

**ADENDA 001 AL DESGLOSE 34 A LA ORDEN DE COMPRA N°018  
(TELFÓNICA INGENIERÍA DE SEGURIDAD)**

**EXPONEN:**

Con fecha 30 de noviembre de 2016, se firmó Orden de Compra N°18 con la empresa TELEFONICA INGENIERIA DE SEGURIDAD y el MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO, para compra de los sistemas asociados al Puesto de Control Central, Comunicaciones y Control de estaciones.

Con fecha 27 de octubre de 2017, se firmó la adenda 001 la Orden de Compra N°18 con la empresa TELEFONICA INGENIERIA DE SEGURIDAD y el MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO, para compra de los sistemas asociados al Puesto de Control Central, Comunicaciones y Control de estaciones, acorde a lo solicitado por el Ingeniero en la Orden de Variación 69.

Con fecha 05 de marzo de 2018, se firmó el Desglose 34 de la adenda 001 de la Orden de Compra N°18 con la empresa TELEFONICA INGENIERIA DE SEGURIDAD y el MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO, para compra de los materiales asociados a Sistema de Control de Estaciones e incluidos en los rubros CES.EST.001.OV.69, CES.EST.002.OV.69, CES.EST.003.OV.69, CES.EST.004.OV.69, CES.EST.005.OV.69, CES.EST.006.OV.69, CES.EST.007.OV.69, CES.EST.008.OV.69, CES.EST.009.OV.69, CES.EST.010.OV.69, CES.EST.011.OV.69, CES.EST.012.OV.69, CES.EST.013.OV.69, CES.EST.014.OV.69 y CES.EST.015.OV.69.

Con fecha 23 de octubre de 2018, se firmó la adenda 002 la Orden de Compra N°18 con la empresa TELEFONICA INGENIERIA DE SEGURIDAD y el MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO, para compra de los sistemas asociados al Puesto de Control Central, Comunicaciones y Control de estaciones, acorde a lo solicitado por el Ingeniero en la Ordenes de Variación 77, 78 y 79.

Con fecha 06 de febrero de 2020, se firmó la adenda 003 la Orden de Compra N°18 con la empresa TELEFONICA INGENIERIA DE SEGURIDAD y el MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO, para compra de los sistemas asociados a Comunicaciones y Control de estaciones, acorde a lo solicitado por el Ingeniero en la Ordenes de Variación 77 Rev.01 y 78 Rev.01.

Con fecha 23 de septiembre de 2020, se aprobó la Orden de Variación 78 Rev.02. En función de esta orden de variación, se realizan los siguientes cambios en el desglose 34 de la Orden de Compra N°18:

***Cambio 1 Precio Unitario del Desglose:***

Se adicionan los precios unitarios al Desglose 34, siendo éste de 8,022.94 USD para la partida ZDIKWXX201 en todas las estaciones. El valor total del desglose queda en **\$328.940,54 USD**.



**Cambio 2 Descripción de la siguiente partida:**

Item	Código	Descripción anterior	Descripción nueva
1	ZDIKWXX201	<p>Equipo de climatización autónomo, sólo frío, de condensación remota vertical para interior, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc..</p>	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>

**Cambio 3 Especificaciones técnicas del equipamiento**

Se actualiza la especificación técnica correspondiente al nuevo código ZDIKWXX201; tal como se muestra en el anexo.

**Cambio 4 Número de cantidad en los siguientes materiales:**

CÓDIGO DE RUBRO	DESCRIPCIÓN DEL RUBRO
	CONTROL DE ESTACIONES
CES.EST.001.OV.78.R3	Estación Quitumbe

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	Equipo climatización de 7 kW de potencia para C. Equipos.	1 Ud.	2 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.006.OV.78.R3	Estación La Magdalena

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plénum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	2 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.007.OV.78.R3	Estación San Francisco

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo</li> </ul>	1 Ud.	3 Ud.

	<p>de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.005.OV.78.R3	Estación El Recreo

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	3 Ud.

		<p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.002.OV.78.R3	Estación Morán Valverde

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente,</p>	1 Ud.	2 Ud.

		conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.003.OV.78.R3	Estación Solanda

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	4 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.004.OV.78.R3	Estación Cardenal de la Torre

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C</p>	1 Ud.	2 Ud.

		<p>de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.008.OV.78.R3	Estación La Alameda

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <p>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	4 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.009.OV.78.R3	Estación El Ejido

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	4 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.010.OV.78.R3	Estación Universidad Central

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante</li> </ul>	1 Ud.	4 Ud.



		<p>agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.011.OV.78.R3	Estación La Pradera

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <p>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	2 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.012.OV.78.R3	Estación La Carolina

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	2 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.013.OV.78.R3	Estación Iñaquito

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante</li> </ul>	1 Ud.	2 Ud.

		<p>agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.014.OV.78.R3	Estación Jipijapa

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <p>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	2 Ud.

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.015.OV.78.R3	Estación El Labrador

Item	Código	Descripción	Cantidad anterior	Cantidad Nueva
1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas. Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	1 Ud.	3 Ud.

**ACUERDAN:**

Conforme los antecedentes expuestos, las partes acuerdan:

**PRIMERO.** Modificar el desglose 34 de la adenda 001 de la Orden de Compra N°18, quedando de la siguiente manera:

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.001.OV.78.R3	Estación Quitumbe

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN</p>	2 Ud.	8,022.94

			<p>Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.002.OV.78.R3	Estación Morán Valverde

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión,</li> </ul>	2 Ud.	8,022.94

			<p>módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.003.OV.78.R3	Estación Solanda

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <p>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas,</p>	4 Ud.	8,022.94

			reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.004.OV.78.R3	Estación Cardenal de la Torre

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	2 Ud.	8,022.94

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.005.OV.78.R3	Estación El Recreo

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	3 Ud.	8,022.94

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.006.OV.78.R3	Estación La Magdalena

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y</p>	2 Ud.	8,022.94



			<p>PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.007.OV.78.R3	Estación San Francisco

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador,</li> </ul>	3 Ud.	8,022.94

			<p>plénium de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.008.OV.78.R3	Estación La Alameda

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <p>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plénium de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro,</p>	4 Ud.	8,022.94

			apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.009.OV.78.R3	Estación El Ejido

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	4 Ud.	8,022.94

CÓDIGO DE RUBRO	DESCRIPCIÓN DEL RUBRO
	CONTROL DE ESTACIONES
CES.EST.010.OV.78.R3	Estación Universidad Central

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	4 Ud.	8,022.94

CÓDIGO DE RUBRO	DESCRIPCIÓN DEL RUBRO
	CONTROL DE ESTACIONES
CES.EST.011.OV.78.R3	Estación La Pradera

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL</p>	2 Ud.	8,022.94

			<p>FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.012.OV.78.R3	Estación La Carolina

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador,</li> </ul>	2 Ud.	8,022.94

			<p>plénium de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.013.OV.78.R3	Estación Iñaquito

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <p>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plénium de impulsión, módulo completo de renovación de aire (free-cooling), etc.</p> <p>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</p> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro,</p>	2 Ud.	8,022.94

			apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.		
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<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.014.OV.78.R3	Estación Jipijapa

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	2 Ud.	8,022.94

<b>CÓDIGO DE RUBRO</b>	<b>DESCRIPCIÓN DEL RUBRO</b>
	CONTROL DE ESTACIONES
CES.EST.015.OV.78.R3	Estación El Labrador

ITEM	Atributo	Código	Descripción	Cantidad	Precio Unitario (USD)
1	ZDIKWXX201-1	ZDIKWXX201	<p>Equipo climatización de 7 kW de potencia para C. Equipos.</p> <p>Equipo de climatización autónomo, sólo frío, unidad interior TIPO SPLIT, CON PANEL FRONTAL CON REJILLA PARA LA IMPULSIÓN Y PANEL INFERIOR CON REJILLA PARA EL RETORNO, con refrigerante R-407C de una potencia frigorífica de 7 kW, de acuerdo a las especificaciones del Pliego de Condiciones Técnicas.</p> <p>Compuesto de los siguientes elementos:</p> <ul style="list-style-type: none"> <li>- Unidad interior: compresores herméticos tipo Scroll y filtro plano, tarjeta electrónica con módulo de integración de supervisión y telemando mediante agentes SNMP a través de la red Ethernet existente, termoregulador, plenum de impulsión, módulo completo de renovación de aire (free-cooling), etc.</li> <li>- Unidad exterior: Intercambiador de condensador remoto Cu/Al, condensado por aire para instalación exterior de alta eficacia equipado con filtros desmontables montados en carril.</li> </ul> <p>Incluyendo conexionado eléctrico, interruptor magnetotérmico de protección, línea frigorífica y eléctrica, drenaje en tubo hasta red existente, conducto de toma de aire exterior, obra civil auxiliar (huecos en muro, apertura de rozas con cierre de las mismas, reposición de revestimientos y/o solados afectados igualando a los existentes, etc.), pequeño material y medios auxiliares, etc.</p>	3 Ud.	8,022.94

<b>CONTROL DE ESTACIONES– ORDEN N°18-DESGLOSE 34</b>	
<b>TOTALIDAD DE SISTEMA DE CLIMATIZACIÓN</b>	<b>328.940,54 USD</b>

**SEGUNDO.** Se modifica la información de facturación, como se indica a continuación:

**Importador:** GAD DEL DISTRITO METROPOLITANO DE QUITO  
**Registro Único de Contribuyentes (RUC):** 1760003410001  
**Dirección:** Venezuela OE -3-35 y Chile  
**Quito – Ecuador**



**TERCERO.** Las partes declaran y aceptan que, salvo las modificaciones aquí contenidas, el desglose 34 de la adenda 001 de la Orden de compra N°18 permanece invariable y se ratifican en lo convenido en el presente documento.

En prueba de su conformidad lo firman las partes a 12 de octubre de 2020.

Por **MUNICIPIO DEL DISTRITO METROPOLITANO DE QUITO.**



Nombre: Edison Santiago Yáñez Romero  
Función: Delegado del Administrador General del Gobierno Autónomo Descentralizado del Distrito Metropolitano de Quito  
Oficio: GADDMQ-AG-2020-0440-O

**TELEFONICA INGENIERIA DE SEGURIDAD ESPAÑA S.A.U.**



Nombre: Yuri Barros Zulai  
Función: Representante Legal

Por **CONSORCIO LINEA 1 METRO DE QUITO**



Nombre: Daniel Núñez Navarro  
Función: Procurador Común





**ANEXO 1 – ESPECIFICACIONES TÉCNICAS  
SISTEMA DE CLIMATIZACIÓN**





**ESPECIFICACIONES TÉCNICAS**  
**EQUIPO DE CLIMATIZACION 9KW**  
**CÓDIGO: ZDIKWXX202**







# High-efficiency room air conditioners

Uniflair Room Cooling



[se.com/cooling](http://se.com/cooling)

Life Is On

**Schneider**  
Electric

## Flexibility

Modular and tailored solutions  
for any application.

## Availability

Continuous operation to safeguard  
the customer's business.

## Energy saving

Technological excellence  
for efficient performance.



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# Uniflair Room Cooling

Perimeter cooling for any data center environment,  
with a low cost of ownership.

Uniflair Room Cooling units are leading-edge precision cooling solutions specifically designed to maintain temperature and humidity within extremely tight tolerances.

Perfect for racked and nonracked IT loads, these products meet the diverse requirements of any data center environment. These intelligent units monitor the status of components and environmental parameters to ensure correct functionality during all modes of operation. When combined with hot-or-cold-aisle containment solutions, Uniflair products can further improve efficiency and achieve higher densities.



# Facing Data Center challenges

Keeping up with growing heat densities while reducing operating costs is today's challenge. Schneider Electric room air conditioners rise to this challenge because energy efficiency, availability, and flexibility are the priorities.

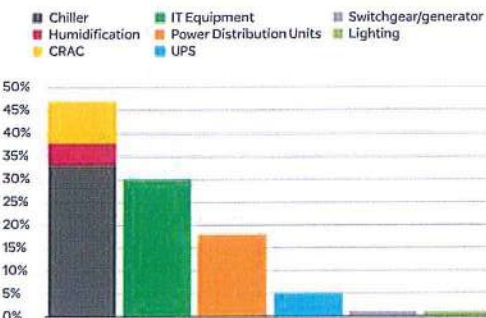
## Efficiency and sustainability

Cooling accounts for up to 40% of the data center total power. This means that high energy saving is a key factor in IT cooling and in precision air conditioning.

Uniflair room air conditioners are designed with the awareness that low energy consumption is the result of an exhaustive analysis — from the choice of components to the constant refinement of design solutions.

Uniflair Room Cooling offers include

- Free-cooling solutions (direct and indirect) to reduce energy consumption leveraging on low outside air temperature.
- Variable Speed Drive technologies to save energy at partial loads thanks to the continuous adjustment to load requirements.
- Design for high temperature operation to benefit from recent increases in the ASHRAE recommended data center operation temperature ranges
- Optimum design on heat exchangers to reach SHR (sensible heat ratio) close to 1 and so to provide more useful (sensible) cooling capacity in the same footprint.
- Optimized management system to have all Schneider Electric cooling resources connected for energy maximization based on real, instantaneous load conditions.



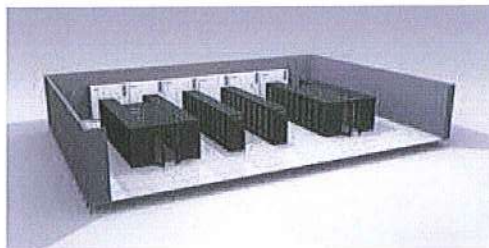
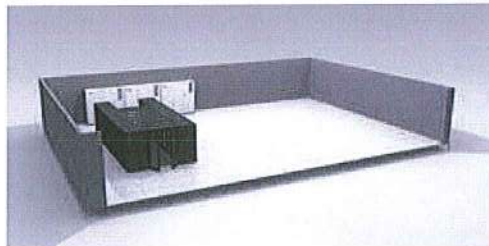
Cooling accounts for up to 40% of the data center total power.

## Modularity and flexibility

A simple and flexible infrastructure creates significant advantage in terms of management costs.

Uniflair Room Cooling achieves this by providing

- A cooling systems that can be implemented over time and that adapts automatically to the load conditions of the room.
- Simple maintenance. The ease of maintenance of Uniflair units is a fundamental factor in reducing operating costs and avoiding downtime.
- Compact dimensions and simple handling/ installation. The high cost of space in high-tech environments, requires precision air conditioning to have the smallest possible footprint and a full frontal component access to enable units to be installed next to each other or next to other equipment.



# 30%\*

of annual energy consumption is reduced thanks to innovative components like EC fans, VSD and tandem compressors, EEV valves, R-410A refrigerant, and AFPS systems.

\*Average value in a medium data center in Europe.

## CapEx

CapEx optimization can be achieved by using a cooling infrastructure that is simply implemented and adapted to changing site requirements.



A wide range of configurations has been developed to give maximum design freedom. Versatility, for Uniflair units, means

- Different fan configurations – fans in the box or underfloor - to cover a wide range of requirements
- Versions available with one or two independent refrigerant circuits
- Minimal footprint with frontal access for all maintenance and minimal service clearance
- A control software that enables the units operation to be adapted to every type of installation and to communicate with a wide range of BMS systems

### Reliability

A fundamental requirement for each data center is to guarantee continuous operation.

Reliability is achieved thanks to the design and implementation of cooling systems that are intrinsically reliable and incorporate an appropriate level of redundancy.

System reliability is based upon several basic considerations, such as a dual source of cooling and electrical power.

Uniflair units ensure reliability also through:

- Monitoring of all components
- Precise and clear display of any malfunctions or abnormal operating conditions
- Management of emergency conditions with ability to maintain basic cooling requirements

### Infrastructure management

Data centers are complex environments; providing complete systems composed of integrated elements guarantees

- full compatibility
- a single source of responsibility
- strategic integration of a regulated system

This is a situation where all of the operating parameters can be optimized (both energy and operational) through integrated logics (internal units, distribution systems, and external units).

The cooling system must then be able to communicate with the various building management systems.

Uniflair Room Cooling

- adapt to a wide range of supervision and network languages and protocols
- can easily interface with a wide range of BMS systems

# 99.999%

is the reliability of Tier III and Tier IV data centers according to Uptime Institute certification standards. - Uniflair units are Tier III and Tier IV ready design.

## DCIM Solutions

To learn more about Schneider Data Center Infrastructure management Solutions visit [www.apc.com/software](http://www.apc.com/software)



A photograph of a Schneider Electric Factory Test Lab. The building is white with large glass windows and a door. A man in a green shirt and dark vest is walking in the foreground. The floor has blue safety markings. The background shows an industrial setting with overhead structures.

**Schneider**  
Electric

**FACTORY TEST LAB**

Technologies built for  
today's challenges

# Total Control



## Microprocessor control and display interface

Uniflair Room Cooling units are equipped with sophisticated controls and management software conceived, developed, implemented, and tested by Schneider Electric.

Every component of the unit is monitored in real time, its performance optimized and kept within design parameters.

Chilled Water (CW) and Direct Expansion (DX) air conditioning units are equipped with the latest generation of graphic 7-inch. IT Touch screen display interface.



## Ultracapacitor

The Ultracapacitor module is an optional electronic device integrated in the units that provides temporary supply to the control in case of a lack of power. This function minimizes the restart time of the units, avoiding the reboot time of the microprocessor.

In case of power failure, capacitors release the stored energy until it is not exhausted, the minimum time ensured with the Ultracapacitor fully charged is two minutes. When power is reset, the capacitors start re-charging.

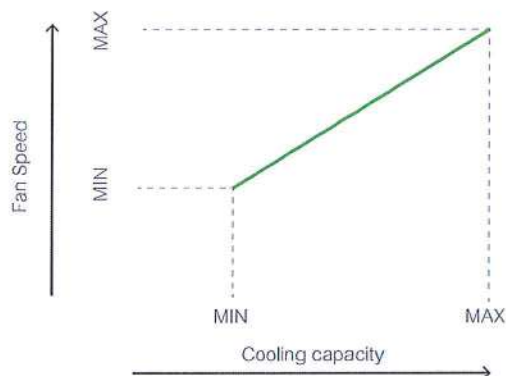
## Double power supply

CW and DX units can be equipped with double power supply with automatic commutation (upon request to provide redundancy and to ensure a continuous service). Since the power supply is equipped with an electromechanical changeover, it can be connected to two separate electrical lines: a main line and a secondary line connected to a generator or emergency line.

## Ultra Fan Speed Management

Uniflair Room Cooling DX units can utilize different fan speed management logics to minimize energy consumption. When combined with an Active Flow Controller (AFC), the unit will automatically set the airflow according to the pressure setpoint required under the raised floor.

Alternatively, the unit can adjust the airflow based on a combination of the heat load in the room (related to the speed of inverter driven compressor) and the airflow regulation from minimum to maximum.

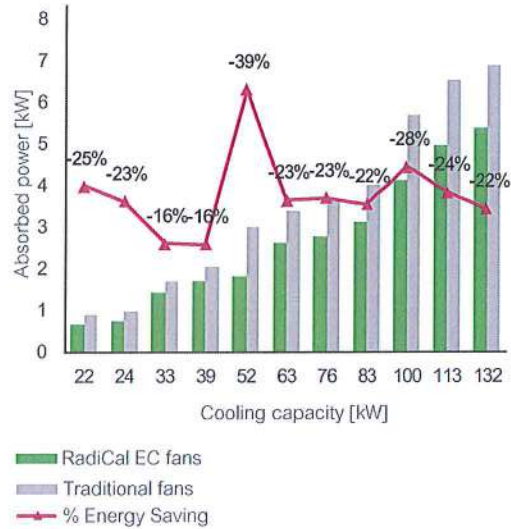


# Fans and airflow control



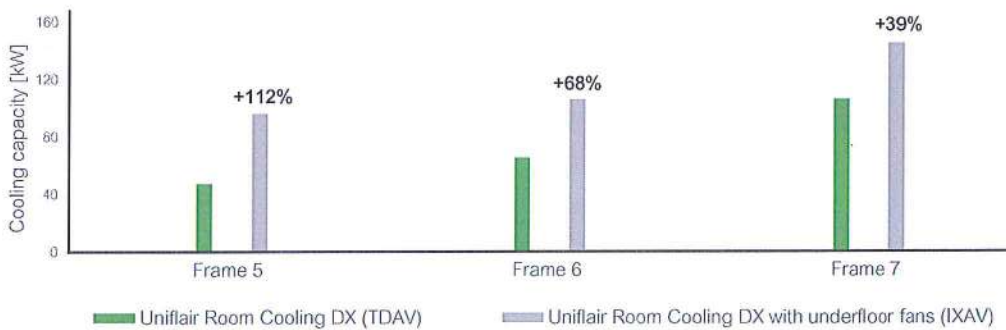
## RadiCal EC fans

- Every component of the Uniflair Room Cooling range has been chosen in accordance with the design criteria of energy saving for maximum efficiency. Just one example is the selection of fans with electronically commutated (EC) direct current motor and blades made of high tech compound material. This type of fan-motor combination offers a number of advantages over traditional types:
- Lower power consumption on the fan side
- High part-load efficiency
- Lower noise level
- Fan speed adjustment via the microprocessor control while the unit is running
- Ability to regulate airflow depending on the actual thermal load



## Under Floor fans configuration

- Air conditioning units with fans located underneath the floor allow for more coil area in the unit and less internal air-side pressure drop. The fan module beneath the unit can be configured in many different airflow patterns as well as be placed beneath or above the raised floor for total flexibility.
- More heat exchanger coil and less pressure drop equals less power consumption and more capacity inside a compact footprint.



Data refer to nominal conditions 45°C condensation, return air 24°C

### Cooling Categories:

- Chilled Water
- Direct Expansion

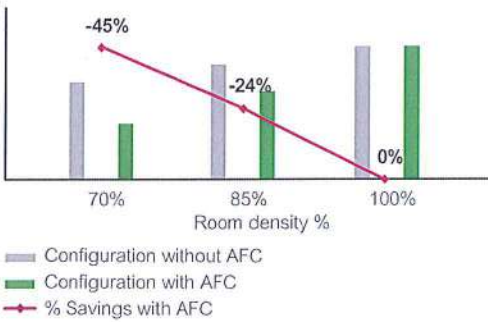
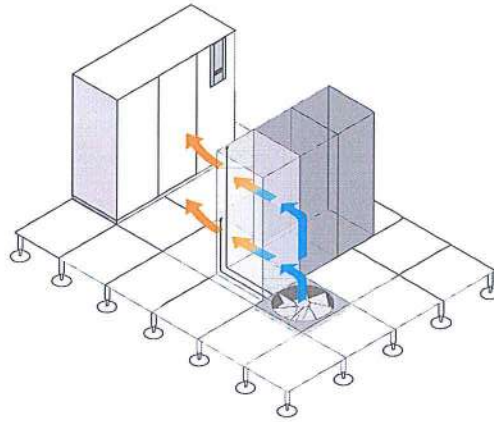




## Active Flow Controller (AFC)

Maintaining correct pressurization of the floor space is a key factor to ensure that the cooling system operates with maximum efficiency and that cool air is available where needed. This process must be guaranteed for the entire lifetime of a server room that may be upgraded and changed over time.

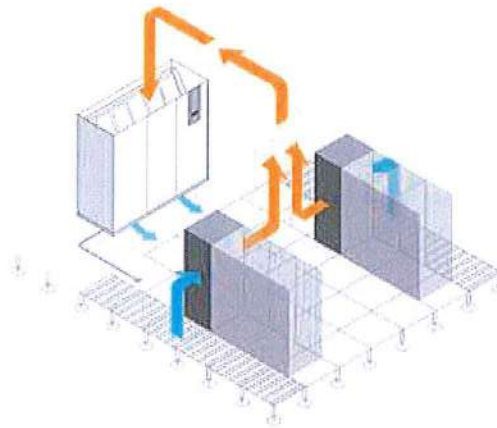
The Active Flow Controller (AFC), developed and tested by Schneider Electric, enables structural flexibility through automatic adjustment of the airflow according to the servers that have been installed. AFC automatically adjusts the airflow of the perimeter units that are fitted with EC fans during standard and emergency maintenance, maintaining a constant pressure under the raised floor and avoiding the creation of hot spots.



## Active Floor

Active Floor is a flexible and modular system for cooling data centres with medium- and high-density loads. Integrated within a modular access floor in front of the intake section of the rack, the Active Floor fits exactly into a modular access floor panel measuring 600 mm x 600 mm. The cold air produced by the Close Control perimeter units is directly channeled to the source of the thermal load thanks to the advanced adjustment of the direction of the airflow.

The Active Floor creates a high-density bubble of air, which is maintained at a constant temperature along the whole intake section of the rack, guaranteeing operation at the nominal design conditions. The airflow varies according to the actual thermal load and is detected by two sensors placed on the discharge section of the servers.



# Compressor technologies

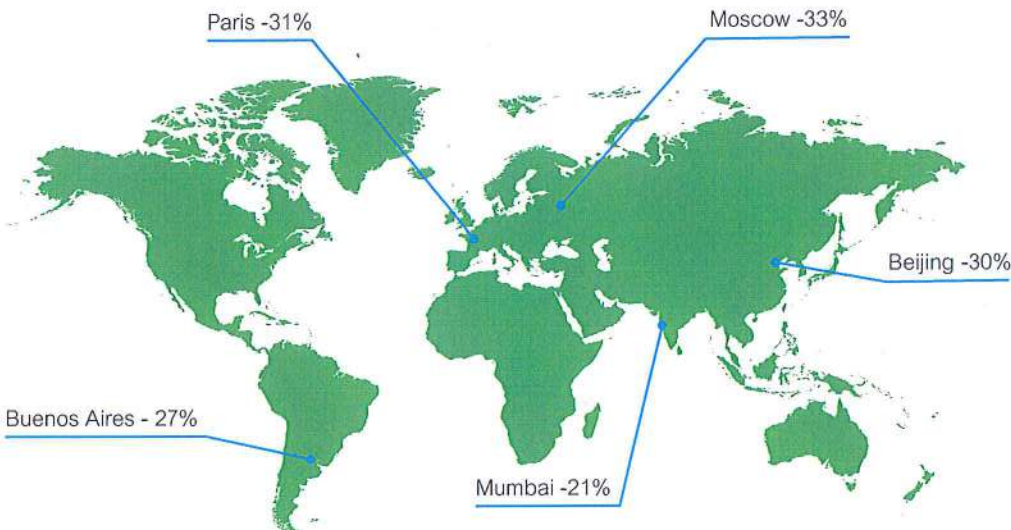


## Variable speed brushless compressors

Uniflair Room Cooling units, series I\*\*V, are equipped with latest generation variable-speed drive scroll compressors.

These units have been developed in order to improve further energy efficiency values of brushless compressors and guarantee high efficiency level at partial load conditions, compared to units with fixed-speed or traditional variable capacity solutions.

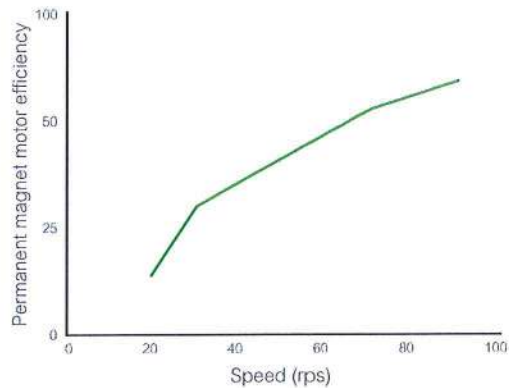
In order to minimize the operative expense, air-cooled units are naturally matched with condensers equipped with EC fans.



(\*) Data calculated comparing IDAV2922 and TDAV3342 for 100 kW net sensible 37° return air

The generation of inverter scroll compressors are equipped with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range.

High motor efficiency means less heat transferred from the motor to the refrigerant, providing better compressor efficiency.





### Fixed speed compressors

The optimum combination between Schneider Electric technology and fixed speed scroll compressors results in the following advantage for LDAV units:

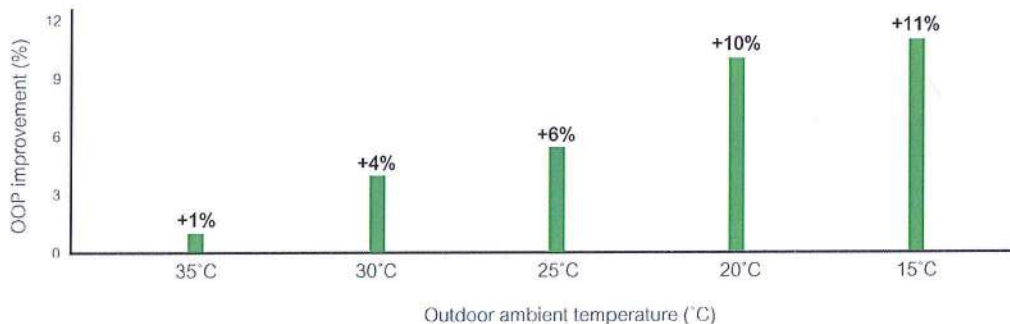
- Extended operating map that permits higher efficiency at high return air temperatures
- No over compression losses
- Energy efficiency and seasonal efficiency improvement
- Low starting current
- Low stress on mechanical parts
- Improved robustness of the complete unit
- Service costs reduction

### Intermediate Discharge Valves

Fixed speed scroll compressors are equipped with Intermediate Discharge Valves (IDVs) to mechanically reduce excessive compression of refrigerant under part-load conditions while maintaining the same cooling capacity.

