INTARCON

REFRIGERATION UNITS

COMMERCIAL RANGE

Price list
2022

INTARCON

INTARCON, is a Spain-based company dedicated to designing, manufacturing, marketing and servicing a full range of refrigeration equipment for commercial and industrial sectors.

Our mission at INTARCON is to develop and offer the market a wide range of innovative solutions for the most reliable, efficient and sustainable operation of refrigeration facilities.

The INTARCON team has over 30 years of valuable experience in the fields of refrigeration, air conditioning and related thermal appliances, focusing our effort on the creation and development of a wide range of innovative refrigeration solutions.


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DELINOVA
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more than
50 000
supplied units

at more than
50
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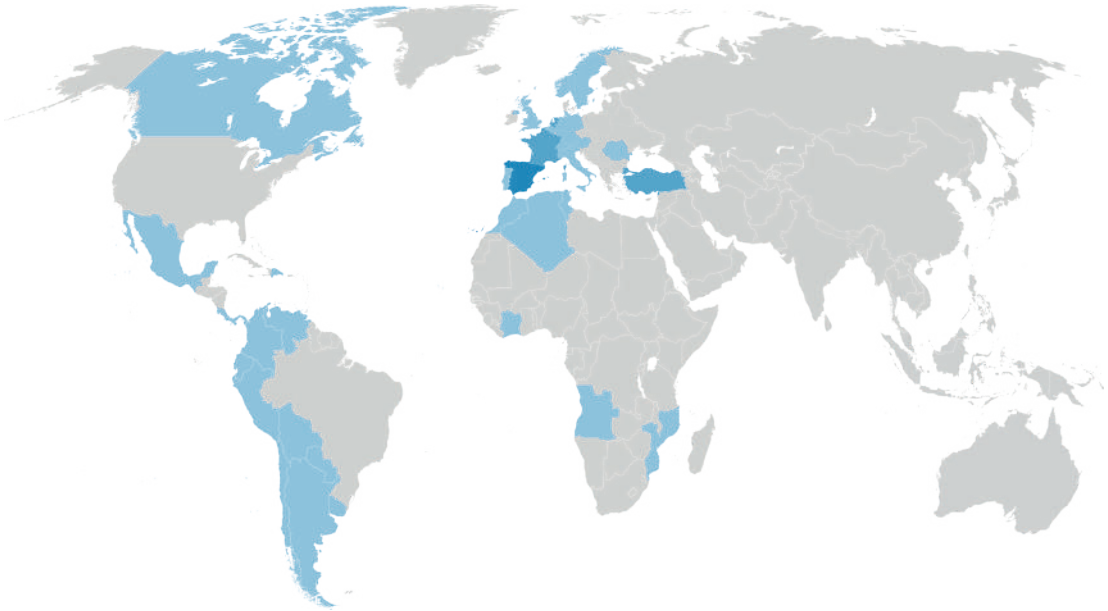
with more than
200
employees



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WHAT'S NEW IN COMMERCIAL RANGE

New R-290 monoblock units

New compact units with high-efficiency R-290 refrigerant in our known construction of door monoblock for the cold room, with very low refrigerant charge.

New CR3 models of rooftop monoblocks

We have expanded our range of compact units with new models of larger ceiling units, with axial or centrifugal condensation, for positive cold rooms up to 50 m^3 and negative cold rooms up to 25 m^3.

R-290 waterloop motoevaporators

An evaporator with built-in group? This is the 100 % natural innovative solution that INTARCON proposes for cold rooms. Discover the new R-290 waterloop series.

Smartest electronic regulation

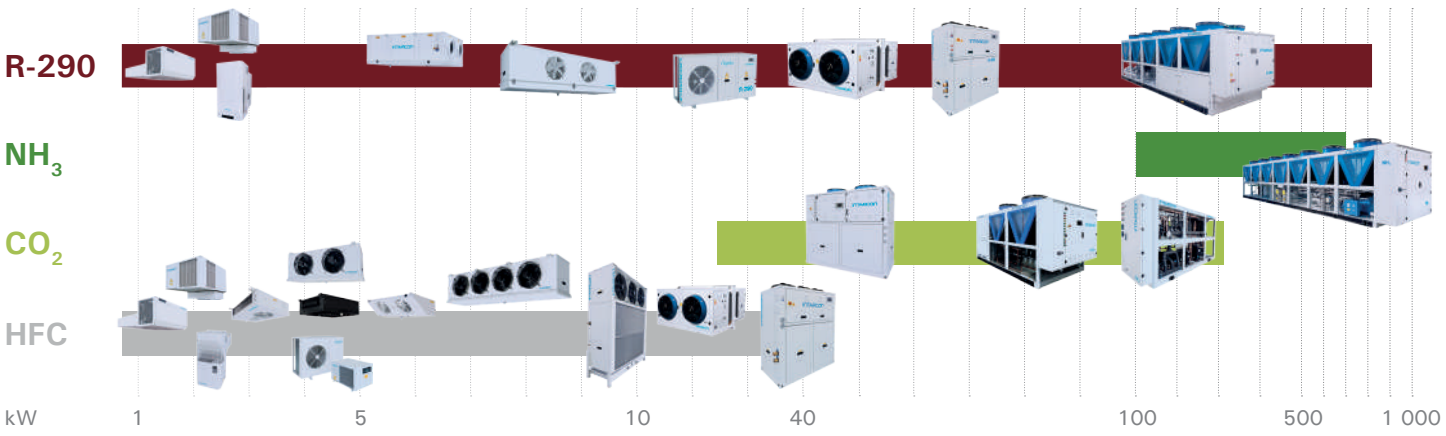
A new electronic control unit that ensures the safety of the cold room, the environment and the installation, with predictive self-diagnosis, gas collection manoeuvre, and synchronization with other units.

New improved models 55 and 75 at negative temperature

We have upgraded our compact and split low-temperature models to the new Tecumseh FH2 compressors, which are quieter, with higher cooling capacity and lower energy consumption.

Low refrigerant charge units

We update our range of single-phase split systems to reduce the refrigerant charge, with pre-charging up to 10 m of refrigeration lines, equivalent to less than 5 ton CO_2, and are exempt from leak checks.



Commercial monoblocks

- Monoblock for small and medium sized cold rooms.
- Easy Plug & Play installation directly on the ceiling, door or wall of the cold room.
- Natural refrigerant R-290.

Commercial split systems

- Split system for small and medium sized cold rooms.
- Refrigerant pre-load and exempt from leak checks.
- R-134a and R-449A refrigerant with low greenhouse effect.
- Low noise units and axial or centrifugal condensing units.

Condensing units

- Tropicalised design, low noise and centrifugal fan.
- Ecodesign certification.
- Electronic and multiservice controller versions.

Compact air-cooled DX plants up to 40 kW

- Compact plants with axial or centrifugal condenser.
- Duo or trio of hermetic or scroll compressors.
- Optimised designs for each refrigerant (R-134a, R-449A).

Industrial refrigeration plants

- High cooling capacity for industrial applications.
- Low refrigerant charge.
- High service accessibility.

Industrial monoblock

- Scroll compressors.
- High, medium and negative temperature.
- Easy wall installation.
- Tropicalised design for ambient temperature up to 45 °C.
- Natural refrigerant R-290.

PRODUCT RANGE

Evaporating units and air coolers

- Expansion and solenoid valves as standard.
- Optimised designs for R-134a, R-449A and glycol.
- High, medium, negative temperature and deep-freezing.

intarSANIT

- Air purification and sterilization in work rooms.
- High efficiency filtration units.
- Air renewal units with active cold recovery.

Waterloop system

- R-290 water condensed motor evaporators.
- Air-coolers with hydraulic group.
- Water condensed units up to 50 °C.

HFC chillers

- Low refrigerant charge.
- Plug & Play.
- Optimised compact system, with minimum maintenance.

Glycol chillers R-290

- Operation with glycol water and reduced R-290 refrigerant charge.
- Scroll and semi-hermetic compressors.
- Hydraulic group built-in.

CO_2 system from 30 up to 60 kW

- Compact plants with axial or centrifugal gas cooler or centrifugal.
- Trio of positive temperature compressors and duo of negative temperature compressors.
- High performance with parallel compression.

NH_3 chillers ammolite

- Low charge ammonia technology.
- Dry expansion systems.
- Air-cooled chillers.

Direct expansion of NH_3 ammolite

- Low charge ammonia technology.
- No need for an engine room.
- On-site maintenance of the compressor.

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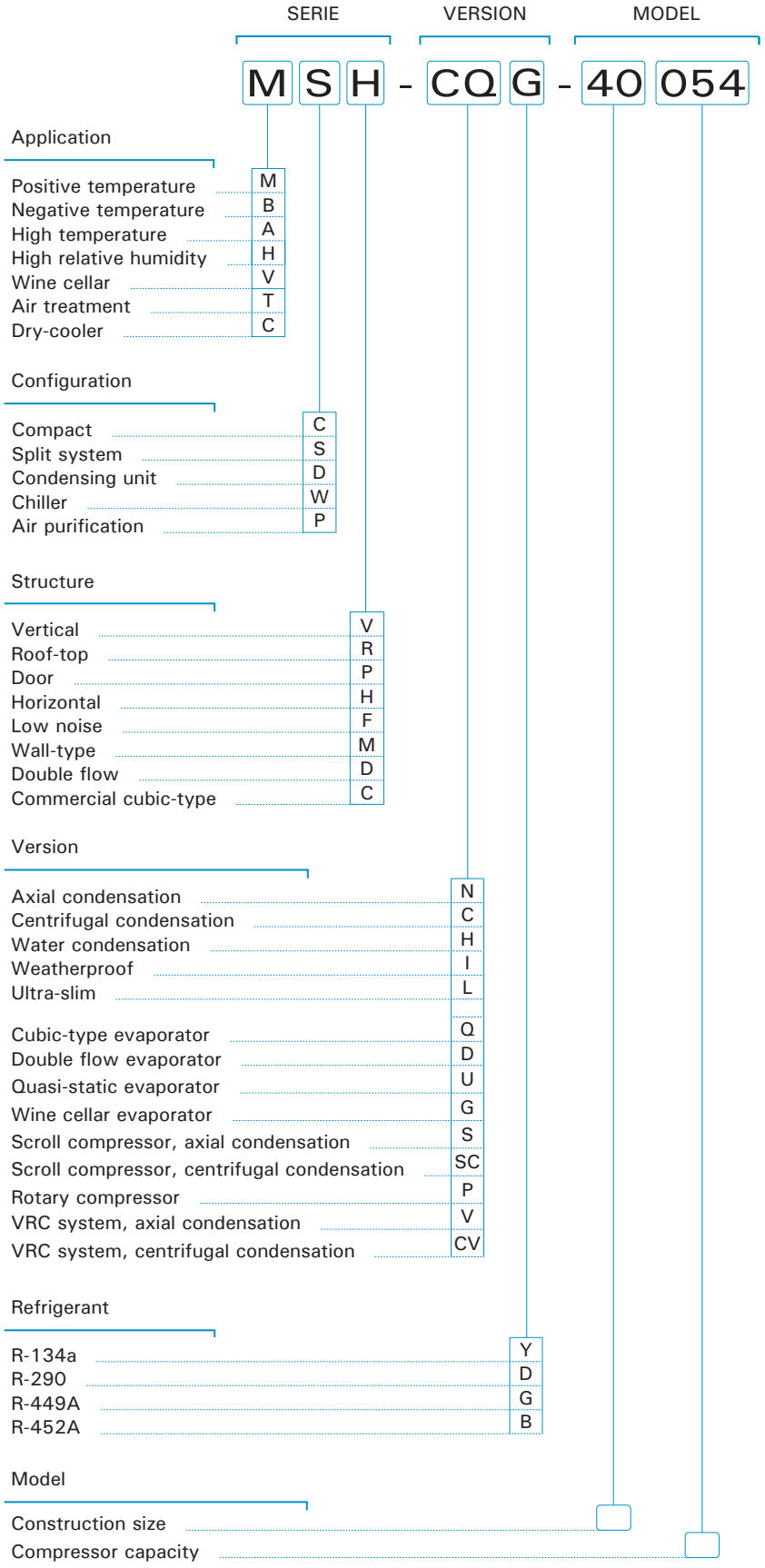
TÜVRheinland®
CEPYME 500
PYME INNOVADORA
CE
ErP ecodesign
RoHS COMPLIANT

Product codification

INTARCON units are identified unequivocally according to the following criteria in their nomenclature:



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Cold room calculation

Quick needs calculation

The chart below shows recommended cooling needs for high temperature process rooms and cold rooms at positive and negative temperature according to the calculation basis.

	Cold room volume (m³)	Recommended cooling needs for standard process handling rooms and cold storage rooms (W)				
		HIGH TEMPERATURE (12 °C)		POSITIVE TEMPERATURE (0 °C)		NEGATIVE TEMPERATURE (-20 °C)
		No floor panel		Floor panel	No floor panel	
		50 mm insulation	Without insulation	80 mm insulation		100 mm insulation
Commercial cold rooms	**5**			700	900	700
	10	1 300	2 300	1 200	1 500	1 100
	15	1 600	2 700	1 600	2 000	1 400
	20	1 900	3 400	1 900	2 400	1 700
	25	2 300	4 000	2 300	2 800	2 000
	30	2 600	4 500	2 600	3 300	2 200
	40	3 200	5 600	3 200	4 000	2 700
	50	3 800	6 600	3 800	4 800	3 100
	60	4 400	7 600	4 400	5 400	3 600
	75	5 100	9 000	5 100	6 400	4 200
	100	6 400	11 100	6 400	8 000	5 100
	125	7 500	13 100	7 500	9 400	5 900
	150	8 600	15 100	8 600	10 800	6 700
	175	9 700	16 900	9 700	12 100	7 500
	200	10 700	18 700	10 700	13 300	8 200
	250	12 600	22 100	12 600	15 800	9 600

Unit capacity correction

Cooling capacity indicated in this catalogue are based on the cooling performance of the unit with 35 °C ambient temperature.

To obtain cooling capacity of the unit under other ambient temperature values it is recommended to apply the following correction factors:

	AMBIENT TEMPERATURE	20 °C	25 °C	30 °C	35 °C	40 °C	45 °C
PT	**F_a: Cooling capacity factor**	1.23	1.15	1.08	1.00	0.92	0.84
	F_b: Input power factor	0.81	0.88	0.94	1.00	1.07	1.13
NT	**F_a: Cooling capacity factor**	1.33	1.22	1.11	1.00	0.89	0.77
	F_b: Input power factor	0.85	0.91	0.96	1.00	1.03	1.05

$$\text{Cooling capacity} = F_a \times \text{Cooling capacity}_{|35\,°C}$$

$$\text{Input power} = F_b \times \text{Input power}_{|35\,°C}$$

$$\text{Cooling capacity}_{|35\,°C} = \frac{Q\text{Cooling capacity. corrected}}{F_a}$$

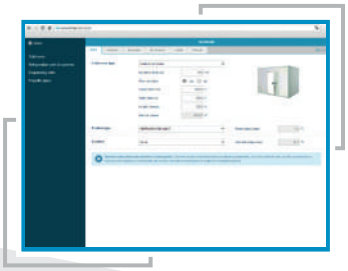
Online refrigeration calculator

For a more accurate calculation we recommend the use of our on-line refrigeration calculator, available on our web site.

Refrigeration calculator for cold room sizing and selection of cooling units.

By entering basic design data, such as cold room type, application, dimensions and insulation thickness, you will get a quick estimation based on other standard assumptions. You will also be able to customise your calculation by entering further data and to select the most suitable refrigeration unit according to your needs.

www.intarcon.com/calcooling



Correction of refrigeration needs

To obtain the corrected cooling load for a cold room with special characteristics, the application of a series of correction factors is proposed, based on the following:

$$Q\text{Cooling capacity}_{\text{ corrected}} =$$

$$Q\text{Cooling capacity} \times F1 \times F2 \times F3 \times F4$$

Where correction factors adopt the following values:

F_1: Ambient temperature

The following correction factors can be used to obtain the cooling load at an ambient temperature other than the calculation temperature of 35 °C:

- Ambient temperature of 40 °C: **$F_1 = 1.05$**
- Ambient temperature of 45 °C: **$F_1 = 1.10$**

F_2: Breathing of fruit and vegetable products

The ripening process of fruit and vegetable products in positive temperature storage produces a considerable amount of heat. This breathing heat can represent, depending on the type of product, up to 50 % additional cooling load.

For indicative purposes, we suggest a factor:

F_2 = 1,25

F_3: High product turnover rate

The cooling capacities indicated in the table have been obtained with a conventional product rotation, according to calculation basis. A high product turnover of twice the rotation rate considered can represent up to an additional 50 % of refrigeration needs.

F_3 = 1,50

Calculation example

Calculation of an 80 m³ apple conservation cold room, isolated with an 80 mm thickness refrigeration panel, with uninsulated floor:

1. From the values in the table, the reference refrigeration load for 80 m³ is interpolated.

$$Q\text{cooling capacity} = 7\,200\ \text{W}$$

2. The correction factor for the heat of respiration of fruit and vegetable products is applied: $F_2 = 1.25$

$$Q\text{cooling capacity}_{\text{ corrected}} =$$

$$Q\text{cooling capacity} \times 1.25 = 9\,000\ \text{W}$$

Cooling needs calculation basis for cooling needs

Cooling needs shown for each cold room volume in product technical features charts in this catalogue have been calculated according to the following assumptions:

- Ambient temperature: 35 °C.
- Product load density: 250 kg/m³.
- Daily rotation rate depending on cold room volume: 10 % (V ≤ 100 m³), 8 % (100 m³ < V).
- Product specif c heat PT: 3,2 kJ/(kg·K), NT: 1,8 kJ/(kg·K).
- Product inlet temperature: 25 °C (PT) and -5 °C (NT).
- Insulation panel: Injected polyurethane with 40 kg/m³ density and 0,025 W/(m·K) conductivity, with 80 mm (PT) and 100 mm (NT) thick and floor panel.
- 18 daily hours compressor operation time.

Commercial monoblocks

Compact refrigeration units for wall, door or roof-top installation

Easy and quick installation

100 % natural solution

R-290 low refrigerant charge

door intarblock

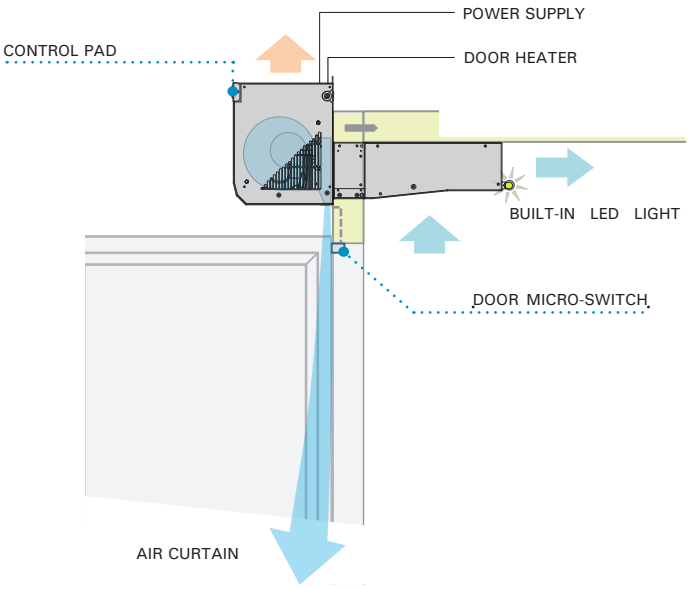
- R-290 natural refrigerant with high energy efficiency.
- Optimal use of space in mini cold rooms.
- Tropicalised design for ambient temperature up to 45 °C.
- Air curtain (optional).
- Units exempt from leak checks.

