



Waterloop system

Indirect condensation system



Complies with
Ecodesign



VRC multi-service
version



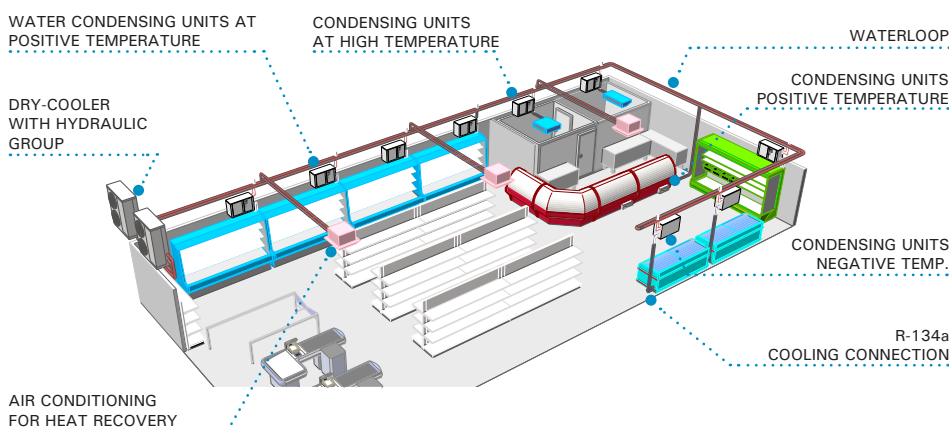
Low noise
construction

Waterloop system

Waterloop is a commercial refrigeration system, consisting of: DX cooling units distributed, with indirect condensation by a water circuit; and one or more units in parallel air-cooler connected to the condensation heat dissipation.

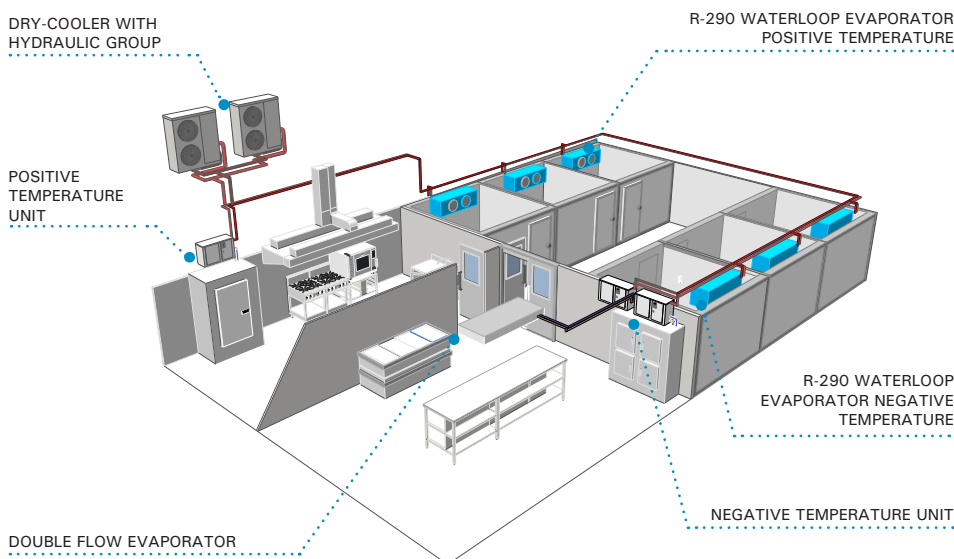
Supermarkets and food stores applications

Waterloop system allows distributed cooling production at different temperatures, with a single condensing water loop. Condensation heat recovery from the cooling units can easily be carried out in air conditioners or fan coils.



Application in industrial kitchens

Waterloop system makes possible to centralise a set of cold rooms and process rooms. The use of compact R-290 **waterloop** units in cold rooms and process rooms is a 100 % ecological solution free of greenhouse gases.



Ecology

Distributed cooling production allows to reduce and fractionate the load of HFC refrigerant in the installation, so that the risk of leakage is reduced.



Safety

Decentralization of the cooling production contributes a greater operation security of the installation, that guarantees a high availability of the system when faced with the isolated failure of a single unit.

The installation of a double air-cooler or dry-cooler in parallel, provides a greater operational security.

The condensation water loop contains only closed-circuit water working at low hydraulic pressure.



Simple installation

Waterloop system is very easy to install, thanks to its condensed water units pre-charged with refrigerant, and air-coolers or dry-coolers with inbuilt hydraulic unit/circuit.