The IDVs adapt the effort of the motor to the pressure conditions in the system opening when condensing pressure and pressure ratio (part-load) fall below the built-in optimization point of the scroll.

The compressors equipped with IDVs provide better COP compared to compressors without these valves and the size of this improvement depends on the outdoor air temperature.



### Non-return valve

The non-return valve is integrated in the compressors of LDAV3822 while on the other LDAV units it's installed in the refrigerant circuit. The scope of the non-return valve is to avoid the refrigerant migration from high-pressure to low-pressure side after compressor is switched off.



# Tandem operation

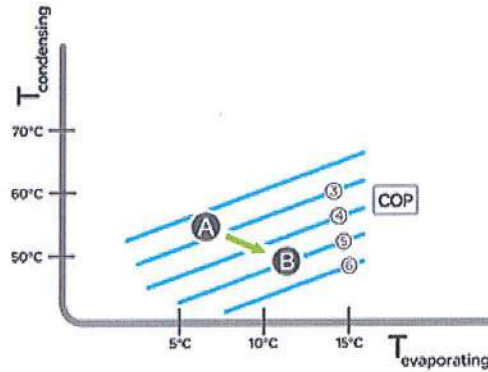


## Main features

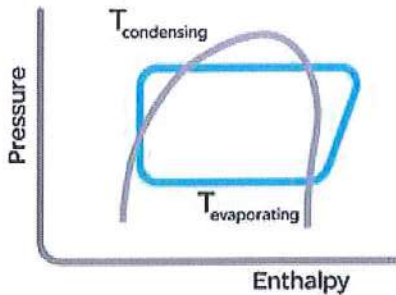
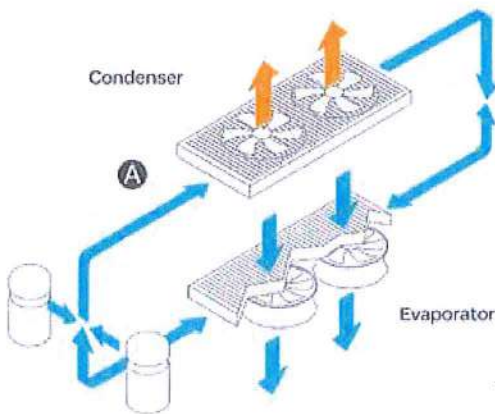
In many applications the room load can vary enormously during the course of a single day or from season to season. This will cause wide variations in the amount of cooling required at any given moment. In these circumstances it is very important to use precision air conditioning units that are highly energy efficient at part load.

Uniflair Room Cooling models (with suffix \*\*21, \*\*42) are equipped with two compressors operating in parallel on the same circuit in order to offer two stages of cooling on a single circuit of refrigeration.

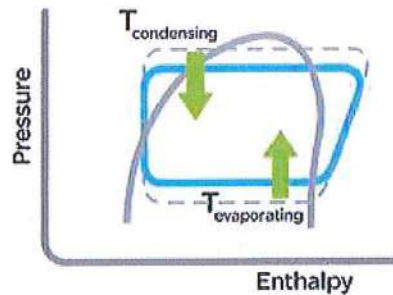
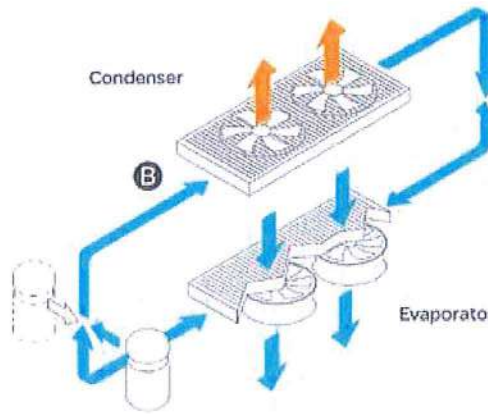
As the evaporator coil surface area (designed for the capacity of two compressors) is fixed, one single compressor in operation (Fig. B) benefits from the availability of a "double sized" evaporator coil. This maximization of the cooling effect leads to increases in part load efficiencies and a rise in the part load coefficient of performance (COP).



$$\frac{(W_{100\%} \times COP_{100\%}) + (W_{75\%} \times COP_{75\%}) + (W_{50\%} \times COP_{50\%}) + (W_{25\%} \times COP_{25\%})}{100}$$



A. 100% full load operation



B. Partial load operation



# Refrigerant circuit



## Refrigerant R-410A

R-410A is similar to a mono-component refrigerant (which is near azeotropic), as it is characterized by the absence of glide during the change of state.

Thanks to a greater heat exchange capacity and a notable decrease in pressure drops, it is possible to maximize the size of the exchangers, while increasing efficiency.

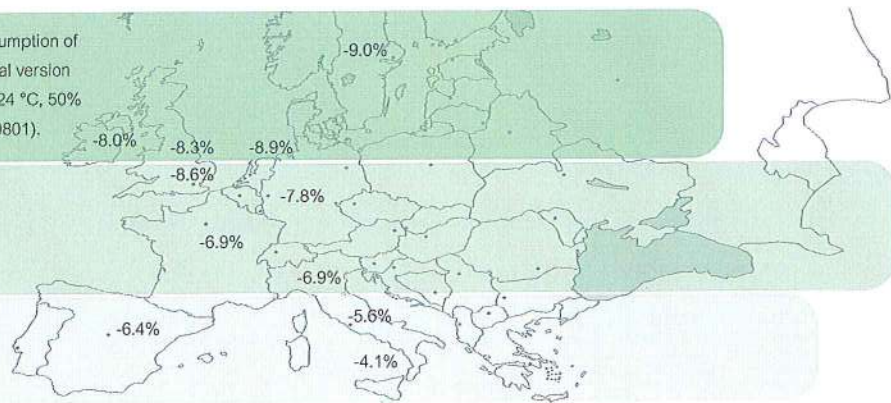
- Summarizing the main advantages of R410A compared to R407C are:
- R410A has a lower Global Warming Potential index<sup>1</sup>.
- Units with R410A provide better energy efficiency.
- R410A is not affected by "temperature glide", featuring better performances in terms of cooling capacity and service lifetime.

## Electronic expansion valves

Electronic expansion valves (EEVs) are integrated with the microprocessor range in all Uniflair models to provide highly efficient electronic control of the flow of refrigerant.

The EEV provides accurate control of the refrigerant superheat to ensure an increase in the COP at low external temperatures; it enables the unit to operate at much lower condensing pressures than would be possible with a traditional mechanical valve. The dehumidification function is also controlled through the operation of the EEV.

Percentage annual reduction in energy consumption of a unit fitted with EEV compared to a traditional version (cooling capacity: 60 kW, space conditions: 24 °C, 50% RH at constant load, TDAV1822A + 2 x CAP0801).



1. GWP (Global Warming Potential) is an index based on CO2 equivalent tons to measure the impact of a greenhouse gas on the atmosphere



# Free-cooling choices



## Direct free-cooling

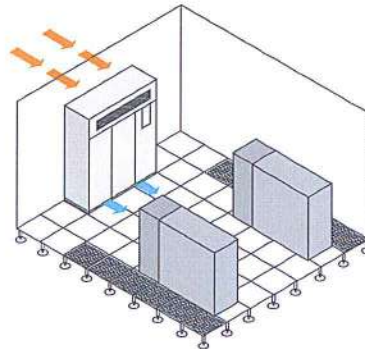
The direct free-cooling is comprised of an air conditioning unit equipped with a free-cooling plenum with dampers in order to manage the external air, the return air from the room and their blending when necessary.

Direct free-cooling mode leverages on the outdoor temperature in moderate climate areas. The external air enters directly the data center removing the thermal load provided by the IT equipment. The air must be treated before entering the data center by means filtration and humidification systems in order to guarantee the right quality level of the air.

### Direct free-cooling operating modes

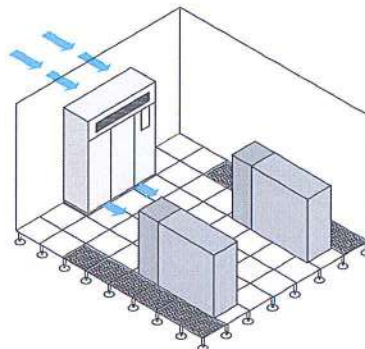
#### 1 External temperature higher than the setpoint

The damper is open and the external air enters into the unit, compressors are switched on to provide the additional cooling load necessary to reach the temperature requirement.



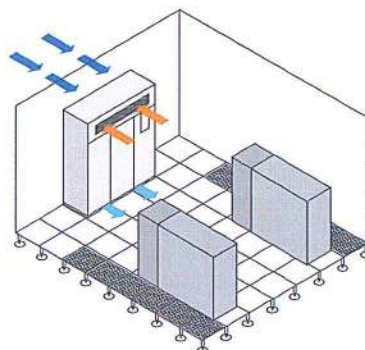
#### 2 External temperature between the setpoint and antifreeze temperature

The damper is open and compressors are switched off. The external air is cold enough to achieve the required temperature setpoint, therefore it flows through the filters and enters directly into the room.



#### 3 External temperature below the antifreeze temperature

The damper is open and compressors are switched off. Since the external air temperature is too low, it is necessary to recirculate the hot air from the Data Center. The hot air is mixed with external cold air to provide the required setpoint temperature.





## Indirect free-cooling

The indirect free-cooling operation leverage on free-cooling effect when the outdoor temperature is low enough to minimize energy consumption and it is not dependent on the quality of the outdoor air since it does not enters directly the data center.

### Energy saving units (LDEV, I\*EV)

Free-cooling is provided without the need to operate compressors and does not depend upon pulling outside air into the space (indirect free-cooling). This guarantees stable humidity and air quality in the space.

Energy saving units are design to operate in three different modes (Fig. a, b and c)

The main advantage of the Patent Pending Solution is the use of three flow control valves to minimize the pressure drops.

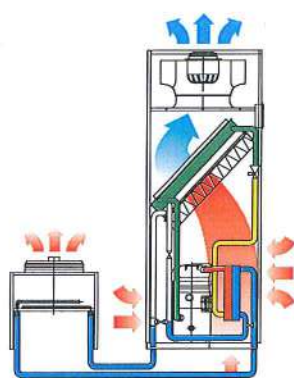


Fig. a) Mechanical mode

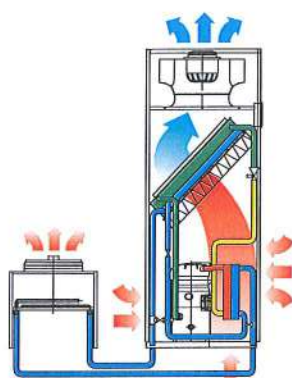


Fig. a) Hybrid mode

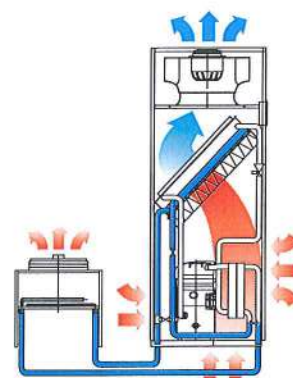
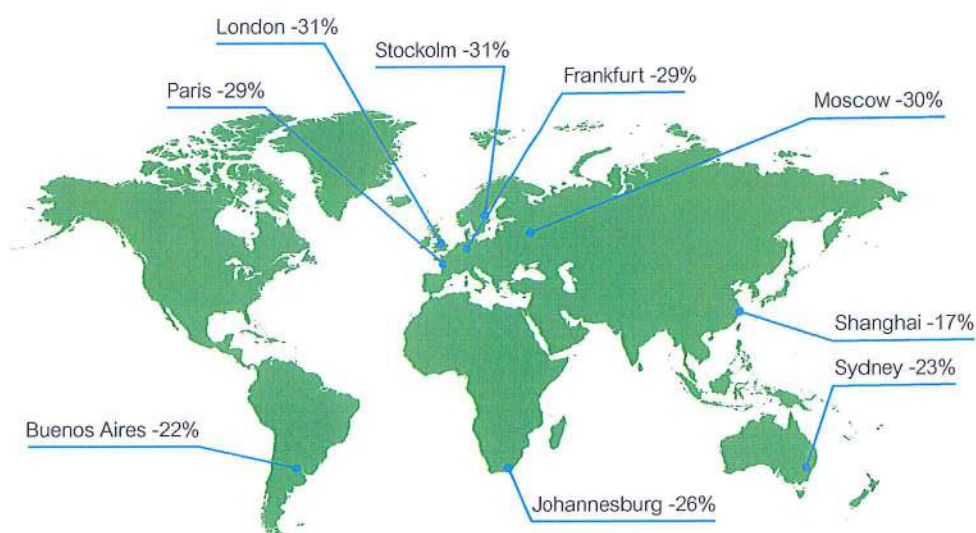


Fig. a) Free-cooling mode

### A worldwide perspective: Indirect Free-cooling

(\*) Data calculated comparing a DX air-cooled unit IXAV4022 and an energy saving unit IXEV4022, pump consumption included. 100 kW net sensible cooling capacity, 35° return air, 30% rH and 30% glycol



### Chilled water units (L\*CV, HDCV) coupled with free-cooling chillers

Chilled water systems can leverage on the outdoor temperature to reduce the energy consumption during the year. In this case the free cooling effect is provided by the free-cooling coils of chillers.



# Designed for optimum temperatures



## ASHRAE Guidelines

ASHRAE guidelines permit to operate with higher operating temperatures in order to maximize system efficiency.

Air conditioning units are designed for discharge temperature and moisture control and are optimized according to the recommended water temperature range and a higher delta T.

## Discharge temperature control

The control algorithm provides proportional and integral regulation on the discharge temperature of the CRAC unit, which manages the regulation of the on-board three-way valve (chilled water units) or of the speed of the inverter-driven compressor (VSD DX units).

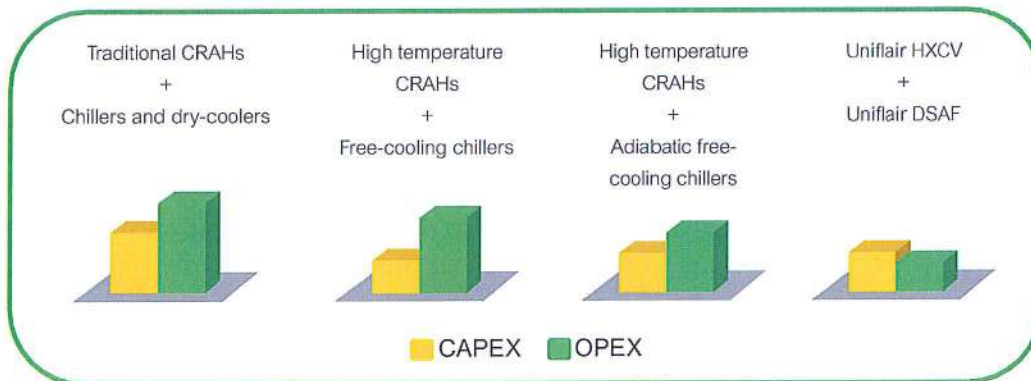
## High temperature applications

### Chilled water units

Room air conditioners offer:

- Part of the range optimized for high water temperatures and discharge temperature control.
- Part of the range optimized for traditional water temperatures.

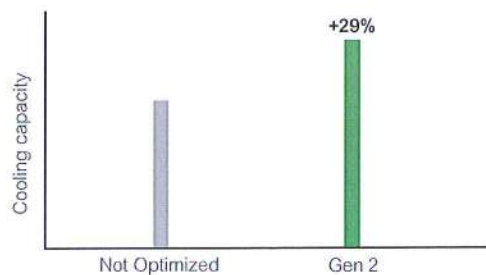
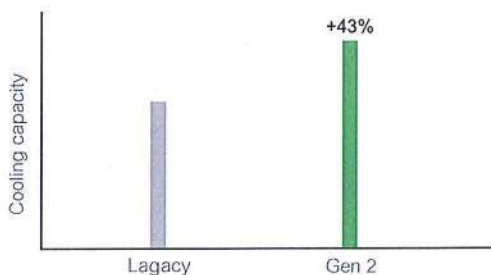
The optimized design for high Delta T enables to have less consumption on yearly base compared to a unit not optimized.



## Direct expansion units

Latest DX generation optimized for high air temperature operation allows:

- +43% cooling capacity in the box with the same power consumption compared to traditional working conditions
- +29% cooling capacity compared to traditional design at the same conditions





# Optimized management

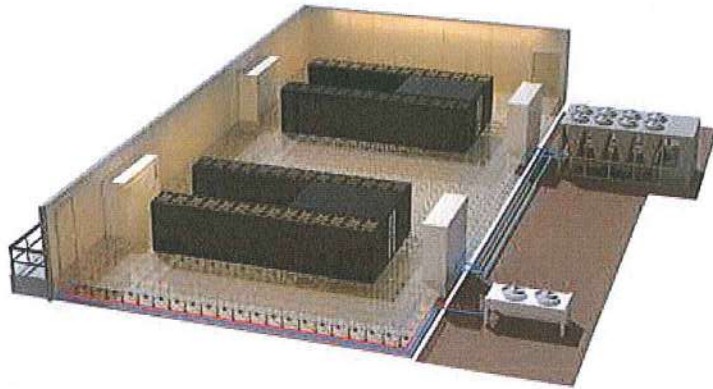


## Optimized management

Management of the whole system allows energy consumption to be optimized and integrated control strategies to be implemented, which would otherwise not be possible.

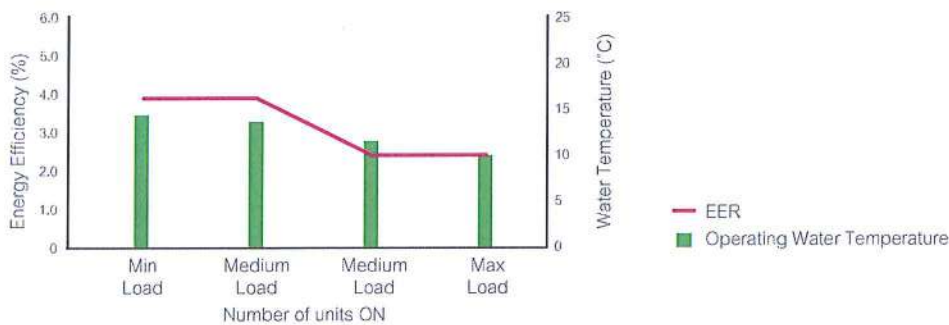
All the Schneider Electric cooling resources can be linked together in a network to maximize the operating parameters and the current required. Row and room cooling units communicate to the chiller, reducing the energy requirement by means of a "tracking logic" for the current thermal load.\*

The chilled water temperature varies dynamically to minimize compressor consumption and maximize the use of free-cooling, while maintaining the optimum temperature in the data center.

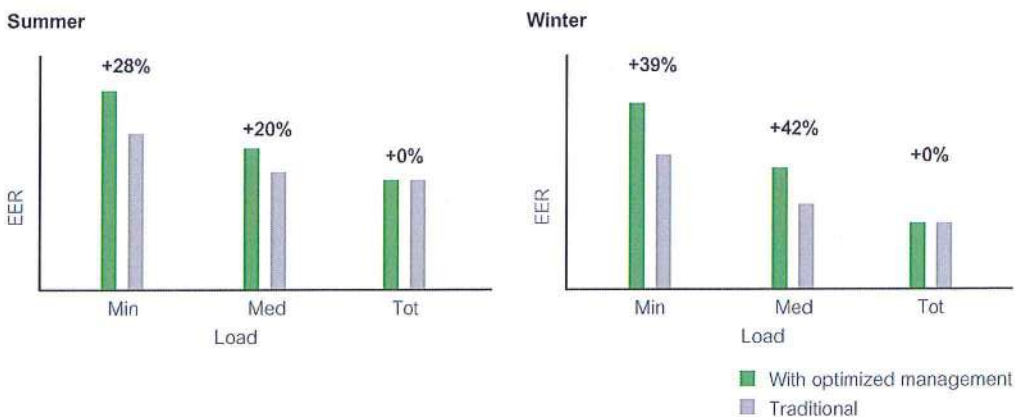


\* Optimized Management is not available for Small Room Cooling (5-20kW)

## How it works



## Energy saving improvement



Comparison between a traditional solution and an optimized management logic:

Summer mode external temperature: 35°C

Free-cooling external temperature: 8°C

Load variation: 100 kW - 300kW

Water set point: 12°C



# External Condenser technology



## EC fans

The external condenser can be equipped with AC axial fans or electronically commutated (EC) axial fans.

The regulator works via Modbus commands that allow the controller to manage all parameters.

## Low ambient operation

Uniflair DX air-cooled units can be equipped with a kit applicable to the external condenser to allow operation down to  $-40^{\circ}\text{C}$ .

The low temperature kit includes a liquid receiver and flooding valve to control the condensing temperature, both fit within the overall dimensions of the unit including leg kits.

The fan speed regulator varies the speed of the fan motor to maintain constant condensation pressure. In low temperature condensers, the regulator is installed inside the indoor cooling unit.

## Microchannel coils

External condensers can be equipped with microchannel condensing coils to reduce the refrigerant charge and minimize air-side pressure drops.



# Uniflair Rack Mounted Cooling for Micro Data Centers

Uniflair Rack Mounted Cooling solution addresses the escalating demand for rack-based cooling for micro data centers and edge computing. Perfect for new and existing applications, these units provide precise temperature control and are powerful enough to cool most single racks with no need for alternative solutions. Uniflair Rack Mounted installs and integrates quickly and simply. The solution offers continuous and automatic modulation of fan and compressor speed to match rack airflow requirements and is designed for 24x7 continuous operation and convenient servicing of critical components outside the IT space.

## Continuous control

- Infinitely adjustable capacity modulation between 30-100%
- Precise  $\pm 1^{\circ}\text{C}$  temperature control
- Outdoor inverter compressor
- Upward air plenum
- Active Response Controls



## High adaptability

- Fits into bottom of virtually any rack
- 5U height
- Discrete, easy installation
- Pipe kits for top or bottom connections
- Pre-charged R410a refrigerant
- Low sound

## Smart manageability

- Immediate startup (no config necessary)
- Automatic assist for low load
- Protection alarm
- Modbus 485
- Gravity condensate drain

## Additional options

- User interface
- Low temp kit ( $-40^{\circ}\text{C}$ )
- Condensate pump

MAIN TECHNICAL FEATURES	
Cooling mode	Air cooled
Height - Depth	5U - 752 mm
Min capacity	800 W
Rated cooling capacity	3.5 kW
Max air flow	750 m <sup>3</sup> /h
Electrical power	230V, 1ph, 50Hz
Equip piping +/- lift	20 m +/- 5 m
Ambient temperature range with low temp kit	$-40^{\circ}\text{C}$ to $48^{\circ}\text{C}$
Certification	CCC, CE

Data at 35°C RAT, 23%RH, outdoor air temperature 35°C.



# Monoblock and split units for Edge applications

Uniflair Monoblock and Ceiling Mounted Split Room Cooling units are designed to meet the specific needs of Edge data centers and telecom applications. Edge computing leverages distributed micro data centers at the edge of the network where data is used closer to where it is generated. Telephone technology uses equipment that is usually housed in shelters or in small- to medium-sized rooms. These sites form effective technological rooms with common needs from which a series of particular requirements arise.

## Around-the-clock operation every day of the year

- Highly reliable equipment
- Reduced running costs

## High breakdown costs

- Rapid intervention
- Avoidance of critical conditions

## Expensive equipment

- Guaranteed control of environmental conditions
- Management of critical situations
- Long life for the system

## Unmanned sites

- Autonomous control of emergencies
- Elimination only of the sensible heat

## Reduced space

- High density of thermal loads
- Protection of the space dedicated to the instruments

## Applications in various environments

- Easy installation
- Adaptable for any site

To satisfy these needs, Schneider Electric has designed various product families to ensure:

- Operational accuracy
- Continuous service
- Flexibility
- Low running costs

Uniflair Monoblock and Ceiling Mounted Split units provide the features of the most advanced cooling units.

## Connection to supervision systems

All the units can be connected to a RS485 serial line by using an additional card, ensuring complete monitoring of the system. This allows for:

- Control through the Uniflair Netvisor supervision system
- Connection to a centralized supervision system

Furthermore, all the units are fitted with digital alarm outputs (between three and six depending on the model), which make it easier to control the status of the cooling unit and the connection to the external control PLC.

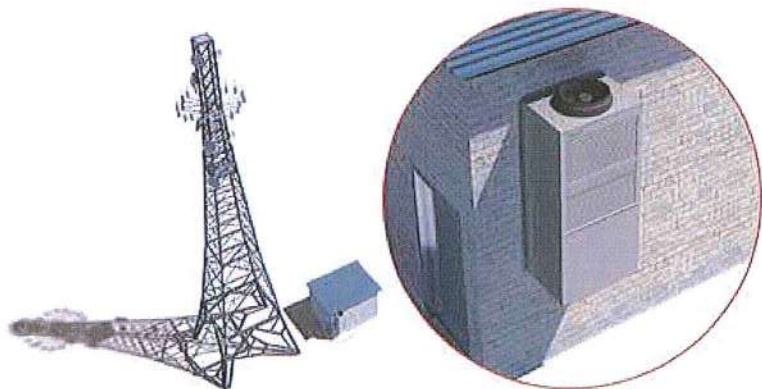
## Intelligent free-cooling

The microprocessor control continuously monitors the room temperature and the outside environmental conditions: if these conditions allow the dissipation of the thermal load, free-cooling is then activated.

Unlike traditional systems, the free-cooling start-up temperature varies as the thermal load in the conditioned room varies.

COOLING	MECHANICAL	FREE-COOLING	MIXED
Compressor	ON	OFF	OFF
Evaporator fan	ON	ON	ON
Condenser fan	ON	OFF	ON
Damper	Closed	Open	Modulating

Minimal discharge air temperature with modulating damper.



### Continuous operation during emergencies

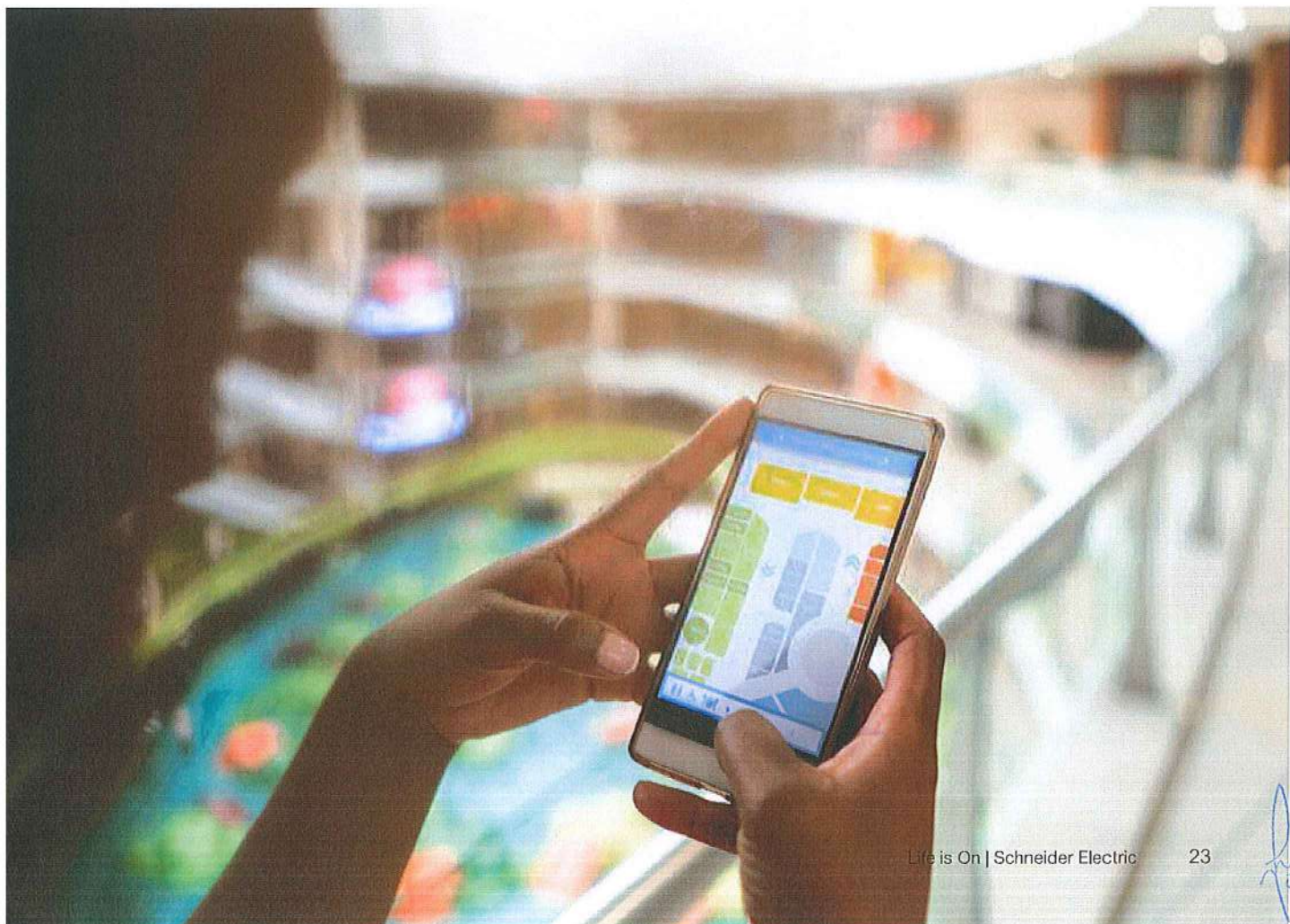
Micro Data Centers and telephone shelters are constructed to guarantee continuous operation even during power failures.