Commercial monoblock for refrigeration and freezing cold rooms, for assembly in the door panel of the cold room with optional R-290 refrigerant and air curtain built-in on the unit.

Features

- 230 V-I-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-290 refrigerant load, below 0.1 kg.
- R-134a or R-449A refrigerant load, below 1 kg.
- Hermetic reciprocating compressor.
- High pressure switches.
- Thermostatic expansion valve.
- MCB protection.
- Hot gas defrost.
- Stainless steel drain pan.
- Evaporation of condensed water.
- Cold room LED light and door micro-switch.
- Door heater cable (only for BCP series).
- Multifunction electronic control.

Installation scheme with air curtain (optional)



Installation

Air curtain (optional)

Door monoblock can incorporate an air curtain built-in into the unit, especially dimensioned for doors of 1 800 mm high and up to 800 mm. It has an adjustable speed centrifugal fan, door switch and linear diffuser.

Air curtain creates an invisible barrier to prevent the loss of cold inside the cold room, which is activated during the opening of the door, and prevents the entry of hot air and the loss of cold air, with an efficiency greater than 50 %.

- Centrifugal fan.
- Longitudinal air diffuser.
- Automatic activation with door opening.

Electronic control

XW60LH electronic control, as standard on our commercial propane and door monoblock units, is an advanced small size controller, which includes the following functions:

- Temperature control with maximum and minimum temperature recording.
- Quick cooling function "Jet Cool".
- Night operation mode.
- Energy saving.
- 4 output relays for: compressor, fan, defrost and light.
- 3 temperature NTC probes for cold room, defrost and condensation.

Built-in cold room LED light

High efficiency cold room LED light, built-in in the unit that is automatically activated when the cold room door is opened.

230 V-I-50 Hz | Positive temperature | R-290

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) 0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrigerant load (kg) (2)	Weight (kg)	SPL dB(A) (4)	Price (€)
R-290	MCP-ND-0 009	1/3	230 V-I	700	6	810	8	945	13	0.34	3.1	275	< 0.1	61	29	2 226
R-290	MCP-ND-1 012	1/2	230 V-I	1 065	9	1 235	15	1 430	27	0.52	4.3	550	< 0.1	67	29	2 696
R-290	MCP-ND-1 017	3/4	230 V-I	1 325	14	1 530	20	1 765	35	0.72	4.5	550	< 0.1	67	31	3 048

230 V-I-50 Hz | Negative temperature | R-290

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrigerant load (kg) (2)	Weight (kg)	SPL dB(A) (4)	Price (€)
R-290	BCP-ND-0 014	3/4	230 V-I	420	1	500	2.5	590	5	0.30	3.3	275	< 0.1	62	29	2 591
R-290	BCP-ND-1 017	3/4	230 V-I	575	2	695	6	825	9	0.34	4.3	550	< 0.1	67	29	2 931
R-290	BCP-ND-1 028	1 1/4	230 V-I	750	4	905	9	1 070	15	0.64	6.0	550	< 0.1	74	31	3 307

230 V-I-50 Hz | Positive temperature | R-134a

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) 0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrigerant load (kg) (3)	Weight (kg)	SPL dB(A) (4)	Price (€)	Price with air curtain (€)
R-134a	MCP-NY-0 010	3/8	230 V-I	580	4	695	7	820	12	0.47	4.6	300	< 1.0	61	29	2 020	2 609
R-134a	MCP-NY-0 015	1/2	230 V-I	760	7	890	10	1 030	15	0.61	5.6	300	< 1.0	66	32	2 276	2 865
R-134a	MCP-NY-1 015	1/2	230 V-I	880	8	1 055	12	1 250	21	0.68	5.8	600	< 1.0	72	32	2 516	3 105
R-134a	MCP-NY-1 026	3/4	230 V-I	1 180	11	1 435	18	1 710	28	0.91	9.5	600	< 1.0	79	30	2 874	3 463
R-134a	MCP-NY-1 033	1	230 V-I	1 490	17	1 760	26	2 070	40	1.03	9.7	600	< 1.0	83	33	3 228	3 817

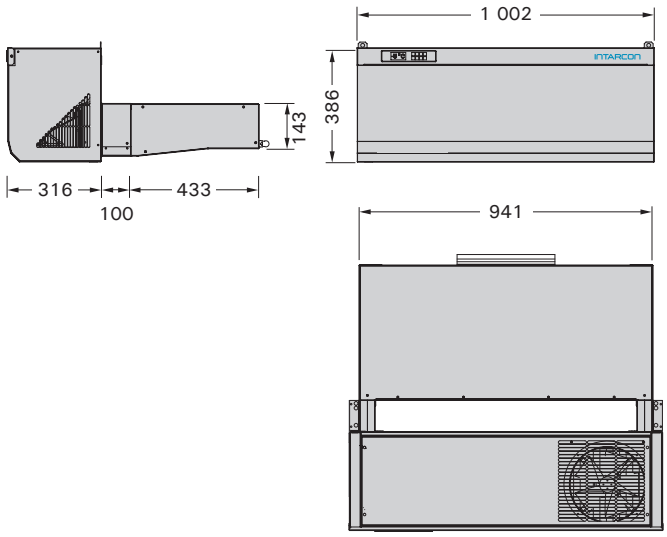
230 V-I-50 Hz | Negative temperature | R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrigerant load (kg) (3)	Weight (kg)	SPL dB(A) (4)	Price (€)	Price with air curtain (€)
R-449A	BCP-NG-0 018	5/8	230 V-I	390	1	490	2	585	3	0.67	7.2	300	< 1.0	67	31	2 582	3 171
R-449A	BCP-NG-1 026	3/4	230 V-I	640	3	810	7	960	10	1.00	8.6	600	< 1.0	74	31	3 015	3 604
R-449A	BCP-NG-1 034	1 1/4	230 V-I	790	4	950	10	1 120	12	1.27	11.1	600	< 1.0	80	33	3 202	3 791

Options

- Evaporator coil epoxy anti-corrosion treatment. + 6 %

Dimensions



Measuring mm.

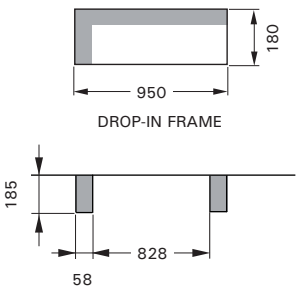
(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) A3 refrigerant charge less than 0.5 kg, units exempt from the International Electrotechnical Committee (IEC 60335).

(3) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(4) Sound pressure in dB (A) in open field at 10 m from the unit.

Mounting frame



intartop

- **R-290** natural refrigerant with high energy efficiency.
- Tropicalised design for ambient temperature up to 45 °C.
- Thermostatic expansion valve.
- Hot gas defrost with temperature control.
- Units exempt from leak checks.

Commercial monoblock units for small-size chiller and freezer cold rooms, for ceiling panel installation.

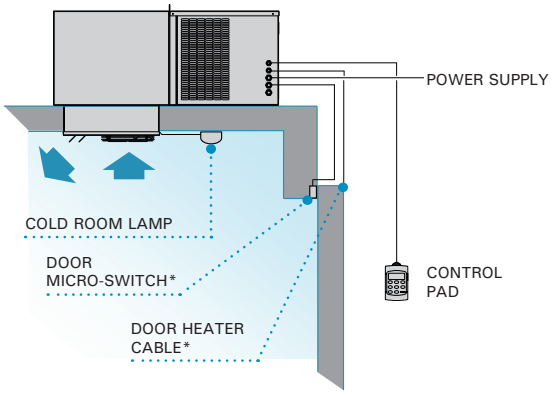
Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-290 refrigerant load, below 0.2 kg.
- R-134a or R-449A refrigerant load, below 1.5 kg.
- Hermetic reciprocating compressor.
- High pressure switch.
- Thermostatic expansion valve.
- MCB protection.
- Hot gas defrost.
- Stainless steel drain pan.
- Evaporation of condensed water.
- Cold room LED light and door micro-switch (CR-ND model).
- Cold room light and door micro-switch cable (CR-Y/G model).
- Door heater cable (only BCR model).
- Evaporator case made in sandwich panel, with 50 mm polyurethane insulation, internally covered in steel sheet.
- Multifunction electronic control.

Series

- CR-N: Axial monoblock version for ceiling panel installation.
- CR-C: Centrifugal monoblock version with centrifugal motor fan to duct the hot condensation air outdoors.

Installation scheme



* Door heater cable only in negative temperature series.
* Door micro-switch not included (except CR-ND models).

Installation

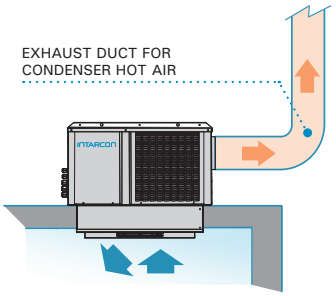
Electronic control

intartop units feature XWING electronic control as standard:

- Multi-function remote digital control.
- Temperature control with maximum and minimum temperature value recording.
- Quick cooling function Jet Cool.
- Night operation mode.

Centrifugal version

intartop centrifugal units feature a centrifugal motor fan to duct the hot condensation air outdoors.



Exhaust duct

Recommended size for 20 m long steel, PVC or fibreglass ducts (each elbow at 90° equals 5 m in length). For flexible or semi-flexible ducts use a larger size:

0 series:	200 x 150 mm or Ø 150 mm
1 series:	200 x 200 mm or Ø 150 mm
2 series:	250 x 150 mm or Ø 200 mm
3 series:	200 x 300 mm or Ø 250 mm

230 V-I-50 Hz | Positive temperature | R-290

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) 0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrig. load (kg)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-290	MCR-ND-0 009	1/3	230 V-I	670	5	780	7	900	12	0.39	3.6	300	< 0.10	63	29	2 187
	MCR-ND-1 012	1/2	230 V-I	1 060	9	1 240	15	1 435	27	0.53	3.4	600	< 0.10	73	29	2 655
	MCR-ND-1 017	3/4	230 V-I	1 370	14	1 585	21	1 815	36	0.68	4.5	600	< 0.15	73	31	2 961
	MCR-ND-2 026	2	230 V-I	1 850	21	2 200	34	2 577	58	0.98	5.9	1 150	< 0.15	96	35	3 954
	MCR-ND-2 034	2 1/2	230 V-I	2 240	27	2 650	43	2 995	70	1.35	9.0	1 150	< 0.20	96	35	4 972

230 V-I-50 Hz | Negative temperature | R-290

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrig. load (kg)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-290	BCR-ND-0 014	3/4	230 V-I	385	1	460	2	550	4	0.39	3.3	300	< 0.10	65	29	2 576
	BCR-ND-1 017	3/4	230 V-I	540	2	660	5	800	8	0.49	3.5	600	< 0.10	73	29	2 894
	BCR-ND-1 028	1 1/4	230 V-I	770	4	925	9	1 100	15	0.73	6.0	600	< 0.15	80	31	3 170
	BCR-ND-2 034	1 1/2	230 V-I	985	7	1 215	14	1 475	25	0.99	9.3	1 150	< 0.20	96	34	3 894

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-134a

	Axial version Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) 0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-134a	MCR-NY-0 010	3/8	230 V-I	605	4.0	751	7.0	902	12	0.43	4.5	300	< 1.0	62	29	1 924
	MCR-NY-0 015	1/2	230 V-I	788	6.1	956	10	1 134	18	0.53	5.5	300	< 1.0	65	32	2 201
	MCR-NY-1 015	1/2	230 V-I	999	8.2	1 231	12	1 490	23	0.58	5.6	600	< 1.0	73	32	2 344
	MCR-NY-1 026	3/4	230 V-I	1 265	12	1 549	19	1 853	30	0.93	9.3	600	< 1.0	82	30	2 857
	MCR-NY-1 033	1	230 V-I	1 502	16	1 817	26	2 153	41	1.05	9.5	600	< 1.0	83	33	3 226
	MCR-NY-2 033	1	230 V-I	1 911	24	2 363	37	2 846	61	1.21	10.3	1 150	< 1.5	98	34	3 667
	MCR-NY-2 053	1 1/2	230 V-I *	2 352	33	2 882	50	3 455	75	1.67	12.9	1 150	< 1.5	99	38	4 344
	MCR-NY-2 074	2	230 V-I *	2 940	40	3 560	60	4 211	90	1.83	16.9	1 150	< 1.5	110	44	4 810
	MCR-NY-3 108	5	400 V-III	3 725	48	4 465	71	5 155	121	2.30	15.1	1 300	< 2.0	149	45	5 343

Centrifugal version Series / Model	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
MCR-CY-0 010	375	8	2 179
MCR-CY-0 015	375	8	2 493
MCR-CY-1 015	575	8	2 655
MCR-CY-1 026	575	8	3 235
MCR-CY-1 033	575	8	3 651
MCR-CY-2 033	1 000	12	4 156
MCR-CY-2 053	1 000	12	4 923
MCR-CY-2 074	1 000	12	5 448
MCR-CY-3 108	1 500	14	5 842

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-449A

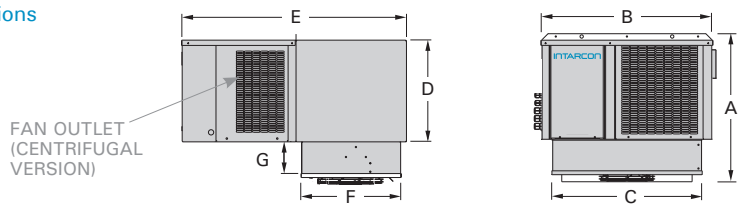
	Axial version Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-449A	BCR-NG-0 018	5/8	230 V-I	418	0.6	525	1.5	638	2.8	0.59	4.7	300	< 0.5	65	31	2 477
	BCR-NG-1 026	3/4	230 V-I	562	2.0	736	4.1	907	7.7	0.84	8.5	600	< 1.0	84	31	2 887
	BCR-NG-1 034	1 1/4	230 V-I	703	3.2	892	5.8	1 060	10	1.05	11.0	600	< 1.0	84	33	3 041
	BCR-NG-2 034	1 1/4	230 V-I	775	3.8	1 102	7.8	1 406	14	1.11	11.5	1 150	< 1.0	135	35	3 455
	BCR-NG-2 055	1 3/4	230 V-I *	1 160	8.0	1 575	15	2 015	27	1.60	12.6	1 150	< 1.5	145	41	4 063
	BCR-NG-2 075	2 1/2	230 V-I *	1 470	11	1 870	19	2 295	32	2.00	25.5	1 150	< 1.5	145	44	4 588
	BCR-NG-3 075	2 1/2	230 V-I *	1 630	13	2 115	23	2 655	38	2.10	25.5	1 300	< 1.5	147	44	5 109
	BCR-NG-3 096	3 1/2	400 V-III	1 850	15	2 420	27	3 010	46	2.20	11.2	1 300	< 1.5	147	49	5 285

Centrifugal version Series / Model	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
BCR-CG-0 018	375	8	2 766
BCR-CG-1 026	575	8	3 231
BCR-CG-1 034	575	8	3 392
BCR-CG-2 034	1 000	12	3 954
BCR-CG-2 055	1 000	12	4 580
BCR-CG-2 075	1 000	12	5 126
BCR-CG-3 075	1 500	14	5 626
BCR-CG-3 096	1 500	14	5 784

Options

- Change to 400 V-III-50 Hz power supply (CR-Y/G models). + 5 %
- Door micro-switch (CR-Y/G models). + 61 €
- Non-return damper (centrifugal version). + 65 €
- Adaptation of air discharge to circular duct (CR-Y/G models). + 119 €
- Vertical discharge (centrifugal version).
- Evaporator coil epoxy anti-corrosion treatment. + 6 %

Dimensions



Dimensions (mm)	A	B	C	D	E	F	G	Fan outlet	Hopper
0 series	480	600	430	330	790	375	100	185 x 115	Ø 150
1 series	574	665	582	385	850	379	135	185 x 115	Ø 150
2 series	677	835	756	469	850	379	135	230 x 130	Ø 200
3 series	680	925	843	485	1 070	454	145	266 x 236	Ø 250

(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

(4) Available static pressure of condensation.

* Units available with 400 V-III-50 Hz power supply.

Mounting frames

CEILING FRAME

Dimensions (mm)	H	I
0 series	435	380
1 series	590	385
2 series	760	385
3 series	850	460

R-290 intarblock

- **R-290** natural refrigerant with high energy efficiency.
- Tropicalised design for ambient temperature up to 45 °C.
- Thermostatic expansion valve.
- Hot gas defrost with temperature control.

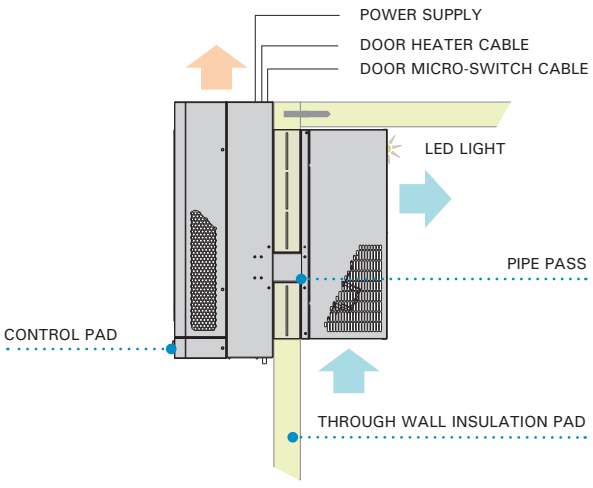
Self-contained slim monoblock units for wall-mount installation in small cold rooms for positive and negative temperature.

This new range of monoblock units incorporates the latest technology components in a very compact size that integrates into the wall panel of the cold room.

Features

- 230 V-I-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-290 refrigerant load, below 0.2 kg.
- Hermetic reciprocating compressor.
- EC motor fans.
- High pressure switch.
- Thermostatic expansion valve.
- Hot gas defrost.
- Stainless steel drain pan.
- Evaporation of condensed water.
- Cold room LED light and door micro-switch.
- Removable through-wall insulation pad included.
- Door heater cable (only for BCV series).
- Multifunctional electronic control.

Installation scheme



Installation

Propane

Propane or R-290 is a hydrocarbon used as a refrigerant in small commercial refrigeration units. It has a low environmental impact and excellent thermodynamic properties.

- Global-warming potential GWP = 0,02 according to IPCC AR6
- Boiling point at 1.013 bar (°C): -42.10
- Temperature slip (°C): 0
- Safety classification: A3. Not toxic but extremely flammable.
- The International Electrotechnical Committee IEC 60335 allow the use of up to 0.5 kg on compact commercial refrigeration units.

Electronic control

XW60LH electronic control, as standard on our commercial propane and door monoblock units, is an advanced small size controller, which includes the following functions:

- Temperature control with maximum and minimum temperature recording.
- Quick cooling function Jet Cool.
- Night operation mode.
- 4 output relays for: compressor, fan, defrost and light.
- 3 temperature NTC probes for cold room, defrost and condensation.

Built-in cold room LED light

High efficiency cold room LED light, built-in in the unit that is automatically activated when the cold room door is opened.