Precision

Distributed cooling production allows adaptation of working temperatures to the needs of each service, thus obtaining an adequate degree of humidity for the best preservation of each product, and optimizing the performance of the systems.



Energy saving

Condensing units incorporate high-efficiency scroll compressors with R-134a or R-449A refrigerant for positive temperature, and R-449A for negative temperature.

Air-coolers or dry-coolers incorporate hydraulic group with electronic pump of variable flow, that adapts its functioning speed to the demand of the installation. Motor fans are equipped with speed regulators to reduce their consumption in low ambient temperatures or low load.



Versatility

Waterloop system is applicable both in new installations and in existing centralized direct expansion facilities, where the update of refrigeration installation is desired. In fact, existing refrigerating displays are usable and easily converted to new refrigerants.



Easy and flexible installation

Refrigeration units are supplied with service valves and factory refrigerant pre-load with service keys.

The waterloop can be made with polypropylene pipe without insulation, with service valves in each refrigeration unit, thus providing great flexibility in modifying the installation.

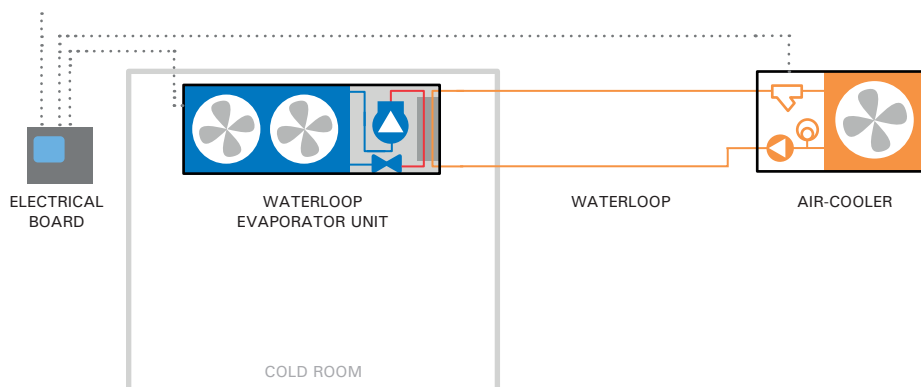


Tropicalised design

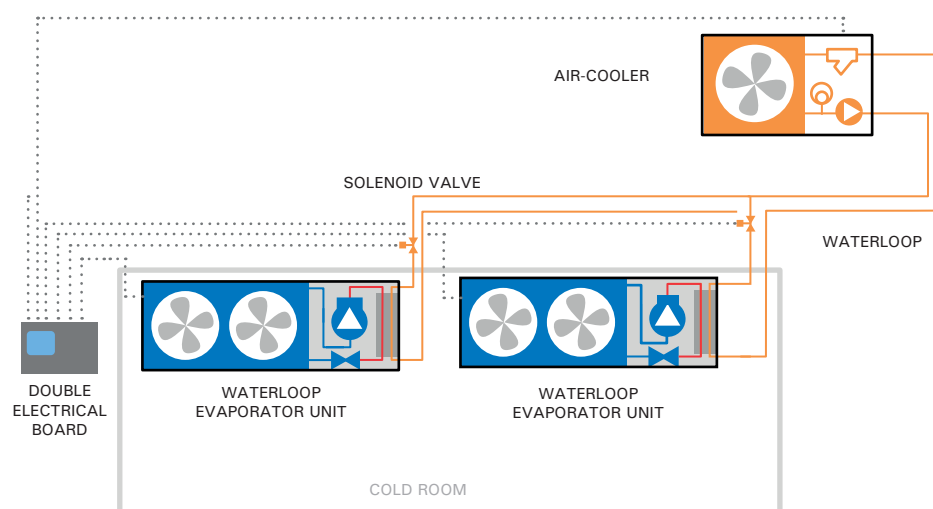
Unlike other systems on the market, the waterloop system is designed to work properly even with extreme ambient temperatures of up to 45 °C, with condensation water temperatures of up to 55 °C, and without the need to incorporate additional cooling equipment.

Waterloop system allows different configurations from a simple cold room up to a set of rooms and other refrigeration services at different temperatures.

