Waterloop

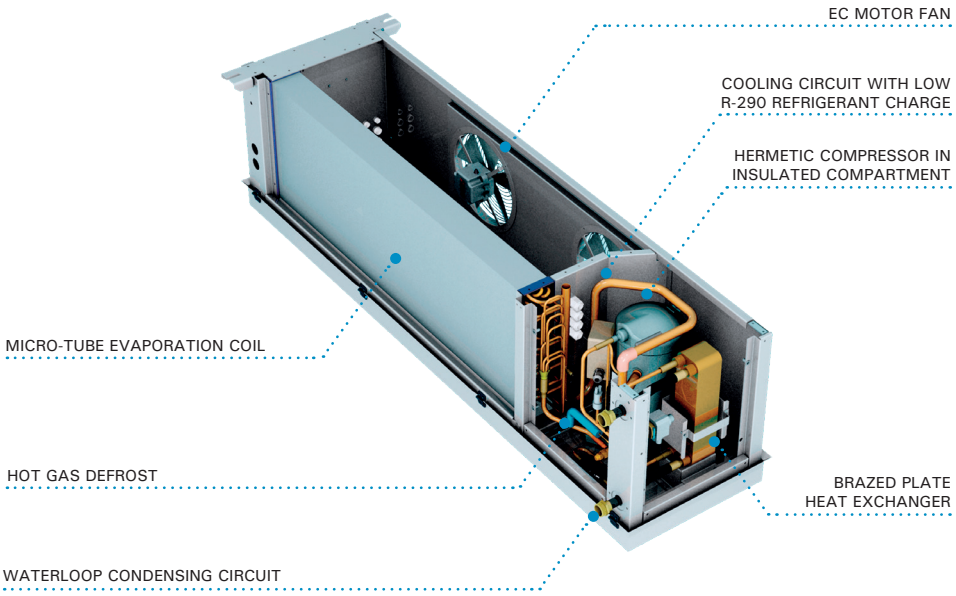
Evaporator with built-in compressor

- 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

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-290 refrigerant charge low than 0.2 kg.
- Bodywork in aluminium sheet and structure in galvanised steel lacquered in polyester paint.
- Hermetic compressor integrated in thermally insulated compartment, with crankase heater.
- Refrigeration circuit in annealed copper tube, with high pressure switch, filter drier and load valve.
- Evaporation coil in copper pipes and aluminium fins, thermostatic expansion valve and hot gas defrost.
- EC motor fans.
- Brazed plates heat exchanger.
- Threaded hydraulic connections.
- Control panel in white lacquered sheet metal cabinet, with MCB protection and multifunction electronic control.
- 3 m interconnection cable.



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, exempt from the application EN 378.

They have a minimum R-290 refrigerant charge lower than the practical limit of the refrigerated volume.

Electrical board

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.

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | Hermetic compressor - Scroll compressor | R-290

Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / cold room volume (W) [1] 0 °C W	Cooling capacity / cold room volume (W) [1] 0 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. water flow l/h	Condenser pressure drop kPa [2]	Hydraulic connection	Refrigerant charge (kg) [3]	Weight (kg)	Dry-cooler model [4]
R-290	1x H	MCC-ND-1 017	3/4	230 V-I	1 400	12	0.8	7.7	1 600	350	3	3/4"	< 0.10	50	CWF-0
		MCC-ND-1 034	1 1/2	230 V-I	2 230	24	1.4	16.4	1 600	600	3	3/4"	< 0.10	59	CWF-0
	1x Sc	MCC-SD-1 012	1 1/2	400 V-III	2 830	33	1.4	7.7	1 600	750	5	3/4"	< 0.15	62	CWF-1
		MCC-SD-2 017	2	400 V-III	3 850	51	2.0	9.0	1 700	1 000	5	1"	< 0.20	72	CWF-2

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | Hermetic compressor - Scroll compressor | R-290

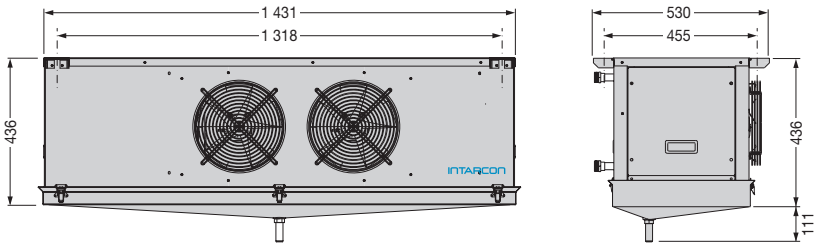
Refrigerant	Compressor	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / cold room volume (W) [1] -20 °C W	Cooling capacity / cold room volume (W) [1] -20 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. water flow l/h	Condenser pressure drop kPa [2]	Hydraulic connection	Refrigerant charge (kg) [3]	Weight (kg)	Dry-cooler model [4]
R-290	1x H	BCC-ND-1 034	1	230 V-I	970	9	1.0	11.0	1 600	350	3	3/4"	< 0.10	59	CWF-0
	1x Sc	BCC-SD-1 012	1 1/2	400 V-III	1 420	15	1.4	7.6	1 600	500	3	3/4"	< 0.15	68	CWF-0
		BCC-SD-2 017	2	400 V-III	1 900	24	1.8	8.9	1 700	750	3	1"	< 0.20	72	CWF-1

Options

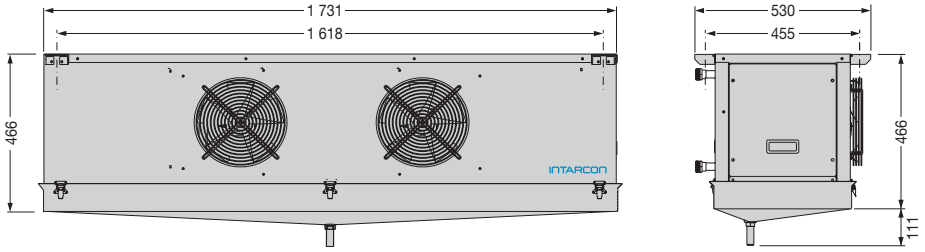
- Electrical board for one unit.
- Electrical board for two units in the same cold room.
- Water solenoid valve for multi-equipment waterloop installation.

Dimensions

1 series



2 series



Dimension in 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 40 °C. Estimated cold room volume according to conditions of the calculation bases (page 12).

[2] Condenser pressure drop in the water circuit.

[3] A3 refrigerant charge less than 0.5 kg, units exempt from, Regulation (EU) No 517/2014.

[4] 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:

Evaporator power supply	230 V-I-50 Hz	400 V-III-50 Hz
Compressor	1 x 1.5 mm² + N + T	3 x 1.5 mm² + N + T
Manoeuvre	4 x 1 mm²	4 x 1 mm²
Probes	4 x 1 mm²	4 x 1 mm²
Dry-cooler power supply	230 V-I-50 Hz	
Manoeuvre	2 x 1 mm² + N + T	
Probes	2 x 1 mm²	

Electrical board dimensions