230 V-I-50 Hz | Positive temperature | R-290

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature [1] 0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrigerant load (kg)	Weight (kg)	SPL dB(A) [2]	Price (€)
R-290	**MCV-LD-0 009**	1/3	230 V-I	635	5	740	7	850	12	0.40	3,5	300	< 0.10	38	29	2 076
	MCV-LD-1 012	1/2	230 V-I	1 050	9	1 220	15	1 410	27	0.52	3,3	500	< 0.10	56	29	2 499
	MCV-LD-1 017	3/4	230 V-I	1 340	14	1 560	21	1 780	36	0.68	4,3	500	< 0.15	57	31	2 786
	MCV-LD-2 026	2	230 V-I	1 824	21	2 170	34	2 540	58	0.94	5,9	950	< 0.15	86	35	3 535
	MCV-LD-2 034	2 1/2	230 V-I	2 215	27	2 618	43	2 960	70	1.31	9,0	950	< 0.20	86	35	4 432

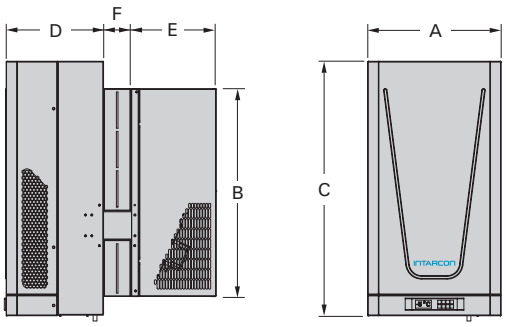
230 V-I-50 Hz | Negative temperature | R-290

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature [1] -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Refrigerant load (kg)	Weight (kg)	SPL dB(A) [2]	Price (€)
R-290	**BCV-LD-0 014**	3/4	230 V-I	370	1	440	2	520	4	0.38	3,6	300	< 0.10	38	29	2 465
	BCV-LD-1 017	3/4	230 V-I	540	2	660	5	790	8	0.48	4,3	500	< 0.10	57	29	2 738
	BCV-LD-1 028	1 1/4	230 V-I	770	4	920	9	1 090	15	0.73	5,6	500	< 0.15	64	31	3 015
	BCV-LD-2 034	1 1/2	230 V-I	985	7	1 210	14	1 470	25	0.97	9,3	950	< 0.20	86	34	3 235

Options

- Evaporator coil epoxy anti-corrosion treatment. + 6 %

Dimensions

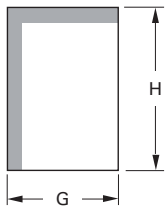


Dimensions (mm)	A	B	C	D	E	F
0 series	420	596	803	237	207	86
1 series	420	656	803	307	270	86
2 series	620	676	764	343	310	106

[1] Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT), ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

[2] Sound pressure in dB (A) in open field at 10 m from the unit.

Mounting frames



PLUG-IN FRAME

Dimensions (mm)	G	H
0 series	400	600
1 series	400	660
2 series	600	680

intarblock

- ❄ Compact unit with reduced refrigerant load, less than 2 kg.
- ❄ Tropicalised design for high ambient temperature up to 45 °C.
- ❄ Thermostatic expansion valve.
- ❄ Hot gas defrost with temperature control.
- ❄ Units exempt from leak checks.

Self-contained monoblock units for wall-mount installation in small cold rooms at positive and negative temperature.

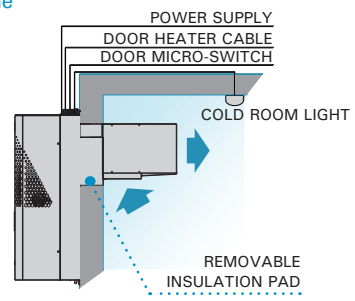
Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-134a or R-449A refrigerant load, below 2 kg.
- Hermetic reciprocating compressor.
- High pressure switches.
- Thermostatic expansion valve.
- MCB protection.
- Hot gas defrost.
- Stainless steel drain pan.
- Evaporation of condensed water.
- Cold room lamp and door micro-switch cable.
- Door heater cable (only for BCV series).
- Removable through-wall insulation pad included.
- Multifunction electronic control.

Series

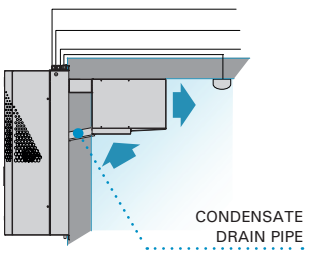
- CV-N: Monoblock units ready for quick installation through cold room wall and removable through-wall insulation pad for drop-in frame mounting.
- CV-C: Centrifugal version units featuring a centrifugal motor fan for ducted outlet of condenser hot air.
- CV-I: Weatherproof monoblock units for outdoors installations at positive and negative small cold rooms.

Installation scheme



Plug-in frame mounting

A removable insulation pad is included for direct installation through a hole in the cold room wall.



Drop-in frame mounting (except for series 0)

After cutting a channel for tube passage in the wall panel, the unit can be dropped in before assembling the ceiling panel.

Installation

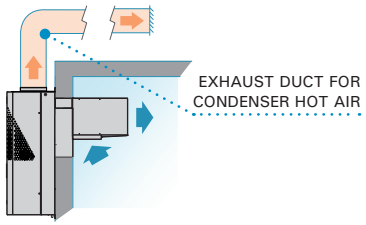
Electronic control

intarblock units feature XWING electronic control as standard.

- Temperature control with maximum and minimum temperature value recording.
- Quick cooling function "Jet Cool".
- Night operation mode.

Centrifugal version

intarblock centrifugal units feature a centrifugal motor fan to duct hot condensation airflow outdoors.



Exhaust duct

Recommended size for 20 m long steel, PVC or fibreglass ducts (each elbow at 90° equals 5 m in length). For flexible or semi-flexible ducts use a larger size.

0 series:	200 x 150 mm or Ø 150 mm
1 series:	200 x 200 mm or Ø 150 mm
2 series:	250 x 150 mm or Ø 200 mm
3 series:	300 x 200 mm or Ø 250 mm

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-134a

	Axial version	Compressor		Cooling capacity / Cold room volume according to cold room temperature (1)						Input power (kW)	Max. current (A)	Evap. air flow (m^3/h)	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
				0 °C		5 °C		10 °C								
	Series / Model	HP	Power supply	W	m^3	W	m^3	W	m^3							
R-134a	MCV-NY-0 010	3/8	230 V-I	610	4.0	758	7.0	907	12	0.43	4.5	300	< 1.0	36	29	1 786
	MCV-NY-0 015	1/2	230 V-I	794	6.0	961	10	1 139	18	0.53	5.5	300	< 1.0	38	32	2 062
	MCV-NY-1 015	1/2	230 V-I	972	8.0	1 199	14	1 453	23	0.57	5.6	500	< 1.0	60	32	2 274
	MCV-NY-1 026	3/4	230 V-I	1 281	12	1 565	19	1 859	30	0.81	9.3	500	< 1.0	69	30	2 537
	MCV-NY-1 033	1	230 V-I	1 454	14	1 743	25	2 037	41	0.92	9.5	500	< 1.0	70	33	2 680
	MCV-NY-2 033	1	230 V-I	1 790	19	2 163	36	2 573	57	1.09	10.3	950	< 1.5	88	34	3 301
	MCV-NY-2 053	1 1/2	230 V-I *	2 153	24	2 609	41	3 103	72	1.46	12.9	950	< 1.5	89	38	3 697
	MCV-NY-3 053	1 1/2	230 V-I *	2 489	29	3 103	53	3 743	83	1.51	13.1	1 300	< 2.0	117	39	4 270
	MCV-NY-3 074	2	230 V-I *	3 239	40	3 938	70	4 667	97	1.89	17.1	1 300	< 2.0	114	44	4 638
	MCV-NY-3 108	5	400 V-III	3 927	51	4 725	110	5 539	130	2.48	18.6	1 300	< 2.0	116	45	4 939

Centrifugal version	Conden. air flow (m^3/h)	ASP (mmca) (4)	Price (€)
Series / Model			
MCV-CY-0 010	375	8	2 025
MCV-CY-0 015	375	8	2 335
MCV-CY-1 015	575	8	2 575
MCV-CY-1 026	575	8	2 875
MCV-CY-1 033	575	8	3 036
MCV-CY-2 033	950	13	3 739
MCV-CY-2 053	950	13	4 186
MCV-CY-3 053	1 150	8	5 013
MCV-CY-3 074	1 150	8	5 445
MCV-CY-3 108	1 150	8	5 798

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-449A

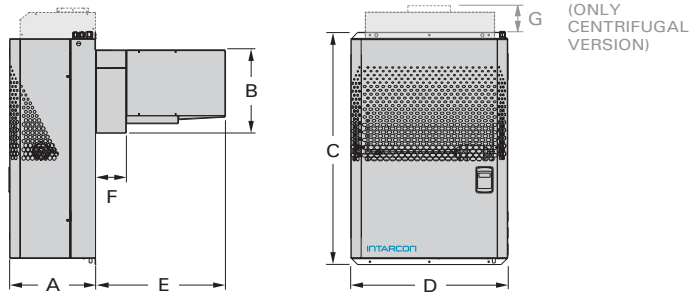
	Axial version	Compressor		Cooling capacity / Cold room volume according to cold room temperature (1)						Input power (kW)	Max. current (A)	Evap. air flow (m^3/h)	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
				-25 °C		-20 °C		-15 °C								
	Series / Model	HP	Power supply	W	m^3	W	m^3	W	m^3							
R-449A	BCV-NG-0 018	5/8	230 V-I	382	0.6	486	1.5	596	2.8	0.50	4.7	300	< 0.5	38	31	2 404
	BCV-NG-1 026	3/4	230 V-I	550	2.1	721	4.3	888	7.6	0.84	8.5	550	< 1.0	60	31	2 770
	BCV-NG-1 034	1 1/4	230 V-I	697	3.2	882	6.1	1 047	10	1.05	11.0	550	< 1.0	60	33	2 847
	BCV-NG-2 034	1 1/4	230 V-I	793	3.8	1 049	7.7	1 341	14	1.11	11.9	950	< 1.0	89	35	3 040
	BCV-NG-2 055	1 3/4	230 V-I *	1 155	8.0	1 560	15	1 960	26	1.60	17.5	950	< 1.0	96	41	3 638
	BCV-NG-2 075	2 1/2	230 V-I *	1 453	11	1 835	18	2 245	31	2.00	25.5	950	< 1.0	101	44	3 986
	BCV-NG-3 075	2 1/2	230 V-I *	1 680	13	2 150	23	2 635	38	2.20	26.0	1 300	< 1.5	113	44	4 433
	BCV-NG-3 096	3 1/2	400 V-III	2 022	18	2 492	32	2 942	54	2.39	12.1	1 300	< 1.5	129	49	4 715

Centrifugal version	Conden. air flow (m^3/h)	ASP (mmca) (4)	Price (€)
Series / Model			
BCV-CG-0 018	375	8	2 682
BCV-CG-1 026	575	8	3 088
BCV-CG-1 034	575	8	3 159
BCV-CG-2 034	950	13	3 502
BCV-CG-2 055	950	13	4 110
BCV-CG-2 075	950	13	4 461
BCV-CG-3 075	1 150	8	5 136
BCV-CG-3 096	1 150	8	5 434

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Door micro-switch. + 61 €
- Non-return damper (centrifugal version). + 65 €
- Adaptation of air discharge to circular duct. + 119 €
- Evaporator coil epoxy anti-corrosion treatment. + 6 %

Dimensions



Dimensions (mm)	A	B	C	D	E	F	G	Fan outlet
0 series	306	510	683	420	250	100	90	185 x 115
1 series	340	330	880	400	514	122	42	185 x 115
2 series	340	330	920	620	514	122	140	230 x 130
3 series	365	470	940	735	514	122	50	2x 185 x 115

(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

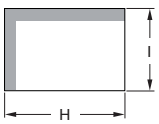
(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

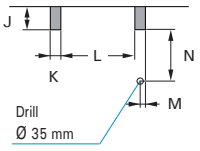
(4) Available Static Pressure of condensation.

* Available units with 400 V-III-50 Hz power supply.

Mounting frame



PLUG-IN FRAME



DROP-IN FRAME

Dimensions (mm)	H	I	J	K	L	M	N
0 series	405	515	n/a				
1 series	380	335	75	38	295	21	218
2 series	600	335	75	30	522	16	218
3 series	715	475	75	45	607	20	356

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-452A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -5 °C W	-5 °C m³	0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Refrig. load (kg)	Weight (kg)	SPL dB(A) (2)	Price (€)
R-452A	MCV-IB-1 010	3/8	230 V-I	630	3.5	799	6.4	966	11	1 157	19	0.65	5.5	500	575	< 1.0	59	34	2 802
R-452A	MCV-IB-1 012	1/2	230 V-I	767	4.9	930	8.2	1 118	14	1 317	23	0.67	6.5	500	575	< 1.0	60	34	2 891
R-452A	MCV-IB-1 014	1/2	230 V-I	893	6.3	1 077	10	1 270	16	1 485	27	0.80	7.1	500	575	< 1.0	60	34	2 983
R-452A	MCV-IB-1 016	5/8	230 V-I	985	7.4	1 184	12	1 386	19	1 615	30	0.87	8.0	500	575	< 1.0	69	34	3 073
R-452A	MCV-IB-1 018	3/4	230 V-I	1 138	9.3	1 347	14	1 570	22	1 806	35	1.02	9.3	500	575	< 1.0	70	34	3 226
R-452A	MCV-IB-1 024	1	230 V-I	1 207	10	1 468	16	1 739	25	2 039	41	1.18	12.3	500	575	< 1.0	70	34	3 407
R-452A	MCV-IB-2 024	1	230 V-I	1 554	14	1 917	23	2 296	36	2 726	57	1.36	11.9	950	950	< 1.0	88	35	4 197
R-452A	MCV-IB-2 026	1 1/4	230 V-I *	1 795	17	2 149	26	2 526	40	2 945	63	1.47	12.3	950	950	< 1.0	89	36	4 443
R-452A	MCV-IB-2 034	1 1/2	230 V-I *	1 996	20	2 391	31	2 801	46	3 247	72	1.95	16.9	950	950	< 1.5	89	37	4 686
R-452A	MCV-IB-3 034	1 1/2	230 V-I *	2 230	23	2 690	35	3 200	53	3 730	83	2.07	17.1	1 300	1 250	< 2.0	117	38	5 130
R-452A	MCV-IB-3 038	1 3/4	400 V-III	2 500	27	3 020	41	3 580	62	4 220	97	1.97	7.9	1 300	1 250	< 1.5	114	40	5 574

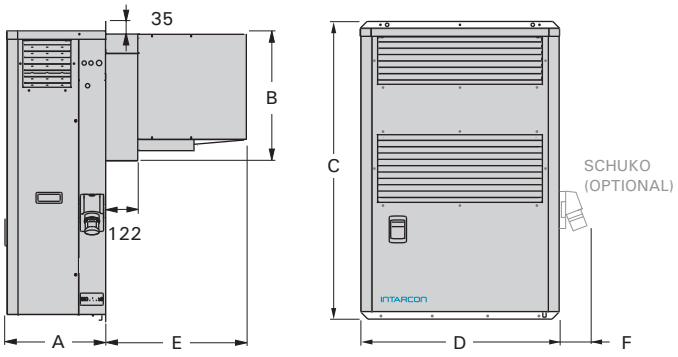
230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-452A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Refrig. load (kg)	Weight (kg)	SPL dB(A) (2)	Price (€)
R-452A	BCV-IB-1 018	5/8	230 V-I	383	1.0	489	2.0	655	4.4	0.67	7.3	500	575	< 0.5	59	31	3 563
R-452A	BCV-IB-1 026	3/4	230 V-I	548	2.1	720	4.3	877	7.6	0.91	8.5	500	575	< 1.0	60	31	3 636
R-452A	BCV-IB-1 034	1 1/4	230 V-I	668	3.2	866	6.1	1 023	10	1.14	11.0	500	575	< 1.0	60	33	3 734
R-452A	BCV-IB-2 034	1 1/4	230 V-I	793	3.8	1 048	7.7	1 297	14	1.19	11.9	950	950	< 1.0	89	35	3 986
R-452A	BCV-IB-2 055	1 3/4	230 V-I *	1 280	11	1 650	14	2 025	22	1.80	17.9	950	950	< 1.0	96	41	4 773
R-452A	BCV-IB-2 075	2 1/2	230 V-I *	1 580	15	1 900	17	2 355	27	2.30	25.9	950	950	< 1.0	101	44	5 231
R-452A	BCV-IB-3 075	2 1/2	230 V-I *	1 630	16	2 130	19	2 540	30	2.50	26.0	1 300	1 250	< 1.5	113	44	5 847
R-452A	BCV-IB-3 096	3 1/2	400 V-III	1 890	18	2 460	32	3 040	54	2.64	12.1	1 300	1 250	< 1.5	129	49	6 190

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Door micro-switch. + 61 €
- Condenser coil polyurethane anti-corrosion treatment. + 4 %
- Evaporator coil epoxy anti-corrosion treatment. + 6 %
- Male and female schuko electrical connector base. + 72 €
- Low voltage protection (single-phase models). + 178 €
- Low voltage and phase sequence protection (three-phase models). + 353 €

Dimensions



Measuring mm.

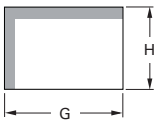
Dimensions (mm)	A	B	C	D	E	F
1 series	340	330	1 060	400	514	115
2 series	340	330	1 100	620	514	115
3 series	365	470	1 100	735	514	115
3 096 series	365	470	1 215	735	514	115

(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

Mounting frame



PLUG-IN FRAME

Dimensions (mm)	G	H
1 series	380	335
2 series	600	335
3 series	710	475

Installations scheme

Split systems

Condensing and evaporator unit

Low-noise construction

Units exempt from leak checks

Refrigerant pre-load

intarsplit

- ❄ Units exempt from leak checks.
- ❄ Factory-tested systems with no need for on-site tests.
- ❄ Tropicalised design for high ambient temperature up to 45 °C.
- ❄ Built-in thermostatic expansion valve.
- ❄ Refrigerant pre-load.

Split systems for small and medium size cold rooms at positive and negative temperature, composed by a condensing unit in horizontal construction and a slim-type, cubic-type or double-flow evaporating unit.

Features

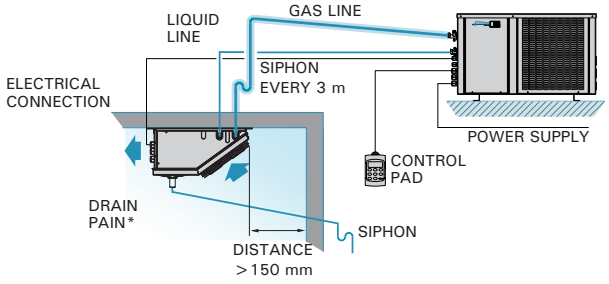
- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Minimal R-134a or R-449A refrigerant load.
- Hermetic reciprocating compressor (noise insulation in 3-phases models).
- High and low pressure switches.
- Liquid receiver.
- Refrigerant pre-load for 10 m of piping.
- Thermostatic expansion valve.
- Electrical heater defrost (except ASH series).
- Stainless steel drain pan.
- Flare-type connections (up to 3/8"-3/4") and service valves.
- 10 m of electrical connections included (except for 4 and 40 up to 54 series).
- MCB protection.
- Multifunction electronic control with remote keyboard and digital regulation of condensing pressure.
- Liquid injection system for negative temperature models with R-449A.

Series

- SH-N: Split systems with axial condensing unit and slim-type evaporating unit.
- SH-Q: Split systems with axial condensing unit and cubic-type evaporating unit.
- SH-C: Split systems with centrifugal condensing unit and slim-type evaporating unit.
- SH-CQ: Split systems with centrifugal condensing unit and cubic-type evaporating unit.
- SH-D: Split systems with axial condensing unit and double-flow evaporating unit.
- SH-CD: Split systems with centrifugal condensing unit and double-flow evaporating unit.