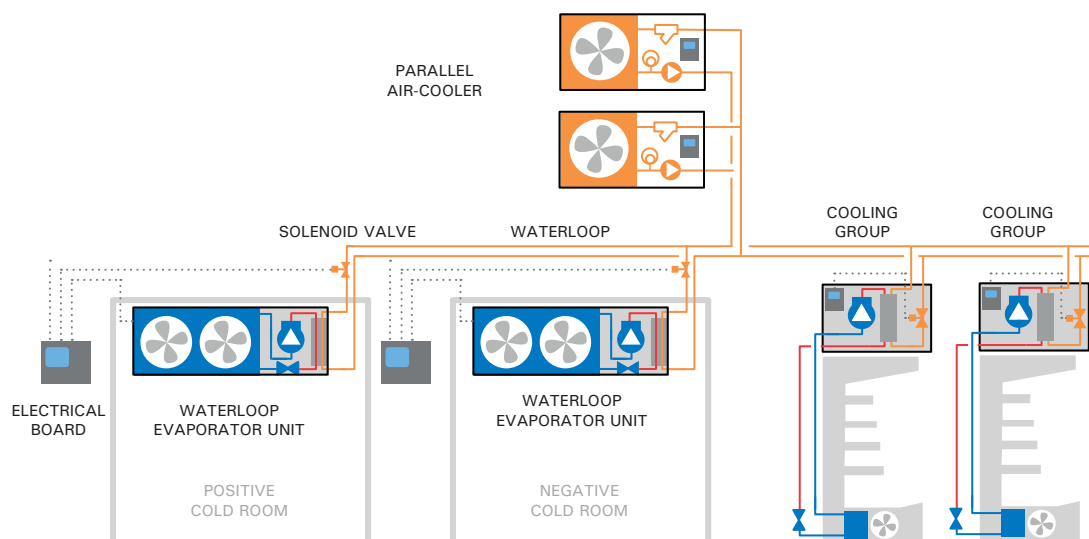
Simple installation example 1 + 1



Twin installation example



Multi installation example



Product range

Evaporator units with built-in compressor, condensed by water, and with external panel. Designed for positive or negative cold rooms temperature.



Refrigeration units condensed by water, with external panel. Designed to service refrigerated cabinets and displays.



Aero condensers with built-in hydraulic unit, at constant or variable flow, with water loop temperature control.



Waterloop

Evaporator with built-in compressor

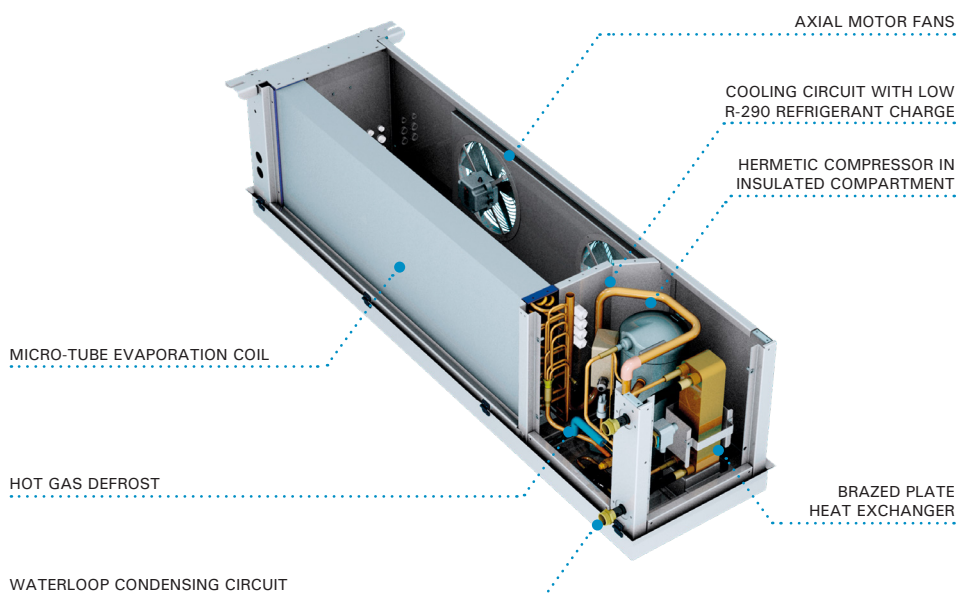


- ❄ Compact unit condensed by water.
- ❄ Minimal **R-290** refrigerant charge.
- ❄ Easy and safe installation with connection to the condensation water circuit.

Waterloop evaporator units with compressor are compact units for installation inside small cold rooms, designed with natural refrigerant R-290 and waterloop condensed.