The free-cooling damper, microprocessor control, and evaporator fan can also be powered by the UPS in the shelter. During power failures the room is cooled by the outside air through the free-cooling damper. Without air conditioning, the temperature in the racks rises from 45 °C to 70 °C in less than 15 minutes.

### Stand-by control

Up to 10 units can be installed in each shelter, which are linked to each other through the local LAN network, offering the following benefits:

- Equal wear to the units that are rotated on a timed basis
- The stand-by unit turns on if there is an alarm in the working unit
- Automatic power turns on if there is an exceptional thermal load
- Control of the combined operating phases with excellent energy savings

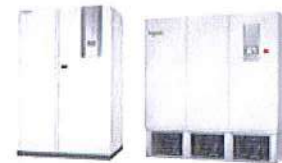


# Uniflair Room Cooling offer overview

UNIFLAIR AIR COOLED ROOM COOLING					
Fixed speed compressors			Variable speed compressors		
5 - 20 kW	SUAV-SUAC*	(Upflow)	5 - 20 kW	IDAV	(Downflow)
	SDAV-SDAC*	(Downflow)		50 - 160 kW	IUAV
20 - 60 kW	TUAV	(Upflow)		IDAV	(Downflow)
	TDAV	(Downflow)		IXAV	(Underfloor fans)
60 - 160 kW	LDAV	(Downflow)			



UNIFLAIR INDIRECT FREE COOLING ROOM COOLING					
Fixed speed compressors			Variable speed compressors		
20 - 60 kW	TUEV	(Upflow)	50 - 160 kW	IUEV	(Upflow)
	TDEV	(Downflow)		IDEV	(Downflow)
60 - 160 kW	LDEV	(Downflow)		IXEV	(Underfloor fans)



UNIFLAIR TWIN COOLED ROOM COOLING					
Air Cooled   Fixed speed compressors			Water Cooled   Fixed speed compressors		
20 - 100 kW	TUTV	(Upflow)	20 - 100 kW	TUDV	(Upflow)
	TDTV	(Downflow)		TDDV	(Downflow)



UNIFLAIR WATER COOLED ROOM COOLING					
Fixed speed compressors			Variable speed compressors		
5 - 20 kW	SUWV-SUWC*	(Upflow)	50 - 150 kW	IUWV	(Upflow)
	SDWV-SDWC*	(Downflow)		IDWV	(Downflow)
20 - 100 kW	TUWV	(Upflow)		IXWV	(Underfloor)
	TDWV	(Downflow)			
60 - 140 kW	LDWV	(Downflow)			



UNIFLAIR CHILLED WATER ROOM COOLING					
5 - 20 kW	SUCV-SUCC*	(Upflow)	30 - 200 kW	HDCV	(Underfloor fans)
	SDCV-SDCC*	(Downflow)		High Temperature operation	
20 - 100 kW	LUCV	(Upflow)	120 - 250 kW	HXCV	(Underfloor fans)
	LDCV	(Downflow)			



UNIFLAIR CEILING MOUNTED SPLIT ROOM COOLING		
6 - 15 kW	UCA	
	UCF	(with direct free-cooling)



UNIFLAIR MONOBLOCK ROOM COOLING					
External installation			Internal installation		
4 - 17 kW	WMA-WMF	(Upflow)	5 - 12 kW	XMA-XMF	(Upflow)
6 - 15 kW	WDA-WDF	(Downflow)	6 - 15 kW	XDA-XDF	(Downflow)



UNIFLAIR CONDENSERS	
7 - 160 kW	CAP
40 - 200 kW	OCC



UNIFLAIR RACK MOUNTED COOLING		
3,5 kW	ACRMD4K	(Direct Expansion Split)



\*V suffix = Electronically Commuted (EC) motor fans; C suffix = backward-curved fans with asynchronous motor.



# EcoStruxure™

Innovation At Every Level

## IoT-enabled solutions that drive operational and energy efficiency

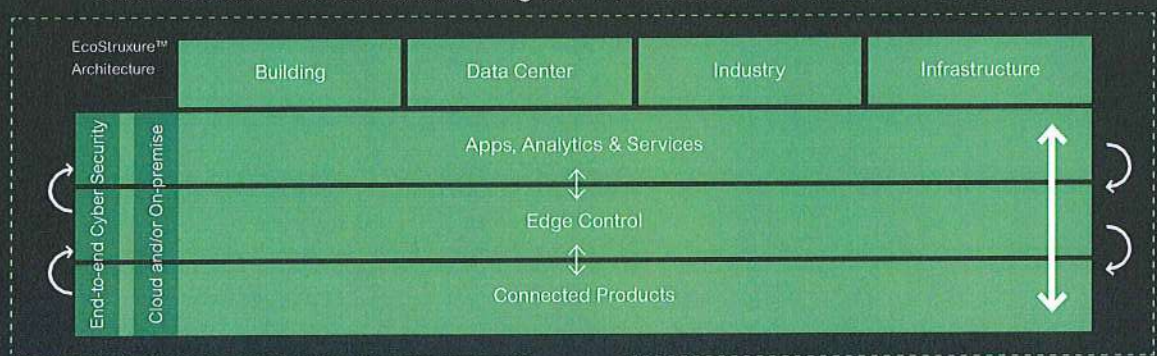
EcoStruxure™ architecture and interoperable technology platform brings together energy, automation, and software. It provides enhanced value around safety, reliability, efficiency, sustainability, and connectivity.

In turn, this advancement opens up the digital world to users across key end markets, enabling them to be competitive in today's IoT economy.

## Uniflair Room Cooling is EcoStruxure ready

Schneider Electric Room Cooling seamlessly integrates with EcoStruxure. Users are able to monitor, manage and optimize any unit from local or remote locations.

One EcoStruxure architecture, serving four end markets, with six domains of expertise



### Connected Products:

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision-making throughout operations.

### Edge Control:

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

### Applications, Analytics & Services:

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid end markets. EcoStruxure enables a breadth of agnostic applications, analytics & services for seamless enterprise integration.

Life Is On

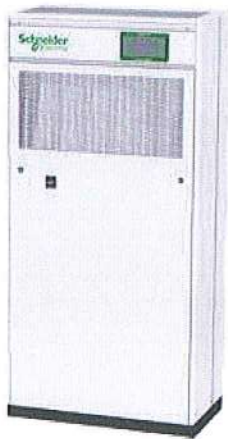
**Schneider**  
Electric

# Uniflair Air Cooled Room Cooling

Direct-expansion air-cooled units with asynchronous motor fans

SDAC – SUAC

Cooling capacity: 5 ÷ 20 kW



Refrigerant R-410A

Available versions

- Downflow (SDAC)
- Upflow (SUAC) with bottom, front, and rear suction

## Standard features

- Advanced microprocessor control system is included with local or remote user terminal.
- The units are equipped with forward-curved fans and directly coupled asynchronous motor.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Uniflair Room Cooling units comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS)
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Total front access is available for unit maintenance.
- Electrical panel is situated in a compartment separated from the airflow
- Integrated card (LAN) to perform grouping logic. Up to 15 units can be linked to each other through the local LAN network, optimizing the operation of the units that are rotated on a timed basis
- Rotation and active stand-by management. The stand-by unit turns on if there is an alarm in the working unit. Automatic power turns on if there is an exceptional thermal load.
- Free contact for general and two for addressable alarms
- Remote on/off switch
- Integrated TCP/IP serial card for BMS connection (SNMP or Modbus TCP/IP or BACnet over IP)
- Integrated clock card
- USB integrated through 4,3 inch Touch Screen Display
- Native integration with EcoStruxure IT platform that allows simplification of the connectivity to customer assets. Full compatibility with Schneider EcoStruxure system through integrated SNMP connection
- Ability to interface with two separate BMSs. In addition to the TCP/IP integrate it is possible to select one of the two modules below reported:
  - LonWorks Module
  - RS485 Module to target Modbus RTU or BACnet MS/TP

\* to be considered when applicable





TECHNICAL DATA									
SDAC – SUAC MODEL		0151B	0251B	0151A	0251A	0331A	0351A	0501A	0601A
Fan type		Forward-curved centrifugal motor fan							
Power supply	V/ph/Hz	230/1/50				400/3/50			
Fans	nr.	1	1	1	1	2	2	2	2
Airflow	m <sup>3</sup> /h	1600	1750	1600	1750	3000	3300	4500	4500
N° of compressors		1	1	1	1	1	1	1	1
Refrigerating circuits		1	1	1	1	1	1	1	1
Gross total cooling capacity <sup>1,2</sup>	kW	6,6	8,0	6,4	7,9	10,0	13,3	16,9	18,8
Gross sensible cooling capacity <sup>1,2</sup>	kW	5,3	6,1	5,2	6,0	9,1	10,6	14,4	15,4
DIMENSIONS									
Height	mm	1740	1740	1740	1740	1740	1740	1740	1740
Length	mm	550	550	550	550	850	850	1200	1200
Depth	mm	450	450	450	450	450	450	450	450

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, 45 °C condensing temperature, and ESP = 20 Pa.

## Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with safety thermostat and manual resetting (T/H versions)
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the precision of the cooling and the energy efficiency of the cooling cycle

## Accessories

The units can be supplied with the following external accessories:

- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

# Uniflair Air Cooled Room Cooling

Direct- expansion air- cooled with EC motor fans

SDAV- SUAV

Cooling capacity: 5 ÷ 20 kW



Refrigerant R-410A

EC fans

Available versions

- Downflow (SDAV)
- Upflow (SUAV) with bottom, front, and rear suction

## Standard features

- Advanced microprocessor control system is included with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Uniflair Room Cooling units are in conformity with the following directives\*: Machinery Directive 2006/42/EC (MD), Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Total front access is available for unit maintenance.
- Electrical panel is situated in a compartment separate from the airflow
- Integrated card (LAN) to perform grouping logic. Up to 15 units can be linked to each other through the local LAN network, optimizing the operation of the units that are rotated on a timed basis
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- Integrated clock card
- USB integrated through 4,3 inch Touch Screen Display
- Native integration with EcoStruxure IT platform that allows simplification of the connectivity to customer assets. Full compatibility with Schneider EcoStruxure system through integrated SNMP connection
- Ability to interface with two separate BMSs. In addition to the TCP/IP integrate it is possible to select one of the two modules below reported:
  - LonWorks Module
  - RS485 Module to target Modbus RTU or BACnet MS/TP

\* to be considered when applicable



TECHNICAL DATA									
SDAV – SUAV MODEL		0151B	0251B	0151A	0251A	0331A	0351A	0501A	0601A
Fan type		EC backward-curved centrifugal motor fan							
Power supply	V/ph/Hz	230/1/50				400/3/50			
Fans	nr.	1	1	1	1	2	2	2	2
Airflow	m <sup>3</sup> /h	1600	1750	1600	1750	3000	3300	4500	4500
N° of compressors		1	1	1	1	1	1	1	1
Refrigerating circuits		1	1	1	1	1	1	1	1
Gross total cooling capacity <sup>1,2</sup>	kW	6,4	8,0	6,4	7,9	10,0	13,3	16,9	18,8
Gross sensible cooling capacity <sup>1,2</sup>	kW	5,2	6,1	5,2	6,0	9,1	10,6	14,4	15,4
DIMENSIONS									
Height	mm	1740	1740	1740	1740	1740	1740	1740	1740
Length	mm	550	550	550	550	850	850	1200	1200
Depth	mm	450	450	450	450	450	450	450	450

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

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- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

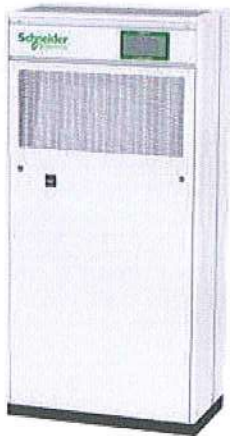


# Uniflair Water Cooled Room Cooling

Direct- expansion water- cooled units with asynchronous motor fans

SDWC- SUWC

Cooling capacity: 5 ÷ 20 kW



Refrigerant R-410A

Available versions

- Downflow (SDWC)
- Upflow (SUWC) with bottom, front, and rear suction

## Standard features

- Advanced microprocessor control system is included with local or remote user terminal.
- The units are equipped with forward-curved fans and directly coupled asynchronous motor.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Uniflair Room Cooling units comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow.
- Integrated card (LAN) to perform grouping logic. Up to 15 units can be linked to each other through the local LAN network, optimizing the operation of the units that are rotated on a timed basis
- Rotation and active stand-by management. The stand-by unit turns on if there is an alarm in the working unit. Automatic power turns on if there is an exceptional thermal load.
- Free contact for general and two for addressable alarms
- Remote on/off switch
- Integrated TCP/IP serial card for BMS connection (SNMP or Modbus TCP/IP or BACnet over IP)
- Integrated clock card
- USB integrated through 4,3 inch Touch Screen Display
- Native integration with EcoStruxure IT platform that allows simplification of the connectivity to customer assets. Full compatibility with Schneider EcoStruxure system through integrated SNMP connection
- Ability to interface with two separate BMSs. In addition to the TCP/IP integrate it is possible to select one of the two modules below reported:
  - LonWorks Module
  - RS485 Module to target Modbus RTU or BACnet MS/TP

\* to be considered when applicable



TECHNICAL DATA									
SDWC – SUWC MODEL		0151B	0251B	0151A	0251A	0331A	0351A	0501A	0601A
Fan type		Forward-curved centrifugal motor fan							
Power supply	V/ph/Hz	230/1/50				400/3/50			
Fans	nr.	1	1	1	1	2	2	2	2
Airflow	m <sup>3</sup> /h	1600	1750	1600	1750	3000	3300	4500	4500
N° of compressors		1	1	1	1	1	1	1	1
Refrigerating circuits		1	1	1	1	1	1	1	1
Gross total cooling capacity <sup>1,2</sup>	kW	6,9	8,3	6,9	8,3	9,8	13,6	17,7	19,4
Gross sensible cooling capacity <sup>1,2</sup>	kW	5,4	6,2	5,4	6,2	8,7	10,6	14,7	15,6
DIMENSIONS									
Height	mm	1740	1740	1740	1740	1740	1740	1740	1740
Length	mm	550	550	550	550	850	850	1200	1200
Depth	mm	450	450	450	450	450	450	450	450

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperatures 30 – 35 °C, and ESP = 20 Pa.

### Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with safety thermostat and manual resetting (T/H versions)
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the precision of the cooling and the energy efficiency of the cooling cycle

### Accessories

The units can be supplied with the following external accessories:

- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

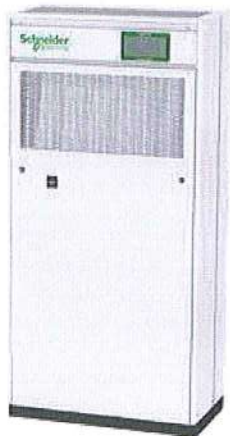


# Uniflair Water Cooled Room Cooling

Direct- expansion water- cooled units with EC motor fans

SDWV- SUWV

Cooling capacity: 5 ÷ 20 kW



Refrigerant R-410A

EC fans

Available versions

- Downflow (SDWV)
- Upflow (SUWV) with bottom, front, and rear suction

## Standard features

- Advanced microprocessor control system is included with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Uniflair Room Cooling units comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow.
- Integrated card (LAN) to perform grouping logic. Up to 15 units can be linked to each other through the local LAN network, optimizing the operation of the units that are rotated on a timed basis
- Rotation and active stand-by management. The stand-by unit turns on if there is an alarm in the working unit. Automatic power turns on if there is an exceptional thermal load.
- Free contact for general and two for addressable alarms
- Remote on/off switch
- Integrated TCP/IP serial card for BMS connection (SNMP or Modbus TCP/IP or BACnet over IP)
- Integrated clock card
- USB integrated through 4,3 inch Touch Screen Display
- Native integration with EcoStruxure IT platform that allows simplification of the connectivity to customer assets. Full compatibility with Schneider EcoStruxure system through integrated SNMP connection
- Ability to interface with two separate BMSs. In addition to the TCP/IP integrate it is possible to select one of the two modules below reported:
  - LonWorks Module
  - RS485 Module to target Modbus RTU or BACnet MS/TP

\* to be considered when applicable



TECHNICAL DATA									
SDWV – SUWV MODEL		0151B	0251B	0151A	0251A	0331A	0351A	0501A	0601A
Fan type		EC backward-curved centrifugal motor fan							
Power supply	V/ph/Hz	230/1/50				400/3/50			
Fans	nr.	1	1	1	1	2	2	2	2
Airflow	m <sup>3</sup> /h	1600	1750	1600	1750	3000	3300	4500	4500
N° of compressors		1	1	1	1	1	1	1	1
Refrigerating circuits		1	1	1	1	1	1	1	1
Gross total cooling capacity <sup>1,2</sup>	kW	6,9	8,4	6,9	8,3	9,8	13,6	17,7	19,4
Gross sensible cooling capacity <sup>1,2</sup>	kW	5,4	6,2	5,4	6,2	8,7	10,6	14,7	15,6
DIMENSIONS									
Height	mm	1740	1740	1740	1740	1740	1740	1740	1740
Length	mm	550	550	550	550	850	850	1200	1200
Depth	mm	450	450	450	450	450	450	450	450

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperatures 30 – 35 °C, and ESP = 20 Pa.

### Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with safety thermostat and manual resetting (T/H versions)
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the precision of the cooling and the energy efficiency of the cooling cycle

### Accessories

The units can be supplied with the following external accessories:

- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

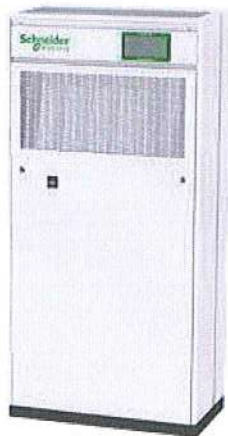


# Uniflair Chilled Water Room Cooling

CW units with asynchronous motor fans

SDCC - SUCC

Cooling capacity: 5 ÷ 20 kW



Refrigerant CW

Available versions

- Downflow (SDCC)
- Upflow (SUCC) with bottom, front, and rear suction

## Standard features

- Advanced microprocessor control system is available with local or remote user terminal.
- The units are equipped with forward-curved fans with directly coupled asynchronous motor.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- The unit can be selected with a two-way or three-way valve and an actuator integrated with the microprocessor.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Uniflair Room Cooling units comply with the following directives<sup>1</sup>: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow.
- Integrated card (LAN) to perform grouping logic. Up to 15 units can be linked to each other through the local LAN network, optimizing the operation of the units that are rotated on a timed basis
- Rotation and active stand-by management. The stand-by unit turns on if there is an alarm in the working unit. Automatic power turns on if there is an exceptional thermal load.
- Free contact for general and two for addressable alarms
- Remote on/off switch
- Integrated TCP/IP serial card for BMS connection (SNMP or Modbus TCP/IP or BACnet over IP)
- Integrated clock card
- USB integrated through 4,3 inch Touch Screen Display
- Native integration with EcoStruxure IT platform that allows simplification of the connectivity to customer assets. Full compatibility with Schneider EcoStruxure system through integrated SNMP connection
- Ability to interface with two separate BMSs. In addition to the TCP/IP integrate it is possible to select one of the two modules below reported:
  - LonWorks Module
  - RS485 Module to target Modbus RTU or BACnet MS/TP

<sup>1</sup> to be considered when applicable





TECHNICAL DATA						
SDCC – SUCC MODEL		0200A <sup>3</sup>	0250A <sup>3</sup>	0300A <sup>3</sup>	0400A <sup>3</sup>	0600A <sup>3</sup>
Fan type		Forward-curved centrifugal motor fan				
Power supply	V/ph/Hz	400/3/50				
Fans	nr.	1	1	1	2	2
Airflow	m <sup>3</sup> /h	1600	2300	2300	3350	4500
Gross total cooling capacity <sup>1,2</sup>	kW	7,2	10,0	11,3	14,1	20,6
Gross sensible cooling capacity <sup>1,2</sup>	kW	6,4	8,9	9,9	12,9	18,2
DIMENSIONS						
Height	mm	1740	1740	1740	1740	1740
Length	mm	550	850	850	850	1200
Depth	mm	450	450	450	450	450
SDCC – SUCC MODEL		0200B	0250B	0300B	0400B	0600B
Fan type		Forward-curved centrifugal motor fan				
Power supply	V/ph/Hz	230/1/50				
Fans		1	1	1	2	2
Airflow	m <sup>3</sup> /h	1600	2300	2300	3350	4500
Gross total cooling capacity <sup>1,2</sup>	kW	7,2	10,0	11,3	14,1	20,6
Gross sensible cooling capacity <sup>1,2</sup>	kW	6,4	8,9	9,9	12,9	18,2
DIMENSIONS						
Height	mm	1740	1740	1740	1740	1740
Length	mm	550	850	850	850	1200
Depth	mm	450	450	450	450	450

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperature 7/12 °C, glycol 0%, and ESP = 20 Pa.

<sup>3</sup> Equipped with standard electrical heaters.

## Construction options

- Double power supply with automatic, integrated management on the active line
- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Discharge temperature sensor integrated with the microprocessor to grant discharge temperature control; in combination with D and U version, moisture control can be selected

## Accessories

The units can be supplied with the following external accessories:

- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- Motorized damper
- Suction from the top or front discharge plenums
- Adjustable floor stands

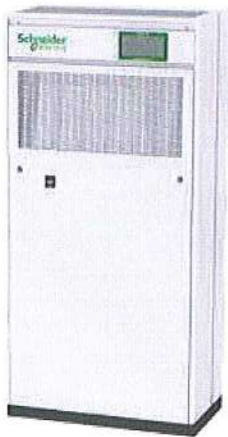


# Uniflair Chilled Water Room Cooling

CW units with EC motor fans

SDCV - SUCV

Cooling capacity: 5 ÷ 20



Refrigerant CW

EC fans

Available versions

- Downflow (SDCV)
- Upflow (SUCV) with bottom, front, and rear suction

## Standard features

- Advanced microprocessor control system is available with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- The unit can be selected with a two-way or three-way valve and an actuator integrated with the microprocessor.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Uniflair Room Cooling units comply with the following directives<sup>1</sup>: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Total front access is included for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Integrated card (LAN) to perform grouping logic. Up to 15 units can be linked to each other through the local LAN network, optimizing the operation of the units that are rotated on a timed basis
- Rotation and active stand-by management. The stand-by unit turns on if there is an alarm in the working unit. Automatic power turns on if there is an exceptional thermal load.
- Free contact for general and two for addressable alarms
- Remote on/off switch
- Integrated TCP/IP serial card for BMS connection (SNMP or Modbus TCP/IP or BACNet over IP)
- Integrated clock card
- USB integrated through 4,3 inch Touch Screen Display
- Native integration with EcoStruxure IT platform that allows simplification of the connectivity to customer assets. Full compatibility with Schneider EcoStruxure system through integrated SNMP connection
- Ability to interface with two separate BMSs. In addition to the TCP/IP integrate it is possible to select one of the two modules below reported:
  - LonWorks Module
  - RS485 Module to target Modbus RTU or BACnet MS/TP

<sup>1</sup> to be considered when applicable



TECHNICAL DATA						
SDCV – SUCV MODEL		0200A <sup>3</sup>	0250A <sup>3</sup>	0300A <sup>3</sup>	0400A <sup>3</sup>	0600A <sup>3</sup>
Fan type		EC backward-curved centrifugal motor fan				
Power supply	V/ph/Hz	400/3/50				
Fans	nr.	1	1	1	2	2
Airflow	m <sup>3</sup> /h	1600	2100	2100	3350	5000
Gross total cooling capacity <sup>1,2</sup>	kW	7,2	9,4	10,6	14,1	22,1
Gross sensible cooling capacity <sup>1,2</sup>	kW	6,4	8,3	9,2	12,9	19,7
DIMENSIONS						
Height	mm	1740	1740	1740	1740	1740
Length	mm	550	850	850	850	1200
Depth	mm	450	450	450	450	450
SDCV – SUCV MODEL		0200B	0250B	0300B	0400B	0600B
Fan type		EC backward-curved centrifugal motor fan				
Power supply	V/ph/Hz	230/1/50				
Fans	nr.	1	1	1	2	2
Airflow	m <sup>3</sup> /h	1600	2100	2100	3350	5000
Gross total cooling capacity <sup>1,2</sup>	kW	7,2	9,4	10,6	14,1	22,1
Gross sensible cooling capacity <sup>1,2</sup>	kW	6,4	8,3	9,2	12,9	19,7
DIMENSIONS						
Height	mm	1740	1740	1740	1740	1740
Length	mm	550	850	850	850	1200
Depth	mm	450	450	450	450	450

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling datas.

<sup>2</sup> Data refer to nominal conditions: Room at 24 °C-50% RH, water temperature 7/12 °C, glycol 0%, and ESP = 20 Pa.

<sup>3</sup> Equipped with standard electrical heaters.

## Construction options

- Double power supply with automatic, integrated management on the active line
- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Discharge temperature sensor integrated with the microprocessor to allow discharge temperature control; in combination with D and U version can be selected moisture control

## Accessories

The units can be supplied with the following external accessories:

- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Suction from the top or front discharge plenums
- Adjustable floor stands

# Uniflair Chilled Water Room Cooling

CW units with backward- curved fans equipped with EC motor

LDCV - LUCV

Cooling capacity: 20 ÷ 170 kW



Refrigerant CW

EC fans

Available versions

- Downflow (LDCV)
- Upflow (LUCV)

## Standard features

- Advanced microprocessor control system UG50 with touch-screen human interface is included.
- The units are equipped with the latest generation Radical EC fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removal kit.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation. The internal panels are featured by captive screws.
- The unit can be selected with a two-way or three-way valve and an actuator integrated with the microprocessor. The actuator is available in two versions: basic and premium.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- A low airflow differential pressure alarm switch is included.
- Single coil version with one chilled water circuit.
- CW inlet temperature measurement is integrated in the microprocessor.
- Integrated discharge temperature control and room moisture control.
- Zinc-free CW circuit.
- Full frontal accessibility is available for maintenance.
- Phase sequence control.
- Microprocessor control system includes:
  - Adjustable fan speed meets energy-saving and load-sharing logics
  - 7-inch, touch-screen LCD display interface
  - Integration with Uniflair Chillers for optimized management logics
  - Integrated LAN card for local network connection of a group of CRACs
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Integrated TCP/IP serial card for BMS connection
  - Clock card integrated in the unit
  - USB integrated in the display interface
  - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare platform

\* to be considered when applicable



TECHNICAL DATA								
LDCV – LUCV MODEL		0600A	0700A	0800A	1200A	1400A	1700A	1800A
Fan type	EC backward-curved centrifugal motor fan							
Power supply	V/ph/Hz	400/3/50						
Fans	nr.	1	1	1	1	1	2	2
Airflow	m <sup>3</sup> /h	8000	8000	8000	11500	11500	16000	16000
Gross total cooling capacity <sup>1,2</sup>	kW	28,3	32,2	44,8	44,8	62,7	59,2	86,9
Gross sensible cooling capacity <sup>1,2</sup>	kW	25,5	28,1	35,2	39,5	49,8	52,1	69,1
DIMENSIONS								
Height	mm	1960	1960	1960	1960	1960	1960	1960
Length	mm	1010	1010	1010	1310	1310	1720	1720
Depth	mm	865	865	865	865	865	865	865
TDCV – TUCV MODEL		2000A	2500A	2700A	3000A	3400A	4000A	4300A <sup>(3)</sup>
Fans	nr.	2	2	2	3	3	3	3
Airflow	m <sup>3</sup> /h	19000	19000	19000	25700	25700	25700	29500
Gross total cooling capacity <sup>1,2</sup>	kW	74,9	100,3	106,4	100,3	131,6	145,5	181,1
Gross sensible cooling capacity <sup>1,2</sup>	kW	64,6	80,6	83,7	86,4	106,8	114,3	138,6
DIMENSIONS								
Height	mm	1960	1960	1960	1960	1960	1960	2170
Length	mm	2170	2170	2170	2582	2582	2852	2852
Depth	mm	865	865	865	865	865	865	865
LDCV/LUCV MODEL DUAL COIL <sup>(4)</sup>		0600A	1200A	1700A	2000A	3000A	4300A <sup>(3)</sup>	
Fans	nr.	1	1	2	2	3	3	
Airflow	m <sup>3</sup> /h	8000	11500	16000	19000	25700	29500	
Gross total cooling capacity <sup>1,2</sup>	kW	24,9	37,5	58,8	77,0	104,4	120,1	
Gross sensible cooling capacity <sup>1,2</sup>	kW	24,9	37,5	56,4	71,1	96,0	110,4	
DIMENSIONS								
Height	mm	1960	1960	1960	1960	1960	2170	
Length	mm	1010	1310	1720	2170	2582	2582	
Depth	mm	865	865	865	865	865	865	

<sup>1</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperature 7/12°C, glycol 0%, and ESP = 20Pa

<sup>2</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>3</sup> Only downflow version is available.