Installation scheme

Maximum vertical distance between units of 15 m if the condensing unit is placed at a higher level than the evaporating unit, and 6 m otherwise.
*20 % minimum slope of draining pipe for negative temperature models.



Control pad

intarsplit systems feature XM670K electronic control as standard.

- Remote control keyboard with digital display.
- Temperature control with maximum and minimum temperature value recording.
- Possibility of interconnection and synchronization of up to 8 devices by LAN, managed from a single control.

Digital condensing control

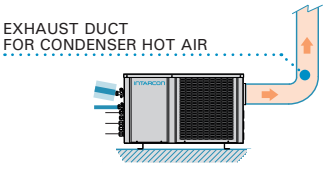
Standard as intarsplit series, it protects the unit against occasional low ambient temperatures. For prolonged operations with negative temperature outside it is recommended to install the proportional condensation control (optional in series 3 and 33 onwards).

Crankcase Heater (optional)

The inclusion of the optional crankcase heater is recommended in all outdoor units.

Centrifugal version

The units of the centrifugal intarsplit series incorporates a centrifugal turbine that allows the condensation hot air to be transported outside by means of air ducts.



Electrical interconnections (SH-N/-C models)

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m.

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	2 x 1 mm²	3 x 1 mm²
Defrost	2 x 1.5 mm² + G	4 x 1.5 mm² + G
Control pad	2 x 1 mm²	
Switch door*	2 x 1 mm²	
Door heater cable	2 x 1 mm² at NT	
Cold room light*	2 x 1 mm² + G	

* Optional not included.
To know electrical interconnections of each model: see technical manual.

MSH / BSH series

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-134a / R-449A

	Axial version Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) 0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-134a	MSH-NY-00 010	3/8	230 V-I	643	5.1	788	8.5	945	13	0.46	4.6	300	1/4"-3/8"	< 1.5	37+12	29	2 452
	MSH-NY-00 015	1/2	230 V-I	832	7.2	1 010	10	1 193	19	0.56	5.6	300	1/4"-3/8"	< 1.5	40+12	32	2 657
	MSH-NY-11 015	1/2	230 V-I	988	8.2	1 220	12	1 474	23	0.58	5.6	550	1/4"-1/2"	< 1.5	41+16	32	2 808
	MSH-NY-11 026	3/4	230 V-I	1 250	12	1 533	18	1 827	30	0.82	9.3	550	1/4"-1/2"	< 1.5	48+16	30	3 627
	MSH-NY-11 033	1	230 V-I	1 481	16	1 790	24	2 116	41	0.93	9.5	550	1/4"-1/2"	< 1.5	50+16	33	3 903
	MSH-NY-22 033	1	230 V-I	1 922	23	2 368	36	2 846	60	1.06	10.0	1 050	1/4"-5/8"	< 2.0	53+24	34	4 354
	MSH-NY-22 053	1 1/2	230 V-I *	2 363	31	2 882	48	3 455	73	1.45	12.6	1 050	1/4"-5/8"	< 2.0	63+24	38	4 826
	MSH-NY-33 053	1 1/2	230 V-I *	2 688	40	3 318	63	4 069	100	1.55	13.2	1 725	1/4"-3/4"	< 3.5	82+45	38	5 045
	MSH-NY-33 074	2	230 V-I *	3 518	47	4 347	71	5 198	110	1.93	17.2	1 725	1/4"-3/4"	< 3.5	84+45	44	5 436
	MSH-NY-43 086	4	400 V-III	4 379	66	5 366	100	6 421	165	2.39	14.9	1 725	3/8"-7/8"	< 5.0	107+55	48	6 461
	MSH-NY-44 108	5	400 V-III	5 628	88	6 888	140	8 274	220	3.05	19.2	3 100	3/8"-7/8"	< 5.0	109+55	45	7 169
	MSH-NY-44 136	6 1/2	400 V-III	6 862	115	8 311	170	9 881	260	3.77	23.2	3 100	3/8"-1 1/8"	< 5.5	112+55	44	8 965
R-449A	MSH-NG-0 008	1/3	230 V-I	758	5.1	900	8.5	1 071	13	0.47	5.1	300	1/4"-3/8"	< 1.5	38+12	34	2 312
	MSH-NG-0 010	3/8	230 V-I	893	6.1	1 042	10	1 223	15	0.58	4.8	300	1/4"-3/8"	< 1.5	40+12	34	2 503
	MSH-NG-0 012	1/2	230 V-I	980	7.2	1 135	12	1 324	19	0.65	5.6	300	1/4"-3/8"	< 1.5	41+12	34	2 647
	MSH-NG-1 014	1/2	230 V-I	1 100	10	1 313	16	1 564	26	0.79	6.7	550	1/4"-1/2"	< 1.5	44+16	34	2 968
	MSH-NG-1 016	5/8	230 V-I	1 216	12	1 451	18	1 734	30	0.85	7.6	550	1/4"-1/2"	< 1.5	53+16	34	3 162
	MSH-NG-1 018	3/4	230 V-I	1 404	14	1 653	22	1 954	35	1.00	8.9	550	1/4"-1/2"	< 1.5	54+16	34	3 421
	MSH-NG-1 024	1	230 V-I	1 528	16	1 811	24	2 140	41	1.01	11.1	550	1/4"-1/2"	< 1.5	54+16	34	3 679
	MSH-NG-2 024	1	230 V-I	2 020	23	2 424	36	2 896	60	1.27	11.6	1 050	1/4"-1/2"	< 1.5	65+24	35	4 104
	MSH-NG-2 026	1 1/4	230 V-I *	2 230	26	2 640	41	3 131	64	1.36	12.0	1 050	1/4"-1/2"	< 1.5	66+24	36	4 297
	MSH-NG-2 034	1 1/2	230 V-I *	2 543	31	2 985	48	3 516	73	1.80	16.6	1 050	1/4"-5/8"	< 1.5	66+24	37	4 491
	MSH-NG-3 034	1 1/2	230 V-I *	3 091	40	3 674	63	4 364	100	1.67	17.0	1 725	1/4"-5/8"	< 3.5	74+45	38	4 709
	MSH-NG-3 038	1 3/4	400 V-III	3 459	47	4 060	71	4 786	110	1.53	7.8	1 725	1/4"-5/8"	< 4.0	71+45	40	5 125
	MSH-NG-4 048	2	400 V-III	4 494	66	5 350	98	6 358	155	2.61	10.5	1 725	3/8"-3/4"	< 5.5	95+45	36	5 945
	MSH-NG-4 054	2 1/2	400 V-III	4 949	74	5 847	110	6 916	170	2.80	11.0	1 725	3/8"-3/4"	< 5.0	96+45	36	6 355

Centrifugal version Series / Model	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
MSH-CY-00 010	375	8	2 723
MSH-CY-00 015	375	8	2 949
MSH-CY-11 015	575	8	3 115
MSH-CY-11 026	575	8	4 028
MSH-CY-11 033	575	8	4 334
MSH-CY-22 033	1 000	12	4 831
MSH-CY-22 053	1 000	12	5 359
MSH-CY-33 053	1 500	14	5 599
MSH-CY-33 074	1 500	14	6 035
MSH-CY-43 086	3 500	10	7 169
MSH-CY-44 108	3 500	10	7 962
MSH-CY-44 136	3 500	10	9 953
MSH-CG-0 008	375	8	2 541
MSH-CG-0 010	375	8	2 753
MSH-CG-0 012	375	8	2 911
MSH-CG-1 014	575	8	3 286
MSH-CG-1 016	575	8	3 493
MSH-CG-1 018	575	8	3 768
MSH-CG-1 024	575	8	4 081
MSH-CG-2 024	1 000	12	4 535
MSH-CG-2 026	1 000	12	4 783
MSH-CG-2 034	1 000	12	4 990
MSH-CG-3 034	1 500	14	5 224
MSH-CG-3 038	1 500	14	5 679
MSH-CG-4 048	3 500	10	6 580
MSH-CG-4 054	3 500	10	7 004

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-449A

	Axial version Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-449A	BSH-NG-0 018	5/8	230 V-I	422	0.9	537	1.8	658	3.9	0.60	4.8	300	1/4"-1/2"	< 1.5	41+12	31	2 914
	BSH-NG-1 026	3/4	230 V-I	559	2.1	711	4.2	900	7.3	0.84	8.7	550	1/4"-1/2"	< 2.5	55+16	31	3 107
	BSH-NG-1 034	1 1/4	230 V-I	622	3.0	858	5.9	1 038	10	1.05	11.2	550	1/4"-1/2"	< 2.5	56+16	33	3 460
	BSH-NG-2 034	1 1/4	230 V-I	815	4.0	1 056	8.0	1 377	14	1.18	11.5	1 050	1/4"-1/2"	< 2.5	66+24	35	3 802
	BSH-NG-2 055	1 3/4	230 V-I *	1 175	8.0	1 675	16	2 090	28	1.70	17.5	1 050	1/4"-5/8"	< 2.5	66+24	41	4 538
	BSH-NG-2 075	2 1/2	230 V-I *	1 620	13	2 035	21	2 435	34	2.10	25.5	1 050	1/4"-5/8"	< 3.5	66+24	44	5 256
	BSH-NG-3 075	2 1/2	230 V-I *	1 795	15	2 410	26	3 020	46	2.30	26.3	1 725	1/4"-5/8"	< 3.5	85+45	44	5 497
	BSH-NG-3 096	3 1/2	400 V-III	2 046	23	2 745	37	3 435	62	2.18	12.4	1 725	1/4"-3/4"	< 3.5	85+45	49	5 749
	BSH-NG-4 108	4 1/4	400 V-III	2 851	34	3 588	55	4 378	94	3.18	15.5	1 725	3/8"-7/8"	< 5.5	107+45	47	7 617
	BSH-NG-4 136	5	400 V-III	3 289	42	4 064	67	4 895	110	4.37	17.4	1 725	3/8"-7/8"	< 5.0	107+45	42	8 511

Centrifugal version Series / Model	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
BSH-CG-0 018	375	8	3 146
BSH-CG-1 026	575	8	3 339
BSH-CG-1 034	575	8	3 714
BSH-CG-2 034	1 000	12	4 063
BSH-CG-2 055	1 000	12	4 866
BSH-CG-2 075	1 000	12	5 613
BSH-CG-3 075	1 500	14	5 916
BSH-CG-3 096	1 500	14	6 487
BSH-CG-4 108	3 500	10	8 326
BSH-CG-4 136	3 500	10	9 267

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Crankcase heater. + 72 €
- Proportional control of condensing pressure:
  Axial version (N): 3/33 and 4/43/44 series. + 295 €
  Centrifugal version (C): 4/43/44 series. + 471 €
- Vertical air flow (centrifugal version).
- Rectangular to circular exhaust air adaptor. + 119 €
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6 %
- Anti-corrosion condenser coil coating. + 4 %
- Larger sized multifunction electronic control. + 178 €

(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

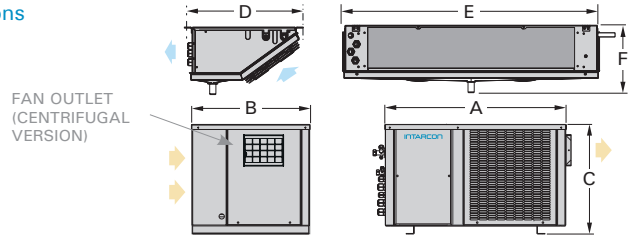
(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

(4) Available static pressure of condensation

* Available units with 400 V-III-50 Hz power supply.

Dimensions



Dimensions (mm)	A	B	C	D	E	F	Evaporator fan	Fan outlet
0 and 00 series	600	395	355	417	549	185	1x Ø 172	185 x 115
1 and 11 series	665	435	416	430	643	235	1x Ø 200	185 x 115
2 and 22 series	835	435	500	430	993	235	2x Ø 200	230 x 130
3 and 33 series	925	580	515	508	1 691	235	3x Ø 254	266 x 236
4 and 43 series	1 000	615	585	508	1 691	235	3x Ø 254	305 x 266
44 series	1 000	615	585	547	2 064	285	4x Ø 300	305 x 266

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-134a / R-449A

	Axial version	Compressor		Cooling capacity / Cold room volume according to cold room temperature (1)						Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Liq-Gas Cooling Connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
	Series / Model	HP	Power supply	0 °C		5 °C		10 °C									
				W	m³	W	m³	W	m³								
R-134a	MSH-QY-30 068	3 1/2	400 V-III	3 854	54	4 646	59	5 513	84	2.00	12.0	2 100	1/4"-3/4"	< 4.0	74+43	37	6 038
	MSH-QY-40 086	4	400 V-III	4 431	63	5 418	68	6 500	100	2.35	14.3	2 100	3/8"-7/8"	< 5.0	107+43	48	7 058
	MSH-QY-41 108	5	400 V-III	5 324	71	6 500	80	7 775	110	2.77	17.3	2 700	3/8"-7/8"	< 5.0	109+56	45	7 839
	MSH-QY-42 136	6 1/2	400 V-III	7 235	110	8 773	180	10 474	280	3.85	22.0	4 150	3/8"-1 1/8"	< 5.0	112+72	44	9 798
	MSH-QY-53 171	8	400 V-III	7 830	135	9 535	185	11 520	300	4.25	24.1	5 200	3/8"-1 1/8"	< 5.5	162+89	50	11 362
	MSH-QY-53 215	10	400 V-III	9 450	175	11 435	230	13 740	350	5.01	30.5	6 200	3/8"-1 1/8"	< 5.5	166+94	49	12 497
	MSH-QY-54 271	13	400 V-III	12 400	240	14 760	320	17 420	400	7.13	40.2	8 300	1/2"-1 3/8"	< 5.5	171+118	48	14 628
R-449A	MSH-QG-30 034	1 1/2	230 V-I *	3 409	39	4 054	62	4 797	99	1.61	16.3	2 100	1/4"-5/8"	< 3.5	74+43	38	5 182
	MSH-QG-30 038	1 3/4	400 V-III	3 647	46	4 301	70	5 063	110	1.79	7.1	2 100	1/4"-5/8"	< 3.5	71+43	40	5 449
	MSH-QG-40 048	2	400 V-III	4 752	67	5 559	99	6 554	159	2.42	9.8	2 100	3/8"-3/4"	< 4.5	95+43	36	6 373
	MSH-QG-40 054	2 1/2	400 V-III	5 203	76	6 060	113	7 106	178	2.61	10.3	2 100	3/8"-3/4"	< 5.0	96+43	36	6 795
	MSH-QG-41 060	3	400 V-III	6 049	86	7 038	128	8 260	198	3.07	11.3	2 700	1/2"-3/4"	< 5.0	97+56	36	7 364
	MSH-QG-41 068	3 1/2	400 V-III	6 545	113	7 581	163	8 866	253	3.44	12.3	2 700	1/2"-3/4"	< 5.0	98+56	35	8 848
	MSH-QG-52 086	4	400 V-III	8 056	125	9 542	185	11 320	315	3.87	15.0	4 150	1/2"-7/8"	< 5.0	135+72	48	10 536
	MSH-QG-52 108	5	400 V-III	9 386	160	11 011	220	12 991	375	4.90	18.0	4 150	1/2"-7/8"	< 7.0	157+72	45	10 981
	MSH-QG-53 136	6 1/2	400 V-III	11 894	190	13 856	260	16 173	430	6.67	21.0	6 200	1/2"-1 1/8"	< 9.0	140+94	44	11 881

Centrifugal version	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
Series / Model			
MSH-CQY-30 068	1 500	14	6 699
MSH-CQY-40 086	3 500	10	7 832
MSH-CQY-41 108	3 500	10	8 701
MSH-CQY-42 136	3 500	10	10 876
MSH-CQY-53 171	3 600	10	12 523
MSH-CQY-53 215	3 600	10	13 737
MSH-CQY-54 271	3 600	10	16 163
MSH-CQG-30 034	1 500	14	5 678
MSH-CQG-30 038	1 500	14	5 962
MSH-CQG-40 048	3 500	10	6 895
MSH-CQG-40 054	3 500	10	7 324
MSH-CQG-41 060	3 500	10	7 900
MSH-CQG-41 068	3 500	10	9 407
MSH-CQG-52 086	3 600	12	11 102
MSH-CQG-52 108	3 600	12	11 548
MSH-CQG-53 136	3 600	12	12 446

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-449A

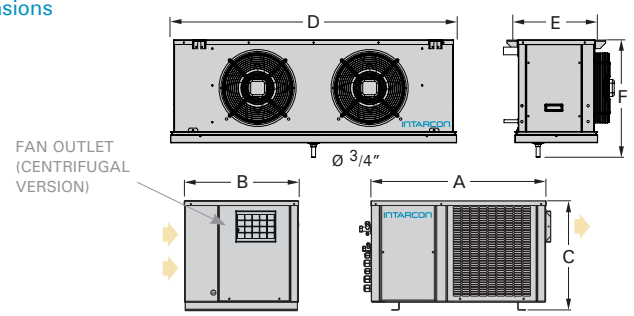
	Axial version	Compressor		Cooling capacity / Cold room volume according to cold room temperature (1)						Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Liq-Gas Cooling Connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
	Series / Model	HP	Power supply	-25 °C		-20 °C		-15 °C									
				W	m³	W	m³	W	m³								
R-449A	BSH-QG-30 075	2 1/2	230 V-I *	1 765	14	2 425	27	3 050	47	2.30	25.1	2 100	1/4"-5/8"	< 3.5	85+43	44	5 767
	BSH-QG-30 096	3 1/2	400 V-III	2 354	22	2 925	36	3 533	61	2.34	11.2	2 100	1/4"-3/4"	< 3.5	85+43	49	6 412
	BSH-QG-41 108	4 1/4	400 V-III	2 988	34	3 799	58	4 656	99	2.94	14.4	2 700	3/8"-7/8"	< 5.0	107+56	47	8 356
	BSH-QG-42 136	5	400 V-III	4 205	51	5 119	85	6 092	144	4.16	17.3	4 150	3/8"-7/8"	< 5.0	107+72	42	9 973
	BSH-QG-53 215	7 1/2	400 V-III	5 692	80	7 300	120	8 976	200	6.08	25.0	5 200	1/2"- 1 1/8"	< 7.0	166+89	49	13 049
	BSH-QG-53 271	10	400 V-III	7 329	110	9 048	150	10 877	220	7.71	30.0	6 200	1/2"- 1 1/8"	< 7.5	166+94	49	13 749

Centrifugal version	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
Series / Model			
BSH-CQG-30 075	1 500	14	6 091
BSH-CQG-30 096	1 500	14	7 002
BSH-CQG-41 108	3 500	10	8 932
BSH-CQG-42 136	3 500	10	10 574
BSH-CQG-53 215	3 600	12	13 651
BSH-CQG-53 271	3 600	12	14 349

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Crankcase heater. + 72 €
- Proportional control of condensing pressure:
  Axial version (Q). + 295 €
  Centrifugal version (CQ): 40/41/42/52/53/54 series. + 471 €
- Vertical air flow (centrifugal version).
- Rectangular to circular exhaust air adaptor. + 119 €
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6 %
- Anti-corrosion condenser coil coating. + 4 %
- Larger sized multifunction electronic control. + 178 €

Dimensions



Dimensions (mm)	A	B	C	D	E	F	Evaporator fan	Fan outlet
30 series	925	580	515	880	455	581	1x Ø 350	266 x 236
40 series	1 000	615	585	880	455	581	1x Ø 350	305 x 266
41 series	1 000	615	585	1 230	455	581	1x Ø 350	305 x 266
42 series	1 000	615	585	1 530	455	581	2x Ø 350	305 x 266
52 series	1 290	755	656	1 530	455	581	2x Ø 350	305 x 266
MSH-QY-53 171 BSH-QG-53 215	1 290	755	656	1 930	455	581	2x Ø 350	305 x 266
53 series	1 290	755	656	1 930	455	581	3x Ø 350	305 x 266
54 series	1 290	755	656	2 430	455	581	4x Ø 350	305 x 266

(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

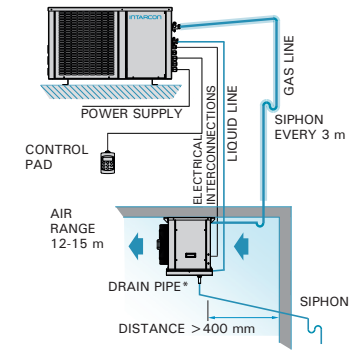
(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

(4) Available static pressure of condensation.