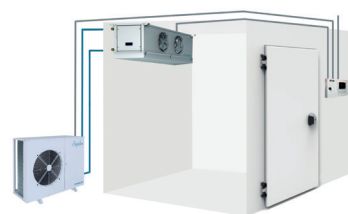
Features

- ▶ 230V 50Hz or 400V 3N 50Hz power supply. 60Hz model by request.
- ▶ R-290 refrigerant charge low than 0.25 kg.
- ▶ Bodywork in aluminium sheet and structure in galvanised steel lacquered in polyester paint.
- ▶ Alternative hermetic or scroll compressor integrated in thermally insulated compartment, with crankcase heater.
- ▶ Refrigeration circuit in annealed copper tube, with high and low pressure switches, filter drier and load valve.
- ▶ Evaporation coil in copper pipes and aluminium fins, thermostatic expansion valve and hot gas defrost.
- ▶ Axial motor fans.
- ▶ Stainless steel brazed plates heat exchanger.
- ▶ Threaded hydraulic connections.
- ▶ Control panel in white lacquered sheet metal cabinet, with MCB protection and multifunction electronic control.
- ▶ Water solenoid valve for multi-equipment waterloop installation (without assembly).



Installation

Installation of a closed loop water evaporator unit with an air cooler and general electrical panel:



Compact R-290 system

The **waterloop** evaporator units are hermetically sealed compact systems with a minimum charge of R-290. They have a minimum R-290 refrigerant charge lower than the practical limit of the refrigerated volume.

Electrical board (optional)

Electrical power and control board for outside installation.

- MCB protection of compressor and manoeuvre.
- Electronic control with temperature control and recording of maximum and minimum temperatures.
- Jet Cool function.
- Energy saving function.
- Optional air condenser management with water loop temperature control and frost protection.

230V 50Hz / 400V 3N 50Hz | Positive temperature | Hermetic compressor - Scroll compressor | R-290

Series / Model		Compressor		Cooling capacity / cold room volume (W) ⁽¹⁾	Input power (W)	Max. current (A)	Evap. air flow (m³/h)	Condens. water flow (l/h)	PdC (kPa) ⁽²⁾	Hydraulic connection	Refrigerant charge (g)	Weight (kg)	Price (€)	Dry-cooler model ⁽³⁾	Set price (€)	
		HP	Power supply	0 °C W												
R-290	1xH	MCC-ND-1 017	3/4	230V	1 430	572	7.7	1 600	350	3	3/4"	210	50	4 228	CWF-0	6 794
		MCC-ND-1 034	1 1/2	230V	2 640	1 060	16.4	1 600	650	3	3/4"	170	59	4 729	CWF-0	7 295
	1xSc	MCC-SD-1 012	1 1/2	400V 3N	3 410	860	7.7	1 600	750	5	3/4"	265	62	6 170	CWF-1	9 981
		MCC-SD-2 017	2	400V 3N	3 930	1 070	9.0	1 700	875	5	1"	240	240	7 295	CWF-2	12 209

230V 50Hz / 400V 3N 50Hz | Negative temperature | Hermetic compressor - Scroll compressor | R-290

Series / Model		Compressor		Cooling capacity / cold room volume (W) ⁽¹⁾	Input power (W)	Max. current (A)	Evap. air flow (m³/h)	Condens. water flow (l/h)	PdC (kPa) ⁽²⁾	Hydraulic connection	Refrigerant charge (g)	Weight (kg)	Price (€)	Dry-cooler model ⁽³⁾	Set price (€)	
		HP	Power supply	-20 °C W												
R-290	1xH	BCC-ND-1 034	1	230V	847	800	11.0	1 600	300	3	3/4"	150	59	4 696	CWF-0	7 262
	1xSc	BCC-SD-1 012	1 1/2	400V 3N	1 480	770	7.6	1 600	400	3	3/4"	150	68	6 116	CWF-0	8 682
		BCC-SD-2 017	2	400V 3N	1 980	1 000	8.9	1 700	525	3	1"	190	72	7 109	CWF-1	10 920

Options

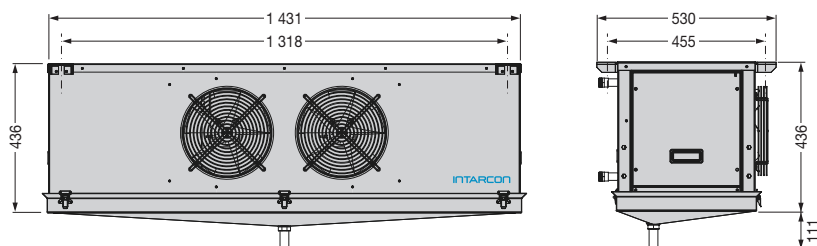
- ▶ Electrical board for twin installation
- ▶ Without water solenoid valve for multi-equipment waterloop installation.