<sup>4</sup> Cooling capacity refer to only one running CW circuit.

## Construction options

- Single power supply with ultracapacitor
- Double power supply with automatic integrated management on the active line
- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Dual coil version equipped with two separate chilled water circuits equipped with 2 or 3 way valve
- Single Coil HT version with dedicated design for High temperature operations (only Downflow)
- CW outlet temperature measurement integrated in the microprocessor
- Intelligent dehumidification with cooling capacity limiting device
- Energy meter and CO<sub>2</sub> emission calculator
- Flow meter
- Pressure-independent balancing and control valve (PIBCV)

## Accessories

The units can be supplied with the following external accessories:

- Additional RS485 serial adapter to communicate with external BMS.
- Additional TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- RS232 modem card
- PCONET card
- Motorized damper
- Suction from the top or front discharge plenums
- Adjustable floor stands
- Fire and smoke sensors
- Water leak detector
- Automatic floor pressurization system (AFPS) through active floor control (AFC)

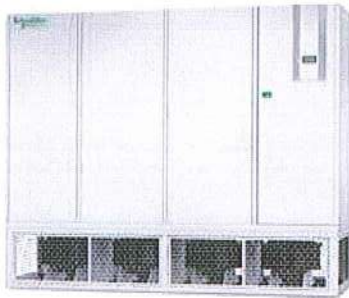


# Uniflair Chilled Water Room Cooling

CW units with backward- curved fans equipped with EC motor; fan module can be installed under or above raised floor

HDCV

Cooling capacity: 30 ÷ 200 kW



Refrigerant Chilled Water/Brine

EC fans

Available versions

- Underfloor Single Coil for low/medium operating temperature (SC)
- Underfloor Dual Coil for low/medium operating temperature (DC)
- Underfloor single coil for high water temperature (HT)

## Standard features

- Unit is made of two sections for installation of fan module under the raised floor and increase the coil surface for energy efficiency maximization.
- Single circuit large surface copper and aluminum cooling coil specifically designed for high specific cooling capacity and efficiency.
- Underfloor fan module equipped with latest generation Radical EC fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors.
- EC fan module is equipped with a circular plug in connector for quick and failure-free installation; the module is supplied with safety protection grills on the sides.
- 2-way valve or 3-way valve.
- Return and discharge air temperature sensors.
- Water inlet temperature sensor.
- Single power supply.
- High efficiency EU4 air filters.
- Advanced microprocessor control system UG50 is included.
  - Microprocessor control system includes:
    - Continuous fan speed regulation and fan operation monitoring via ModBus connection
    - 7-inch, touch-screen LCD display interface
    - Integration with Uniflair Chillers for optimized management logics
    - Integrated LAN card for local network connection of a group of CRACs (up to 30)
    - Rotation and active stand-by management
    - Free contact for general and two for addressable alarms
    - Remote on/off switch
    - Integrated TCP/IP serial card for BMS connection
    - Clock card integrated in the unit
    - USB integrated in the display interface
    - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and Ecostruxure )
- Full frontal accessibility for maintenance.
- Wide choice of air flow configurations for any site layout.
- Low airflow differential pressure alarm switch.
- Dirty filter differential pressure switch.
- Zinc-free CW circuit.

## Options

- Single circuit large surface copper and aluminum cooling coil specifically designed for high water temperatures (20°C up to 30°C).
- Dual circuit large surface copper and aluminum cooling coil specifically designed for medium water temperatures and two independent CW circuits.
- Ultracapacitor to keep the microprocessor on in case of power failure (up to 2 mins).
- Dual power supply with automatic change over (Ultracapacitor included).
- High efficiency EU5 air filters.
- Pressure independent and control (PIBCV) valve managed by the microprocessor.
- Water flow meter.
- Automatic Floor Pressurization System (through AFC -Automatic Flow Control).
- Integrated Discharge Temperature Control and Room Moisture Control.
- Chilled water outlet temperature measurement integrated in the microprocessor.
- Valve signal feedback for continuous monitoring of the correct operation of the chilled water valve.
- Energy meter and CO2 emissions calculator integrated in the unit
- Condensate Drain Pump
- Motorized damper
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).

<sup>1</sup> to be considered when applicable



TECHNICAL DATA										
HDCV MODEL		0800A	1400A	1800A	2500A	2900A	4600A	5100A	5300A	5500A
Fan type	EC									
Version	Single coil									
Power supply	V/ph/Hz	400/3/50								
Fans	nr									
Airflow	m <sup>3</sup> /h	10000	13000	19000	24000	24000	31000	35000	40000	42000
Net sensible cooling <sup>1</sup>	kW	34.3	54.2	78.9	76.5	99.4	136.3	156.1	173.3	181.7
DIMENSIONS										
Height <sup>2</sup>	mm	2510	2510	2510	2510	2510	2510	2510	2510	2510
Length	mm	1010	1310	1720	2170	2170	2570	3100	3100	3405
Depth	mm	865	865	865	865	865	865	865	865	865

HDCV MODEL		0800A DC	1400A DC	1800A DC	2500A DC	4600A DC	5300A DC	5500A DC
Fan type	EC							
Version	Dual coil							
Power supply	V/ph/Hz	400/3/50						
Fans	nr							
Airflow	m <sup>3</sup> /h	7900	13000	17500	24000	32000	35000	42000
Net sensible cooling <sup>1,3</sup>	kW	28.3	42.5	57.4	82	108	125.6	151.2
DIMENSIONS								
Height <sup>2</sup>	mm	2510	2510	2510	2510	2510	2510	2510
Length	mm	1010	1310	1720	2170	2570	3100	3405
Depth	mm	865	865	865	865	865	865	865

<sup>1</sup> Data refer to nominal conditions: Room at 35 °C-30% RH water temperature 18/24 °C, fan module installed under a 900 mm raised floor, and glycol 0%.

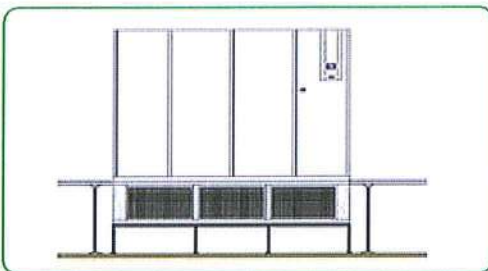
<sup>2</sup> Includes fan module.

<sup>3</sup> Cooling performance refers to one running CW circuit.

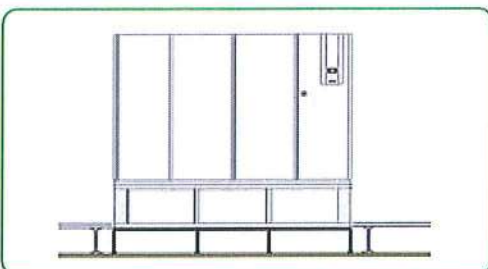
HDCV MODEL		0800A HT	1400A HT	1800A HT	2900A HT	4600A HT	5300A HT	5500A HT
Fan type	EC							
Version	High temperature							
Power supply	V/ph/Hz	400/3/50						
Fans	nr							
Airflow	m <sup>3</sup> /h	7400	11000	17000	25500	28200	33700	36400
Net sensible cooling capacity <sup>4</sup>	kW	28.5	42.3	64.3	98.6	109.5	131	143.4
DIMENSIONS								
Height <sup>2</sup>	mm	2510	2510	2510	2510	2510	2510	2510
Length	mm	1010	1310	1720	2170	2570	3100	3405
Depth	mm	865	865	865	865	865	865	865

<sup>4</sup> Data refer to nominal conditions: Room at 36 °C-30% RH water temperature 20/30 °C, fan module installed under a 900 mm raised floor, and glycol 20%.

## Construction options



Unit with fan plenum installed under the raised floor.



Unit with fan plenum installed above the raised floor.

## Accessories

Units can be supplied with the following accessories:

- Safety sensors: leak detector, humidity sensor, smoke and fire sensor.
- Adjustable legs for an easy installation with a raised floor.
- Top air suction or front air suction plenum.
- Direct free-cooling plenum.
- Integrated base frame with adjustable legs for installation in the raised floor (up to 1 m high).
- Additional TCP/IP card for dual BMS connection.
- RS485 serial card.
- Additional connectivity cards to interface with different external protocols.

# Uniflair Chilled Water Room Cooling

Chilled Water precision air conditioners with underfloor fans designed to cool data centers at high temperatures.

HXCV

Cooling capacity: 120 ÷ 250 kW



Refrigerant Chilled Water

EC fans

Available versions

- Underfloor single coil for high water temperature (HT)
- Underfloor single coil for extended high water temperature (HTE)
- Underfloor dual coil for medium water temperature (DC)

## Standard features

- Unit is made of two sections for installation of fan module under the raised floor and increase the coil surface for energy efficiency maximization.
- Single circuit large surface copper and aluminum cooling coil specifically designed for high water temperatures (20°C up to 30°C).
- Underfloor fan module equipped with latest generation Radical EC fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors.
- Underfloor fan module specifically designed to avoid turbulence and increase efficiency.
- EC fan module is equipped with a circular plug in connector for quick and failure-free installation; the module is supplied with safety protection grills on the sides.
- 2-way valve or 3-way valve.
- Return and discharge air temperature sensors.
- Water inlet temperature sensor.
- Single power supply.
- High efficiency EU4 air filters.
- Advanced microprocessor control system UG50 is included.
  - Continuous fan speed regulation and fan operation monitoring via ModBus connection
  - 7-inch, touch-screen LCD display interface
  - Integration with Uniflair Chillers for optimized management logics
  - Integrated LAN card for local network connection of a group of CRACs (up to 30)
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Integrated TCP/IP serial card for BMS connection
  - Clock card integrated in the unit
  - USB integrated in the display interface
  - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and Ecostruxure)
- Full frontal accessibility for maintenance.
- Wide choice of air flow configurations for any site layout.
- Low airflow differential pressure alarm switch.
- Dirty filter differential pressure switch.
- Zinc-free CW circuit

## Options

- Single circuit large surface copper and aluminum cooling coil specifically designed for extended high water temperatures (20°C up to 32°C).
- Dual circuit large surface copper and aluminum cooling coil specifically designed for medium water temperatures and two independent CW circuits.
- Ultracapacitor to keep the microprocessor on in case of power failure (up to 2 mins).
- Dual power supply with automatic change over (Ultracapacitor included).
- High efficiency EU5 air filters.
- Pressure independent and control (PIBCV) valve managed by the microprocessor.
- Water flow meter.
- Automatic Floor Pressurization System (through AFC -Automatic Flow Control).
- Top & Front air suction.
- Integrated Discharge Temperature Control and Room Moisture Control.
- Chilled water outlet temperature measurement integrated in the microprocessor.
- Valve signal feedback for continuous monitoring of the correct operation of the chilled water valve.
- Energy meter and CO2 emissions calculator integrated in the unit.
- Condensate Drain Pump.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).

<sup>1</sup> to be considered when applicable





TECHNICAL DATA						
HXCVC MODEL		4000A HT	5000A HT	6000A HT	6500A HT	6800A HT
Fan type		RadiCal composite EC fans				
Version		High temperature water				
Power supply	V/ph/Hz	400/3/50				
Fans	Nr.	2	3	3	4	4
Airflow	m <sup>3</sup> /h	31000	39000	45000	53000	56000
Net sensible cooling <sup>1</sup>	kW	136.4	168.7	196.3	229.4	240.9
Discharge air temperature	°C	23.2	23.5	23.3	23.4	23.5
DIMENSIONS						
Height (above floor)	mm	2350				2475
Height (under floor)	mm	800				
Length	mm	2170	2580	3100	3400	3400
Depth	mm	1070				

HXCVC MODEL		4000A HTE	5000A HTE	6000A HTE	6500A HTE	6800A HTE
Fan type		RadiCal composite EC fans				
Version		High temperature water				
Power supply	V/ph/Hz	400/3/50				
Fans	Nr.	2	3	3	4	4
Airflow	m <sup>3</sup> /h	31000	39000	45000	53000	56000
Net sensible cooling <sup>2</sup>	kW	127.6	158.5	183.5	216.7	226.5
Discharge air temperature	°C	24.1	24.3	24.2	24.2	24.3
DIMENSIONS						
Height (above floor)	mm	2350				2475
Height (under floor)	mm	800				
Length	mm	2170	2580	3100	3400	3400
Depth	mm	1070				

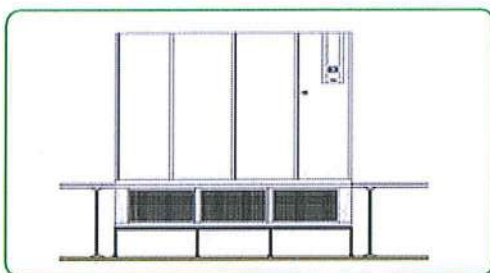
HXCVC MODEL		4000A DC	5000A DC	6000A DC	6500A DC	
Fan type		RadiCal composite EC fans				
Version		High temperature water				
Power supply	V/ph/Hz	400/3/50				
Fans	Nr.	2	3	3	4	
Airflow	m <sup>3</sup> /h	31000	39000	45000	53000	
Net sensible cooling <sup>3</sup>	kW	129.1	158.2	189.0	220.4	
Discharge air temperature	°C	22	22.4	21.9	22.1	
DIMENSIONS						
Height (above floor)	mm	2350				
Height (under floor)	mm	800				
Length	mm	2170	2580	3100	3400	
Depth	mm	1070				

<sup>1</sup> Data refer to nominal conditions: Room at 37 °C-30% RH water temperature 20/30°C and glycol 0%.

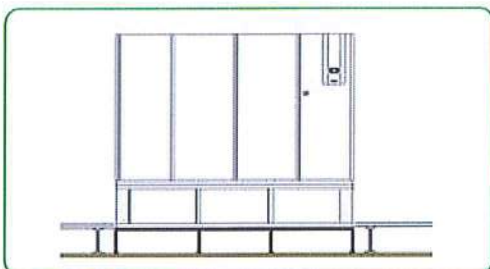
<sup>2</sup> Data refer to nominal conditions: Room at 37 °C-30% RH water temperature 20/32°C and glycol 0%.

<sup>3</sup> Data refer to nominal conditions: Room at 35 °C-30% RH water temperature 18/24°C, glycol 0% and one chilled water circuit running.

## Construction options



Unit with fan plenum installed under the raised floor.



Unit with fan plenum installed above the raised floor.

## Accessories

The units can be supplied with the following accessories:

- Safety sensors: leak detector, humidity sensor, smoke and fire sensor.
- Adjustable legs for an easy installation in presence of raised floor.
- Top air suction or front air suction plenum.
- Piping kit for different options for hydraulic connections (bottom, top, left and right).
- Integrated base frame with adjustable legs for installation with raised floor (up to 1m high).
- Additional TCP/IP card for dual BMS connection.
- RS485 serial card.
- Additional connectivity cards to interface with different external protocols.



# Uniflair Air Cooled Room Cooling

Direct- expansion air- cooled units with backward- curved fans equipped with EC motor

TDAV - TUAV

Cooling capacity: 20 ÷ 100 kW



Refrigerant R-410A

EC fans

Available versions

- Downflow (TDAV)
- Upflow (TUAV)

## Standard features

- Advanced microprocessor control system is available with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the cooling precision and the energy efficiency of the cooling cycle.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Uniflair Room Cooling units meet the following comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- The Uniflair Room Cooling range offers the possibility to select units equipped with two compressors (tandem) for each circuit, granting better efficiency and regulation capacity at partial loads (models with the \*\*21 or \*\*42 suffix).
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Microprocessor control system includes:
  - Integrated management of the EEV and refrigerating circuit parameters
  - Local user terminal with external accessibility
  - Integrated LAN card for local network connection of a group of CRACs
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Ability to interface with modbus protocol directly on RS485 serial card
  - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare platform

## Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)

## Accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

\* to be considered when applicable



TECHNICAL DATA								
TDAV – TUAV MODEL		0511A	0611A	0721A	0722A	0921A	0922A	1021A
Fan type		EC backward-curved centrifugal motor fan						
Power supply	V/ph/Hz	400/3/50						
Fans	nr.	1	1	1	1	1	1	1
Airflow	m³/h	5700	5700	8600	8600	8600	8600	8600
N° of compressors		1	1	2	2	2	2	2
Refrigerating circuits		1	1	1	2	1	2	1
Gross total cooling capacity <sup>1,2</sup>	kW	20,3	24,9	25,6	25,8	34,5	34,2	37,6
Gross sensible cooling capacity <sup>1,2</sup>	kW	19,7	21,9	25,4	25,3	29,6	28,4	30,1
DIMENSIONS								
Height	mm	1960	1960	1960	1960	1960	1960	1960
Length	mm	1010	1010	1310	1310	1310	1310	1310
Depth	mm	750	750	865	865	865	865	865
TDAV – TUAV MODEL		1022A	1121A	1122A	1321A	1322A	1422A	1622A
Fans	nr.	1	1	2	2	2	2	2
Airflow	m³/h	8600	12320	12320	12320	12320	16300	16500
N° of compressors		2	2	2	2	2	2	2
Refrigerating circuits		2	1	2	1	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	37,3	37,6	37,9	48,1	47,7	51,5	56,5
Gross sensible cooling capacity <sup>1,2</sup>	kW	29,2	36,7	36,3	39,4	38,0	50,9	55,8
DIMENSIONS								
Height	mm	1960	1960	1960	1960	1960	1960	1960
Length	mm	1010	1720	1720	1720	1720	2170	2170
Depth	mm	865	865	865	865	865	865	865
TDAV MODEL		1822A						
Fans	nr.	2						
Airflow	m³/h	16500						
N° of compressors		2						
Refrigerating circuits		2						
Gross total cooling capacity <sup>1,2</sup>	kW	64,0						
Gross sensible cooling capacity <sup>1,2</sup>	kW	57,5						
DIMENSIONS								
Height	mm	1960	2175	2175	2175	2175	2175	2175
Length	mm	2170	2580	2580	2580	2580	2580	2580
Depth	mm	865	865	865	865	865	865	865
TUAV MODEL		2222A	2242A	2522A	2542A	2842A	3342A	
Fans	nr.	3	3	3	3	3	3	
Airflow	m³/h	22000	22000	22500	22500	23000	23000	
N° of compressors		2	4	2	4	4	4	
Refrigerating circuits		2	2	2	2	2	2	
Gross total cooling capacity <sup>1,2</sup>	kW	75,3	82,6	86,8	88,3	95,6	105,6	
Gross sensible cooling capacity <sup>1,2</sup>	kW	75,3	81,7	85,8	85,7	91,8	93,6	
DIMENSIONS								
Height	mm	1960	1960	1960	1960	1960	1960	
Length	mm	2580	2580	2580	2580	2580	2580	
Depth	mm	865	865	865	865	865	865	

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, 45 °C condensing temperature, and ESP = 20 Pa.

<sup>3</sup> Data refers to downflow unit.

# Uniflair Air Cooled Room Cooling

Direct-expansion air-cooled with backward-curved fans equipped with EC motor  
LDAV

Cooling capacity: 60 ÷ 140 kW



Fixed speed compressors

Refrigerant R-410A

EC fans

Available versions

- Downflow (LDAV)

## Standard features

- Downflow configuration with bottom or front discharge and suction from the top.
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. The filters are housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Double refrigerant circuit each equipped with a fixed-speed scroll compressor.
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Uniflair Room Cooling units comply with the following directives<sup>1</sup>: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- New generation of hermetic scroll compressor with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- 7-inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.
- Schneider Electric IT J-Controller (J5 18 DIN).
- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external

<sup>1</sup> to be considered when applicable



TECHNICAL DATA					
LDVV MODEL		2422A	2522A	2722A	3822A
Fan Type	EC Backward-curved centrifugal motor fan				
Power supply	V/ph/Hz	400/3/50Hz			
Fans	Nr.	2	2	2	3
Airflow	m3/h	20000	24300	26000	27000
N° of fixed speed compressors		2	2	2	2
Refrigerating circuits		2	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	79,0	83,0	93,1	132,0
Gross sensible cooling capacity <sup>1,2</sup>	kW	74,1	83,0	90,1	110,0
DIMENSIONS					
Height	mm	2150	2150	2150	2150
Length	mm	2082	2650	2650	2650
Depth	mm	900	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, 45 °C condensing temperature and ESP = 20 Pa..

connections. The external connections on the upper level offer a wide variety of accessibility options:

- External CAN and Group CAN
- Isolated 2-wire and 4-wire RS485 ports
- NetBotz universal sensor ports
- Alarm/Shutdown Contacts
- USB ports (Host, Device)
- Ethernet
- HDMI display interface
- Modbus
- Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating

- High efficiency EU5 pleated air filters housed in a dedicated plenum box
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Floor stands with or without motorized damper
- Height adjustable base frame
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating

# Uniflair Water Cooled Room Cooling

Direct- expansion water- cooled units with backward- curved fans equipped with EC motor

TDWV - TUWV

Cooling capacity: 20 ÷ 100 kW



Refrigerant R-410A

EC fans

Available versions

- Downflow (TDWV)
- Upflow (TUWV)

## Standard features

- Advanced microprocessor control system with a local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the precision of the cooling and the energy efficiency of the cooling cycle.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Internal water-cooled condenser braze is welded and made of AISI 304 stainless steel.
- Uniflair Room Cooling units meet the following directives comply with the following directives <sup>1</sup>: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- The Uniflair Room Cooling range offers the possibility to select units equipped with two compressors (tandem) for each circuit, which grants better efficiency and regulation capacity at partial loads (models with the \*\*21 or \*\*42 suffix).
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Microprocessor control system includes:
  - Integrated management of the EEV and refrigerating circuit parameters
  - Local user terminal with external accessibility
  - Integrated LAN card for local network connection of a group of CRACs
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Ability to interface with modbus protocol directly on RS485 serial card
  - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare platform



<sup>1</sup> to be considered when applicable

TECHNICAL DATA						
TDWV – TUWV MODEL		0611A	0921A	1321A	1622A	1822A
Fan type		EC backward-curved centrifugal motor fan				
Power supply	V/ph/Hz	400/3/50				
Fans	nr.	1	1	2	2	2
Airflow	m <sup>3</sup> /h	5700	8600	12320	16000	16000
N° of compressors		1	2	2	2	2
Refrigerating circuits		1	1	1	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	24,0	32,5	45,6	56,7	62,3
Gross sensible cooling capacity <sup>1,2</sup>	kW	21,3	28,6	38,1	54,3	55,2
DIMENSIONS						
Height	mm	1960	1960	1960	1960	1960
Length	mm	1010	1310	1720	2170	2170
Depth	mm	750	865	865	865	750
DIMENSIONS						
Height	mm	1960	2150	2150	2150	
Length	mm	2580	2580	2580	2580	
Depth	mm	865	865	865	865	
TUWV MODEL		2242A	2542A	2842A	3342A	
Fans	nr.	3	3	3	3	
Airflow	m <sup>3</sup> /h	22000	22500	23000	23000	
N° of compressors		4	4	4	4	
Refrigerating circuits		2	2	2	2	
Gross total cooling capacity <sup>1,2</sup>	kW	85,9	92,9	100,4	111,7	
Gross sensible cooling capacity <sup>1,2</sup>	kW	83,0	85,4	92,9	94,6	
DIMENSIONS						
Height	mm	1960	1960	1960	1960	
Length	mm	2580	2580	2580	2580	
Depth	mm	865	865	865	865	

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C -50% RH, water temperatures 30 – 35 °C, and ESP = 20 Pa.

## Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Condensation control on refrigerant side with constant water flow

## Accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands



# Uniflair Water Cooled Room Cooling

Direct- expansion water- cooled units with backward- curved fans equipped with EC motor

LDWW

Cooling capacity: 60 ÷ 140 kW



Fixed speed compressors

Refrigerant R-410A

EC fans

Available versions

- Downflow (LDWW)

## Standard features

- Downflow configuration with bottom or front discharge and suction from the top.
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. The filters are housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Brazed plate water-cooled condenser made from stainless steel.
- Double refrigerant circuit each equipped with a fixed-speed scroll compressor.
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Uniflair Room Cooling comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Hermetic scroll compressor with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- 7-inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.
- Schneider Electric IT J-Controller (J5 18 DIN)
- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation



<sup>†</sup> to be considered when applicable



TECHNICAL DATA					
LDVV MODEL		2422A	2522A	2722A	3822A
Fan Type	EC Backward-curved centrifugal motor fan				
Power supply	V/ph/Hz	400/3/50Hz			
Fans	Nr.	2	2	2	3
Airflow	m3/h	20000	24300	26000	27000
N° of fixed speed compressors		2	2	2	2
Refrigerating circuits		2	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	83,2	86,8	97,2	137,7
Gross sensible cooling capacity <sup>1,2</sup>	kW	75,1	86,8	90,9	111,7
DIMENSIONS					
Height	mm	2150	2150	2150	2150
Length	mm	2082	2650	2650	2650
Depth	mm	900	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/35°C, 0% glycol and ESP = 20 Pa.

- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters housed in a dedicated plenum box
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Floor stands with or without motorized damper
- Height adjustable base frame
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- 2-way pressostatic valve to modulate the water flow through the braze plate condenser
- Condensing Pressure Regulation Valve (Flooding Valve) to maintain a minimum condensing pressure even with low water inlet temperature

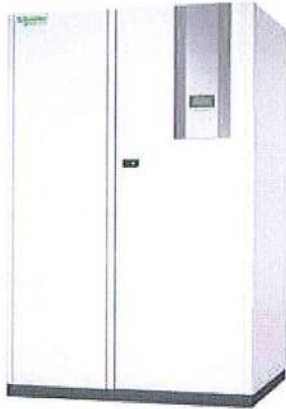


# Uniflair Indirect Free Cooling Room Cooling

Energy- saving units with backward- curved fans equipped with EC motor

TDEV - TUEV

Cooling capacity: 20 ÷ 100 kW



Refrigerant R-410A

EC fans

Available versions

- Downflow (TDEV)
- Upflow (TUEV)

## Standard features

- Advanced microprocessor control system is available with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the precision of the cooling and the energy efficiency of the cooling cycle.
- Unit is equipped with an indirect free cooling system that provides the required cooling capacity when the external temperature is lower than the internal ambient. Compressor power consumption is minimized while internal and external environments are kept separate.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- The cooling coil is characterized by CW and direct expansion circuits interlaced to increase the efficiency of the unit in all running conditions.
- Internal water-cooled condenser braze is welded and made of AISI 304 stainless steel.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS). High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- The Uniflair Room Cooling range offers the possibility to select units equipped with two compressors (tandem) for each circuit, which grants better efficiency and regulation capacity at partial loads (models with the \*\*21 or \*\*42 suffix).
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Microprocessor control system includes:
  - Integrated management of the cooling modes monitoring room temperature, external temperature, and glycol circuit temperature
  - Integrated management of the EEV and refrigerating circuit parameters
  - Local user terminal with external accessibility
  - Integrated LAN card for local network connection of a group of CRACs

- Rotation and active stand-by management
- Free contact for general and two for addressable alarms
- Remote on/off switch
- Ability to interface with modbus protocol directly on RS485 serial card
- Ability to interface with main external communication Protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare platform

## Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)

## Accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

<sup>1</sup> to be considered when applicable



TECHNICAL DATA									
TDEV – TUEV MODEL		0511A	0611A	0721A	0722A	0921A	0922A	1021A	
Fan type		EC backward-curved centrifugal motor fan							
Power supply		V/ph/Hz 400/3/50							
Fans		nr	1	1	1	1	1	1	
Airflow		m³/h	5700	5700	8600	8600	8600	8600	
N° of compressors			1	1	2	2	2	2	
Refrigerating circuits			1	1	1	2	1	2	
DX MODE	Gross total cooling capacity <sup>1,2</sup>	kW	19,1	23,7	27,0	28,4	30,4	32,2	34,6
	Gross sensible cooling capacity <sup>1,2</sup>	kW	19,1	20,8	27,0	28,4	28,7	28,0	30,5
CW MODE	Gross total cooling capacity <sup>1,3</sup>	kW	20,2	20,2	28,5	28,5	28,5	28,5	28,5
	Gross sensible cooling capacity <sup>1,3</sup>	kW	20,1	20,1	28,3	28,3	28,3	28,3	28,3
DIMENSIONS									
Height		mm	1960	1960	1960	1960	1960	1960	
Length		mm	1010	1010	1310	1310	1310	1310	
Depth		mm	750	750	865	865	865	865	
TDEV – TUEV MODEL			1022A	1121A	1122A	1321A	1322A	1422A	
Fans		nr	1	1	2	2	2	2	
Airflow		m³/h	8600	12320	12320	12320	12320	16000	
N° of compressors			2	2	2	2	2	2	
Refrigerating circuits			2	1	2	1	2	2	
DX MODE	Gross total cooling capacity <sup>1,2</sup>	kW	37,1	36,9	39,2	46,6	49,7	49,7	55,9
	Gross sensible cooling capacity <sup>1,2</sup>	kW	30,4	36,9	37,4	40,3	39,9	49,7	55,9
CW MODE	Gross total cooling capacity <sup>1,3</sup>	kW	28,5	40,1	40,1	40,1	40,1	54,1	54,1
	Gross sensible cooling capacity <sup>1,3</sup>	kW	28,3	39,9	39,9	39,9	39,9	53,9	53,9
DIMENSIONS									
Height		mm	1960	1960	1960	1960	1960	1960	
Length		mm	1010	1720	1720	1720	1720	2170	
Depth		mm	750	750	865	865	865	865	
TDEV MODEL			1822A						
Fans		nr	2						
Airflow		m³/h	16000						
N° of compressors			2						
Refrigerating circuits			2						
DX MODE	Gross total cooling capacity <sup>1,2</sup>	kW	60,5						
	Gross sensible cooling capacity <sup>1,2</sup>	kW	56,0						
CW MODE	Gross total cooling capacity <sup>1,3</sup>	kW	54,1						
	Gross sensible cooling capacity <sup>1,3</sup>	kW	53,9						
DIMENSIONS									
Height		mm	1960	2150	2150	2150	2150	2150	
Length		mm	2170	2580	2580	2580	2580	2580	
Depth		mm	750	750	865	865	865	865	
TUEV MODEL			2222A	2242A	2522A	2542A	2842A		
Fans		nr	3	3	3	3	3		
Airflow		m³/h	22000	22000	22000	22500	22500		
N° of compressors			2	4	2	4	4		
Refrigerating circuits			2	2	2	2	2		
DX MODE	Gross total cooling capacity <sup>1,2</sup>	kW	78,4	83,7	86,3	88,3	96,4		
	Gross sensible cooling capacity <sup>1,2</sup>	kW	72,4	78,8	75,4	76,9	79,0		
CW MODE	Gross total cooling capacity <sup>1,3</sup>	kW	98,3	98,3	98,3	100,0	100,0		
	Gross sensible cooling capacity <sup>1,3</sup>	kW	97,4	97,4	97,4	99,0	99,0		
DIMENSIONS									
Height		mm	1960	1960	1960	1960	1960		
Length		mm	2580	2580	2580	2580	2580		
Depth		mm	750	865	865	865	865		

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperatures 30 – 35 °C, and ESP = 20 Pa.