* Available units with 400 V-III-50 Hz power supply.

Installation scheme



* Minimum slope of the drain pipe of 20 % in negative temperature models.

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m.

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	2 x 1 mm²	3 x 1 mm²
Defrost	2 x 1.5 mm² + G	4 x 1.5 mm² + G
Control pad	2 x 1 mm²	
Switch door*	2 x 1 mm²	
Door heater cable	2 x 1 mm² at NT	
Cold room light*	2 x 1 mm² + G	

* Optional not included. To know electrical interconnections of each model: see technical manual.

ASH series

230 V-I-50 Hz / 400 V-III-50 Hz | High temperature | R-134a / R-449A

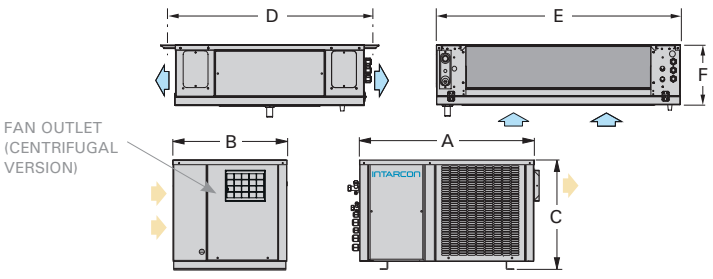
	Axial version Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) 9 °C W	9 °C m³	12 °C W	12 °C m³	15 °C W	15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-134a	ASH-DY-11 015	1/2	230 V-I	1 555	14	1 733	19	1 928	26	0.75	5.9	1 100	1/4"-1/2"	< 2.0	48+32	32	3 667
	ASH-DY-11 026	3/4	230 V-I	1 985	18	2 221	24	2 462	33	0.99	9.6	1 100	1/4"-1/2"	< 2.0	51+32	30	3 964
	ASH-DY-11 033	1	230 V-I	2 378	22	2 636	29	2 903	40	1.37	9.8	1 100	1/4"-5/8"	< 2.0	51+32	33	4 449
	ASH-DY-22 033	1	230 V-I	2 961	28	3 329	38	3 717	51	1.30	10.7	1 800	1/4"-5/8"	< 2.5	54+45	34	4 884
	ASH-DY-22 053	1 1/2	230 V-I *	3 738	35	4 169	48	4 625	63	2.04	13.3	1 800	3/8"-3/4"	< 2.5	55+45	38	5 683
	ASH-DY-33 053	1 1/2	230 V-I *	4 211	42	4 709	56	5 234	76	2.05	13.6	3 150	3/8"-3/4"	< 4.0	74+65	39	6 017
	ASH-DY-33 074	2	230 V-I *	5 502	58	6 148	77	6 830	104	2.74	17.6	3 150	3/8"-3/4"	< 4.0	71+65	44	7 161
	ASH-DY-43 086	4	400 V-III	7 124	74	8 001	98	8 915	131	3.16	15.4	3 150	3/8"-7/8"	< 6.5	107+65	48	8 160
	ASH-DY-43 108	5	400 V-III	8 216	85	9 177	111	10 206	148	3.76	18.4	3 150	3/8"-7/8"	< 6.0	109+65	45	8 956
	ASH-DY-44 108	5	400 V-III	8 873	92	9 954	121	11 062	160	4.08	18.4	5 700	3/8"-7/8"	< 6.0	112+70	45	9 815
	ASH-DY-44 136	6 1/2	400 V-III	10 988	114	12 206	148	13 498	195	4.57	22.4	5 700	1/2"-1 1/8"	< 6.0	112+70	44	10 796
R-449A	ASH-DG-1 010	3/8	230 V-I	1 237	10	1 341	14	1 455	19	0.77	5.2	1 100	1/4"-3/8"	< 2.5	42+32	34	3 361
	ASH-DG-1 012	1/2	230 V-I	1 419	12	1 535	16	1 664	22	0.82	6.2	1 100	1/4"-3/8"	< 2.5	43+32	34	3 504
	ASH-DG-2 014	1/2	230 V-I	1 829	16	1 965	22	2 109	29	0.95	7.4	1 100	1/4"-1/2"	< 3.0	45+32	35	3 648
	ASH-DG-2 016	5/8	230 V-I	2 014	18	2 169	24	2 338	33	1.03	8.3	1 100	1/4"-1/2"	< 3.0	54+32	35	3 791
	ASH-DG-2 018	3/4	230 V-I	2 309	22	2 481	28	2 675	38	1.23	9.6	1 100	1/4"-1/2"	< 3.0	55+32	35	4 005
	ASH-DG-2 024	1	230 V-I	2 988	27	3 228	36	3 480	47	1.61	11.8	1 800	3/8"-5/8"	< 3.0	55+45	35	4 504
	ASH-DG-3 026	1 1/4	230 V-I *	3 434	33	3 709	42	3 996	57	1.76	11.7	1 800	3/8"-5/8"	< 3.5	74+45	37	4 832
	ASH-DG-3 034	1 1/2	230 V-I *	4 376	41	4 692	54	5 048	72	2.26	16.5	1 800	3/8"-5/8"	< 4.0	74+45	38	5 434
	ASH-DG-3 038	1 3/4	400 V-III	5 011	47	5 356	62	5 733	85	2.15	7.3	1 800	3/8"-5/8"	< 4.0	71+45	40	6 300
	ASH-DG-4 048	2	400 V-III	6 667	66	7 151	86	7 673	115	2.98	10.2	3 150	1/2"-3/4"	< 5.5	95+65	36	6 946
	ASH-DG-4 054	2 1/2	400 V-III	7 362	73	7 875	95	8 446	125	3.23	10.7	3 150	1/2"-3/4"	< 6.0	96+65	36	7 371
	ASH-DG-4 060	3	400 V-III	8 369	82	8 974	105	9 614	140	3.96	12.2	3 800	1/2"-7/8"	< 6.0	97+65	36	8 085
	ASH-DG-4 068	3 1/2	400 V-III	9 113	89	9 753	115	10 442	150	4.47	13.2	3 800	1/2"-7/8"	< 6.0	98+65	35	8 862

Centrifugal version Series / Model	Conden. air flow (m³/h)	ASP (mmca) (4)	Price (€)
ASH-CDY-11 015	575	8	4 067
ASH-CDY-11 026	575	8	4 399
ASH-CDY-11 033	575	8	4 939
ASH-CDY-22 033	1 000	12	5 419
ASH-CDY-22 053	1 000	12	6 309
ASH-CDY-33 053	1 500	14	6 682
ASH-CDY-33 074	1 500	14	7 944
ASH-CDY-43 086	3 500	10	9 059
ASH-CDY-43 108	3 500	10	9 940
ASH-CDY-44 108	3 500	10	10 893
ASH-CDY-44 136	3 500	10	11 983
ASH-CDG-1 010	575	8	3 797
ASH-CDG-1 012	575	8	3 960
ASH-CDG-2 014	1 000	12	4 119
ASH-CDG-2 016	1 000	12	4 269
ASH-CDG-2 018	1 000	12	4 491
ASH-CDG-2 024	1 000	12	5 006
ASH-CDG-3 026	1 500	14	5 419
ASH-CDG-3 034	1 850	14	6 033
ASH-CDG-3 038	1 850	14	6 937
ASH-CDG-4 048	3 500	10	7 602
ASH-CDG-4 054	3 500	10	8 028
ASH-CDG-4 060	3 500	10	8 744
ASH-CDG-4 068	3 500	10	9 521

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Crankcase heater. + 72 €
- Proportional control of condensing pressure:
  Axial version (D): 3/33 and 4/43/44 series. + 295 €
  Centrifugal version (CD): 4/43/44 series. + 471 €
- Vertical air flow (centrifugal version).
- Rectangular to circular exhaust air adaptor. + 119 €
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6 %
- Anti-corrosion condenser coil coating. + 4 %
- Condensed water pump. + 143 €
- Larger sized multifunction electronic control. + 178 €

Dimensions



	Dimensions (mm)	A	B	C	D	E	F	Evaporator fan	Fan outlet
R-134a	11 series	665	435	416	798	706	245	1x Ø 360	185 x 115
	22 series	835	435	500	798	1 056	245	2x Ø 360	230 x 130
	33 series	925	580	515	798	1 756	245	3x Ø 360	305 x 266
	43 series	1 000	615	585	798	1 756	245	3x Ø 360	305 x 266
	44 series	1 000	615	585	888	2 156	295	3x Ø 450	305 x 266
R-449A	1 series	665	435	416	798	706	245	1x Ø 360	185 x 115
	ASH-DG 2 014 up to 2 018	835	435	500	798	706	245	1x Ø 360	230 x 130
	ASH-DG 2 024	835	435	500	798	1 056	245	2x Ø 360	230 x 130
	3 series	925	580	515	798	1 056	245	2x Ø 360	236 x 266
	4 series	1 000	615	585	798	1 756	245	3x Ø 360	305 x 266

(1) Nominal performances refer to operation with cold room temperatures of 12 °C (HT) and ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

(4) Available static pressure of condensation

* Available units with 400 V-III-50 Hz power supply.

Exhaust duct

Recommended size for 20 m long steel, PVC or fibreglass ducts (each elbow at 90° equals 5 m in length). For flexible or semi-flexible ducts use a larger size.

- 0 series: 200 x 150 mm or Ø 150 mm
- 1 series: 200 x 200 mm or Ø 150 mm
- 2 series: 250 x 150 mm or Ø 200 mm
- 3 series: 200 x 300 mm or Ø 250 mm
- 4 and 5 series: 350 x 400 mm or Ø 360 mm

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m (except series 4, 43 and 44).

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	3 x 1 mm² + G	
Control pad	2 x 1 mm²	
Switch door*	2 x 1 mm²	
Cold room light*	2 x 1 mm² + G	

* Optional not included.
To know electrical interconnections of each model: see technical manual.

Sigilus

- ❄ Factory-tested systems with no need for on-site tests.
- ❄ Low-noise condensing unit.
- ❄ Tropicalised design for high ambient temperature up to 50 °C.
- ❄ Built-in thermostatic expansion valve.
- ❄ Proportional control of condensing pressure (optional for slim-type).
- ❄ Refrigerant pre-load.
- ❄ Units exempt from leak checks.

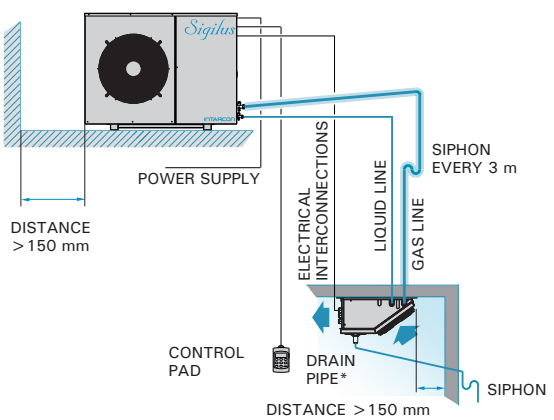
Split systems for small and medium size cold rooms at positive and negative temperature, composed of a low-noise condensing unit and a slim-type, cubic-type or double-flow evaporating unit.

Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Minimal R-134A or R-449A refrigerant load.
- Hermetic reciprocating compressor.
- Double noise compressor insulation.
- Large surface L-shape condensing coil (straight for series 0 and 1).
- Low-speed condensing motor fans.
- Proportional control of condensing pressure (optional for -N version).
- High and low pressure switches.
- Discharge muffler (for models 1 HP or more) and crankcase heater.
- Liquid receiver.
- Refrigerant pre-load for 10 m of pipe.
- Evaporating unit: slim-type (-N version) or cubic-type (-Q version).
- Built-in thermostatic expansion valves and solenoid valves.
- Electrical heater defrost (except ASF series).
- Stainless steel drain pan.
- Flare-type connections (up to 1/2"-3/4") and service valves.
- MCB protection.
- Multifunctional electronic control with remote keyboard and digital condensation control.
- Liquid injection system for negative temperature models with R-449A.

Installation scheme

Maximum vertical distance between units of 15 m if the condensing unit is placed at a higher level than the evaporating unit, and 6 m otherwise.
* 20 % minimum slope for drain tube for negative temperature models.



Control pad

Sigilus split systems feature XM670K electronic control as standard:

- Remote control keyboard with digital display.
- Temperature control with maximum and minimum temperature value recording.
- Possibility of interconnection and synchronization of up to 8 devices by LAN, managed from a single control.

Triple noise insulation

Sigilus units feature triple noise insulation:

- Noise insulated compressor compartment, separated from the air flow.
- Hermetic reciprocating compressor with insulation cover (three-phase models) and discharge muffler.
- Low-noise and low-speed fan on shock absorbing structure.

Proportional control of condensing pressure

Proportional control of condensing pressure, for prolonged operation at under low ambient temperature, standard for *Sigilus* series (optional for slim-type).

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m (hoses not included):

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	2 x 1 mm²	3 x 1 mm²
Defrost	2 x 1.5 mm² + G	4 x 1.5 mm² + G
Control pad	2 x 1 mm²	
Switch door*	2 x 1 mm²	
Door heater cable	2 x 1 mm² at NT	
Cold room light*	2 x 1 mm² + G	

* Optional not included.
To know electrical interconnections of each model: see technical manual.

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-134a / R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -5 °C W	-5 °C m³	0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. fan	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-134a	MSF-NY-00 010	3/8	230 V-I	497	2.9	637	5.0	788	8.8	945	13	0.41	4.2	1x Ø 172	300	350	1/4"-3/8"	< 1.5	46+12	28	2 672
	MSF-NY-00 015	1/2	230 V-I	653	3.6	832	7.4	1 004	11	1 188	16	0.51	5.2	1x Ø 172	300	350	1/4"-3/8"	< 1.5	49+12	29	2 946
	MSF-NY-11 015	1/2	230 V-I	805	4.7	1 031	10	1 296	14	1 582	28	0.56	5.6	1x Ø 200	550	1 700	1/4"-1/2"	< 2.0	57+16	34	3 083
	MSF-NY-11 026	3/4	230 V-I	1 076	9.0	1 412	16	1 738	25	2 084	40	0.80	9.2	1x Ø 200	550	1 700	1/4"-1/2"	< 2.0	65+16	34	3 744
	MSF-NY-12 033	1	230 V-I	1 475	13	1 859	20	2 289	35	2 741	57	1.02	9.7	2x Ø 200	1 050	1 700	1/4"-5/8"	< 2.0	67+24	34	4 679
	MSF-NY-12 053	1 1/2	230 V-I *	1 811	22	2 347	33	2 872	50	3 439	79	1.42	12.3	2x Ø 200	1 050	1 700	1/4"-5/8"	< 2.0	77+24	35	5 486
	MSF-NY-13 074	2	230 V-I *	2 772	30	3 528	50	4 363	76	5 229	125	1.94	17.2	3x Ø 254	1 725	1 700	1/4"-3/4"	< 3.5	79+45	37	5 974
	MSF-NY-23 086	4	400 V-III	3 355	39	4 384	65	5 376	108	6 437	160	2.18	14.1	3x Ø 254	1 725	3 700	3/8"-7/8"	< 4.5	96+45	38	6 651
	MSF-NY-24 108	5	400 V-III	4 347	58	5 649	90	6 920	138	8 316	220	2.83	18.2	4x Ø 300	3 100	3 700	3/8"-7/8"	< 5.0	98+45	35	7 819
	MSF-NY-24 136	6 1/2	400 V-III	5 486	75	6 899	110	8 363	150	9 949	280	3.55	22.2	4x Ø 300	3 100	3 700	3/8"-1 1/8"	< 5.5	101+55	34	9 771
	MSF-NY-34 171	8	400 V-III	6 080	88	7 613	130	9 240	200	10 978	350	4.16	25.2	4x Ø 300	3 100	4 000	3/8"-1 1/8"	< 5.5	140+55	40	11 136
R-449A	MSF-NG-0 008	1/3	230 V-I	611	2.9	759	5.0	915	8.8	1 103	13	0.43	5.1	1x Ø 172	300	350	1/4"-3/8"	< 1.5	47+12	29	2 517
	MSF-NG-0 010	3/8	230 V-I	739	3.6	894	6.1	1 056	10	1 254	15	0.53	4.8	1x Ø 172	300	350	1/4"-3/8"	< 1.5	49+12	29	2 776
	MSF-NG-0 012	1/2	230 V-I	818	4.7	981	7.4	1 153	12	1 358	21	0.63	5.6	1x Ø 172	300	350	1/4"-3/8"	< 1.5	50+12	29	2 905
	MSF-NG-1 014	1/2	230 V-I	882	8.0	1 095	12	1 322	20	1 585	34	0.77	6.5	1x Ø 200	550	1 700	1/4"-1/2"	< 2.0	59+16	34	3 239
	MSF-NG-1 016	5/8	230 V-I	972	10	1 210	15	1 462	24	1 759	40	0.81	7.4	1x Ø 200	550	1 700	1/4"-1/2"	< 2.0	67+16	34	3 529
	MSF-NG-1 018	3/4	230 V-I	1 397	12	1 649	19	1 915	28	2 245	45	0.94	8.7	1x Ø 200	550	1 700	1/4"-1/2"	< 2.0	68+16	34	3 922
	MSF-NG-2 024	1	230 V-I	1 513	14	1 958	22	2 420	35	2 958	57	1.26	11.1	2x Ø 200	1 050	1 700	1/4"-1/2"	< 2.5	82+24	34	4 409
	MSF-NG-2 026	1 1/4	230 V-I *	1 712	16	2 147	25	2 611	39	3 157	64	1.44	11.5	2x Ø 200	1 050	1 700	1/4"-1/2"	< 2.5	83+24	34	4 606
	MSF-NG-2 034	1 1/2	230 V-I *	2 120	21	2 606	33	3 117	50	3 730	79	1.83	16.1	2x Ø 200	1 050	1 700	1/4"-5/8"	< 2.5	83+24	35	4 882
	MSF-NG-3 038	1 3/4	400 V-III	2 770	29	3 394	46	4 078	71	4 894	112	1.89	8.1	3x Ø 254	1 725	3 200	1/4"-5/8"	< 3.0	82+45	29	5 526
	MSF-NG-4 048	2	400 V-III	3 368	39	4 231	62	5 158	92	6 225	145	2.34	9.6	3x Ø 254	1 725	3 700	3/8"-3/4"	< 4.5	84+45	26	6 005
	MSF-NG-4 054	2 1/2	400 V-III	3 792	47	4 671	70	5 640	105	6 780	160	2.54	10.1	3x Ø 254	1 725	3 700	3/8"-3/4"	< 4.5	85+45	26	6 415