By request

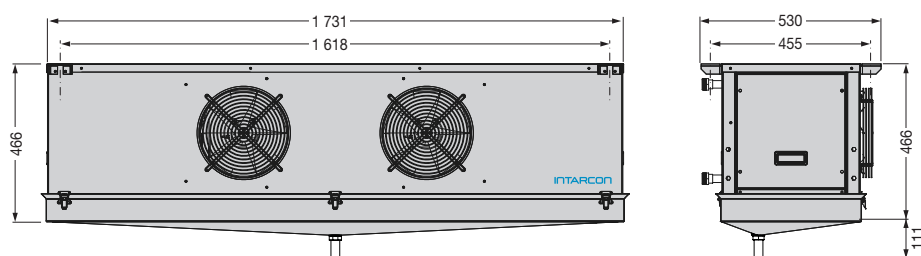
By request

Dimensions

1 series



2 series



Measuring mm.

⁽¹⁾ Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) and water inlet condensation temperature of 7 °C. Estimated cold room volume according to conditions of the calculation bases (page 12).

⁽²⁾ Condenser pressure drop in the water circuit.

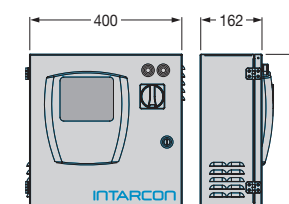
⁽³⁾ Recommended air cooler model to combine with the evaporator unit.

Electrical interconnections

For the electrical interconnection from the electrical panel to the unit and to the air condenser (optional), the following interconnection cables must be provided:

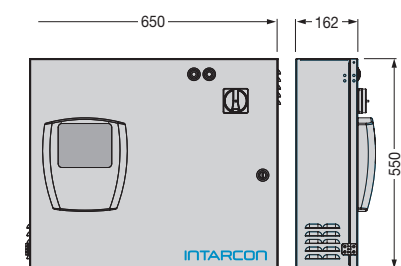
Cabinet - Evaporator	Connection
Compressor for single-phase units (except MCC-ND-1 034)*	3 x 1.5 mm² + T
Compressor for three-phase units and MCC-ND-1 034	3 x 2.5 mm² + T
Manoeuvre	7 x 1 mm²
Probes	5 x 1 mm²
Cabinet - Dry-cooler	Connection
Pump (1 + 1 system)	2 x 1.5 mm² + T
Fan (1 + 1 system)	3 x 1 mm²
Probes (1 + 1 system)	3 x 1 mm²
Pumping permit (multi system)	2 x 1 mm²

Electrical board dimensions



Measuring mm.

Electrical board dimensions - Twin installation



Measuring mm.

Waterloop

Water-cooled condensing units

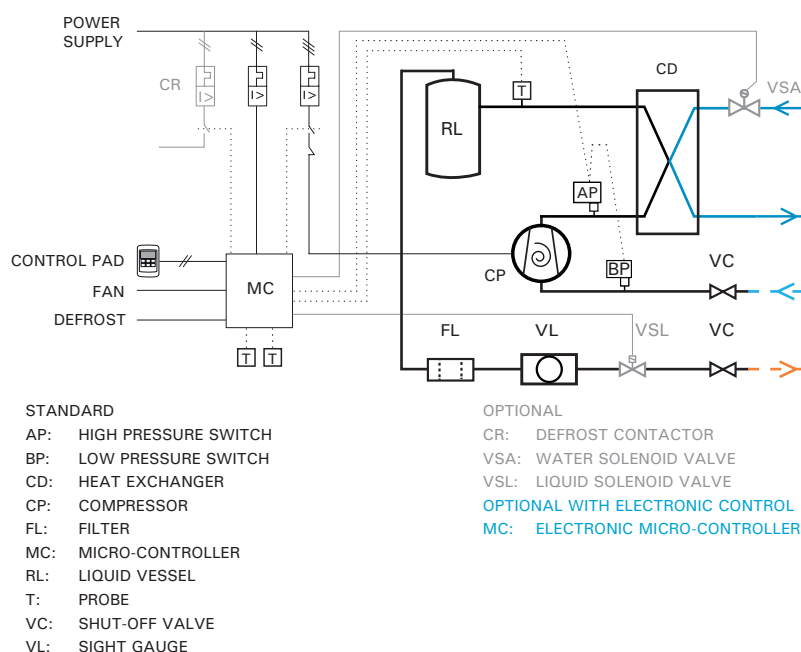


Water-cooled condensing units for positive and negative temperature refrigeration, with very compact size and quiet operation, designed for on-wall or floor installation.