<sup>3</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperature 7/12 °C; glycol 0%, and ESP = 20 Pa.

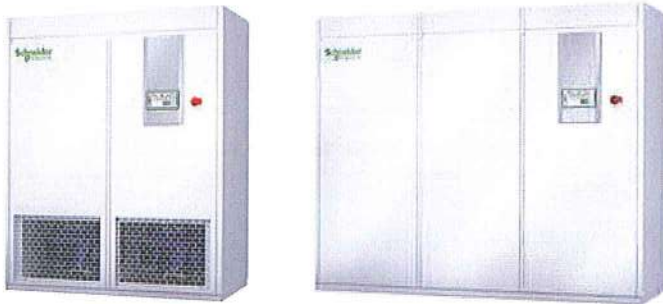
<sup>4</sup> Data refers to downflow unit.



# Uniflair Indirect Free Cooling Room Cooling

Direct-expansion energy-saving units with backward-curved fans equipped with EC motor  
LDEV

Cooling Capacity: 70 ÷ 100 kW



Fixed speed compressors

Refrigerant R-410A

EC fans

Available versions

- Downflow (LDEV)

## Standard features

- Downflow configuration with bottom or front discharge and suction from the top.
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. The filters are housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Brazed plate water-cooled condenser made from stainless steel.
- Double refrigerant circuit each equipped with a fixed-speed scroll compressor.
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Uniflair Room Cooling comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Hermetic scroll compressor with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- Energy saving units are equipped with a patent pending solution. The 3-way valve is replaced by three flow control devices designed to maximize efficiency and minimize water side pressure drops.
- 7-inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.

\* to be considered when applicable



TECHNICAL DATA			
LDEV MODEL		2422A	2722A
Fan Type		EC Backward-curved centrifugal motor fan	
Power supply	V/ph/Hz	400/3/50Hz	
Fans	Nr.	2	2
Airflow	m3/h	20000	26000
N° of fixed speed compressors		2	2
Refrigerating circuits		2	2
Gross total cooling capacity <sup>1,2</sup>	kW	79,1	94,5
Gross sensible cooling capacity <sup>1,2</sup>	kW	66,1	82,1
DIMENSIONS			
Height	mm	2150	2150
Length	mm	2082	2650
Depth	mm	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/36°C, 0% glycol and ESP = 20 Pa.

- Schneider Electric IT J-Controller (J5 18 DIN).
- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters housed in a dedicated plenum box
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Floor stands with or without motorized damper
- Height adjustable base frame
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors



# Uniflair Twin Cooled Room Cooling

Twin-cool air-cooled units with backward-curved fans equipped with EC motor

TDTV - TUTV

Cooling capacity: 20 ÷ 100 kW



- Refrigerant R-410A
- EC fans
- Available versions
  - Downflow (TDTV)
  - Upflow (TUTV)

## Standard features

- Advanced microprocessor control system is available with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the cooling precision and the energy efficiency of the cooling cycle.
- Unit is characterized by two independent cooling sources — one CW with related circuit and one direct expansion air cooled.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- The cooling coil is characterized by CW and direct expansion circuits interlaced to increase the efficiency of the unit in all running conditions.
- The CW circuit is equipped with a three-way valve and an actuator integrated with the microprocessor.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- The Uniflair Room Cooling range offers the possibility to select units equipped with two compressors (tandem) for each circuit, which grants better efficiency and regulation capacity at partial loads (models with the \*\*21 or \*\*42 suffix).
- Total front access is included for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Microprocessor control system includes:
  - Integrated management of the EEV and refrigerating circuit parameters
  - Local user terminal with external accessibility
  - Integrated LAN card for local network connection of a group of CRACs
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Ability to interface with modbus protocol directly on RS485 serial card
  - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare platform

<sup>†</sup> to be considered when applicable



TECHNICAL DATA									
TDTV MODEL		0611A	0921A	1321A	1622A	1822A	2242A	2542A	2842A
Fan type		EC backward-curved centrifugal motor fan							
Power supply		V/ph/Hz 400/3/50							
Fans		nr.	1	1	2	2	2	3	3
Airflow		m <sup>3</sup> /h	5700	8600	12320	16000	16000	21500	21500
N° of compressors			1	2	2	2	4	4	4
Refrigerating circuits			1	1	1	2	2	2	2
DX MODE	Gross total cooling capacity <sup>1,2</sup>	kW	23,5	30,3	46,5	58,5	63,4	82,4	81,6
	Gross sensible cooling capacity <sup>1,2</sup>	kW	20,6	28,7	39,8	55,6	55,5	77,4	73,4
CW MODE	Gross total cooling capacity <sup>1,3</sup>	kW	20,2	28,5	40,1	54,1	54,1	96,6	96,6
	Gross sensible cooling capacity <sup>1,3</sup>	kW	20,1	28,3	39,9	53,9	53,9	95,7	95,7
DIMENSIONS									
Height		mm	1960	1960	1960	1960	1960	2150	2150
Length		mm	1010	1310	1720	2170	2170	2580	2580
Depth		mm	750	865	865	865	750	865	865
TUTV MODEL			2242A	2542A	2842A				
Fans		nr.	3	3	3				
Airflow		m <sup>3</sup> /h	22000	22500	22500				
N° of compressors			4	4	4				
Refrigerating circuits			2	2	2				
DX MODE	Gross total cooling capacity <sup>1,2</sup>	kW	82,6	82,1	91,5				
	Gross sensible cooling capacity <sup>1,2</sup>	kW	78,6	75,5	77,6				
CW MODE	Gross total cooling capacity <sup>1,3</sup>	kW	98,3	100,0	100,0				
	Gross sensible cooling capacity <sup>1,3</sup>	kW	97,4	99,0	99,0				
DIMENSIONS									
Height		mm	1960	1960	1960				
Length		mm	2580	2580	2580				
Depth		mm	865	865	865				

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, 45 °C condensing temperature, and ESP = 20 Pa.

<sup>3</sup> Data refer to nominal conditions: Room at 24 °C-50% RH, water temperature 7/12 °C; glycol 0%, and ESP = 20 Pa.

## Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)

## Accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands



# Uniflair Twin Cooled Room Cooling

Twin- cool water- cooled units with backward- curved fans equipped with EC motor

TDDV - TUDV

Cooling capacity: 20 ÷ 100 kW



Refrigerant R-410A

EC fans

Available versions

- Downflow (TDDV)
- Upflow (TUDV)

## Standard features

- Advanced microprocessor control system is available with local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the precision of the cooling and the energy efficiency of the cooling cycle.
- Unit is characterized by two independent cooling sources — one CW with related circuit and one direct expansion water cooled.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section. The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- The cooling coil is characterized by CW and direct expansion circuits interlaced to increase the efficiency of the unit in all running conditions.
- Internal water-cooled condenser braze is welded and made of AISI 304 stainless steel.
- The CW circuit is equipped with a three-way valve and an actuator integrated with the microprocessor.
- Uniflair Room Cooling comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- The Uniflair Room Cooling range offers the possibility to select units equipped with two compressors (tandem) for each circuit, which grants better efficiency and regulation capacity at partial loads (models with the \*\*21 or \*\*42 suffix).
- Total front access is included for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow.
- Microprocessor control system includes:
  - Integrated management of the EEV and refrigerating circuit parameters
  - Local user terminal with external accessibility
  - Integrated LAN card for local network connection of a group of CRACs
  - Rotation and active stand-by management
  - Free contact for general and two for addressable alarms
  - Remote on/off switch
  - Ability to interface with modbus protocol directly on RS485 serial card
  - Ability to interface with main external communication protocols: BACnet, Lonworks, Trend, Metasys, TCP/IP, SNMP, and StruxureWare platform

\* to be considered when applicable





TECHNICAL DATA										
TDDV MODEL		0611A	0921A	1321A	1622A	1822A	2242A <sup>4</sup>	2542A <sup>4</sup>	2842A <sup>4</sup>	
Fan type		EC backward-curved centrifugal motor fan								
Power supply		V/ph/Hz 400/3/50								
Fans		nr.	1	1	2	2	2	3	3	
Airflow		m <sup>3</sup> /h	5700	8600	12320	16000	16000	21500	21500	
N° of compressors			1	2	2	2	4	4	4	
Refrigerating circuits			1	1	1	2	2	2	2	
DX MODE	Gross total cooling capacity <sup>1,2</sup>		kW	23,7	30,4	46,6	55,9	60,5	90,3	87,7
	Gross sensible cooling capacity <sup>1,2</sup>		kW	20,8	28,7	40,3	55,9	56,0	79,0	74,9
CW MODE	Gross total cooling capacity <sup>1,3</sup>		kW	20,2	28,5	40,1	54,1	54,1	96,6	96,6
	Gross sensible cooling capacity <sup>1,3</sup>		kW	20,1	28,3	39,9	53,9	53,9	95,7	95,7
DIMENSIONS										
Height		mm	1960	1960	1960	1960	1960	2150	2150	
Length		mm	1010	1310	1720	2170	2170	2580	2580	
Depth		mm	750	865	865	865	750	865	865	
TUDV MODEL			2242A	2542A	2842A					
Fans		nr.	3	3	3					
Airflow		m <sup>3</sup> /h	22000	22500	22500					
N° of compressors			4	4	4					
Refrigerating circuits			2	2	2					
DX MODE	Gross total cooling capacity <sup>1,2</sup>		kW	90,6	88,3	96,4				
	Gross sensible cooling capacity <sup>1,2</sup>		kW	80,1	76,9	79,0				
CW MODE	Gross total cooling capacity <sup>1,3</sup>		kW	98,3	100,0	100,0				
	Gross sensible cooling capacity <sup>1,3</sup>		kW	97,4	99,0	99,0				
DIMENSIONS										
Height		mm	1960	1960	1960					
Length		mm	2580	2580	2580					
Depth		mm	865	865	865					

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperatures 30 – 35 °C, and ESP = 20 Pa.

<sup>3</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, water temperature 7/12 °C; glycol 0%, and ESP = 20 Pa.

<sup>4</sup> Data refers to downflow unit.

## Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Condensation control on refrigerant side with constant water flow

## Accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- LON FTT10 serial adapter to communicate with external BMS managed with LON protocol
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

# Uniflair Air Cooled Room Cooling

Direct-expansion air-cooled units with backward-curved fans equipped with EC motor and variable speed brushless compressors

IDAV

Cooling capacity: 20 ÷ 50 kW



Refrigerant R-410A  
Brushless compressors  
EC fans  
Available versions  
• Downflow air cooled

## Standard features

- Brushless variable speed scroll DC compressor.
- Units in tandem version (models \*\*21) equipped with one brushless compressor and one fixed speed compressor.
- Advanced microprocessor control system with a local or remote user terminal.
- The units are equipped with EC fans for efficiency maximization.
- The structure of the unit is characterized by a self-supporting frame in galvanized steel with panels. The external panels are coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation.
- Electronic expansion valve is controlled by the microprocessor and a dedicated software that increases the cooling precision and the energy efficiency of the cooling cycle.
- The cooling coil is designed for an elevated SHR and reduced pressure drops in the air section.
- The coil is made from copper tubes mechanically expanded on aluminum fins, complete with a hydrophilic treatment.
- Internal water-cooled condenser braze is welded and made of AISI 304 stainless steel.
- Uniflair Room Cooling units comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS). High-efficiency, EU4-pleated air filters are housed in a metal frame and equipped with a dirty filter differential pressure switch and low airflow differential pressure switch.
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow.
- Advanced microprocessor control UG50.
- Free-contact for general alarm and 2 for addressable alarms.
- Remote on/off switch.
- Integrated RS485 serial card for direct connection external BMS (modbus).
- Second slot for additional serial card for BMS connection (optional).
- Clock card integrated in the unit.
- Discharge temperature control (option).

\* to be considered when applicable



TECHNICAL DATA						
IDAV		0601A	0611A	1021A	1321A	1421A
Fan type		EC backward-curved centrifugal motor fan				
Power supply	V/ph/Hz	400/3/50 Hz				
Fans	nr.	2	1	1	2	2
Airflow	m <sup>3</sup> /h	4500	5700	8600	12320	16500
Compressors		1	1	1+1	1+1	1+1
Refrigerating circuits		1	1	1	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	23,1	23,4	31,4	39,3	53,4
Gross sensible cooling capacity <sup>1,2</sup>	kW	16,6	20,2	26,3	35,3	53,4
DIMENSIONS						
Height	mm	1740	1960	1960	1960	1960
Length	mm	1200	1010	1310	1710	2170
Depth	mm	450	750	865	865	865

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, 45 °C condensing temperature, and ESP = 20 Pa.

### Construction options

- Intelligent dehumidification integrated in the unit
- Advanced microprocessor control system  
UG50 is included
- Integrated discharge temperature control and room moisture control

### Accessories

The units can be supplied with the following external accessories:

- Double power supply with automatic changeover and manual selection with integrated ultracapacitor (ETO)
- Automatic floor pressurization system
- Energy meter and CO<sub>2</sub> emissions calculator integrated in the unit (ETO)
- Ultracapacitor for single power supply units.
- Direct free-cooling (on demand)
- Air-cooled condensers equipped with EC fans



# Uniflair Air Cooled Room Cooling

Direct- expansion air- cooled units with backward- curved fans equipped with EC motor

IDAV - IUAV

Cooling capacity: 50 ÷ 140 kW



1 VSD compressor and 1 fixed speed compressor

Refrigerant R-410A

EC fans

Available versions

- Downflow (IDAV)
- Upflow (IUAV)

## Standard features

- Air flow configuration:
  - Downflow configuration with bottom or front discharge and suction from the top
  - Upflow configuration with top discharge and bottom or front return
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. Downflow units have filters housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Single (\*\*11A models) or double (\*\*22A models) refrigerant circuit each equipped with a scroll compressor (one fixed-speed and one brushless inverter driven, except the 1511A model that is equipped with only one brushless inverter driven scroll compressor)
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Hermetic scroll compressor:
  - Fixed-speed compressors with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
  - Variable speed scroll compressors with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- 7 inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.

\* to be considered when applicable



TECHNICAL DATA							
IDAV MODEL		1511A	1922A	2022A	2422A	2922A	3822A
Fan Type		EC Backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400/3/50Hz					
Fans	Nr.	2	2	2	2	2	3
Airflow	m3/h	16800	16800	17000	20000	26000	27000
N° of fixed speed compressors		-	1	1	1	1	1
N° of variable speed compressors		1	1	1	1	1	1
Refrigerating circuits		2	2	2	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	56,0	61,7	63,8	91,3	101,4	133,2
Gross sensible cooling capacity <sup>1,2</sup>	kW	54,9	57,2	60,9	75,8	92,4	108,9
DIMENSIONS							
Height	mm	2150	2150	2150	2150	2150	2150
Length	mm	1777	1777	2082	2082	2650	2650
Depth	mm	900	900	900	900	900	900
IDAV MODEL		1511A	1922A	2022A	2422A	2922A	3822A
Fan type		EC Backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400/3/50Hz					
Fans	Nr.	2	2	2	2	2	3
Airflow	m3/h	16800	16800	17000	20000	26000	27000
N° of fixed speed compressors		-	1	1	1	1	1
N° of variable speed compressors		1	1	1	1	1	1
Refrigerating circuits		2	2	2	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	56,0	61,7	63,8	91,3	101,4	133,2
Gross sensible cooling capacity <sup>1,2</sup>	kW	54,9	57,2	60,9	75,8	92,4	108,9
DIMENSIONS							
Height	mm	1950	1950	1950	1950	1950	1950
Length	mm	1777	1777	2082	2082	2650	2650
Depth	mm	900	900	900	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/35°C, 0% glycol and ESP = 20 Pa.

- Schneider Electric IT J-Controller (J5 18 DIN).
- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON

- Cooling Tuner as service diagnostic tool

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters. Downflow units have filters housed in a dedicated plenum box.
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Floor stands with or without motorized damper
- Height adjustable base frame
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors
- Check and by-pass valves kit



# Uniflair Air Cooled Room Cooling

Direct- expansion air- cooled units with backward- curved fans equipped with EC motor  
IXAV

Cooling capacity: 70 ÷ 150 kW



1 VSD compressor and 1 fixed speed compressor

Refrigerant R-410A

EC fans

Available versions

- Underfloor (IXAV)

## Standard features

- Underfloor configuration with top return and multiple fan module configurations:
  - bottom discharge
  - rear discharge
  - front discharge
  - front and side discharge
  - fully open discharge
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. Air filters are housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Double (\*\*22A models) refrigerant circuit each equipped with a scroll compressor (one fixed-speed and one brushless inverter driven)
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Hermetic scroll compressor:
  - Fixed-speed compressors with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
  - Variable speed scroll compressors with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- Electrical panel complying with Machinery Directive 2006/42/EC (MD) and Electromagnetic compatibility Directive 2014/30/EU (EMC), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS), housed- in a compartment isolated from the airflow and including 24V control circuit transformer, metal isolating screen for protection from live components, mains switch, thermomagnetic circuit-breakers, terminal board for no-voltage signal and control contacts.
- 7 inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.
- Schneider Electric IT J-Controller (J5 18 DIN), complying with Machinery Directive 2006/42/EC (MD) and Electromagnetic compatibility Directive 2014/30/EU (EMC), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS), where are connected analogical and digital inputs necessary for control of the unit.
- Control software design to provide a highly accurate real-time control of room conditions and the complete

<sup>†</sup> to be considered when applicable



TECHNICAL DATA				
IXAV MODEL		2322A	2622A	4022A
Fan type		EC Backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400/3/50Hz		
Fans	Nr.	2	2	3
Airflow	m3/h	18800	23400	30000
N° of fixed speed compressors		1	1	1
N° of variable speed compressors		1	1	1
Refrigerating circuits		2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	90,8	100,8	139,5
Gross sensible cooling capacity <sup>1,2</sup>	kW	74,6	88,9	119,5
DIMENSIONS				
Height	mm	1950	1950	1950
Fan module height	mm	565	565	565
Length	mm	1777	2082	2650
Depth	mm	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, 45 °C condensing temperature and ESP = 20 Pa.

unit management such as:

- electronic expansion valve complete management
- advanced interactivity with the installation environment
- dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
- double set-point with digital input selection
- emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters. Air filters are housed in a dedicated plenum box.
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Fan module shipped separately from the upper unit
- Height adjustable legs kit
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors
- Check and by-pass valves kit



# Uniflair Indirect Free Cooling Room Cooling

Direct- expansion energy- saving units with backward- curved fans equipped with EC motor

IDWW - IUWV

Cooling capacity: 50 ÷ 140 kW



1 VSD compressor and 1 fixed speed compressor

Refrigerant R-410A

EC fans

Available versions

- Downflow (IDWW)
- Upflow (IUWV)

## Standard features

- Air flow configuration:
  - Downflow configuration with bottom or front discharge and suction from the top
  - Upflow configuration with top discharge and bottom or front return
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. Downflow units have filters housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Brazed plate water-cooled condenser made from stainless steel.
- Single (\*\*11A models) or double (\*\*22A models) refrigerant circuit each equipped with a scroll compressor (one fixed-speed and one brushless inverter driven, except the 1511A model that is equipped with only one brushless inverter driven scroll compressor)
- Uniflair Room Cooling units comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Uniflair Room Cooling units comply with the following directives\*: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Hermetic scroll compressor:
  - Fixed-speed compressors with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
  - Variable speed scroll compressors with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- 7-inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.

\* to be considered when applicable





TECHNICAL DATA							
IDVV/MODEL		1511A	1922A	2022A	2422A	2922A	3822A
Fan type		EC Backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400/3/50Hz					
Fans	Nr.	2	2	2	2	2	3
Airflow	m3/h	16800	16800	17000	20000	26000	27000
N° of fixed speed compressors		-	1	1	1	1	1
N° of variable speed compressors		1	1	1	1	1	1
Refrigerating circuits		2	2	2	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	58	65,1	67,1	93,3	104,1	137,9
Gross sensible cooling capacity <sup>1,2</sup>	kW	55,4	58,1	63,8	76,5	93,1	110,5
DIMENSIONS							
Height	mm	2150	2150	2150	2150	2150	2150
Length	mm	1777	1777	2082	2082	2650	2650
Depth	mm	900	900	900	900	900	900
IUVV/MODEL		1511A	1922A	2022A	2422A	2922A	3822A
Fan type		EC Backward-curved centrifugal motor fan					
Power supply	V/ph/Hz	400/3/50Hz					
Fans	Nr.	2	2	2	2	2	3
Airflow	m3/h	16800	16800	17000	20000	26000	27000
N° of fixed speed compressors		-	1	1	1	1	1
N° of variable speed compressors		1	1	1	1	1	1
Refrigerating circuits		2	2	2	2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	58	65,1	67,1	93,3	104,1	137,9
Gross sensible cooling capacity <sup>1,2</sup>	kW	55,4	58,1	63,8	76,5	93,1	110,5
DIMENSIONS							
Height	mm	1950	1950	1950	1950	1950	1950
Length	mm	1777	1777	2082	2082	2650	2650
Depth	mm	900	900	900	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/35°C, 0% glycol and ESP = 20 Pa.

- Schneider Electric IT J-Controller (J5 18 DIN).
- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- 2-way pressostatic valve to modulate the water flow through the braze plate condenser
- Condensing Pressure Regulation Valve (Flooding Valve) to maintain a minimum condensing pressure even with low water inlet temperature
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters. Downflow units have filters housed in a dedicated plenum box.
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Floor stands with or without motorized damper
- Height adjustable base frame
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors



# Uniflair Water Cooled Room Cooling

Direct- expansion water- cooled units with backward- curved fans equipped with EC motor IXWW

Cooling capacity: 70 ÷ 150 kW



1 VSD compressor and 1 fixed speed compressor

Refrigerant R-410A

EC fans

Available versions

- Underfloor (IXWW)

## Standard features

- Underfloor configuration with top return and multiple fan module configurations:
  - bottom discharge
  - rear discharge
  - front discharge
  - front and side discharge
  - fully open discharge
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. Air filters are housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Brazed plate water-cooled condenser made from stainless steel.
- Double (\*\*22A models) refrigerant circuit each equipped with a scroll compressor (one fixed-speed and one brushless inverter driven)
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Hermetic scroll compressor:
  - Fixed-speed compressors with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
  - Variable speed scroll compressors with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- 7 inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated

<sup>1</sup> to be considered when applicable



TECHNICAL DATA				
IXWV MODEL		2322A	2622A	4022A
Fan type		EC Backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400/3/50Hz		
Fans	Nr.	2	2	3
Airflow	m3/h	18800	23400	30000
N° of fixed speed compressors		1	1	1
N° of variable speed compressors		1	1	1
Refrigerating circuits		2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	92,9	103,4	144,4
Gross sensible cooling capacity <sup>1,2</sup>	kW	75,4	89,7	121,1
DIMENSIONS				
Height	mm	1950	1950	1950
Fan module height	mm	565	565	565
Length	mm	1777	2082	2650
Depth	mm	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/35°C, 0% glycol and ESP = 20 Pa.

greenhouse gases (F-GAS).

- Schneider Electric IT J-Controller (J5 18 DIN)
- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

- Condensing Pressure Regulation Valve (Flooding Valve) to maintain a minimum condensing pressure even with low water inlet temperature
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters. Air filters are housed in a dedicated plenum box.
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Fan module shipped separately from the upper unit
- Height adjustable legs kit
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- 2-way pressostatic valve to modulate the water flow through the braze plate condenser



# Uniflair Indirect Free Cooling Room Cooling

Direct- expansion energy- saving units with backward- curved fans equipped with EC motor

IDEV- IUEV

Cooling capacity: 50 ÷ 100 kW



1 VSD compressor and 1 fixed speed compressor

Refrigerant R-410A

EC fans

Available versions

- Downflow (IDEV)
- Upflow (IUEV)

## Standard features

- Air flow configuration:
  - Downflow configuration with bottom or front discharge and suction from the top
  - Upflow configuration with top discharge and bottom or front return
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. Downflow units have filters housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Brazed plate water-cooled condenser made from stainless steel.
- Single (\*\*11A models) or double (\*\*22A models) refrigerant circuit each equipped with a scroll compressor (one fixed-speed and one brushless inverter driven, except the 1511A model that is equipped with only one brushless inverter driven scroll compressor)
- Uniflair Room Cooling units comply with the following directives<sup>†</sup>: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Refrigerant circuits include: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Hermetic scroll compressor:
  - Fixed-speed compressors with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
  - Variable speed scroll compressors with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- Energy saving units are equipped with a patent pending solution. The 3-way valve is replaced by three flow control devices designed to maximize efficiency and minimize water side pressure drops.
- 7-inch, IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.
- Schneider Electric IT J-Controller (J5 18 DIN).