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Evap. fan	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-449A	BSF-NG-0 018	5/8	230 V-I	486	1.1	613	2.3	749	4.1	0.50	4.7	1x Ø 172	300	350	1/4"-1/2"	< 1.5	50+12	28	3 259
	BSF-NG-1 026	3/4	230 V-I	763	3.2	952	7.0	1 155	13	0.82	8.5	1x Ø 200	550	1 700	1/4"-1/2"	< 2.0	67+16	34	3 968
	BSF-NG-2 034	1 1/4	230 V-I	930	3.9	1 107	8.1	1 437	15	1.18	11.3	2x Ø 200	1 050	1 700	1/4"-1/2"	< 2.0	83+16	34	4 211
	BSF-NG-2 055	1 3/4	230 V-I *	1 260	9.0	1 710	16	2 190	30	1.70	17.5	2x Ø 200	1 050	1 700	1/4"-5/8"	< 2.5	85+24	36	5 156
	BSF-NG-2 075	2 1/2	230 V-I *	1 655	13	2 130	22	2 625	38	2.10	25.5	2x Ø 200	1 050	1 700	1/4"-5/8"	< 3.5	90+24	37	5 433
	BSF-NG-3 075	2 1/2	230 V-I *	1 755	14	2 450	27	3 080	48	2.30	26.3	3x Ø 254	1 725	1 700	1/4"-5/8"	< 3.5	90+45	37	5 826
	BSF-NG-4 096	3 1/2	400 V-III	2 139	19	2 670	39	3 523	68	2.48	12.0	3x Ø 254	1 725	3 700	3/8"-3/4"	< 4.5	97+45	39	7 551
	BSF-NG-4 108	4 1/4	400 V-III	2 463	29	3 276	50	4 118	78	2.82	14.6	3x Ø 254	1 725	3 700	3/8"-7/8"	< 5.0	97+45	37	8 174
	BSF-NG-4 136	5	400 V-III	2 949	37	3 775	61	4 648	100	3.64	16.8	3x Ø 254	1 725	3 700	3/8"-7/8"	< 5.0	100+45	32	8 818

Options

- Change to 400 V-III-50 Hz power supply. + 5
- Proportional control of condensing pressure through fan speed variation (except 0 series). + 295 €
- Coil protection grille. + 108 €
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6
- Anti-corrosion condenser coil coating. + 4
- Larger sized multifunction electronic control. + 178

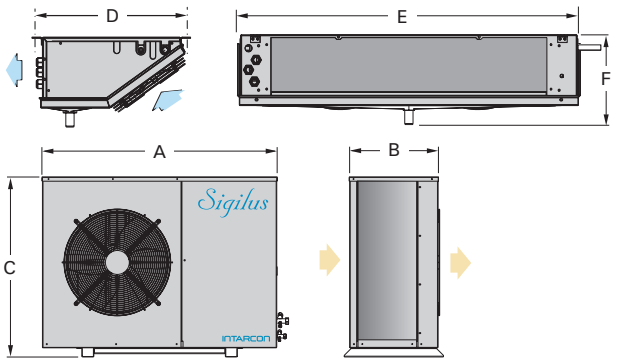
(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT), and ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking , Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

Dimensions



Dimensions (mm)	A	B	C	D	E	F	Evaporator fans
0 and 00 series	670	308	450	417	549	185	1x Ø 172
1 and 11 series	1 030	375	580	430	643	235	1x Ø 200
2 and 12 series	1 030	375	580	430	993	235	2x Ø 200
3 and 13 series	1 030	375	580	508	1 691	235	3x Ø 254
4 and 23 series	1 080	415	830	508	1 691	235	3x Ø 254
24 series	1 080	415	830	547	2 064	285	4x Ø 300
34 series	1 150	480	1 100	547	2 064	285	4x Ø 300

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | R-134a / R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -5 °C W	-5 °C m³	0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Fan evap.	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-134a	MSF-QY-10 068	3 1/2	400 V-III	3 281	42	4 106	60	4 998	69	5 985	110	1.98	12.8	1x Ø 350	2 100	3 200	1/4"-3/4"	< 4.0	82+43	25	7 153
	MSF-QY-20 086	4	400 V-III	3 523	45	4 442	65	5 429	75	6 515	120	2.19	14.8	1x Ø 350	2 100	3 700	3/8"-7/8"	< 4.5	96+43	38	7 742
	MSF-QY-21 108	5	400 V-III	4 226	58	5 334	81	6 521	130	7 807	210	2.56	16.3	1x Ø 350	2 700	3 700	3/8"-7/8"	< 5.0	98+56	35	8 441
	MSF-QY-22 136	6 1/2	400 V-III	5 749	80	7 277	120	8 831	186	10 553	290	3.63	21.1	2x Ø 350	4 150	3 700	3/8"-1 1/8"	< 5.0	101+72	34	10 174
	MSF-QY-33 171	8	400 V-III	6 746	100	8 484	172	10 295	197	12 306	354	4.42	24.1	2x Ø 350	5 200	4 000	3/8"-1 1/8"	< 7.0	140+89	40	11 596
	MSF-QY-33 215	10	400 V-III	8 426	130	10 563	241	12 857	268	15 419	440	5.24	30.5	3x Ø 350	6 200	6 500	3/8"-1 1/8"	< 7.5	147+94	39	12 763
	MSF-QY-34 271	13	400 V-III	11 099	165	13 776	256	16 622	346	19 777	550	7.19	40.2	4x Ø 350	8 300	6 500	1/2"-1 3/8"	< 8.5	152+118	38	16 163
R-449A	MSF-QG-10 038	1 3/4	400 V-III	3 280	31	3 919	48	4 625	75	5 472	120	1.77	7.4	1x Ø 350	2 100	3 200	1/4"-5/8"	< 3.0	82+43	29	6 399
	MSF-QG-20 048	2	400 V-III	3 964	43	4 736	63	5 572	95	6 605	150	2.21	8.8	1x Ø 350	2 100	3 700	3/8"-3/4"	< 5.0	84+43	26	6 922
	MSF-QG-20 054	2 1/2	400 V-III	4 395	48	5 197	72	6 078	110	7 158	170	2.38	9.4	1x Ø 350	2 100	3 700	3/8"-3/4"	< 5.0	85+43	26	7 221
	MSF-QG-21 060	3	400 V-III	5 081	61	6 032	89	7 055	130	8 328	200	2.84	10.4	1x Ø 350	2 700	3 700	3/8"-3/4"	< 5.0	88+56	26	7 875
	MSF-QG-21 068	3 1/2	400 V-III	5 519	78	6 528	110	7 601	160	8 942	250	3.21	11.4	1x Ø 350	2 700	3 700	3/8"-3/4"	< 5.0	88+56	25	9 098
	MSF-QG-32 086	4	400 V-III	6 787	91	8 180	130	9 707	190	11 545	300	4.13	13.6	2x Ø 350	4 150	4 000	1/2"-7/8"	< 7.0	115+72	38	10 369
	MSF-QG-32 108	5	400 V-III	8 623	125	10 181	175	11 880	255	13 969	400	5.05	16.7	2x Ø 350	4 150	6 500	1/2"-7/8"	< 7.0	120+72	35	11 414
	MSF-QG-43 136	6 1/2	400 V-III	11 105	160	13 146	220	15 399	320	18 145	500	6.63	21.5	3x Ø 350	6 200	7 000	1/2"-1 1/8"	< 10.0	135+89	34	13 575
	MSF-QG-44 160	8	400 V-III	11 597	170	14 009	230	16 660	340	19 806	530	7.59	26.0	4x Ø 350	8 300	7 000	5/8"-1 1/8"	< 10.0	157+118	40	15 933

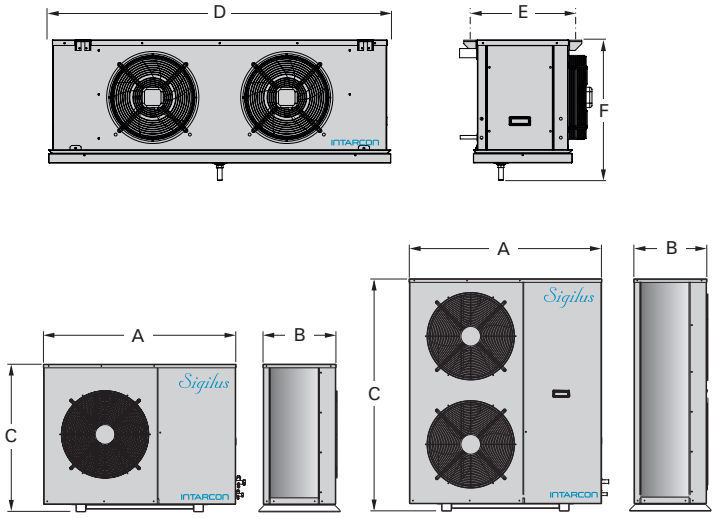
230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -25 °C W	-25 °C m³	-20 °C W	-20 °C m³	-15 °C W	-15 °C m³	Input power (kW)	Max. current (A)	Fan evap.	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-449A	BSF-QG-10 075	2 1/2	230 V-I *	1 760	14	2 465	27	3 110	48	2.30	25.1	1x Ø 350	2 100	1 700	1/4"-5/8"	< 3.0	90+43	37	6 271
	BSF-QG-20 096	3 1/2	400 V-III	2 456	20	3 135	43	3 881	74	2.39	11.5	1x Ø 350	2 100	3 700	1/4"-3/4"	< 4.0	97+43	39	8 537
	BSF-QG-21 108	4 1/4	400 V-III	3 023	28	3 883	50	4 772	86	2.76	13.5	1x Ø 350	2 700	3 700	1/4"-7/8"	< 5.0	97+56	37	9 190
	BSF-QG-22 136	5	400 V-III	4 159	53	5 116	83	6 146	130	4.02	16.4	2x Ø 350	4 150	3 700	3/8"-1 1/8"	< 5.0	97+72	32	10 930
	BSF-QG-33 215	7 1/2	400 V-III	5 970	80	7 605	130	9 334	200	5.63	25.8	3x Ø 350	6 200	6 500	1/2"-1 1/8"	< 7.5	147+94	39	13 815
	BSF-QG-34 271	10	400 V-III	8 005	120	9 839	185	11 798	230	7.15	28.2	4x Ø 350	8 300	6 500	1/2"-1 3/8"	< 8.5	147+118	39	15 473

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Coil protection grille. + 108 €
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6 %
- Anti-corrosion condenser coil coating. + 4 %
- Larger sized multifunction electronic control. + 178 €

Dimensions



(1) Nominal performances refer to operation with cold room temperatures of 0 °C (PT) and -20 °C (NT),and ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m (except series 43 and 44).

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	2 x 1 mm²	3 x 1 mm²
Defrost	2 x 1.5 mm² + G	4 x 1.5 mm² + G
Control pad	2 x 1 mm²	
Switch door*	2 x 1 mm²	
Door heater cable	2 x 1 mm² at NT	
Cold room light*	2 x 1 mm² + G	

* Optional not included.
To know electrical interconnections of each model: see technical manual.

Dimensions (mm)	A	B	C	D	E	F
10 series	1 030	375	580	880	455	581
20 series	1 080	415	830	880	455	581
21 series	1 080	415	830	1 230	455	581
22 series	1 080	415	830	1 530	455	581
32 series	1 150	480	1 100	1 530	455	581
33 series	1 150	480	1 100	1 930	455	581
34 series	1 150	480	1 100	2 430	455	581
43 series	1 150	480	1 350	1 930	455	581
44 series	1 150	480	1 350	2 430	455	581

ASF series

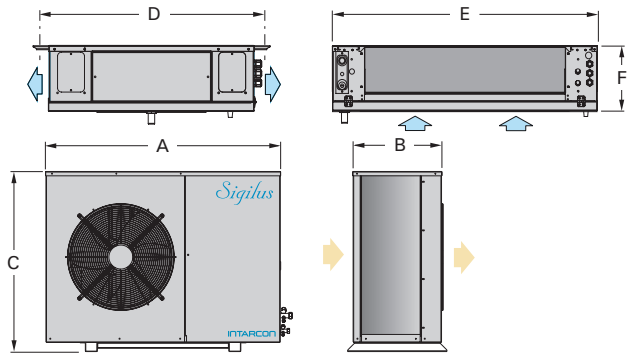
230 V-I-50 Hz / 400 V-III-50 Hz | High temperature | R-134a / R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature [1] 9 °C W	9 °C m³	12 °C W	12 °C m³	15 °C W	15 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) [2]	Weight (kg)	SPL dB(A) [3]	Price (€)
R-134a	**ASF-DY-11 015**	1/2	230 V-I	1 687	16	**1 922**	**21**	2 160	29	0.69	4.7	1 100	1 700	1/4"-1/2"	< 2.5	57+32	34	**4 238**
	ASF-DY-11 026	3/4	230 V-I	2 342	23	**2 678**	**30**	2 977	41	1.05	8.4	1 100	1 700	1/4"-1/2"	< 2.5	65+32	34	**4 540**
	ASF-DY-12 033	1	230 V-I	2 840	27	**3 176**	**36**	3 533	48	1.33	10.4	1 800	1 700	1/4"-5/8"	< 3.0	67+45	34	**5 110**
	ASF-DY-13 053	1 1/2	230 V-I *	4 226	42	**4 730**	**56**	5 271	72	2.04	13.6	3 150	1 700	3/8"-3/4"	< 4.0	77+65	35	**6 425**
	ASF-DY-13 074	2	230 V-I *	6 053	62	**6 825**	**83**	7 634	112	2.61	17.6	3 150	3 200	3/8"-3/4"	< 4.5	79+65	34	**7 467**
	ASF-DY-23 086	4	400 V-III	7 151	75	**8 033**	**99**	8 957	131	2.90	14.4	3 150	3 700	3/8"-7/8"	< 5.0	96+65	38	**8 356**
	ASF-DY-24 108	5	400 V-III	8 936	99	**10 028**	**122**	11 146	165	3.80	17.5	5 700	3 700	3/8"-7/8"	< 5.5	98+70	35	**9 265**
	ASF-DY-24 136	6 1/2	400 V-III	11 093	128	**12 332**	**168**	13 645	224	5.00	21.2	5 700	3 700	1/2"-1 1/8"	< 6.0	98+70	34	**11 828**
	ASF-DY-34 171	8	400 V-III	13 424	146	**14 989**	**186**	16 669	251	5.88	25.2	5 700	6 500	1/2"-1 1/8"	< 6.0	120+70	40	**14 067**
	ASF-DY-44 215	10	400 V-III	15 771	171	**17 593**	**218**	19 546	294	6.61	30.2	5 700	7 000	1/2"-1 3/8"	< 9.5	120+70	39	**15 470**
R-449A	**ASF-DG-1 016**	5/8	230 V-I	2 161	19	**2 387**	**25**	2 635	35	0.99	7.5	1 100	1 700	1/4"-1/2"	< 2.5	67+32	38	**4 051**
	ASF-DG-1 018	3/4	230 V-I	2 462	23	**2 709**	**30**	2 961	42	1.18	8.8	1 100	1 700	1/4"-1/2"	< 2.5	68+32	35	**4 341**
	ASF-DG-1 024	1	230 V-I	3 225	29	**3 539**	**39**	3 879	51	1.53	11.3	1 800	1 700	3/8"-5/8"	< 3.5	82+45	34	**4 885**
	ASF-DG-1 026	1 1/4	230 V-I *	3 709	35	**4 078**	**46**	4 466	63	1.75	12.0	1 800	3 200	3/8"-5/8"	< 3.5	83+45	40	**5 105**
	ASF-DG-1 034	1 1/2	230 V-I *	4 607	43	**5 046**	**58**	5 494	77	2.24	16.6	1 800	3 200	3/8"-5/8"	< 3.5	83+45	39	**5 798**
	ASF-DG-1 038	1 3/4	400 V-III	5 393	52	**5 885**	**68**	6 410	91	2.20	7.8	3 150	3 200	3/8"-5/8"	< 4.0	82+65	29	**6 558**
	ASF-DG-2 048	2	400 V-III	6 722	67	**7 343**	**87**	7 962	115	2.76	9.3	3 150	3 700	1/2"-3/4"	< 5.5	84+65	26	**7 260**
	ASF-DG-2 054	2 1/2	400 V-III	7 447	75	**8 113**	**97**	8 793	130	3.00	9.8	3 150	3 700	1/2"-3/4"	< 5.5	85+65	26	**7 545**
	ASF-DG-3 060	3	400 V-III	8 824	94	**9 673**	**115**	10 551	155	3.60	11.9	3 150	6 500	1/2"-7/8"	< 6.0	88+65	26	**8 363**
	ASF-DG-3 068	3 1/2	400 V-III	9 662	98	**10 578**	**125**	11 512	165	4.19	12.9	3 150	6 500	1/2"-7/8"	< 6.0	88+65	25	**9 857**
	ASF-DG-4 086	4	400 V-III	11 687	120	**12 829**	**155**	14 001	205	4.90	15.2	5 700	7 000	5/8"-1 1/8"	< 9.0	115+70	38	**11 504**
	ASF-DG-4 108	5	400 V-III	14 416	150	**15 702**	**190**	17 068	255	6.40	18.2	5 700	7 000	5/8"-1 1/8"	< 8.5	120+70	35	**12 699**

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Proportional control of condensing pressure through fan speed variation (already included in 2/23 series and above). + 295 €
- Coil protection grille. + 108 €
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6 %
- Anti-corrosion condenser coil coating. + 4 %
- Condensed water pump. + 143 €
- Larger sized multifunction electronic control. + 178 €

Dimensions



	Dimensions (mm)	A	B	C	D	E	F	Evaporator fans
R-134a	11 series	1 030	375	580	798	706	245	1x Ø 360
	12 series	1 030	375	580	798	1 056	245	2x Ø 360
	13 series	1 030	375	580	798	1 756	245	3x Ø 360
	23 series	1 080	415	830	798	1 756	245	3x Ø 360
	24 series	1 080	415	830	888	2 156	295	3x Ø 450
	34 series	1 150	480	1 100	888	2 156	295	3x Ø 450
	44 series	1 150	480	1 350	888	2 156	295	3x Ø 450
R-449A	ASF-DG-1 016 and 1 018	1 030	375	580	798	706	245	1x Ø 360
	ASF-DG-1 024 up to 1 034	1 030	375	580	798	1 056	245	2x Ø 360
	ASF-DG-1 038	1 030	375	580	798	1 756	245	3x Ø 360
	2 series	1 080	415	830	798	1 756	245	3x Ø 360
	3 series	1 150	480	1 100	798	1 756	245	3x Ø 360
	4 series	1 150	480	1 350	888	2 156	295	3x Ø 450

[1] Nominal performances refer to operation with cold room temperatures of 12 °C (HT) ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

[2] Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

[3] Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m (except series 4 and 44).

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	3 x 1 mm² + G	5 x 1 mm² + G
Control pad	2 x 1 mm²	
Condensed water pump*	3 x 1 mm²	

* Optional not included.
To know electrical interconnections of each model: see technical manual.

System for meat preservation and maturation

- Quasi-static double-flow evaporating unit for very low air speed, specially designed for meat preservation.
- Factory-tested systems with no need for on-site tests.
- Refrigerant pre-load.
- Units exempt from leak checks.

Split refrigeration systems for positive temperature applications, featuring a quasi-static evaporating unit with double air flow, and an axial low-noise or centrifugal condensing unit.