Features

- ▶ 230V 50Hz or 400V 3N 50Hz power supply. 60Hz model by request.
- ▶ Casing in pre-painted galvanized steel sheet, with noise insulation, with removable front panel for access to the compressor and the electrical panel.
- ▶ Acoustically insulated scroll compressor, mounted on shock absorbers.
- ▶ Horizontal construction rotary compressor (MDM-P / BDM-P).
- ▶ Stainless steel brazed plates heat exchanger. Cooling circuit with ceramic dryer filter, sight glass, high and low pressure switches and services valves.
- ▶ Hydraulic condensation circuit made of copper pipe with threaded connections.
- ▶ Electromechanic control panel with thermomagnetic protection.
- ▶ Liquid injection system for negative temperature models with R-449A.

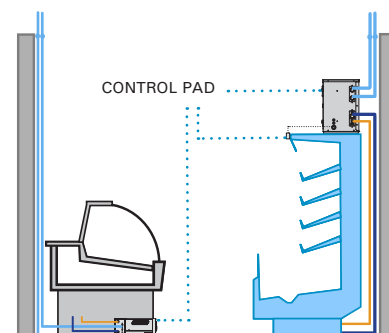
Refrigeration and electrical sheme



- ❄ Indirect condensation by a water circuit.
- ❄ Low noise level.
- ❄ Simple installation.
- ❄ Reduced refrigerant load.
- ❄ According to F-Gas.

Installation

Waterloop series motor condensers can be installed on the furniture, on the floor or anchored at the wall.



Rotary compressors

Hermetic rotary compressors provide greater reliability, lower noise and maximum design flexibility.



Very quiet compressors

Scroll compressors Copeland, are characterized by their great robustness and reliability of operation, and being cooled exclusively by the refrigerant gas, allow effective soundproofing.



Calculation of hydraulic connections

Visit our easy and intuitive online software to calculate the hydraulic pipes of the system.



<https://www.intarcon.com/en/refrigeration-calculation/>

230V 50Hz / 400V 3N 50Hz | Positive temperature | Rotary compressor - Scroll compressor | R-134a / R-449A

Series / Model		Compressor			Cooling capacity (W) ⁽¹⁾			Input power (kW)	Max. current (A)	Condensing flow (l/h)	Hydraulic connection	Pressure drop (mca) ⁽²⁾	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) ⁽³⁾ 1 m	Price without electronic control (€)
		HP	Model	Power supply	Evaporation temperature											
					0 °C	-5 °C	-10 °C									
R-134a	1x R	MDM-PY-0 005	3/8 HGA-4450Y	230 V-I	900	730	585	0.3	4	150	3/4"	5	1/4"-3/8"	20	36	1 664
		MDM-PY-0 007	1/2 HGA-4476Y	230 V-I	1 255	1 030	830	0.5	5	250	3/4"	5	1/4"-1/2"	25	45	2 021
	1x Scroll	MDM-SY-1 009	1 1/4 ZS09	400 V-III *	1 855	1 540	1 270	0.7	3	350	3/4"	5	1/4"-5/8"	34	40	3 166
		MDM-SY-1 015	2 ZB15	400 V-III *	2 840	2 360	1 945	1.1	5	500	3/4"	5	1/4"-5/8"	43	37	3 990
		MDM-SY-1 021	3 ZB21	400 V-III *	4 250	3 520	2 890	1.5	7	750	3/4"	5	1/4"-3/4"	53	40	4 443
		MDM-SY-1 029	4 ZB29	400 V-III	5 245	4 355	3 585	2.0	10	950	1"	5	3/8"-7/8"	53	40	5 006
		MDM-SY-1 038	5 ZB38	400 V-III	7 095	5 880	4 835	2.5	13	1 250	1"	5	3/8"-7/8"	68	43	5 483
		MDM-SY-1 045	6 ZB45	400 V-III	8 320	6 915	5 695	2.9	13	1 500	1"	5	3/8"-1 1/8"	70	43	5 781
		MDM-SY-1 057	8 ZB57	400 V-III	10 575	8 780	7 230	4.0	16	1 950	1 1/4"	5	3/8"-1 1/8"	75	50	6 678
R-449A	1x R	MDM-PG-0 006	1/2 HGA-4467Z	230 V-I	1 285	1 055	855	0.5	5	200	3/4"	5	1/4"-3/8"	22	38	1 676
		MDM-PG-0 010	1 HGA-4512Z	230 V-I	2 140	1 765	1 440	0.5	7	350	3/4"	5	1/4"-1/2"	27	41	2 093
	1x Scroll	MDM-SG-1 009	1 1/4 ZS09	400 V-III *	3 095	2 585	2 135	1.1	2	500	1"	5	1/4"-5/8"	34	40	3 412
		MDM-SG-1 015	2 ZB15	400 V-III *	4 860	4 050	3 340	1.8	5	800	1"	5	3/8"-5/8"	43	37	3 800
		MDM-SG-1 021	3 ZB21	400 V-III *	7 365	6 140	5 080	2.5	7	1 200	1"	5	3/8"-3/4"	53	40	4 233
		MDM-SG-1 029	4 ZB29	400 V-III	9 610	8 020	6 635	3.2	10	1 500	1 1/4"	5	3/8"-7/8"	53	40	4 766
		MDM-SG-1 038	5 ZB38	400 V-III	12 445	10 380	8 540	4.1	13	1 950	1 1/4"	5	3/8"-7/8"	68	43	5 221
		MDM-SG-1 045	6 ZB45	400 V-III	14 715	12 270	10 130	4.7	13	2 500	1 1/4"	5	3/8"-1 1/8"	70	43	5 710