<sup>†</sup> to be considered when applicable



TECHNICAL DATA				
IDEV MODEL		1511A	2022A	2922A
Fan type		EC Backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400/3/50Hz		
Fans	Nr.	2	2	3
Airflow	m3/h	16800	17000	26000
N° of fixed speed compressors		-	1	1
N° of variable speed compressors		1	1	1
Refrigerant circuits		2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	55,4	64,1	100,3
Gross sensible cooling capacity <sup>1,2</sup>	kW	51,1	55,9	85,0
DIMENSIONS				
Height	mm	2150	2150	2150
Length	mm	1777	2082	2650
Depth	mm	900	900	900
IUEV MODEL		1511A	2022A	2922A
Fan type		EC Backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400/3/50Hz		
Fans	Nr.	2	2	2
Airflow	m3/h	16800	17000	26000
N° of fixed speed compressors		-	1	1
N° of variable speed compressors		1	1	1
Refrigerating circuits		2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	55,4	64,1	100,3
Gross sensible cooling capacity <sup>1,2</sup>	kW	51,1	55,9	85,0
DIMENSIONS				
Height	mm	1950	1950	1950
Length	mm	1777	2082	2650
Depth	mm	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/36°C, 0% glycol and ESP = 20 Pa

- Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters. Downflow units have filters housed in a dedicated plenum box.
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Floor stands with or without motorized damper
- Height adjustable base frame
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors



# Uniflair Indirect Free Cooling Room Cooling

Direct-expansion energy-saving units with backward-curved fans equipped with EC motor IXEV

Cooling capacity: 60 ÷ 150 kW



1 VSD compressor and 1 fixed speed compressor

Refrigerant R-410A

EC fans

Available versions

- Underfloor (IXEV)

## Standard features

- Underfloor configuration with top return and multiple fan module configurations:
  - bottom discharge
  - rear discharge
  - front discharge
  - front and side discharge
  - fully open discharge
- Metal structural frame and inside part made with hot-dip zinc-plated sheet steel
- External panels coated with RAL9003 epoxy-polyester paint and internally lined with heat- and sound-proofing insulation to class 1 according to Class B1 according to DIN 4102, BS 476 part 7, VO according to UL94, ASTM E84, class M1 according to NFP92-501
- Internal panels for shutting-off the compartments affected by the airflow, made with hot-dip zinc-plated sheet steel and captive screws
- High efficiency EU4 pleated air filters are contained in a metal frame and equipped with a dirty filter differential pressure switch and a low airflow differential pressure switch. Air filters are housed in a dedicated plenum box.
- The units are equipped with the latest generation Radical EC Fans for efficiency maximization. Impellers are made of high-tech compound material with optimized flow control, combined with highly efficient GreenTech EC motors. These fans are designed to have easier serviceability with quick removability kit.
- Low airflow differential pressure switch
- Cooling coil, mounted upstream of the fans, constructed of copper tubes expanded into hydrophilic aluminum fins, complete with stainless steel tray and a flexible condensate drain hose
- Brazed plate water-cooled condenser made from stainless steel
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- Single (\*\*11A models) or double (\*\*22A models) refrigerant circuit each equipped with a scroll compressor (one fixed-speed and one brushless inverter driven, except the 2311A model that is equipped with only one brushless inverter driven scroll compressor)
- Refrigerant circuits including: liquid refrigerant receiver, filter-dryer and liquid sight glass, electronic expansion valve, high-pressure pressostats with manual reset.
- Hermetic scroll compressor:
  - Fixed-speed compressors with Intermediate Discharge Valves (IDVs), built-in thermal protection and anti-vibration feet
  - Variable speed scroll compressors with a brushless Interior Permanent Magnet (IPM) and dedicated variable speed drive designed to provide maximum efficiency across the full operating range
- Refrigerant R410A
- Electronic Expansion Valve (EEV) to provide accurate control of the refrigerant superheat ensuring high energy efficiency also at low external temperatures.
- Energy saving units are equipped with a patent pending solution. The 3-way valve is replaced by three flow control devices designed to maximize efficiency and minimize water side pressure drops.
- Electrical panel complying with Machinery Directive 2006/42/EC (MD) and Electromagnetic compatibility Directive 2014/30/EU (EMC), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS), housed- in a compartment isolated from the airflow and including 24V control circuit transformer;

<sup>1</sup> to be considered when applicable



TECHNICAL DATA				
IXEV MODEL		2622A	2622A	4022A
Fan type		EC Backward-curved centrifugal motor fan		
Power supply	V/ph/Hz	400/3/50Hz		
Fans	Nr.	2	2	3
Airflow	m3/h	18800	23400	30000
N° of fixed speed compressors		1	1	1
N° of variable speed compressors		1	1	1
Refrigerating circuits		2	2	2
Gross total cooling capacity <sup>1,2</sup>	kW	57,8	98,3	135,1
Gross sensible cooling capacity <sup>1,2</sup>	kW	56,5	80,9	108,4
DIMENSIONS				
Height	mm	1950	1950	1950
Fan module height	mm	565	565	565
Length	mm	1777	2082	2650
Depth	mm	900	900	900

<sup>1</sup> Gross cooling capacities; fans must be deduced to obtain net cooling data.

<sup>2</sup> Data refers to nominal conditions: Room at 24 °C-50% RH, inlet/outlet water temperatures 30/36°C, 0% glycol and ESP = 20 Pa.

metal isolating screen for protection from live components, mains switch, thermomagnetic circuit-breakers, terminal board for no-voltage signal and control contacts.

- 7 inch. IT Touch Screen display interface that allows to set operating parameters, monitor the trend of the main working parameters, and read any alarm messages.
- Schneider Electric IT J-Controller (J5 18 DIN). Control software design to provide a highly accurate real-time control of room conditions and the complete unit management such as:
  - electronic expansion valve complete management
  - advanced interactivity with the installation environment
  - dehumidification operating mode managed by means of EEV with devised algorithm which maintains constant air flow
  - double set-point with digital input selection
  - emergency operation
- The design of the IT J-Controller allows to physically isolate the internal connections from the external connections. The external connections on the upper level offer a wide variety of accessibility options:
  - External CAN and Group CAN
  - Isolated 2-wire and 4-wire RS485 ports
  - NetBotz universal sensor ports
  - Alarm/Shutdown Contacts
  - USB ports (Host, Device)
  - Ethernet
  - HDMI display interface
  - Modbus
  - Remote shutdown input
- Ability to interface with most common external BMS on communication protocols and boosting on connection towards Schneider monitoring systems:
  - Modbus/RTU RS485
  - SNMP
  - Modbus Over IP
  - StruxureWare
  - StruxureON
  - Cooling Tuner as service diagnostic tool

### Construction options

- Double power supply with automatic integrated management on the active line to provide redundancy and ensure a constant power supply
- Standard, cleanable or low conductivity humidifier with immersed-electrodes for modulating steam production available as an option for units equipped with cooling and humidification configuration
- Condensate drain pump
- Electrical heaters with aluminum-finned heating elements complete with safety thermostat (for manual resetting) to cut off the power supply in the event of overheating
- High efficiency EU5 pleated air filters. Air filters are housed in a dedicated plenum box.
- Power phase correction capacitors for compressors
- Active Flow Control to improve the balance of airflow between the cooling structure and IT equipment.
- Energy meter and CO2 emission calculator
- Motorized damper on the air return side

### Accessories

The units can be supplied with the following external accessories:

- Suction / discharge plenums
- Direct free-cooling plenums
- Fan module shipped separately from the upper unit
- Height adjustable legs kit
- Room temperature and humidity sensor
- Smoke and fire sensors
- Water leak detectors



# Uniflair Condensers

CAP

Cooling capacity: 7 ÷ 160 kW



CAP

Cooling capacity: 7 ÷ 160 kW

Refrigerant R-410A

## Standard features

- R-410A refrigerant.
- Low noise axial fans with IP54 class F electric motor.
- Fan speed pressure switch regulator with protection grade IP55.
- Safety protection grills.
- Copper and aluminum condensing coil.
- Low noise levels.
- Outdoor installation.
- High-efficiency, EU4-pleated air filter housed in a metal frame and filter differential pressure switch.
- Vertical or horizontal installation.
- Welded refrigeration connections for rapid and safe connection.
- Condensers are powered by the internal unit to grant operation at 208 – 230 V with a tolerance of +/-10%.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).

## Accessories

- Shut off valves
- Leg support kit
- Manifold kit to make the unit single circuit
- Coil protection treatment for use in aggressive environments
- Low temperature versions down to -40 °C with high-resilience steel liquid receiver and flooding valve to control the condensing temperature

<sup>1</sup> to be considered when applicable





TECHNICAL DATA										
CAP MODEL		0251	0331	0361	0511	0661	0801	1011	1301	
Fan type		Axial AC								
Power supply	V/ph/Hz	230/1/50								
Cooling capacity <sup>1</sup>	kW	9.2	9.5	11.9	15.9	18.5	26.2	30.8	38.6	
Airflow rate	m <sup>3</sup> /h	2520	2230	2820	5270	4510	7670	6820	9000	
Number of circuits		1	1	1	1	1	1	1	1	
Number of circuits	dB (A)	51.4	51.9	53.4	54.9	51	52.5	52.5	57	
DIMENSIONS										
Height	mm	732	732	1067	1227	1227	1877	1877	2277	
Width	mm	350	350	350	350	350	350	350	350	
Depth	mm	700	700	700	700	700	700	700	700	
CAP MODEL		1802	2002	3002	4002	5002	6002	7002		
Fan type		Axial AC								
Power supply	V/ph/Hz	230/1/50								
Cooling capacity <sup>1</sup>	kW	59.8	60.8	83.5	87.4	119.2	135.1	152.7		
Airflow rate	m <sup>3</sup> /h	16730	16280	25740	24146	31930	41914	38223		
Number of circuits		2	2	2	2	2	2	2		
Noise level <sup>2</sup>	dB (A)	57.8	57.8	61.2	66.7	66.7	66.9	63.1		
DIMENSIONS										
Height	mm	2217	2217	3217	3217	4217	5217	5217		
Width	mm	400	400	400	400	400	400	400		
Depth	mm	1110	1110	1110	1110	1110	1110	1110		
CAP MODEL		0661	0801	1011	1301	1802	2002	3002		
Fan type		Axial EC								
Power supply	V ph Hz	230	1	50						
Cooling capacity <sup>1</sup>	kW	19.7	25.7	31.4	38.5	63.4	69.2	72.7		
Airflow rate	m <sup>3</sup> /h	4500	7500	6750	9000	16700	16100	25200		
Number of circuits		1	1	1	1	2	2	2		
Noise level <sup>2</sup>	dB(A)	51	57	57	57.8	61.2	61.2	61.8		
DIMENSIONS										
Height	mm	1227	1877	1877	2277	2217	2217	3217		
Width	mm	350	350	350	350	400	400	400		
Depth	mm	700	700	700	700	1110	1110	1110		

<sup>1</sup> With external temperature 35 °C and 50 °C R-410A condensing temperature.

<sup>2</sup> Measured in free field conditions at 5 meters from the unit.

# Uniflair Condensers

Air-cooled remote condensers

OCC

Heat dissipation: 40 ÷ 200 kW



Refrigerant R-410A

AC or EC fans

## Standard features

- R-410A refrigerant
- Low-speed axial fans compliant with Ecodesign and Energy Labelling Directive 2009/125/EC
- Fan speed regulator works exclusively via Modbus commands
- Copper and aluminum condensing coil
- Outdoor installation
- Vertical or horizontal installation
- High-efficiency, EU4-pleated air filter housed in a metal frame and filter differential pressure switch.
- Uniflair Room Cooling units comply with the following directives<sup>1</sup>: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).

## Construction options and accessories

- Versions with electronically commutated (EC) motor to reduce the sound pressure level
- Shut-off valves
- Leg support kit
- Coil protection treatment for use in aggressive environments (optional)
- Low temperature versions down to -40 °C with high-resilience steel liquid receiver and flooding valve to control the condensing temperature. The kit is shipped separately from the OCC LT condenser, and must be installed on site.

TECHNICAL DATA									
OCC MODEL		1701EC	2101EC	2401EC	2601EC	3101EC	3301EC	3901EC	
Fan Type		Axial							
Power supply	V/ph/Hz	230/1/50			400/3/50				
Cooling capacity <sup>2</sup>	kW	45.9	56	61.8	70.8	80.8	91	100	
Airflow rate	m <sup>3</sup> /h	17 227 (10,139)	16 313 (9601)	15 216 (8956)	22 275 (13,111)	23 372 (16,087)	32 700 (19,246)	29 525 (17,378)	
Fans	Nr.	2	2	2	3	3	2	2	
Noise level <sup>2</sup>	dB(A)	45	45	45	47	47	51	51	
Power consumption AC	kW	1.12	1.14	1.16	1.76	1.73	3.62	3.77	
Power consumption EC	kW	0.883	0.905	0.908	1,377	1,371	3,000	2,980	
DIMENSIONS									
Height	mm	1150	1150	1150	1150	1150	1250	1250	
Length	mm	2380	2380	2380	2660	2660	2660	2660	
Depth	mm	800	800	800	800	800	800	800	
OCC MODEL		3502	4202	4702	5302	6202	6702	7702	
Fan type		Axial fans							
Power supply	V/ph/Hz	230/1/50			400/3/50				
Cooling capacity <sup>3</sup>	kW	95.2	117.9	130.9	142.1	161.6	181.9	200	
Airflow rate	m <sup>3</sup> /h	34 453	32 625	30 431	44 550	46 744	65 400	59 050	
Fans	Nr.	4	4	4	6	6	4	4	
Noise level <sup>3</sup>	dB(A)	48	48	48	50	50	54	54	
Power consumption AC	kW	2.23	2.27	2.33	3.53	3.47	7.23	7.54	
Power consumption EC	kW	1,765	1,810	1,816	2,754	2,743	6,000	5,960	
DIMENSIONS									
Height	mm	2253	2253	2253	2253	2253	2453	2453	
Length	mm	2380	2380	2380	2660	2660	2660	2660	
Depth	mm	800	800	800	800	800	800	800	

<sup>2</sup> With external temperature 35 °C and 50 °C R-410A condensing temperature.

<sup>3</sup> Measured in free field conditions at 10 meters from the unit.

<sup>1</sup> to be considered when applicable



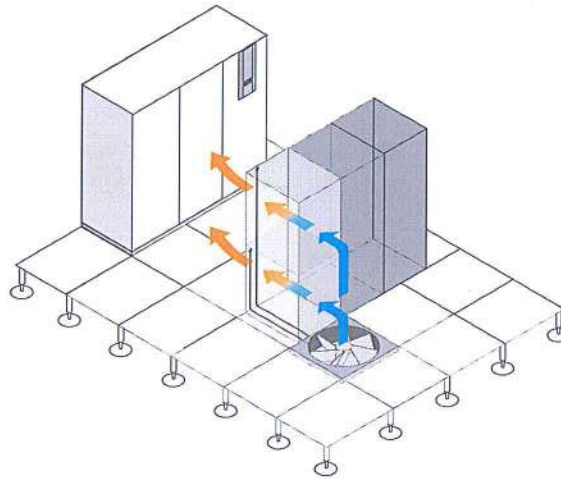
# Active floor

High-density cooling solutions



## Standard features

- Active floor is a flexible and modular system for cooling data centers with medium- and high-density loads. Integrated within a modular access floor in front of the intake section of the rack, the Active Floor fits exactly into a modular access floor panel measuring 600 mm x 600 mm. The cold air produced by the close control perimeter units is directly channeled to the source of the thermal load thanks to the advanced adjustment of the direction of the airflow. The active floor creates a high-density bubble of air, which is maintained at a constant temperature along the whole intake section of the rack, guaranteeing operation at the nominal design conditions. The airflow varies according to the actual thermal load and is detected by two sensors placed on the discharge section of the servers.
- Active floor employs variable speed EC, motor-driven fans to minimize energy consumption.
- This solution may be used in stand-alone applications as well as with perimeter close control units equipped with underfloor pressure control.
- The active floor guarantees optimum operation of high-density equipment for loads installed in each module of 25 kW and 40 kW with solutions featuring the two modules certified by TUV.



TECHNICAL DATA			
ACTIVE FLOOR			
Power supply	V/ph/Hz		220/1+N/60
N° of fans/motor			1/E.C
Max airflow	m³/h/CFM		4988/2936
Nominal airflow	m³/h/CFM		2880/1650
Min airflow	m³/h/CFM		1698/999
DIMENSIONS			
Height	mm/inch		230/9.1
Width	mm/inch		600/23.6
Depth	mm/inch		600/23.6



# Uniflair Monoblock Room Cooling

Monoblock wall-mounted units for external installation with downflow air discharge

WDA – WDF

Cooling capacity: 7 ÷ 160 kW



Refrigerant R407C

Available versions

- Without direct free-cooling (WDA)
- With direct free-cooling (WDF)

## Standard features

- Monoblock conditioning units can be installed on the outside wall of the air conditioned room.
- Built-in air condenser is included. The units can be supplied completely assembled and filled with refrigerant; all the components are set in the factory for normal working conditions and the electrical and cooling functions are tested. Installation only requires simple electrical wiring and mechanical fixing to the shelter, even by nonspecialized personnel.
- The direct free-cooling units (WDF) are supplied with a motorized damper. During free-cooling the excess air is expelled from the room through the condenser section without using any extra overpressure dampers.
- Complete access to all the components allows servicing entirely from the outside, without having to enter the room which is normally protected by controlled access.
- The external screws are stainless steel, antitamper and can only be removed using special tools.
- The double external paneling is available in galvanized, painted sheet steel and gives separate access to the fan compartment and electric board compartments. This enables maintenance and regulation to be carried out without having to turn the unit off.
- Power supply:
  - 400 V/3+N/50 Hz standard on request
  - 230 V/1/50 Hz on 221 and 341 models
  - Main power supply + UPS 48 VDC (evaporator DC fan/s)
- Microprocessor control.
- Scroll compressor.
- EU4 filter (optional).
- Modulating condenser fan/s speed control.
- Free-cooling metal pre-filter.

TECHNICAL DATA					
WDA – WDF MODEL		WDF0221A	WDF0341A	WDF0481A	WDF0501A
Power supply	V/ph/Hz	400/3+N/50			
Mechanical cooling <sup>1</sup>					
Sensible cooling capacity	kW	6,0/6,0	9,0/9,0	12,0/12,0	15,0/15,0
Airflow	m <sup>3</sup> /h	1650	2350	2900	4200
COMPONENT FEATURES					
N° of evaporator fans		1	2	2	2
N° of condenser fans		1	1	1	1
Compressor power consumption <sup>1</sup>	kW	1,25	1,94	3,56	3,78
DIMENSIONS					
Height	mm	1800	1800	1800	1800
Width	mm	950	950	950	1120
Depth	mm	650	650	650	650

<sup>1</sup> Data refers to mechanical operation:  
Ambient temperature: 27 °C/40% RH,  
external temperature 35 °C/R407C  
(data consider inlet and outlet evaporating coil),  
and Maximum external temperature 45 °C.



# Uniflair Monoblock Room Cooling

Monoblock wall-mounted units for external installation with upflow air discharge

WMA – WMF

Cooling capacity: 3.9 ÷ 16.9 kW



Refrigerant R407C

Available versions

- Without direct free-cooling (WMA)
- With direct free-cooling (WMF)

## Standard features

- Monoblock conditioning units are installed on the outside wall of the air conditioned room.
- Air condenser is built in. The units can be supplied completely assembled and filled with refrigerant.
- All the components are set in the factory for normal working conditions. Electrical and cooling functions are all tested. Installation only requires simple electrical wiring and mechanical fixing to the shelter, even by nonspecialized personnel.
- The direct free-cooling units (WMF) are supplied with a motorized damper. During free-cooling the excess of air is expelled from the room through the condenser section without using extra overpressure dampers.
- Complete access to all the components so that servicing can be entirely done from the outside, without having to enter the room which is normally protected by controlled access.
- The external screws are stainless steel, antitamper and can only be removed using special tools.
- The double external paneling is available in galvanized, painted sheet steel and gives separate access to the fan compartment and electric board compartments. This enables maintenance and regulation to be carried out without having to turn the unit off.
- Power supply:
  - 230 V/1/50 Hz or 400 V/3+N/50 Hz (standard, according to the model)
  - Main power supply + UPS 230 V
  - Main power supply + UPS
  - 48 VDC (evaporator DC-fan/s)
- Microprocessor control.
- Scroll compressor (rotary for 0121 model) housed in compartment isolated from the airflow.
- EU4 filter (optional).
- Modulating condenser fan/s speed control.
- Free-cooling metal pre-filter.

TECHNICAL DATA								
WMA – WMF MODELS		0121	0181	0251	0281	0331	0551	0661
Power supply	V/ph/Hz	230/1/50				400/3+N/50		
Mechanical cooling <sup>1</sup>								
Sensible cooling capacity	kW	3,9/3,9	5,4/5,4	7,4/7,4	8,2/8,2	9,6/9,6	15,2/15,2	16,9/16,9
Airflow	m <sup>3</sup> / h	1240	1460	2240	2240	2670	4580	4580
WMF MODEL								
Free-cooling <sup>2</sup>								
Sensible cooling capacity	kW	5,0	5,8	8,5	8,5	9,2	17,4	17,4
Airflow	m <sup>3</sup> /h	1230	1430	2100	2100	2280	4310	4310
COMPONENT FEATURES								
N° of evaporator fans		1	1	2	2	2	1	1
N° of condenser fans		1	1	1	1	2	1	1
Air filter efficiency		EU2	EU2	EU2	EU2	EU2	EU2	EU2
Nominal compressor power <sup>3</sup>	kW	1,2	1,8	2,2	2,5	3,0	4,4	5,2
Electric heating <sup>4</sup>	kW	2,6	4,0	4,0	4,0	6,0	6,0	6,0
Noise pressure level <sup>5</sup>	dB(A)	40,5	44,0	45,5	45,5	49,0	50,0	54,0
DIMENSIONS								
Height	mm	1790	1790	1940	1940	1940	2250	2250
Width	mm	650	650	930	930	930	1050	1050
Depth	mm	400	400	450	450	450	625	625

<sup>1</sup> Room: 26 °C/40% RH; external temperature: 35 °C; R407C.

<sup>2</sup> Room: 26 °C; external temperature: 14 °C; R407C.

<sup>3</sup> ARI standard.

<sup>4</sup> Optional.

<sup>5</sup> Measurements taken at 1 meter above the floor and at a distance of 5 meters from the unit in free field, mechanical cooling.



# Uniflair Monoblock Room Cooling

Monoblock units for internal installations

XMA – XMF – XDA – XDF

Cooling capacity: XM\* 5.7 ÷ 12.3 kW XD\* 6.3-15.0 kW



Refrigerant R407C

Available versions

- Upflow (XMA)
- Upflow with free-cooling (XMF)
- Downflow (XDA)
- Downflow with free-cooling (XDF)

## Standard features

- Monoblock conditioning units are installed inside the installation. These units are ideal when the required solution is easy to install with all the refrigerant components already installed.
- The unit has a self-supporting steel structure finished in epoxy powder and external panels in steel finished in epoxy powder; it's lined internally with abrasion-resistant, self-extinguishing material for noise and heat insulation.
- Units are supplied ready for installation, completely assembled and filled with refrigerant in the factory, where they are calibrated and the electric and cooling systems are tested.
- Easy installation and connection to the outside is provided using rigid or flexible pipes that are fitted to the window.
- The air filtration is provided with an EU2-efficiency air filter in self-extinguishing material and a rigid metal frame; the free-cooling version is available with an additional free-cooling metal pre-filter. EU4 filters are available as an option.
- Uniflair Room Cooling units comply with the following directives: Machinery Directive 2006/42/EC (MD), Ecodesign and Energy Labelling 2009/125/EC, Electromagnetic compatibility Directive 2014/30/EU (EMC), Pressure equipment Directive 2014/68/EU (PED), Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).
- The evaporating and condensing fans are made of galvanized steel. Double-inlet centrifugal fan(s) with forward-curved blower are keyed directly to motor shaft.
- The electrical panel is housed in a compartment isolated from the airflow. Separate power supply for fans and microprocessor is available as an option.
- Cooling circuit includes:
  - Filter and flow sight glass
  - Thermostatic expansion valve
  - High- and low-pressure pressostats
  - Scroll compressor with thermal protection
  - Ecological refrigerant R407C
  - Modulating condenser fan speed regulation.
- The microprocessor control manages the unit autonomously and the free-cooling function and can be integrated with the most common BMSs. The control includes:
  - Microprocessor control board and user terminal
  - Room temperature sensor
  - Mixed air temperature sensor (X\*F version only)
  - External temperature sensor (X\*F version only)
- Power supply:
  - 230 V/ 1/ 50 Hz or 400 V/3+N/50 Hz (Standard, according to the model)
  - Main power supply + UPS 230 V
  - Main power supply + UPS 48 VDC (evaporator DC fan/s, available only for XMF)
- Microprocessor control.
- Scroll compressor with low noise level.
- EU4 filter (optional).
- Modulating condenser fan/s speed control.
- Free-cooling metal pre-filter.

\* to be considered when applicable



TECHNICAL DATA							
XDA – XDF MODELS		0221	0281	0341	0481	0501	
Power supply	V/ph/Hz	230/1/50		400/3+N/50			
Mechanical cooling <sup>1</sup>							
Total/sensible cooling capacity		1,058	6,3/5,8	7,0/6,4	9,0/9,0	12,0/12,0	14,9/14,9
Airflow	m³/h	2230	2230	2900	3920	3920	
Free-cooling <sup>2</sup>							
Sensible cooling capacity	kW	9	9	11,7	15,8	15,8	
COMPONENT FEATURES							
N° of evaporator fans		1	1	1	1	1	
N° of condenser fans		1	1	2	2	2	
Air filter efficiency		EU2	EU2	EU2	EU2	EU2	
Electric heating <sup>3</sup>	kW	2	2	4	4	4	
DIMENSIONS							
Height	mm	1970	1970	2130	2130	2130	
Width	mm	850	850	1160	1160	1160	
Depth	mm	450	450	650	650	650	
XMF MODELS		0221	0281	0341	0401	0491	0555
Power supply	V/ph/Hz	230/1/50		400/3+N/50			
Mechanical cooling <sup>1</sup>							
Total/sensible cooling capacity	kW	5,7/5,7	7,1/7,1	8,4/8,4	10,8/10,8	12,3/12,3	16,5/16,5
Airflow	m³/h	1500	2000	2200	3700	3700	3710
Free-cooling <sup>2</sup>							
Sensible cooling capacity	kW	6,1	8,1	8,9	15	15	15
COMPONENT FEATURES							
N° of evaporator fans		1	1	1	2	2	2
N° of condenser fans		1	1	1	2	2	2
Air filter efficiency		EU2	EU2	EU2	EU2	EU2	EU2
Electric heating <sup>3</sup>	kW	2	2	4	4	4	4
DIMENSIONS							
Height	mm	1960	1960	1960	1960	1960	1960
Width	mm	1200	1200	1200	1200	1200	1200
Depth	mm	600	600	600	600	600	600

<sup>1</sup> Room: 26 °C/40% RH;  
external temperature:  
35 °C; R407C.

<sup>2</sup> Room: 26 °C;  
external temperature:  
14 °C; R407C.

<sup>3</sup> Optional.



# Uniflair Ceiling Mounted Split Room Cooling

Split units for internal installations

UCA – UCF

Cooling capacity: 5,9 ÷ 14,5 kW



Refrigerant R407C

Available versions

- Ceiling mounted (UCA)
- Ceiling mounted with direct free-cooling (UCF)

## Standard features

- Units are made of two separate sections: the evaporation section, which is installed inside the conditioned room (UCA – UCF), and the condensation section (MRA), which is installed on the outside.
- The evaporator is designed to be fixed to the ceiling or a wall and, with advanced microprocessor control, it is very precise in maintaining the set parameters inside the conditioned room.
- Servicing is very simple as different access is given to the electrical board, the technical compartment, and the servomotor for the free-cooling damper.
- There is a special panel for the fan compartment, which means calibration and servicing can be carried out safely without having to turn the unit off.
- UCF units have free-cooling that intakes air from the back of the unit through a connection that can be made using either rigged ducting or flexible piping.
- The user terminal (on request) is fitted to the wall for the ceiling units and onboard for the wall fitted units, and gives complete control for the unit regarding changing and displaying the operating parameters.
- Internal and external units are powered separately.
- Power supply:
  - 230 V/1/0 Hz or 400 V/3+N/50 Hz (Standard, according to the model)
- Main power supply + UPS
  - 48 VDC (evaporator DC-fan/s)
- Evaporator sections are equipped with:
  - Microprocessor control
  - EU4 filter (optional)
  - Scroll compressor
  - Modulating condenser fan/s speed control

TECHNICAL DATA						
MODELS		0341		0401	0481	
Power supply	V/ph/Hz	230/1/50				
Mechanical cooling <sup>1</sup>						
Sensible cooling cap.	kW	5,9/5,9	7,1/7,1	8,1/8,1	10,4/10,4	14,5/14,5
Airflow	m³/h	1850	1850	220	2600	3900
UCF-UWF		0341		0401	0481	
Free-cooling <sup>2</sup>						
Sensible cooling cap.	kW	6,7	6,7	6,9	9,5	14
Airflow	m³/h	1850	1850	220	2600	3900
DIMENSIONS						
Height	mm	330	330	330	410	410
Width	mm	950	950	950	1150	1150
Depth	mm	1050	1050	1050	1300	1300
EXTERNAL UNIT MRA						
Power supply	V/ph/Hz	230/1/50		400/3+N/50		
Nominal compressor power <sup>4</sup>	kW	1,7	2,1	2,6	3,1	4,6
Airflow	m³/h	1800	2990	2990	6290	6290
DIMENSIONS						
Height	mm	610	610	610	1230	1230
Width	mm	850	850	850	1200	1200
Depth	mm	345	345	345	80	80

<sup>1</sup> Room: 26 °C/45% RH; external temperature: 35 °C; R407C.

<sup>2</sup> Room: 26 °C; external temperature: 14 °C; R407C.

<sup>3</sup> ARI standard.





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998-2078/B39\_AU-GB



## 1- OFERTA TÉCNICA

UCF0401 + MRA0401A

a) Equipo de climatización de 9 KW para cuarto de comunicaciones

### UCA-UCF : CEILING MOUNTED INTERNAL UNITS

#### STANDARD FEATURES INTERNAL UNIT

The self-supporting steel panels are finished in epoxy powder RAL9003 and lined internally with abrasion-resistant self-extinguishing material for noise and heat insulation.