Features

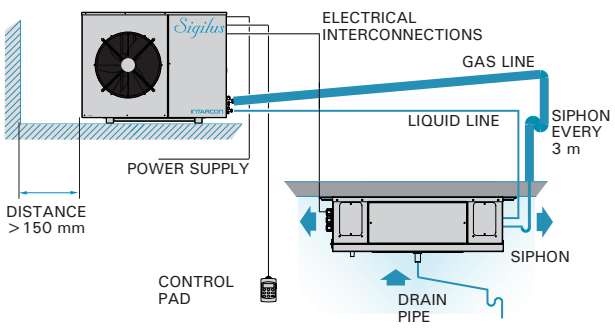
- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Minimal R-134a or R-449A refrigerant load.
- Hermetic reciprocating compressor.
- Quasi-static evaporating unit with double air flow and axial motor fans at very low speed.
- High and low pressure switches.
- Built-in solenoid valve.
- Built-in thermostatic expansion valve.
- Electrical heater defrost.
- Stainless steel drain pan.
- Flare-type connections (up to 1/2"-3/4") and service valves.
- MCB protection.
- Liquid receiver.
- Refrigerant pre-load for 10 m piping.
- Multifunction electronic control with remote keyboard and digital regulation of condensing pressure.

Series

- MSF-U: Split systems with low-noise condensing unit and quasi-static double-flow evaporating unit.
- MSH-CU: Split systems with centrifugal condensing unit and quasi-static double-flow evaporating unit.

Installation scheme

Maximum vertical distance between units of 15 m if the condensing unit is placed at a higher level than the evaporating unit, and 6 m otherwise.



Meat preservation

Quasi-static split systems are specifically recommended for unpacked meat preservation in cold rooms at temperature around 0 °C.

Double airflow evaporating units feature fans operating at a minimum speed to emulate the natural air convection inside the cold room, just as in a static evaporating unit.

Minimum air speed prevents moisture loss from the stored goods and keeps the correct level of humidity inside the cold room to prevent bacterial growth on the meet surface.

Meat maturation (optional)

Maturation of meat requires the control of the relative humidity of the cold room in a certain range.

Units for maturation of meat, are configured for cold rooms in the environment of 0 °C and in the range of 40 % to 95 % of relative humidity.

These unit incorporate an advanced electronic regulation to control of the temperature and humidity inside the cold room, with dehumidification and humidification and functions with steam humidification of 3 kg / h capacity, consisting of: steam lances integrated in the evaporator unit, a submerged electrode generating cylinder with feed and water purge valves, and electronic relative humidity controller in the cold room.

Crankcase heater

As standard on *Sigilus* MSF units and optional on MSH series. Its inclusion in outdoor units is recommended.

MSF-U / MSH-CU series

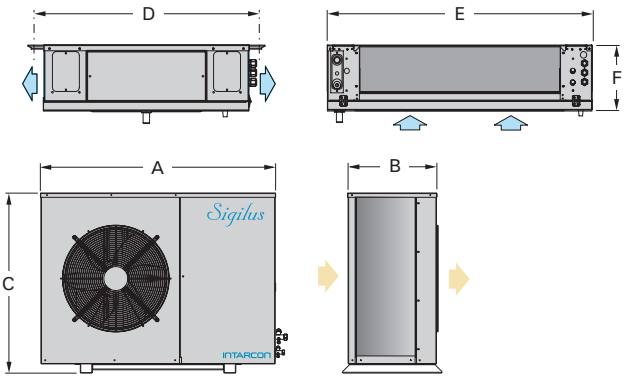
230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature - Meat preservation and maturation | R-134a / R-449A

	Series / Model	Compressor HP	Power supply	Cooling capacity / Cold room volume according to cold room temperature (1) -5 °C W	-5 °C m³	0 °C W	0 °C m³	5 °C W	5 °C m³	10 °C W	10 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas Cooling Connection	Refrig. load (kg) (2)	Weight (kg)	SPL dB(A) (3)	Price (€)
R-134a	MSF-UY-11 026	3/4	230 V-I	1 145	7,6	1 449	15	1 785	24	2 153	41	0.83	9.4	600	1 700	1/4"-1/2"	< 2.0	65+32	34	4 303
	MSF-UY-12 033	1	230 V-I	1 428	12	1 764	20	2 147	34	2 562	53	0.96	10.0	700	1 700	1/4"-5/8"	< 3.0	67+45	34	5 128
	MSF-UY-13 053	1 1/2	230 V-I *	2 100	22	2 657	40	3 255	56	3 938	86	1.50	12.6	1 325	1 700	1/4"-3/4"	< 3.5	77+65	35	6 408
	MSF-UY-13 074	2	230 V-I *	2 741	30	3 434	48	4 190	74	5 009	120	1.86	16.9	1 325	1 700	1/4"-3/4"	< 4.5	79+65	37	7 324
	MSF-UY-23 086	4	400 V-III	3 308	40	4 158	62	5 114	99	6 132	154	2.08	13.4	1 325	3 700	3/8"-7/8"	< 5.5	96+65	38	8 007
	MSF-UY-24 108	5	400 V-III	4 431	54	5 576	87	6 825	134	8 243	209	2.74	16.9	2 600	3 700	3/8"-7/8"	< 7.5	98+65	38	9 147
	MSF-UY-24 136	6 1/2	400 V-III	5 444	72	6 815	108	8 306	162	10 038	268	3.44	20.9	2 600	3 700	3/8"-1 1/8"	< 7.5	101+65	34	10 270
	MSF-UY-34 171	8	400 V-III	11 151	153	7 539	123	9 293	181	11 146	299	4.06	23.9	2 600	4 000	3/8"-1 1/8"	< 8.0	140+65	40	12 168
R-449A	MSF-UG-1 016	5/8	230 V-I	1 215	9,5	1 483	15	1 772	25	2 101	40	0.89	7.5	600	1 700	1/4"-1/2"	< 2.5	67+32	34	4 094
	MSF-UG-1 018	3/4	230 V-I	1 421	12	1 720	19	2 050	30	2 410	48	1.03	8.8	600	1 700	1/4"-1/2"	< 2.5	68+32	34	4 705
	MSF-UG-1 024	1	230 V-I	1 648	15	1 998	24	2 390	37	2 812	59	1.19	11.0	700	1 700	3/8"-5/8"	< 3.5	82+43	34	5 051
	MSF-UG-1 034	1 1/2	230 V-I *	2 235	23	2 699	35	3 193	54	3 739	84	1.84	16.0	700	1 700	3/8"-5/8"	< 3.5	83+43	35	5 759
	MSF-UG-1 038	1 3/4	400 V-III	2 833	31	3 451	47	4 130	72	4 882	115	1.85	7.4	1 325	3 200	3/8"-5/8"	< 4.5	82+63	29	6 739
	MSF-UG-2 054	2 1/2	400 V-III	3 784	47	4 600	70	5 447	105	6 426	160	2.38	9.4	1 325	3 700	3/8"-3/4"	< 5.0	85+63	26	7 463
	MSF-UG-2 068	3 1/2	400 V-III	4 825	64	5 794	93	6 834	135	8 017	205	3.35	11.4	1 325	3 700	1/2"-3/4"	< 7.0	88+63	25	9 227
	MSF-UG-3 086	4	400 V-III	6 027	83	7 257	120	8 579	175	10 060	270	4.23	13.9	2 600	4 000	1/2"-7/8"	< 7.0	115+66	38	10 932

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Proportional control of condensing pressure through fan speed variation (already included in 2/23 series and above). + 295 €
- Coil protection grille. + 108 €
- Built-in oil separator. + 695 €
- Condenser coil polyurethane anti-corrosion treatment. + 4 %
- Control for maturation of meat with humidification and dehumidification functions. By request
  - ▷ Touch screen display. By request

Dimensions



	Dimensions (mm)	A	B	C	D	E	F	Evaporator fans
R-134a	11 series	1 030	373	577	798	706	245	1x Ø 360
	12 series	1 030	373	577	798	1 056	245	1x Ø 360
	13 series	1 030	373	577	798	1 756	245	2x Ø 360
	23 series	1 080	410	827	798	1 756	245	2x Ø 360
	24 series	1 080	410	827	888	2 156	295	2x Ø 450
	34 series	1 150	481	1 097	888	2 156	295	2x Ø 450
R-449A	MSF-UG-1 016 and 1 018	1 030	373	577	798	706	245	1x Ø 360
	MSF-UG-1 024 and 1 034	1 030	373	577	798	1 056	245	1x Ø 360
	MSF-UG-1 038	1 030	373	577	798	1 756	245	2x Ø 360
	MSF-UG-2 054 and 2 068	1 080	410	827	798	1 756	245	2x Ø 360
	MSF-UG-3 086	1 150	481	1 097	888	2 156	295	2x Ø 450

(1) Nominal performances refer to operation with cold room temperatures of 0 °C and ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

(2) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(3) Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

Centrifugal version (MSH-CU series)

Quasi-static split systems are also available with centrifugal condensing units.

	Series / Model	HP	Cooling capacity 0 °C / 35 °C W	m³	Price (€)
R-134a	MSH-CUY-11 026	3/4	1 281	12	4 042
	MSH-CUY-11 033	1	1 517	15	4 917
	MSH-CUY-22 033	1	1 811	22	5 251
	MSH-CUY-22 053	1 1/2	2 174	28	5 791
	MSH-CUY-33 053	1 1/2	2 657	35	6 347
	MSH-CUY-33 074	2	3 402	47	7 105
	MSH-CUY-43 086	4	4 153	70	8 545
	MSH-CUY-43 108	5	5 219	84	9 335
	MSH-CUY-44 108	5	5 555	89	10 051
	MSH-CUY-44 136	6 1/2	6 773	108	12 461
R-449A	MSH-CUG-1 016	5/8	1 349	13	3 846
	MSH-CUG-1 018	3/4	1 545	16	4 677
	MSH-CUG-2 024	1	1 978	23	4 995
	MSH-CUG-2 034	1 1/2	2 627	34	5 703
	MSH-CUG-3 038	1 3/4	3 265	44	6 542
	MSH-CUG-4 054	2 1/4	4 590	69	7 676
	MSH-CUG-4 068	3 1/2	5 783	93	9 026

Condensing units features as in pages 21 up to 22.

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m.

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	2 x 1 mm²	3 x 1 mm²
Defrost	2 x 1.5 mm² + G	4 x 1.5 mm² + G
Control pad	2 x 1 mm²	
Switch door*	2 x 1 mm²	
Cold room light*	2 x 1 mm² + G	

* Optional not included.
To know electrical interconnections of each model: see technical manual.

High humidity

- Low-profile double-flow evaporating unit, oversized for high relative humidity applications.
- Passive humidity control (humidity regulation between 60 and 95 %).*
- Factory-tested systems with no need for on-site tests.
- Refrigerant pre-load.
- Units exempt from leak checks.

Split refrigeration systems for high relative humidity applications in a positive temperature range, featuring an evaporating unit with double air flow, and a low-noise or centrifugal condensing unit.

Features

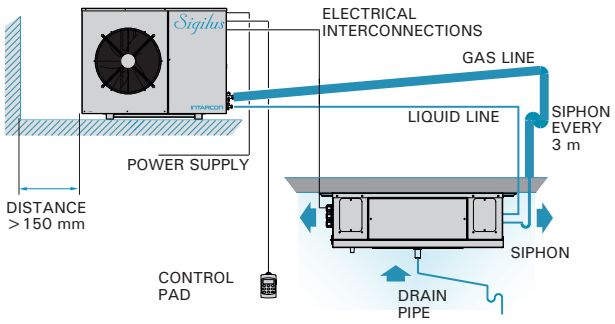
- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Minimal R-134a or R-449A refrigerant load.
- Hermetic reciprocating compressor.
- High and low pressure switches.
- Oversized double air flow evaporating unit designed for relative humidity control between 60 % and 95 %*.
- Built-in solenoid and thermostatic expansion valves (evaporating unit).
- Air defrost.
- Stainless steel drain pan.
- Flare-type connections (up to 1/2"-3/4") with service valves.
- MCB protection.
- Liquid receiver.
- Refrigerant pre-load for 10 m piping.
- Multifunction electronic control with temperature and humidity control and remote keyboard.

Series

- HSF-D: Split systems with low-noise condensing unit and high humidity double-flow evaporating unit.
- HSH-CD: Split systems with centrifugal condensing unit and high humidity double-flow evaporating unit.

Installation scheme

Maximum vertical distance between units of 15 m if the condensing unit is placed at a higher level than the evaporating unit, and 6 m otherwise.



Conservation at controlled relative humidity

The preservation of certain products, such as fruits, vegetables or cut flowers, requires control of the relative humidity in the cold room within a certain range.

These unit adjusted for high relative humidity are especially suitable for fruit and vegetable products preservation cold room.

The evaporators have a double air discharge through oversized coils to obtain up to a high level of relative humidity inside the chamber at around 95 %, avoiding loss of humidity and weight of the product.

Electronic temperature and humidity control

The unit incorporates an advanced electronic regulation for the control of the temperature and humidity inside the cold room.

- Multifunction remote digital control with temperature and relative humidity display.
- Relative humidity control in the regulation range from 60 % to 95 %*.
- Optionally, active humidification kits with steam lances and dehumidification and stove kits are integrated.

* The humidity regulation in the cold room is carried out passively, acting on the evaporator flow, without water vapour. The actual range of humidity regulation depends largely on the conditions of the cold room, absolute outside humidity and type of product.

Electrical interconnections

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m.

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	3 x 1 mm² + G	5 x 1 mm² + G
Control pad	2 x 1 mm²	

To know electrical interconnections of each model: see technical manual.

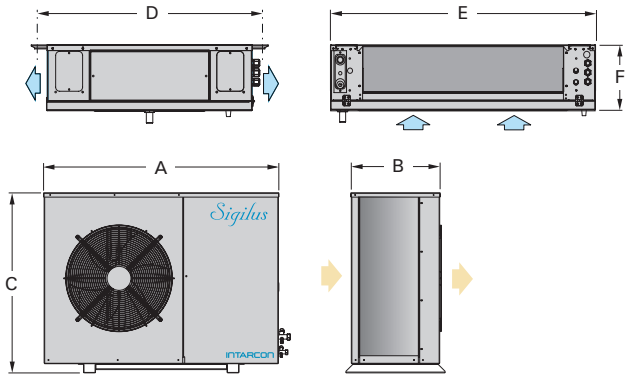
230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature - Humidity control | R-134a / R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / Cold room volume according to cold room temperature [1] 5 °C RH 95 % W	5 °C RH 95 % m³	10 °C RH 95 % W	10 °C RH 95 % m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrig. load (kg) [2]	Weight (kg)	SPL dB(A) [3]	Price (€)
R-134a	**HSF-DY-12 015**	1/2	230 V-I	1 544	22	1 906	38	0.74	6.5	1 800	1 700	1/4"-1/2"	< 2.0	57+32	34	4 392
	HSF-DY-12 026	3/4	230 V-I	2 116	32	2 594	53	1.06	10.2	1 800	1 700	1/4"-1/2"	< 2.0	65+32	34	4 744
	HSF-DY-13 033	1	230 V-I	2 620	43	3 192	73	1.30	11.0	3 150	1 700	1/4"-1/2"	< 2.5	67+45	34	5 836
	HSF-DY-13 053	1 1/2	230 V-I *	3 486	64	4 237	103	1.90	13.6	3 150	1 700	1/4"-5/8"	< 3.0	77+65	35	6 948
	HSF-DY-14 074	2	230 V-I *	4 977	91	6 090	148	2.57	17.7	5 700	1 700	1/4"-3/4"	< 5.0	79+65	37	8 164
	HSF-DY-24 086	4	400 V-III	6 773	134	8 311	217	2.87	14.5	5 700	3 700	3/8"-7/8"	< 6.0	96+65	38	9 209
	HSF-DY-24 108	5	400 V-III	7 865	158	9 713	263	3.40	17.5	5 700	3 700	3/8"-7/8"	< 6.0	98+65	35	10 090
	HSF-DY-24 136	6 1/2	400 V-III	9 870	202	11 960	331	4.44	21.5	5 700	3 700	3/8"-1 1/8"	< 6.5	101+70	34	13 259
R-449A	**HSF-DG-1 014**	1/2	230 V-I	1 801	25	2 112	41	0.85	6.6	1 100	1 700	1/4"-1/2"	< 2.0	59+32	34	4 235
	HSF-DG-1 016	5/8	230 V-I	2 015	29	2 378	47	0.93	7.5	1 100	1 700	1/4"-1/2"	< 2.0	67+32	34	4 573
	HSF-DG-1 018	3/4	230 V-I	2 582	38	3 036	62	1.22	9.1	1 800	1 700	1/4"-1/2"	< 2.0	68+45	34	5 443
	HSF-DG-1 024	1	230 V-I	2 945	46	3 478	75	1.40	11.3	1 800	1 700	3/8"-5/8"	< 3.5	82+45	34	5 812
	HSF-DG-1 026	1 1/4	230 V-I *	3 289	54	3 849	86	1.53	16.3	1 800	1 700	3/8"-5/8"	< 3.5	83+45	34	6 092
	HSF-DG-1 034	1 1/2	230 V-I *	3 734	64	4 361	100	2.09	5.9	1 800	1 700	3/8"-5/8"	< 3.5	83+45	35	6 565
	HSF-DG-1 038	1 3/4	400 V-III	4 905	85	5 760	135	2.02	7.8	3 150	3 200	3/8"-5/8"	< 4.0	82+65	29	7 618
	HSF-DG-2 048	2	400 V-III	6 170	115	7 244	175	2.53	7.9	3 150	3 700	3/8"-3/4"	< 5.0	84+65	26	8 100
	HSF-DG-2 054	2 1/2	400 V-III	6 852	130	7 997	200	2.77	9.8	3 150	3 700	3/8"-3/4"	< 5.0	85+65	26	8 388
	HSF-DG-2 060	3	400 V-III	7 844	150	9 122	230	3.28	11.3	3 800	3 700	3/8"-3/4"	< 5.0	88+65	26	9 190
	HSF-DG-2 068	3 1/2	400 V-III	8 576	165	9 934	260	3.77	12.3	3 800	3 700	1/2"-3/4"	< 5.0	88+65	25	10 264
	HSF-DG-3 086	4	400 V-III	10 308	200	12 124	320	4.74	14.5	5 700	4 000	1/2"-7/8"	< 9.0	115+70	38	12 075

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Proportional control of condensing pressure through fan speed variation (already included in 2/22 series and above). + 295 €
- Coil protection grille. + 108 €
- Built-in active humidification kit. By request
- Dehumidification and heating kit. By request
- Built-in oil separator. + 695 €
- Anti-corrosion evaporator coil coating. + 6 %
- Anti-corrosion condenser coil coating. + 4 %

Dimensions



	Dimensions (mm)	A	B	C	D	E	F	Evap. fan
R-134a	12 series	1 030	375	580	798	1 056	245	2x Ø 360
	13 series	1 030	375	580	798	1 756	245	3x Ø 360
	14 series	1 030	375	580	888	2 156	295	3x Ø 450
	24 series	1 080	415	830	888	2 156	295	3x Ø 450
R-449A	HSF-DG-1 014 and 1 016	1 030	375	580	798	706	245	1x Ø 360
	HSF-DG-1 018 up to 1 034	1 030	375	580	798	1 056	245	2x Ø 360
	HSF-DG-1 038	1 030	375	580	798	1 756	245	3x Ø 360
	HSF-DG-2 048 up to 2 068	1 080	415	830	798	1 756	245	3x Ø 360
	HSF-DG-3 086	1 150	480	1 100	888	2 156	295	3x Ø 450

[1] Nominal performances refer to operation with cold room temperatures of 5 °C, with a relative humidity cold room of 95 %, and ambient temperature of 35 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

[2] Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

[3] Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

Centrifugal version (HSH-CD series)

High humidity split systems are also available with centrifugal condensing units.