230V 50Hz / 400V 3N 50Hz | Negative temperature | Rotary compressor - Scroll compressor | R-449A

Series / Model		Compressor		Cooling capacity (W) ⁽¹⁾				Input power (kW) *	Max. current (A)	Condensing flow (l/h)	Hydraulic connection	Pressure drop (mca) ⁽²⁾	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) ⁽³⁾ 1 m	Price without electronic control (€)		
		HP	Model	Power supply	Evaporation temperature													
					-20 °C	-25 °C	-30 °C										-35 °C	
R-449A	1x R	BDM-PG-0 004	1	HGA-2446Z	230 V-I	985	785	615	470	0.6	5	150	1/2"	5	1/4"-1/2"	23	45	2 491
	1x Scroll	BDM-SG-1 006	2	ZF06	400 V-III	2 360	1 910	1 525	1 195	1.5	5	550	3/4"	5	1/4"-5/8"	45	39	4 961
		BDM-SG-1 009	3	ZF09	400 V-III	3 210	2 590	2 070	1 620	1.9	6	700	3/4"	5	3/8"-3/4"	54	44	5 679
		BDM-SG-1 011	3 1/2	ZF11	400 V-III	4 050	3 275	2 610	2 045	2.3	8	850	3/4"	5	3/8"-3/4"	55	45	5 914
		BDM-SG-2 013	4	ZF13	400 V-III	4 595	3 715	2 970	2 325	2.5	9	950	1"	5	3/8"-7/8"	55	47	6 122
		BDM-SG-2 015	5	ZF15	400 V-III	5 640	4 560	3 640	2 850	3.3	10	1 200	1"	5	3/8"-7/8"	73	47	6 710
		BDM-SG-2 018	6	ZF18	400 V-III	6 685	5 400	4 310	3 375	3.9	14	1 500	1"	5	3/8"-1 1/8"	78	49	7 406
		BDM-SG-2 025	8	ZF25	400 V-III	8 400	6 795	5 430	4 265	4.2	16	1 750	1 1/4"	5	3/8"-1 1/8"	78	5	8 838

Options

- Change to 230V 50Hz power supply. + 8 %
- Electronic control for evaporator and compressor with temperature probes and control suitable for local or remote control. + 5 %
- Refrigerant pre-load for 5 m piping. + 8 %
- Built-in liquid solenoid valve with body and coil. + 178 €
- Water solenoid valve. + 178 €
- Dynamic balancing valve. By request
- Glycol water condensation. By request

⁽¹⁾ Cooling capacity at nominal performances refer to operation at evaporation temperature -10 °C (PT) and -30 °C (NT), water temperature of 40 °C, 10 K super-heating and 3 K sub-cooling.

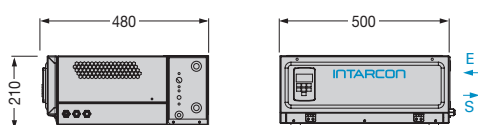
⁽²⁾ Condenser pressure drop in water circuit.

⁽³⁾ Condenser sound pressure level, with directivity 1, measured at 1 m from the unit (non-binding value calculated from sound power).

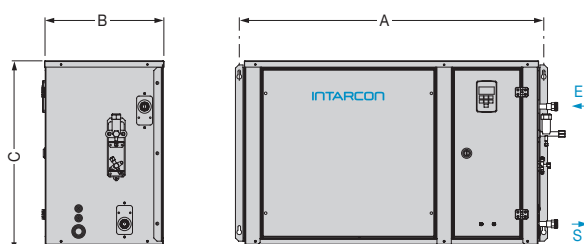
* Available units with 230V 50Hz power supply.