EU2-efficiency air filter in self-extinguishing material rigid metal frame.

Galvanised steel double-inlet centrifugal fan(s) with forward-curved blower keyed directly to motor shaft.

Differential pressostat to activate alarm in the event of low airflow.

Cooling coil with large frontal area consisting of copper tubes mechanically expanded into aluminium fins and complete with stainless steel tray.

Modulating free-cooling damper (UCF version only).

Advanced mP20W II microprocessor control for the autonomous management of the unit and the free-cooling function; the control includes:

- room temperature sensor
- mixed air temperature sensor
- external temperature sensor (UCF version only).
- LAN integrated

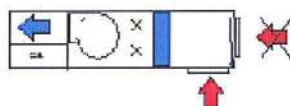
Internal unit can be supplied by UPS-230 V

The electrical panel, housed in a compartment isolated from the airflow, conforms to Norm 73/23/CEE and includes:

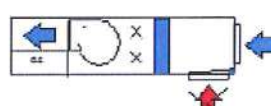
- auxiliary 24V transformer
- general switch
- magnetothermal protection
- remote control switch.

The cooling circuit includes:

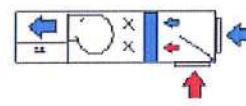
- filter and flow sight glass
- thermostatic expansion valve
- IN/OUT refrigerant interception valves.



Direct expansion operation



Free-cooling function



Modulating function

INTERNAL UNIT (UCA-UCF)	MODELS	0341			0401		0481
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Total cooling capacity @ 26°C / 40% r.h.(*)	kW	5.9	7.1	8.1	10.4	14.5	14.5
Sensible cooling capacity @ 26°C / 40% r.h.(*)	kW	5.9	7.1	8.1	10.4	14.5	14.5
Nominal airflow (evaporator section)	m <sup>3</sup> /h	1850	1850	2200	2600	3900	3900
Number of fans (evaporator section)		1	1	1	2	2	2
Dimensions							
Width	mm		950		1150	1150	1150
Depth	mm		1050		1300	1300	1300
Height	mm		330		410	410	410
EXTERNAL UNIT (*)		MRA	0221	0281	0341	0401	0611
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	400/3.N/50	400/3.N/50	400/3.N/50
Nominal compressor power (ARI standard)	kW	1.7	2.1	2.6	3.1	4.6	4.6
Nominal airflow	m <sup>3</sup> /h	1800	2990	2990	6290	6290	6290
Number of fans		1	1	1	2	2	2

## MRA : EXTERNAL CONDENSING UNIT

### STANDARD FEATURES

Structure and external panels are entirely made by painted galvanised steel to guarantee corrosion resistance.

Painting conforms to ASTM B 17 directives, which include testing for resistance to saline mist. These units can be installed in even the harshest of conditions.

All external fastenings are stainless steel and the closure of the external housing is compliant to IP44 protection standards.

MRA units are equipped with high-energy efficiency Scroll compressors characterized by low noise levels. Compressors are provided with built-in thermal protection.

Standard configuration: ecological refrigerant R407C

High and low pressure pressostats

Axial fan(s) are statically and dynamically balanced on two planes, with blower made in non-oxidising material. The external rotor motor can be fitted with speed regulation. Fans are mounted on a metal support grille, which conforms to safety legislation.

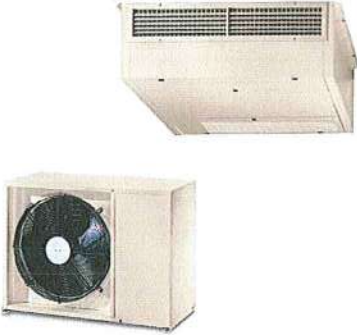
Modulation of condenser fan speed is stepless.

The electrical panel, housed in a compartment isolated from the airflow, conforms to Norm 73/23/CEE and includes:

- general switch
- magnetothermal protection
- remote control switch



MODELS		0221B	0281B	0341B	0401B	0611B
Power supply	V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Nominal compressor power (ARI standard)	kW	1.7	2.1	2.6	3.1	4.6
Nominal airflow	m <sup>3</sup> /h	1800	2990	2990	6290	6290
Number of fans		1	1	1	2	2
MODEL		0221A	0281A	0341A	0401A	0611A
Power supply	V/ph/Hz	400/3~/N/50	400/3~/N/50	400/3~/N/50	400/3~/N/50	400/3~/N/50
Nominal compressor power (ARI standard)	kW	1.7	2.1	2.6	3.1	4.6
Nominal airflow	m <sup>3</sup> /h	1800	2990	2990	6290	6290
Number of fans		1	1	1	2	2
Dimensions						
Width	mm	850	850	850	1200	1200
Depth	mm	360	360	360	480	480
Height	mm	610	610	610	1230	1230

DESCRIPCIÓN DE LA UNIDAD UCF00401 + MRA0401A (Accesorios incluidos en el equipo)	
Cooling Capacity	Sensible Cooling Capacity
10,4 kW	10,4 kW
	<p><b>Unidad:</b></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Versión Frío + Free-Cooling</li> <li><input checked="" type="checkbox"/> Alimentación 230V/60Hz</li> <li><input checked="" type="checkbox"/> Conexión LAN entre unidades interiores</li> <li><input checked="" type="checkbox"/> Sistema de funcionamiento R407c*</li> <li><input checked="" type="checkbox"/> Filtro en aspiración EU4</li> <li><input checked="" type="checkbox"/> Microprocesador de control</li> <li><input checked="" type="checkbox"/> Terminal de usuario MP-20II con kit para instalación en pared</li> <li><input checked="" type="checkbox"/> Tarjeta Reloj</li> <li><input checked="" type="checkbox"/> Sensor de Temperatura y Humedad</li> <li><input checked="" type="checkbox"/> Alarma de filtros sucios</li> <li><input checked="" type="checkbox"/> Tarjeta de red TCP/IP</li> </ul>

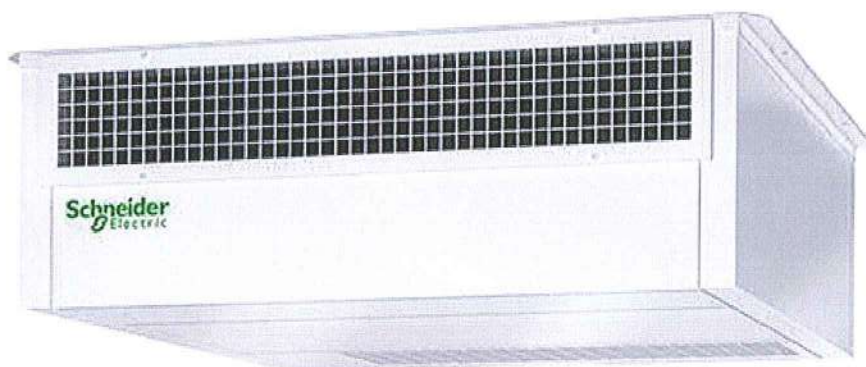
*Jim*

# Technical Specifications

**Uniflair™ SP**

**Uniflair UCA, UCF, UWA, UWF, MRA**

220 V/3 Ph/60 Hz, 220 V/1 Ph/60 Hz, 6–15 kW



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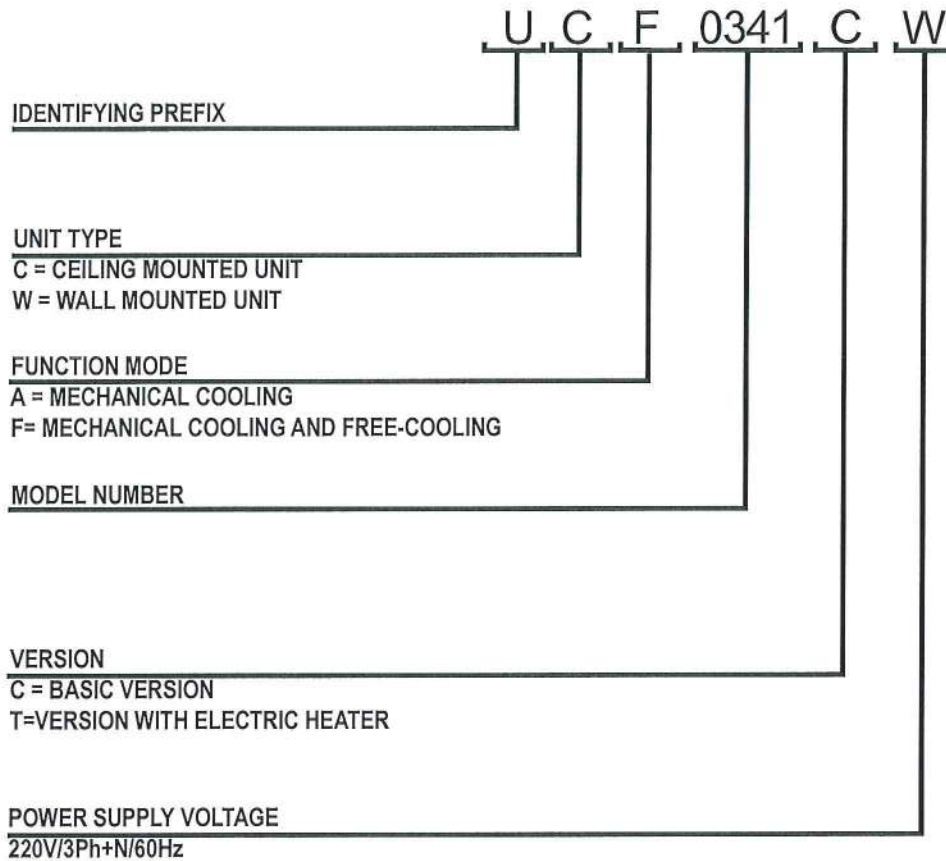


# Technical Data

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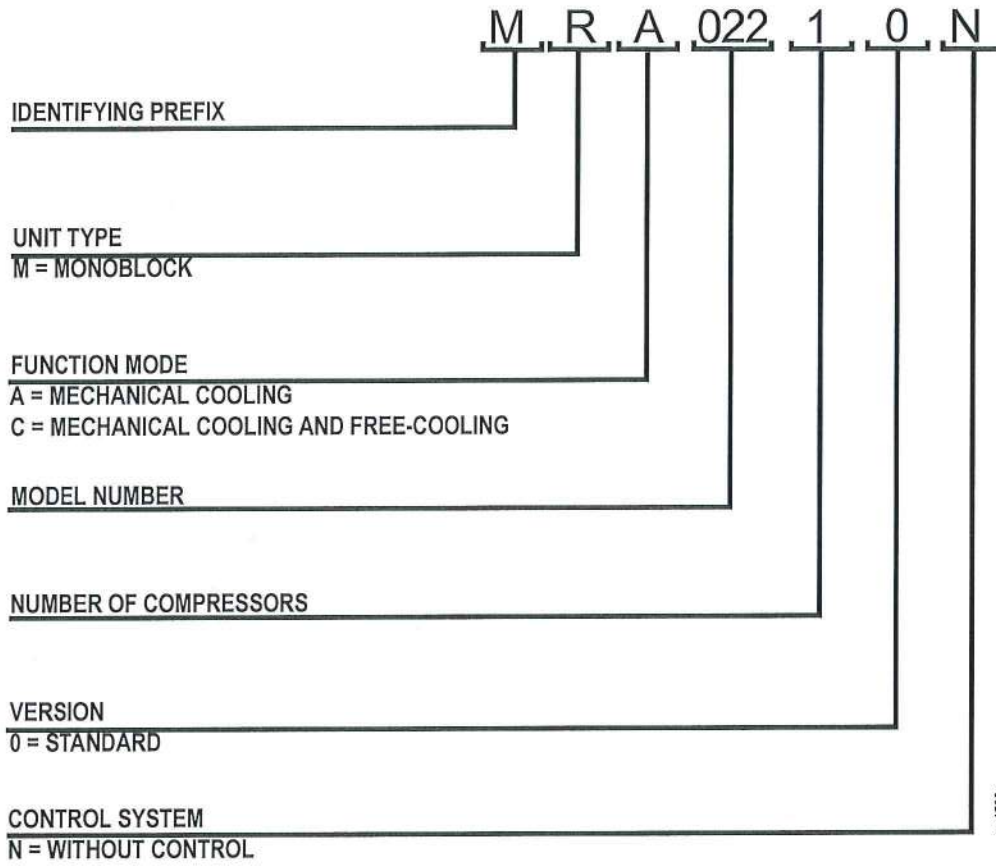
## Model Nomenclature

Internal units



na4524a

## External units



# Overview

## Introduction

Uniflair SP direct-expansion air conditioning units with air-cooled condensers are designed for telephone exchanges and other technological environments. Uniflair SP units have two separate sections: the evaporating section (UCA, UCF, UWA, UWF) within the room to be air conditioned and the condensing section (MRA), which is installed externally. The evaporating section is installed on the ceiling (UC\* models) or on wall (UW\* models) and enables management of room parameters via a sophisticated microprocessor controller. The UCF and UWF models are supplied complete with an intelligent free-cooling system which allows the free-cooling of the room even with high external temperatures.

## Standard features

Self-supporting frame	Self-supporting frame in galvanized steel with panels finished in epoxy powders (color RAL9001). The paint, which conforms to the ASTM B117 standards, provides resistance to saline humidity, allowing units to be installed in the most testing atmospheric conditions.
Filter	Filter is made in self-extinguishing material with EU2 efficiency (doc. Eurovent 4-5) equipped in a rigid frame.
Hermetic-scroll compressors	Equipped with hermetic-scroll compressors with high efficiency and internal thermal protection.  Each compressor is installed inside dedicated housing for noise impact reduction, safe operation, and protection.
Refrigerant circuits	Refrigerant circuit includes filter dryer, liquid sight glass, thermostatic expansion valve, and IN/OUT refrigerant shut-off valves.
Cooling coil	Cooling coil has a large frontal area, is made out of copper tubing mechanically expanded into aluminum fins, and has a stainless steel condensate drain tray with flexible tube
Electric reheat (TW models)	Electric reheat is built with aluminum finned elements and safety thermostat for power supply cut off and alarm activation in the event of overheating.
Free-cooling damper (UCF and UCW models)	Free-cooling damper for introduction of external air and free-cooling of the room.
Air distribution plenum	Air distribution plenum is complete with delivery grilles with double row of slats.
Airflow sensor	Airflow sensor activates an insufficient airflow alarm.
Evaporating section (internal unit)	
Condenser section (external unit)	

Variable-speed condenser fan	Condenser fan speed varies in relation to condensation pressure.
High- and low-pressure pressostat transducer	Transducer for reading of condensation pressure.
Fans	Axial fans, statically and dynamically balanced on two planes, with non-rusting blades, external rotor motor suitable for variable speed control, mounting on a metal support frame, and which conforms to safety norms.
Double-inlet centrifugal fans	Double-inlet centrifugal fans in galvanized steel with forward-curved blades keyed directly to the motor axis.
Electrical panel	Electrical panel conforms to norm 73/23/CEE and housed in a compartment isolated from the airflow, auxiliary 24-V transformer, mains switch, magneto-thermal protection, and contactors.
Microprocessor control system	mPW microprocessor control includes room, external, and mixed temperature sensors. See "Microprocessor Controller" on page 23 for more information.

## Optional accessories

- Display interface  
The display interface controls setting and display of unit function parameters.
- Blocked air filter alarm sensor  
This sensor monitors the status of the air filter
- Clock card  
The clock card manages time and date events.
- RS422/RS485 serial output  
Serial output transmits data to a centralized supervision system.
- Double electrical power supply  
Double power supply for normal function with mains power and with emergency UPS for the fan, control, and external air damper.
- Double electrical power supply with DC fan (48 Vdc)  
Double power supply is available on request as an alternative to the standard power supply 30 Vac/1 Ph/ 50 Hz
- Condensation drain pump  
Condensation drain pump is available upon request.
- EU4 Filter  
In accordance to doc Eurovent 4-5
- LAN card  
LAN card allows connection of units in a Local Area Network.
- Room temperature and humidity sensor  
This sensor monitors the room temperature and humidity.



## Compliance

The manufacturer declares that this product is compliant with the following European directives:

- 2006/42/EC
- 2006/95/EC
- 2004/108/EC

The technical solutions implemented during the design phase are described in the technical documentation. The appliance was built to operate safely in the areas of application for which it was intended, provided its installation, commissioning, and maintenance are performed in compliance with the instructions provided in this manual and on the labels affixed to the unit.

Should it be necessary to replace any welded joint on site, Schneider Electric must be notified immediately of which joint needs repairing and the name of the technician performing the repair work.

These units have been developed with consideration of the final installation in an industrial and professional environment; the unit is intended for installations in a non-public location with restricted access, and with installation, use, and maintenance performed by professionally trained personnel.

**Mains power:** The unit is provided with an internal, mains power disconnect to remove the mains supply during maintenance operations performed by qualified personnel.

It is necessary to install a properly rated mains power disconnect on the fixed wiring located near the unit to provide the safety shutdown and disconnection of the power supply. Consult local and national electrical codes.

The mains power disconnect must be one of the following types:

- Switch-disconnector, with or without fuses that are in accordance with IEC 60947-3, utilization category AC-23B or DC-23B
- Control and protective switching device suitable for isolation that are in accordance with IEC 60947-6-2
- A circuit-breaker suitable for isolation that is in accordance with IEC 60947-2

The installed mains power disconnect must do the following:

- Isolate the electrical equipment from the supply and have one OFF and one ON position marked with "O" and "I"
- Be provided with a means for locking the device in the OFF (isolated) position (e.g., with padlocks).
- Have a breaking capacity sufficient to interrupt the rated current (see rated parameter on the unit name plate or Technical Specifications)
- Be easily accessible and located between 0.6 m (2 ft) and 1.9 m (6 ft) above where the service personnel stands to service the unit

After unit installation, it is necessary to evaluate the fault-loop impedance and automatic protection coordination.

# Free-Cooling Cycle

## UCF and UWF models

The free-cooling cycle consists of the introduction of external air into the room when when the external air is sufficiently cool enough to absorb the thermal load of the room. The unit is equipped with a butterfly damper and two air intakes:

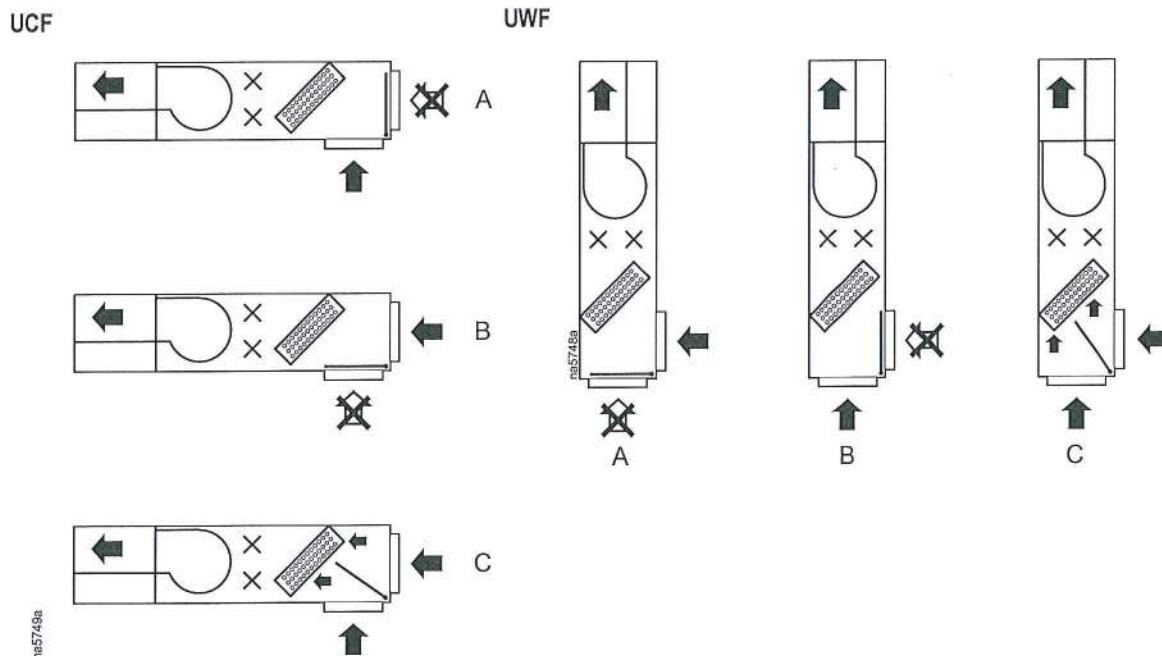
- Recycled air intake
- External air intake

**A. Normal functioning:** During normal operation, the damper takes in air from the room only, closing the external air intake. The fan sends air over the cooling coil and into the room. Cooling is via the cooling cycle (starting the compressor) and controlled by the thermostat.

**B. Free-cooling:** As soon as the external air is of a low enough temperature to maintain room temperature at the desired level, the damper changes position, delivering into the room external air instead of recycled. The discharging of air (in the same quantities as that taken in) can be performed by the condenser fan or directly via the condensation air output (free discharge of condensation circuit air). During free-cooling operation, the compressor is off.

**C. Modulated function:** When the external temperature falls further, the introduction of 100% external air would cause return air temperatures that are too low. The control system therefore changes the position of the damper to mix external and recycled air to maintain the temperature in the room at the required level. The temperature of the return air is maintained above a pre-set minimum.

**Minumum quantity of fresh air:** It is possible to pre-set a minimum opening position on the damper to allow a proportion of fresh air to be taken in during any operating mode.



# Performance Specifications

## Technical Data

### Internal unit

Model	UCA/F					UWA/F				
	0341		0401		0481	0341		0401		0481
Power Supply	220 V/1 Ph/60 Hz					220 V/1 Ph/60 Hz				
Mechanical Cooling*										
Cooling Capacity – kW										
Total	5.9	7.1	8.1	10.4	14.5	5.9	7.1	8.1	10.4	14.5
Sensible	5.9	7.1	8.1	10.4	14.5	5.9	7.1	8.1	10.4	14.5
Nominal Airflow – m <sup>3</sup> /h (cfm)	1850 (1089)	1850 (1089)	2200 (1295)	2600 (1530)	3900 (2296)	1850 (1089)	1850 (1089)	2200 (1295)	2600 (1530)	3900 (2296)
Free-Cooling**										
Cooling Capacity – kW										
Total	5.9	7.1	8.1	10.4	14.5	5.9	7.1	8.1	10.4	14.5
Sensible	5.9	7.1	8.1	10.4	14.5	5.9	7.1	8.1	10.4	14.5
Nominal Airflow – m <sup>3</sup> /h (cfm)	1850 (1089)	1850 (1089)	2200 (1295)	2600 (1530)	3900 (2296)	1850 (1089)	1850 (1089)	2200 (1295)	2600 (1530)	3900 (2296)

\* Room: 26°C / 45% r.h.; external ambient temperature: 35°C; R407C

\*\* Room: 26°C; external ambient temperature: 14°C; R407C

### External unit

Model	MRA										
	0221	0281	0341	0401	0611	0221	0281	0341	0401	0611	
Power Supply	220 V/1 Ph/60 Hz				220 V/3 + N Ph/60 Hz		220 V/1 Ph/50 Hz			220 V/3 + N Ph/60 Hz	
Compressor Nominal Power* – kW	1.7	2.1	2.6	3.1	4.6	1.7	2.1	2.6	3.1	4.6	
Airflow – m <sup>3</sup> /h (cfm)	1800 (1059)	2990 (1760)	2990 (1760)	6290 (3702)	6290 (3702)	1800 (1059)	2990 (1760)	2990 (1760)	6290 (3702)	6290 (3702)	
Number of Fans	1				2		1			2/6	
Number of Poles	6										
Sound Pressure Level** – db(a)	43.0	46.0	46.0	43.0	43.5	43.0	46.0	46.0	43.0	43.5	

\* ARI standard

\*\* Measurements taken at a distance of 5 meters from the unit in free field, mechanical cooling.



# Cooling Capacity

## Models with R 22 refrigerant

30°C (°F) T<sub>ext</sub>, 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.44	0.44	0.44	0.34	0.34	0.34
<b>Air Volume</b>									
l/s	514	475	430	610	575	536	514	475	430
m <sup>3</sup> /h	1850	1710	1550	2200	2070	1930	1850	1710	1550
cfm	1089	1007	912	1295	1218	1136	1089	1007	912
<b>24°C Return Air Temperature 40% RH</b>									
Total – kW	6.1	6.0	5.8	8.3	8.2	8.1	7.3	7.1	7.0
Sensible – kW	6.1	6.0	5.8	8.3	8.2	8.1	7.3	7.1	6.8
<b>24°C Return Air Temperature 50% RH</b>									
Total – kW	6.1	6.1	6.0	8.7	8.6	8.5	7.6	7.5	7.4
Sensible – kW	6.0	5.7	5.4	7.5	7.3	7.3	6.5	6.3	6.0
<b>26°C Return Air Temperature 50% RH</b>									
Total – kW	6.4	6.3	6.2	8.9	8.8	8.7	7.8	7.7	7.6
Sensible – kW	6.4	6.3	6.0	8.2	8.0	7.7	7.2	6.8	6.5
<b>28°C Return Air Temperature 50% RH</b>									
Total – kW	6.6	6.5	6.4	9.0	9.0	8.9	7.9	7.8	7.7
Sensible – kW	6.6	6.5	6.4	9.0	8.7	8.4	7.9	7.5	7.1

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
<b>Air Volume</b>				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
cfm	1530	1295	2296	1913
<b>24°C Return Air Temperature 40% RH</b>				
Total – kW	10.6	10.2	14.8	14.1
Sensible – kW	10.6	9.9	14.8	14.1
<b>24°C Return Air Temperature 50% RH</b>				
Total – kW	11.6	10.8	15.2	14.8
Sensible – kW	9.6	8.8	13.9	12.6
<b>26°C Return Air Temperature 50% RH</b>				
Total – kW	11.3	11.0	15.5	15.2
Sensible – kW	10.5	9.6	15.5	13.8
<b>28°C Return Air Temperature 50% RH</b>				
Total – kW	11.5	11.3	16.1	15.5
Sensible – kW	11.5	10.4	16.1	15.0

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).



35°C (°F) T<sub>ext</sub>, 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.44	0.44	0.44	0.34	0.34	0.34
<b>Air Volume</b>									
l/s	514	475	430	610	575	536	514	475	430
m <sup>3</sup> /h	1850	1710	1550	2200	2070	1930	1850	1710	1550
cfm	1089	1007	912	1295	1218	1136	1089	1007	912
<b>24°C Return Air Temperature 40% RH</b>									
Total – kW	5.9	5.8	5.7	8.1	7.9	7.8	7.1	6.9	6.7
Sensible – kW	5.9	5.8	5.7	8.1	7.9	7.8	7.1	6.9	6.7
<b>24°C Return Air Temperature 50% RH</b>									
Total – kW	5.9	5.8	5.8	8.3	8.2	8.2	7.3	7.2	7.1
Sensible – kW	5.9	5.6	5.3	7.4	7.2	6.9	6.4	6.2	5.9
<b>26°C Return Air Temperature 50% RH</b>									
Total – kW	6.2	6.1	5.9	8.5	8.4	8.4	7.5	7.4	7.3
Sensible – kW	6.2	6.1	5.9	8.1	7.8	7.6	7.0	6.7	6.4
<b>28°C Return Air Temperature 50% RH</b>									
Total – kW	6.4	6.3	6.2	8.7	8.6	8.5	7.7	7.5	7.4
Sensible – kW	6.4	6.3	6.2	8.7	8.6	8.3	7.7	7.5	7.0

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
<b>Air Volume</b>				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
cfm	1530	1295	2296	1913
<b>24°C Return Air Temperature 40% RH</b>				
Total – kW	10.3	9.9	14.3	13.6
Sensible – kW	10.3	9.9	14.3	13.6
<b>24°C Return Air Temperature 50% RH</b>				
Total – kW	10.6	10.4	14.5	14.2
Sensible – kW	9.4	8.6	13.7	12.4
<b>26°C Return Air Temperature 50% RH</b>				
Total – kW	10.9	10.7	14.9	14.5
Sensible – kW	10.3	9.4	14.9	13.5
<b>28°C Return Air Temperature 50% RH</b>				
Total – kW	11.1	10.9	15.6	14.8
Sensible – kW	11.1	10.3	15.6	14.8

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

NOTE: \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).