Dimensions

0 series



1 and 2 series

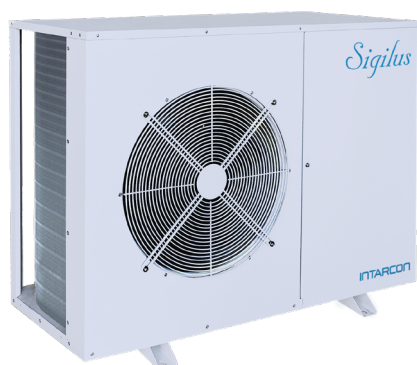


Dimensions (mm)	A	B	C
1 series	832	355	531
2 series	957	375	600

Measuring mm.

Waterloop

Dry-cooler with built-in hydraulic group



- ❄ Low sound level with double acoustic insulation.
- ❄ Tropicalised design for ambient temperature up to 45 °C as standard.

Dry-coolers with built-in hydraulic group, in a low-noise construction, designed for heat dissipation of the refrigeration equipment condensation waterloop.

Features

- ▶ Axial EC motor fans (except CWF-0 and CWF-1).
- ▶ High efficiency water coils with copper pipes and aluminium fins.
- ▶ Hydraulic group with variable flow electronic pump, expansion tank, security valve, filter, thermomanometers and auto-fill valve included.
- ▶ Closed membrane expansion tank.
- ▶ Threaded hydraulic connections.
- ▶ Electric power panel with protection of hydraulic pump, fan motor and frequency variator (except CWF-0 and CWF-1).

Electronic control

Waterloop dry-coolers incorporate an electronic control with the next functions:

- Variation of the water pump flow adapting to the demand, depending on the impulsion pressure.
- Waterloop temperature control by fan speed variation, with floating set-point.
- Frost protection.

230V 50Hz | Positive temperature | Water

Series / Model	Flow control	Exchange capacity (W) ⁽¹⁾	Air flow (m³/h)	Fan (N x Ø mm)	Water flow (l/h)	Input power (kW)	Max. current (A)	Pressure drop (kPa) ⁽²⁾	Hydraulic connection	Weight (kg)	SPL dB(A) ⁽³⁾	Price (€)
CWF-0	Constant	3 000	1 700	1x Ø 360	500	0.14	1.1	100	3/4"	76	30	2 566
CWF-1	Constant	4 700	3 200	1x Ø 450	750	0.22	1.8	100	3/4"	79	26	3 811
CWF-2	Variable	6 000	3 700	1x Ø 450	1 000	0.24	2.0	100	1"	81	26	4 914
CWF-3	Variable	10 000	6 500	2x Ø 450	1 500	0.44	3.6	100	1"	101	29	6 104
CWF-4	Variable	12 000	7 000	2x Ø 450	2 000	0.48	3.9	100	1 1/4"	113	29	6 541
CWF-6	Variable	20 000	13 000	4x Ø 450	3 000	0.88	7.0	100	1 1/2"	160	32	10 263
CWF-8	Variable	24 000	14 000	4x Ø 450	4 000	0.96	7.5	100	1 1/2"	185	32	11 355

Options

- ▶ Water coil anti-corrosion polyurethane coating. + 8 %
- ▶ Coil protection grille:
Series 0 up to 4. + 112 €
Series 6 and 8. + 196 €

⁽¹⁾ Estimated heat exchange power with air temperature of 35 °C, and water inlet / outlet temperature of 45 / 40 °C.

⁽²⁾ Available circuit pressure.

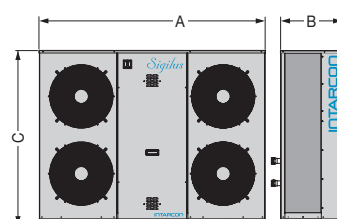
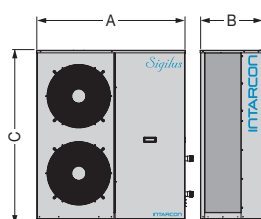
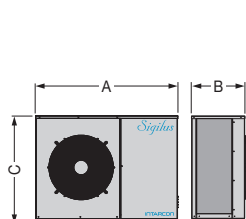
⁽³⁾ Condenser sound pressure level, with directivity 1, measured at 10 m from the unit (non-binding value calculated from sound power).

Dimensions

0,1 and 2 series

3 and 4 series

6 and 8 series



Dimensions (mm)	A	B	C
0 and 1 series	1 030	380	577
2 series	1 080	410	827
3 series	1 150	481	1 097
4 series	1 150	481	1 347
6 series	1 748	481	1 097
8 series	1 748	481	1 347