40°C (Text) 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
	0	50	100	0	50	100	0	50	100
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.44	0.44	0.44	0.34	0.34	0.34
Air Volume									
l/s	514	475	430	610	575	536	514	475	430
m <sup>3</sup> /h	1850	1710	1550	2200	2070	1930	1850	1710	1550
cfm	1089	1007	912	1295	1218	1136	1089	1007	912
24°C Return Air Temperature 40% RH									
Total – kW	5.7	5.6	5.4	7.7	7.6	7.5	6.8	6.7	6.5
Sensible – kW	5.7	5.6	5.4	7.7	7.6	7.5	6.8	6.7	6.5
24°C Return Air Temperature 50% RH									
Total – kW	5.7	5.6	5.5	7.9	7.8	7.8	7.0	6.9	6.8
Sensible – kW	5.7	5.6	5.2	7.2	7.0	6.8	6.3	6.0	5.7
26°C Return Air Temperature 50% RH									
Total – kW	5.9	5.8	5.7	8.1	8.0	8.0	7.1	7.1	7.0
Sensible – kW	5.9	5.8	5.7	8.1	7.7	7.4	6.9	6.6	6.3
28°C Return Air Temperature 50% RH									
Total – kW	6.2	6.1	5.9	8.4	8.3	8.1	7.4	7.2	7.1
Sensible – kW	6.2	6.1	5.9	8.4	8.3	8.1	7.4	7.2	6.9

ESP: Delivery pressure  
Pvent: Fan absorbed power  
T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
	0	65	0	65
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
Air Volume				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
cfm	1530	1295	2296	1913
24°C Return Air Temperature 40% RH				
Total – kW	9.9	9.6	13.7	13.1
Sensible – kW	9.9	9.6	13.7	13.1
24°C Return Air Temperature 50% RH				
Total – kW	10.2	10.1	13.8	13.5
Sensible – kW	9.2	8.5	13.4	12.1
26°C Return Air Temperature 50% RH				
Total – kW	10.4	10.3	14.3	13.8
Sensible – kW	10.1	9.3	14.3	13.2
28°C Return Air Temperature 50% RH				
Total – kW	10.8	10.5	14.9	14.2
Sensible – kW	10.8	10.1	14.9	14.2

ESP: Delivery pressure  
Pvent: Fan absorbed power  
T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).

45°C (Text) 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.44	0.44	0.44	0.34	0.34	0.34
<b>Air Volume</b>									
l/s	514	475	430	610	575	536	514	475	430
m <sup>3</sup> /h	1850	1710	1550	2200	2070	1930	1850	1710	1550
cfm	1089	1007	912	1295	1218	1136	1089	1007	912
<b>24°C Return Air Temperature 40% RH</b>									
Total – kW	5.4	5.3	5.2	7.4	7.3	7.2	6.5	6.4	6.2
Sensible – kW	5.4	5.3	5.2	7.4	7.3	7.2	6.5	6.4	6.2
<b>24°C Return Air Temperature 50% RH</b>									
Total – kW	5.4	5.3	5.2	7.5	7.4	7.4	6.6	6.5	6.5
Sensible – kW	5.4	5.3	5.2	7.1	6.8	6.6	6.2	5.9	5.6
<b>26°C Return Air Temperature 50% RH</b>									
Total – kW	5.7	5.6	5.5	7.7	7.6	7.5	6.8	6.7	6.6
Sensible – kW	5.7	5.6	5.5	7.7	7.6	7.3	6.8	6.5	6.1
<b>28°C Return Air Temperature 50% RH</b>									
Total – kW	5.9	5.8	5.7	8.0	7.9	7.8	7.1	6.9	6.8
Sensible – kW	5.9	5.8	5.7	8.0	7.9	7.8	7.1	6.9	6.8

ESP: Delivery pressure  
Pvent: Fan absorbed power  
T ext: Outdoor temperature  
Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
<b>Air Volume</b>				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
cfm	1530	1295	2296	1913
<b>24°C Return Air Temperature 40% RH</b>				
Total – kW	9.5	9.3	13.0	12.5
Sensible – kW	9.5	9.3	13.0	12.5
<b>24°C Return Air Temperature 50% RH</b>				
Total – kW	9.7	9.7	13.0	12.7
Sensible – kW	9.0	8.3	13.0	11.8
<b>26°C Return Air Temperature 50% RH</b>				
Total – kW	9.9	9.9	13.6	13.0
Sensible – kW	9.9	9.1	13.6	13.0
<b>28°C Return Air Temperature 50% RH</b>				
Total – kW	10.4	10.1	14.3	13.6
Sensible – kW	10.4	10.1	14.3	13.6

ESP: Delivery pressure  
Pvent: Fan absorbed power  
T ext: Outdoor temperature  
Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).



## Models with R407C refrigerant

30°C (Text) 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.44	0.44
Air Volume									
l/s	514	475	430	610	470	430	610	575	536
m <sup>3</sup> /h	1850	1710	1550	2200	1710	1550	2200	2070	1930
cfm	1089	1007	912	1295	1218	1136	1089	1007	912
24°C Return Air Temperature 40% RH									
Total – kW	5.9	5.8	5.6	7.0	6.9	6.7	8.1	7.9	7.8
Sensible – kW	5.9	5.8	5.6	7.0	6.9	6.7	8.1	7.9	7.8
24°C Return Air Temperature 50% RH									
Total – kW	5.9	5.8	5.7	7.3	7.2	7.1	8.3	8.3	8.2
Sensible – kW	5.9	5.6	5.3	6.4	6.1	5.8	7.4	7.2	6.9
26°C Return Air Temperature 50% RH									
Total – kW	6.1	6.0	5.9	7.4	7.4	7.3	8.5	8.4	8.4
Sensible – kW	6.1	6.0	5.9	7.0	6.7	6.4	8.1	7.8	7.5
28°C Return Air Temperature 50% RH									
Total – kW	6.4	6.3	6.1	7.6	7.5	7.4	8.7	8.6	8.5
Sensible – kW	6.4	6.3	6.1	7.6	7.5	6.0	8.7	8.6	8.3

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
Air Volume				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
cfm	1530	1295	2296	1913
24°C Return Air Temperature 40% RH				
Total – kW	10.2	9.8	14.4	13.7
Sensible – kW	10.2	9.8	14.4	13.7
24°C Return Air Temperature 50% RH				
Total – kW	10.6	10.3	14.6	14.3
Sensible – kW	9.4	8.6	13.7	12.4
26°C Return Air Temperature 50% RH				
Total – kW	10.8	10.6	15.0	14.6
Sensible – kW	9.3	9.4	15.0	13.6
28°C Return Air Temperature 50% RH				
Total – kW	11.1	10.8	15.6	14.9
Sensible – kW	11.1	10.2	15.6	14.9

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).



35°C (Text) 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.44	0.44
<b>Air Volume</b>									
l/s	514	475	430	610	470	430	610	575	536
m <sup>3</sup> /h	1850	1710	1550	2200	1710	1550	2200	2070	1930
cfm	1089	1007	912	1295	1007	912	1295	1218	1136
<b>24°C Return Air Temperature 40% RH</b>									
Total – kW	6.4	6.3	6.1	7.6	7.5	7.4	8.7	8.6	8.5
Sensible – kW	6.4	6.3	6.1	7.6	7.5	6.0	8.7	8.6	8.3
<b>24°C Return Air Temperature 50% RH</b>									
Total – kW	5.7	5.6	5.5	7.0	6.9	6.8	8.0	7.9	7.8
Sensible – kW	5.7	5.6	5.2	6.3	6.0	5.8	7.3	7.0	6.8
<b>26°C Return Air Temperature 50% RH</b>									
Total – kW	5.9	5.8	5.7	7.2	7.1	7.0	8.2	8.1	8.0
Sensible – kW	5.9	5.8	5.7	6.9	6.6	6.3	8.0	7.7	7.4
<b>28°C Return Air Temperature 50% RH</b>									
Total – kW	6.2	6.1	5.9	7.4	7.2	7.1	8.4	8.3	8.2
Sensible – kW	6.2	6.1	5.9	7.4	7.2	6.9	8.4	8.3	8.2

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
<b>Air Volume</b>				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
CFM	1530	1295	2296	1913
<b>24°C Return Air Temperature 40% RH</b>				
Total – kW	9.9	9.5	13.8	13.2
Sensible – kW	9.9	9.5	13.8	13.2
<b>24°C Return Air Temperature 50% RH</b>				
Total – kW	10.1	10.0	13.9	13.6
Sensible – kW	9.2	8.5	13.5	12.2
<b>26°C Return Air Temperature 50% RH</b>				
Total – kW	10.4	10.2	14.4	14.0
Sensible – kW	10.1	9.2	14.4	13.3
<b>28°C Return Air Temperature 50% RH</b>				
Total – kW	10.8	10.4	15.1	14.4
Sensible – kW	10.8	10.1	15.1	14.4

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

NOTE: \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).



40°C (Text) 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.44	0.44
Air Volume									
l/s	514	475	430	610	470	430	610	575	536
m <sup>3</sup> /h	1850	1710	1550	2200	1710	1550	2200	2070	1930
CFM	1089	1007	912	1295	1218	1136	1089	1007	912
24°C Return Air Temperature 40% RH									
Total – kW	5.5	5.4	5.3	6.6	6.4	6.3	7.5	7.4	7.3
Sensible – kW	5.5	5.4	5.3	6.6	6.4	6.3	7.5	7.4	7.3
24°C Return Air Temperature 50% RH									
Total – kW	5.5	5.4	5.3	6.7	6.6	6.5	7.6	7.6	7.5
Sensible – kW	5.5	5.4	5.2	6.2	5.9	5.6	7.1	6.9	6.6
26°C Return Air Temperature 50% RH									
Total – kW	5.7	5.6	5.5	6.8	6.8	6.7	7.8	7.7	7.7
Sensible – kW	5.7	5.6	5.5	6.8	6.5	6.2	7.8	7.7	7.3
28°C Return Air Temperature 50% RH									
Total – kW	6.0	5.9	5.9	7.1	7.0	6.8	8.1	8.0	7.9
Sensible – kW	6.0	5.9	5.8	7.1	7.0	6.8	8.1	8.0	7.9

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
Air Volume				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
CFM	1530	1295	2296	1913
24°C Return Air Temperature 40% RH				
Total – kW	9.6	9.2	13.3	12.7
Sensible – kW	9.6	9.2	13.3	12.7
24°C Return Air Temperature 50% RH				
Total – kW	9.7	9.6	13.3	13.0
Sensible – kW	9.1	8.3	13.3	11.9
26°C Return Air Temperature 50% RH				
Total – kW	10.0	9.9	13.9	13.2
Sensible – kW	10.0	9.1	13.9	13.2
28°C Return Air Temperature 50% RH				
Total – kW	10.4	10.0	14.5	13.8
Sensible – kW	10.4	10.0	14.5	13.8

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

NOTE: \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).

45°C (Text) 0% Glycol

Model	UC*0221, MRA0221			UC*0281, MRA0281			UC*0341, MRA0341		
ESP – Pa	0	50	100	0	50	100	0	50	100
Pvent – kW	0.34	0.34	0.34	0.34	0.34	0.34	0.44	0.44	0.44
<b>Air Volume</b>									
l/s	514	475	430	610	470	430	610	575	536
m <sup>3</sup> /h	1850	1710	1550	2200	1710	1550	2200	2070	1930
CFM	1089	1007	912	1089	1007	912	1295	1218	1136
<b>24°C Return Air Temperature 40% RH</b>									
Total – kW	5.2	5.2	5.0	6.3	6.2	6.0	7.1	7.0	6.9
Sensible – kW	5.2	5.2	5.0	6.3	6.2	6.0	7.1	7.0	6.9
<b>24°C Return Air Temperature 50% RH</b>									
Total – kW	5.2	5.2	5.0	6.3	6.3	6.2	7.2	7.2	7.1
Sensible – kW	5.2	5.2	5.0	6.1	5.8	5.5	7.0	6.7	6.5
<b>26°C Return Air Temperature 50% RH</b>									
Total – kW	5.5	5.4	5.3	6.5	6.4	6.4	7.4	7.3	7.2
Sensible – kW	5.5	5.4	5.3	6.5	6.4	6.0	7.4	7.3	7.2
<b>28°C Return Air Temperature 50% RH</b>									
Total – kW	5.7	5.6	5.5	6.8	6.7	6.5	7.8	7.7	7.5
Sensible – kW	5.7	5.6	5.5	6.8	6.7	6.5	7.8	7.7	7.5

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

Model	UC*0401, MRA0401		UC*0481, MRA0611	
ESP – Pa	0	65	0	65
Pvent – kW	0.65	0.65	0.97	0.97
<b>Air Volume</b>				
l/s	720	610	1080	900
m <sup>3</sup> /h	2600	2200	3900	3250
CFM	1530	1295	2296	1913
<b>24°C Return Air Temperature 40% RH</b>				
Total – kW	9.2	8.9	12.6	12.1
Sensible – kW	9.2	8.9	12.6	12.1
<b>24°C Return Air Temperature 50% RH</b>				
Total – kW	9.3	9.3	12.6	12.3
Sensible – kW	8.9	8.2	12.6	11.6
<b>26°C Return Air Temperature 50% RH</b>				
Total – kW	9.6	9.5	13.2	12.7
Sensible – kW	9.6	9.0	13.2	12.7
<b>28°C Return Air Temperature 50% RH</b>				
Total – kW	10.0	9.7	13.8	13.2
Sensible – kW	10.0	9.7	13.8	13.2

ESP: Delivery pressure

Pvent: Fan absorbed power

T<sub>ext</sub>: Outdoor temperature

Note: The cooling capacities of the units are gross of fan motor gains; to obtain net values deduct Pvent from the Total and Sensible capacities indicated.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).



# Air Volume

## Recirculation mode

Model	UC*0221, MRA0221	UC*0281, MRA0281	UC*0341, MRA0341
<b>Nominal Air Flow @ 0 Pa</b>			
l/s	514	610	610
m <sup>3</sup> /h	1850	2200	2200
cfm	1089	1295	1295
<b>Air Flow at 100 Pa</b>			
l/s	430	536	536
m <sup>3</sup> /h	1550	1930	1930
cfm	912	1136	1136
<b>Air Flow at 150 Pa</b>			
l/s	377	488	488
m <sup>3</sup> /h	1360	1760	1760
cfm	801	1036	1036

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).

**NOTE:** Without delivery and intake grilles, clean filters, no electric heaters or reheat.

Model	UC*0401, MRA0401	UC*0481, MRA0611
<b>Nominal Air Flow @ 0 Pa</b>		
l/s	720	1080
m <sup>3</sup> /h	2600	3900
cfm	1530	2296
<b>Air Flow at 65 Pa<sup>†</sup></b>		
l/s	610	900
m <sup>3</sup> /h	2200	3250
cfm	1295	1913

<sup>†</sup>High pressure fans are available by request for units with ESP higher than 65 Pa.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).

**NOTE:** Without delivery and intake grilles, clean filters, no electric heaters or reheat.

# Electrical Specifications

## Internal unit

Model	UC**0341, UW*0341			UC*0401, UW*0401		UC*0481, UW*0481	
<b>Centrifugal Fans</b>							
Volt <sup>†</sup>	220 V/1 Ph/60 Hz						
Number	1	1	1	2		3 kW	
0.340		0.440	0.440	0.300		0.315	
OA	1.60	2.00	2.00	1.60		1.65	
FLA	3.0	3.0	3.0	1.7		1.7	
LRA	4.0	4.0	4.0	—			
<b>Electrical Heaters (Optional)</b>							
Volt <sup>†</sup>	220 V/1 Ph/60 Hz						
Number	1			1		1	
kW	3			3		3	
OA	13.0			13.0		13.0	

kW: Absorbed power in nominal conditions

OA (A): Operating current\*\*

FLA (A): Full load current\*\*

LRA (A): Locked rotor current\*\*

<sup>†</sup> ARI conditions

Note: Measurements refer to each element.

**NOTE:** \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).

## External unit

Model	MRA0221	MRA0281	MRA0341	MRA0401	MRA0611
<b>Compressor</b>					
Volt <sup>†</sup>	220 V/1 Ph/60 Hz			220 V/3 Ph/60 Hz	
Number	1				
kW	1.7	2.1	2.6	3.2	4.7
OA	7.9	10.2	11.9	5.6	8.5
FLA	9.4	12.2	14.1	7.0	12.4
LRA	45.0	57.0	73.0	46.0	65.5
<b>Axial Fans</b>					
Volt <sup>†</sup>	220 V/1 Ph/60 Hz				
Number	1	1	1	2	
2	kW 0.14	0.14	0.14	0.36	0.36
OA	0.6	0.6	0.6	1.74	1.74

kW: Absorbed power in nominal conditions

OA (A): Operating current\*\*

FLA (A): Full load current\*\*

LRA (A): Locked rotor current\*\*

<sup>†</sup> ARI conditions

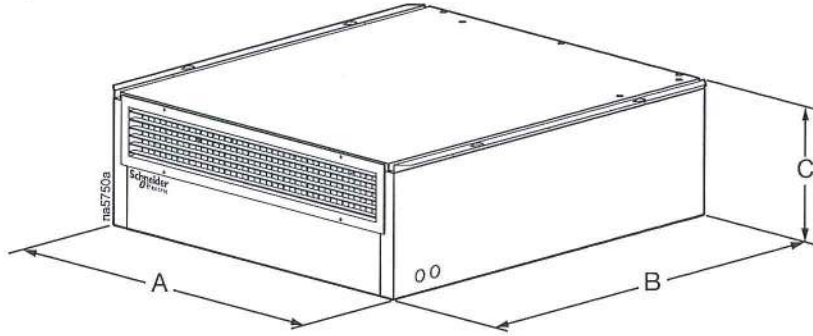
Note: Measurements refer to each element.



# Dimensional Data

## Overall Unit

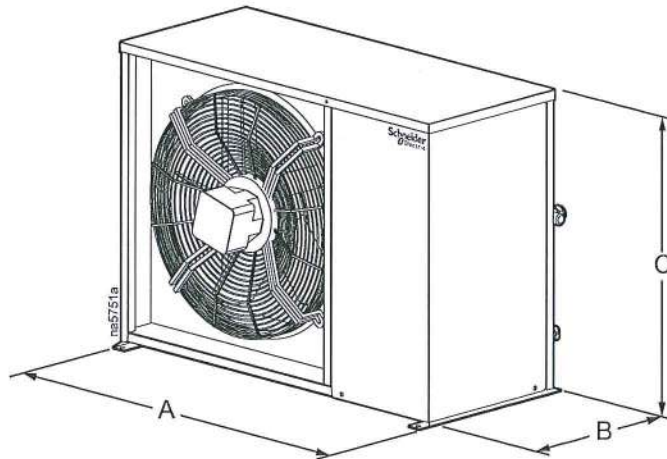
UC\*0341, UC\*0401, UC\*0481, UW\*0341, UW\*0401, UW\*0481



Model	Dimensions – mm (in.)			Net Weight kg (lb)
	A	B	C	
UC*0341	950 (37.4)	1050 (41.3)	330 (13.0)	75 (165.4)
UW*0341	950 (37.4)	1200 (47.2)	330 (13.0)	80 (176.4)
UC*0401, UW*0401	1150 (45.3)	1300 (51.2)	410 (16.1)	146 (321.9)
UC*0481, UW*0481	1150 (45.3)	1300 (51.2)	410 (16.1)	146 (321.9)

NOTE: \* may be A (mechanical cooling) or F (mechanical cooling and free-cooling).

MRA0221, MRA0281, MRA0341, MRA0401, MRA0611



Model	Dimensions (mm)			Net Weight kg (lb)
	A	B	C	
MRA0221	360 (793.7)	850 (1873.9)	610 (1344.8)	105 (231.5)
MRA0281	360 (793.7)	850 (1873.9)	610 (1344.8)	105 (231.5)
MRA0341	360 (793.7)	850 (1873.9)	610 (1344.8)	105 (231.5)
MRA0401	480 (1958.2)	1200 (2645.6)	1230 (2711.7)	140 (308.7)
MRA0611	480 (1958.2)	1200 (2645.6)	1230 (2711.7)	140 (308.7)



# Main Components

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## Microprocessor Controller

### mP20W

The mP20W microprocessor gives autonomous unit management. The control includes:

- microprocessor control circuit
- user interface (optional)
- room temperature sensor
- external temperature sensor (XMF only)
- delivery air temperature sensor

The control system comprises a circuit board housed in the electrical panel and a user interface terminal. All the control algorithms and memorization of function parameters are contained in the microprocessor. Once it has been programmed the circuit board can function without the user terminal, allowing the unit to be controlled by a remote terminal up to 200 m (656.2 ft) from the air conditioner. One terminal can be shared by several units.

The control circuit provides the following functions:

- Control of room temperature
- Reading of relative humidity via an optional humidity sensor in the room
- Management of optional electrical heater
- Management of alarms
- Management of stand-by if two units are connected
- Alarm system with visual and acoustic indicators
- Signal contacts for each type of alarm
- Automatic re-start with restoration of minimum tension
- Programmable delay of re-start for multiple installations
- Control of compressor activation (limiting start-up frequency)
- Programmable control (remote control or supervision)
- Control of minimum temperature limit of discharge air (WMF)
- Password for two programming levels (for setting and for hardware/software configuration)
- RS485 serial output (optional)
- Time/Date circuit (optional)
- Main component run hour counter
- Maintenance programming with explicit indications of operations to be carried out
- Memorization of the last 30 alarms (with date and time if optional time/date board is installed)
- Verbal visualization of function type and of components in operation (with optional display interface)
- Weekly time bands for switching unit on/off (with optional clock board) including weekdays, weekends and holidays
- Sleep mode: the unit remains in stand-by but maintains room temperature between two pre-set limits
- Double set points (hot and cold)
- Override function for manual control of main components without the exclusion of the remote control (if equipped)
- Optimized control algorithm which constantly monitors the temperature of the room, of the air outside and of the discharge air in order to maximize the effectiveness and efficiency of both the direct



expansion and the intelligent free cooling functions. This means that free cooling can start earlier and continue for longer and at higher external temperatures since they take into account the effective load conditions inside the air conditioned room optimized two unit free-cooling management with units in stand-by, giving maximum energy saving

- Immunity to electromagnetic and electrostatic disturbance according to the CEE 89/336 directive
- The microprocessor board and display interface operate optimally between temperatures of –10 and 65°C (14 and 149°F)

**Remote signaling of alarms:** The following potential-free clean contacts are available in the microprocessor control circuit for the remote signaling of alarms:

- Cumulative addressable: The alarms to be excluded can be selected from the keypad
- Compressor
- Fan
- Dirty filters
- Electrical resistance

## Special functions

**Intelligent free-cooling:** This is an exclusive system which gives dynamic control of the energy-saving phase, maximizing the performance of this function at all times. The result is the ability to provide much greater energy saving (and therefore economy of operation) than the common fixed-point free-cooling systems. The microprocessor compares the thermal load present at that moment in the air conditioned environment with the outside temperature, calculating the optimum temperature at which to start free-cooling. In this way the temperature at which free-cooling starts is not fixed but changes to adapt to the load conditions present at that moment in the air conditioned environment. If required by the client, the free cooling cycle can be activated at a fixed point, i.e., when the external temperature falls below a certain pre-set temperature. Under this system, the load in the air conditioned environment is not taken into consideration.

**Remote control:** If it is necessary to link the units to an external control panel, function can be controlled via potential-free contacts. The following control modes are available:

- remote ON/OFF command: the microprocessor controls all unit functions
- ON/OFF command for:
  - Compressor
  - Electrical Resistance
  - Evaporator fan

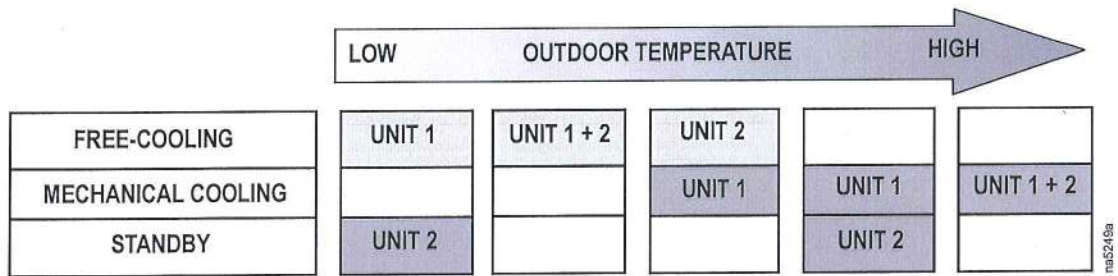
**Setback function (sleep mode):** When the units are off, Sleep Mode function ensures that room temperature stays within the pre-set limits. If the high/low limit is exceeded the microprocessor control steps in, switching on one or both of the units to bring conditions back inside the thresholds. This function protects against faults in the external control system.

**Time settings:** This function, available with the optional clock circuit board, enables the setting of automatic start-up and switching off times of the units (time band function). It is possible to subdivide the time bands for weekdays, weekends, and holidays.

**Management of two units:** If two units are installed, it is possible to connect the two microprocessor controls electrically in order to manage the function of two units without an external management system. The control circuit manages the following situations:

- One unit functioning and the other in stand-by
- The switching on of the reserve unit if there is an alarm in the functioning unit
- The rotation on a time basis of which unit is functioning in order to divide the workload between the two
- The switching on of the second machine in the event that a pre-set temperature threshold is exceeded in the room. This function can be disabled if, for electrical reasons, two cannot function simultaneously.

If two XMF free-cooling units are installed together, the following function logic is applied as the outside temperature or the thermal load increases:





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# Worldwide Customer Support

Customer support for this or any other product is available at no charge in any of the following ways:

- Visit the Schneider Electric Web site to access documents in the Schneider Electric Knowledge Base and to submit customer support requests.
  - **www.schneiderelectric.com** (Corporate Headquarters)  
Connect to localized Schneider Electric Web sites for specific countries, each of which provides customer support information.
  - **www.schneiderelectric.com/support/**  
Global support searching Schneider Electric Knowledge Base and using e-support.
- Contact the Schneider Electric Customer Support Center by telephone or e-mail.
  - Local, country-specific centers: go to **www.schneiderelectric.com > Support > Operations around the world** for contact information.

For information on how to obtain local customer support, contact the representative or other distributors from whom you purchased your product.

As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this publication.

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## CONDICIONES DE OPERACIÓN PROYECTO METRO QUITO

Estimado Cliente:

Primeramente, agradecerle la confianza depositada en Schneider Electric contando con nosotros para la distribución de frío de precisión en sus instalaciones.

Nos complace detallarle las condiciones de operación y características técnicas de los siguientes equipos para el proyecto de METRO QUITO en Ecuador.

### Modelo

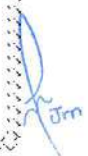
UCF0341 – MRA0401

UNIFLAIR	Unit model	: UC*0341-MRA0401 (230V/1ph/60Hz)	
WORKING CONDITIONS			
Dry bulb temperature	: 28.0 °C;	External air temperature	: 41.0 °C;
Wet bulb temperature	: 18.5 °C;	External static pressure	: 0 Pa;
Relative humidity	: 40 %;	Condens. ext. st. press.	: 0 Pa;
Altitude a.s.l	: 3000 m;		
PERFORMANCES/CHARACTERISTICS R407C			
Total cooling capacity		kw:	7.2
Sensible cooling capacity (SHR)		kw:	4.9 ( 68%)
Unit air flow rate	mc/h (mc/s):		1280 (0.36)
Condenser air flow rate	mc/h (mc/s):		4400 (1.22)
Discharge air temperature	°C:		12.2
Discharge air relative humidity	%:		82
Electrical data		kw:	3.93 (14.9)
- Compressor (230V/3ph/60Hz)		kw (A):	3.10 ( 9.7)
- Fans (230V/1ph/60Hz)		kw (A):	0.34 ( 2.8)
- Condenser (230V/1ph/60Hz)		kw (A):	0.49 ( 2.4)

### Modelo

UCF0401 – MRA0401

UNIFLAIR	Unit model	: UW*0401-MRA0401 (230V/1ph/60Hz)	
WORKING CONDITIONS			
Dry bulb temperature	: 28.0 °C;	External air temperature	: 41.0 °C;
Wet bulb temperature	: 18.5 °C;	External static pressure	: 0 Pa;
Relative humidity	: 40 %;	Condens. ext. st. press.	: 0 Pa;
Altitude a.s.l	: 3000 m;		
PERFORMANCES/CHARACTERISTICS R407C			
Total cooling capacity		kw:	8.7
Sensible cooling capacity (SHR)		kw:	6.1 ( 70%)
Unit air flow rate	mc/h (mc/s):		1540 (0.43)
Condenser air flow rate	mc/h (mc/s):		4400 (1.22)
Discharge air temperature	°C:		10.9
Discharge air relative humidity	%:		94
Electrical data		kw:	4.34 (14.0)
- Compressor (230V/3ph/60Hz)		kw (A):	3.44 ( 9.4)
- Fans (230V/1ph/60Hz)		kw (A):	0.41 ( 2.2)
- Condenser (230V/1ph/60Hz)		kw (A):	0.49 ( 2.4)



Le reiteramos el compromiso de Schneider Electric con ustedes en la solución seleccionada en sus instalaciones y en la mejora continua de nuestros procedimientos para adecuarnos a sus necesidades presentes y futuras.

Atentamente

César García Gutiérrez  
Responsable de operaciones



Schneider Electric IT Spain, S.L.

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A handwritten signature or set of initials in blue ink, located in the bottom right corner of the page.



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To Whom it may concern

Conselve, 9<sup>th</sup> June 2020

**Ref.: UWF/MRA unisplit units**

This is to confirm that Uniflair SP Unisplit range includes precision cooling units used to control environments for telecom rooms, internet hubs, and data processing centers.

Kind regards

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