	Series / Model	HP	Cooling capacity 5 °C RH 95 % W	5 °C RH 95 % m³	Price (€)
R-134a	**HSH-CDY-12 015**	1/2	1 415	21	4 189
	HSH-CDY-12 026	3/4	1 859	28	4 811
	HSH-CDY-12 033	1	2 242	32	5 285
	HSH-CDY-23 033	1	2 746	45	5 630
	HSH-CDY-23 053	1 1/2	3 507	64	6 200
	HSH-CDY-23 074	2	4 526	82	7 708
	HSH-CDY-34 074	2	5 140	93	8 104
	HSH-CDY-44 086	4	6 741	134	9 200
	HSH-CDY-44 108	5	7 817	158	10 013
	HSH-CDY-44 136	6 1/2	9 791	200	12 415
R-449A	**HSH-CDG-1 014**	1/2	1 399	20	4 040
	HSH-CDG-1 016	5/8	1 608	22	4 185
	HSH-CDG-2 018	3/4	2 510	38	5 098
	HSH-CDG-2 024	1	2 902	46	5 430
	HSH-CDG-2 026	1 1/4	3 242	54	5 647
	HSH-CDG-3 034	1 1/2	4 056	71	6 167
	HSH-CDG-3 038	1 3/4	4 360	77	7 194
	HSH-CDG-3 048	2	6 160	116	7 935
	HSH-CDG-4 054	2 1/4	6 833	132	8 380
	HSH-CDG-4 060	3	7 652	149	9 120
	HSH-CDG-4 068	3 1/2	8 371	164	9 789

Condensing units features as in pages 21 up to 22.

Wine cellar

- Specifically designed for wine preservation in cellars.
- Active humidity control.
- Active heating system.
- Factory-tested systems with no need for on-site tests.
- Refrigerant pre-load.
- Units exempt from leak checks.

Wine cellar refrigeration split systems with low-noise axial or centrifugal condensing unit and double-flow evaporating unit with heating function, humidification / dehumidification system and condensed water pump, and compact ceiling construction with axial or centrifugal condensation.

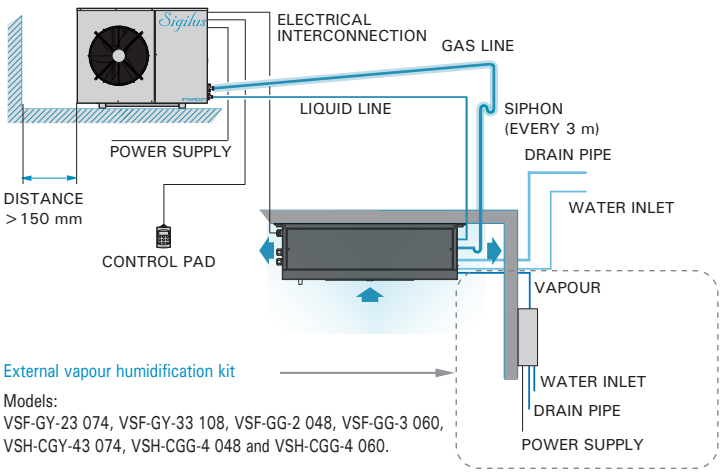
Applications

- Bottled wine preservation.
- Cigar and tobacco preservation.
- Refrigeration at high temperature with humidity control.
- Preservation of wine in barrels.
- Cheese curing.
- Mini drying rooms.

Series

- VSF-G: Wine cellar split systems with low-noise condensing unit.
- VSH-CG: Wine cellar split systems with centrifugal condensing unit.
- VCR-N: Wine cellar roof-top monoblock with axial fan.
- VCR-C: Wine cellar roof-top monoblock with centrifugal fan.

Split systems installation scheme



External vapour humidification kit

Models:
VSF-GY-23 074, VSF-GY-33 108, VSF-GG-2 048, VSF-GG-3 060, VSH-CGY-43 074, VSH-CGG-4 048 and VSH-CGG-4 060.

Maximum vertical distance between units of 15 m if the condensing unit is placed at a higher level than the evaporating unit, and 6 m otherwise.

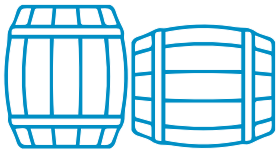
Conservation of bottled wine

Bottled wine requires temperature and humidity controlled conditions that optimally conserve the product while avoiding both cork drying and label mouldiness.

The wine treatment unit guarantees optimal conditions for the preservation of bottled wine.

Wine conservation in barrel

In the conservation of wine in barrels, the relative humidity inside the cellar is of great importance, which must be adjusted so that there is no transfer of water vapour between the environment of the cellar and the interior of the barrel, avoiding thus wine wastage or water absorption by the content.



External vapour humidification kit

Vapour humidification with 3 kg/h capacity, consisting of: vapour lances integrated in the evaporator unit, a submerged electrode generating cylinder with feed valves and water purge valves.

Electrical interconnection

For the interconnection of the condenser and evaporator units, the following cable sections must be provided for a length of 10 m (except series 43 and 44).

Power supply	230 V-I-50 Hz	400 V-III-50 Hz
Probes	4 x 1 mm²	
Manoeuvre	10 x 1 mm²	
Heating resistance	2 x 2.5 mm² + G	4 x 1.5 mm² + G
Control pad	2 x 1 mm²	
Humidifier	2 x 1 mm²	

To know electrical interconnections of each model: see technical manual.

VSF-G / VSH-CG series

Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Minimal R-134a or R-449A refrigerant load.
- Hermetic reciprocating compressor.
- Double-flow low-profile evaporating unit with heaters and active humidification / dehumidification system; and evaporation anti-corrosion coated coil.
- Air defrost; Air filter.
- Built-in solenoid and thermostatic expansion valves.
- Stainless steel drain pan and condensed water pump.
- Flare-type cooling connections (up to 1/2"-3/4) and service valves.
- Liquid receiver and refrigerant pre-load for 10 m piping.
- Proportional condensation control (VSF 1/2/3 and VSH 4/43 series) and all / nothing condensation control (VSF 0, VSH 2/22 and 3/33 series).
- Multifunction electronic dual control of temperature and humidity with remote keyboard and digital regulation of condensing temperature.
- MCB protection.

VSF-G series

VSH-CG series

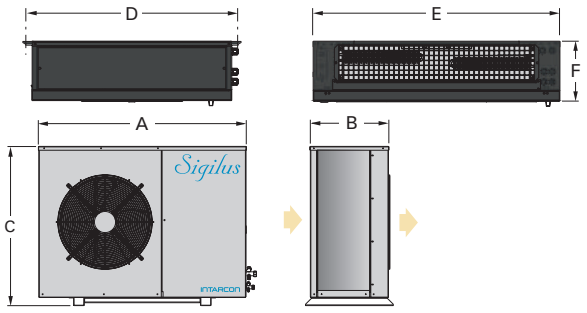
230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature - Wine cellar | R-134a / R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cellar volume (m³) Without insulation	Cellar volume (m³) Insulation	Cooling capacity at 15 °C 70 % RH (W) (1)	Heating capacity (W)	Input power (kW) (2)	Input power (kW) (3)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Liq-Gas cooling connection	Refrigerant charge (kg) (4)	Weight (kg)	SPL dB(A) (5)	Price (€)
R-134a	**VSF-GY-00 010**	3/8	230 V-I	11	37	1 242	1 000	1.52	0.52	8.8	500	350	1/4"-3/8"	< 1.5	46+30	28	6 059
	VSF-GY-10 015	1/2	230 V-I	20	53	1 820	1 000	1.67	0.67	10.1	500	1 700	1/4"-1/2"	< 2.0	57+30	34	6 905
	VSF-GY-11 033	1	230 V-I	47	100	3 281	1 500	2.76	1.26	16.3	1 100	1 700	1/4"-5/8"	< 2.5	67+42	34	8 312
	VSF-GY-12 053	1 1/2	230 V-I *	74	168	4 683	3 000	4.93	1.93	26.1	1 800	3 200	3/8"-3/4"	< 3.5	77+52	35	10 293
	VSF-GY-23 074 (K)	2	230 V-I *	149	297	7 497	6 000	8.60	2.60	43.7	3 150	3 700	3/8"-3/4"	< 5.5	79+75	34	13 575
	VSF-GY-33 108 (K)	5	400 V-III	224	444	9 944	6 000	9.50	3.50	26.1	3 150	4 000	3/8"-7/8"	< 6.0	98+75	35	15 896
R-449A	**VSF-GG-0 008**	1/3	230 V-I	10	35	1 227	1 000	1.16	0.48	8.4	500	350	1/4"-3/8"	< 1.5	48+30	28	5 711
	VSF-GG-1 014	1/2	230 V-I	24	60	2 134	1 500	2.55	1.05	13.5	1 100	1 700	1/4"-1/2"	< 2.5	59+42	34	6 507
	VSF-GG-1 024	1	230 V-I	47	100	3 388	3 000	4.81	1.81	24.9	1 800	1 700	3/8"-5/8"	< 4.0	82+52	34	7 834
	VSF-GG-1 034	1 1/2	230 V-I *	75	170	4 944	3 000	5.55	2.55	29.9	1 800	3 200	3/8"-5/8"	< 4.0	83+52	35	9 162
	VSF-GG-2 048 (K)	2	400 V-III	151	300	7 830	6 000	9.19	3.19	17.9	3 150	3 700	1/2"-3/4"	< 5.5	84+75	26	12 380
	VSF-GG-3 060 (K)	3	400 V-III	221	450	10 490	6 000	10.87	4.87	19.5	5 200	6 500	1/2"-7/8"	< 6.5	88+75	26	14 147

Options

- Change to 400 V-III-50 Hz power supply. + 5 %
- Proportional control of condensing pressure through fan speed variation (already included in VSF 1/2/3 series and VSH 4/43 series). + 295 €
- Built-in oil separator. + 695 €
- Condenser coil polyurethane anti-corrosion treatment. + 4 %
- Coil protection grille. + 108 €

Dimensions



Dimensions (mm)	A	B	C	D	E	F	Evap. fan
0 and 00 series	670	308	450	764	627	205	1x Ø 254
VSF-GY-10 015	1 030	375	580	764	627	205	1x Ø 254
11 and VSF-GG-1 014 series	1 030	375	580	886	706	255	1x Ø 360
12, VSF-GG-1 024 and 1 034 series	1 030	375	580	886	1 056	255	2x Ø 360
2 and 23 series	1 080	415	830	886	1 756	255	3x Ø 360
VSF-GY-33 108	1 150	480	1 100	886	1 756	255	3x Ø 360
VSF-GG-3 060	1 150	480	1 100	1 030	2 156	305	3x Ø 450

(1) Nominal performances refer to operation with cold room temperatures of 15 °C (PT) with relative humidity cold room of 70 % and ambient temperature of 35 °C. Volume of cold room for the hotel industry estimated without insulation and warehouse volume estimated with 30 mm insulation. Others applications by request

(2) Input power at dehumidification mode.

(3) Input power at refrigeration mode.

(4) Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

(5) Sound pressure in dB (A) in open field at 10 m from the unit.

* Available units with 400 V-III-50 Hz power supply.

(K) Standard models with external vapour humidification kit.

Centrifugal version (VSH-CG series)

Wine cellar split systems are also available with centrifugal condensing unit.

	Series / Model	HP	Conden. air flow (m³/h)	ASP (mmca) (6)	Price (€)
R-134a	**VSH-CGY-10 010**	3/8	575	8	5 523
	VSH-CGY-21 015	1/2	1 000	12	6 905
	VSH-CGY-22 033	1	1 000	12	8 312
	VSH-CGY-33 053	1 1/2	1 500	14	10 293
	VSH-CGY-43 074 (K)	2	3 500	10	13 575
R-449A	**VSH-CGG-2 014**	1/2	1 000	12	6 507
	VSH-CGG-2 024	1	1 000	12	7 834
	VSH-CGG-3 034	1 1/2	1 500	14	9 162
	VSH-CGG-4 048 (K)	2	3 500	10	12 380
	VSH-CGG-4 060 (K)	3	3 500	10	14 147

(6) Available static pressure of condensation.

Condensing units features as in pages 21 up to 22.

VCR-N / VCR-C series

Features

- R-134a refrigerant load, below 1.5 kg.
- Hermetic reciprocating compressor.
- High and low pressure switches.
- Air defrost.
- Heating elements, humidification / dehumidification system.
- Evaporation coils with anti-corrosion coating.
- Water purge system.
- Thermostatic expansion valve.
- Evaporation drawer of 50 mm sandwich panel made of polyurethane foam, internally coated with pre-lacquered steel plate.
- Multifunction electronic dual control of temperature and humidity with remote keyboard and digital regulation of condensing temperature.

VCR-N series

VCR-C series

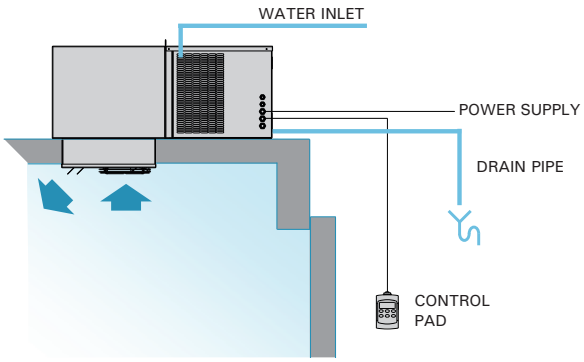
230 V-I-50 Hz | Positive temperature | R-134a

	Series / Model	Compressor HP	Compressor Power supply	Cellar volume (m³) Without insulation	Cellar volume (m³) Insulated	Power supply at 15 °C 70 % RH (W) [1]	Heating capacity (W)	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. air flow (m³/h)	Refrig. load (kg) [2]	Weight (kg)	SPL dB(A) [3]	Price (€)
R-134a	**VCR-NY-1 010**	3/8	230 V-I	15	34	**1 269**	1 000	1.55	8.9	600	575	< 1.0	73	29	**5 289**
	VCR-NY-2 015	1/2	230 V-I	25	63	**2 020**	1 000	1.83	10.8	1 150	1 000	< 1.5	88	34	**5 696**
	VCR-NY-2 033	1	230 V-I	42	95	**3 203**	2 000	3.37	19.0	1 150	1 000	< 1.5	98	34	**6 847**

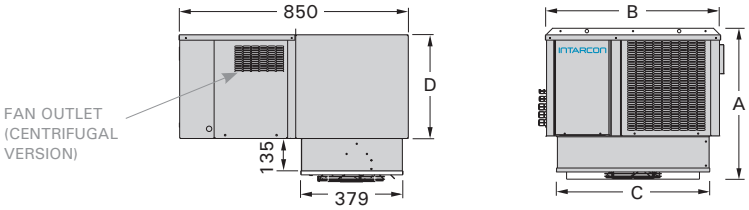
Options

- Non-return discharge damper (VCR-C series). + 65 €
- Adaptation of air discharge to circular duct. + 119 €
- Vertical air flow (centrifugal version).

Monoblock installation scheme



Dimensions



Measuring mm.

Dimensions (mm)	A	B	C	D	Fan outlet	Hopper
1 series	574	665	582	385	185 x 115	Ø 150
2 series	677	835	756	469	230 x 130	Ø 200

[1] Nominal performances refer to operation with cold room temperatures of 15 °C (PT) with relative humidity cold room of 70 % and ambient temperature of 35 °C.

Volume of cold room for the hotel industry estimated without insulation and warehouse volume estimated with 30 mm insulation.

[2] Units with refrigerant load less than 5 tons of CO_2 equivalent (3.5 kg of R-134a or R-449A) exempt from leak checking, Regulation (EU) No 517/2014.

[3] Sound pressure in dB (A) in open field at 10 m from the unit.

Centrifugal version (VCR-C series)

Wine cellar split systems are also available with centrifugal condensation unit.

	Series / Model	HP	Conden. air flow (m³/h)	ASP (mmca) [4]	Price (€)
R-134a	**VCR-CY-1 010**	3/8	575	8	**5 557**
	VCR-CY-2 015	1/2	1 000	8	**6 101**
	VCR-CY-2 033	1	1 000	12	**7 455**

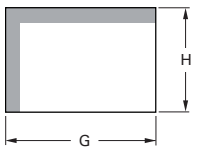
[4] Available static pressure of condensation.

Exhaust duct

Recommended size for 20 m long steel, PVC or fibreglass ducts (each elbow at 90° equals 5 m in length). For flexible or semi-flexible ducts use a larger size.

- 1 series: 200 x 200 mm or Ø 150 mm
- 2 series: 250 x 150 mm or Ø 200 mm

Mounting frame



CEILING FRAME

Dimensions (mm)	G	H
1 series	588	385
2 series	762	385

intarSANIT

STERILIZATION | PURIFICATION | VENTILATION

COVID-19 free

Safety and health

Smart solution

intarSANIT | new air conditioning and supply

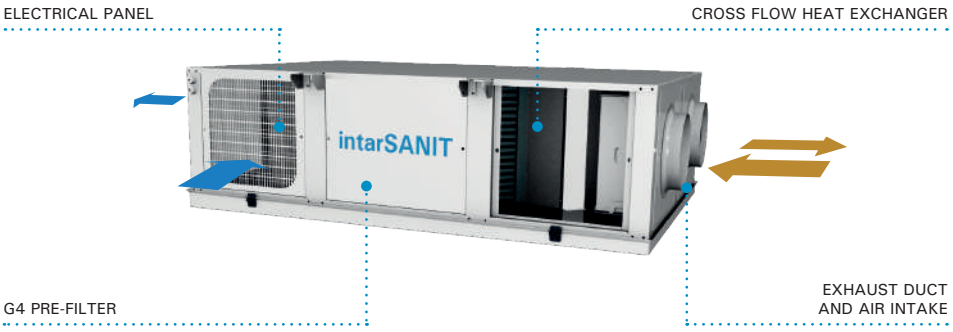
- ❄ Air cold room filtration, sterilization and purification.
- ❄ Ventilation flow adaptable to occupation, and room overpressure.
- ❄ High energy efficiency with heat recovery from exhaust air.
- ❄ Easy ceiling installation.

intarSANIT-TCH is the new air conditioning and supply solution for work rooms, with heat recovery from extract air.

The ventilation unit is specifically designed for the supply of fresh air in work rooms and food processing rooms, which operate at a temperature of 10 to 15 ºC.

Features

- 230 V-I-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Built-in a white coated aluminium frame.
- Compact and lightweight design.
- Adjustable ventilation flow from 500 up to 1 000 m^3/h.
- Compact refrigeration system with natural refrigerant R-290.
- Static and dynamic heat recovery from exhaust air.
- Air supply and extraction by centrifugal fan for connection to duct or textile diffuse.
- G4 pre-filter and F7 new air filter.



Installation scheme

Ventilation of process rooms

The regulations on safety and health at work stipulate a minimum ventilation flow of 50 m^3/h per worker for non-sedentary work (Directive 89/391/EEC).

UNE-EN 16798 establishes the requirements for air quality. In work rooms, at least medium air quality (IDA3) should be ensured, and high air quality (IDA1) for laboratories and clean rooms.

Cold room type	Indoor air quality UNE-EN 13779	Metabolic activity of the worker at 12ºC	Level of CO_2 in the air above the outer level ppm	Ventilation flow / person (m^3/h) *
Laboratories, clean rooms	IDA 1, high quality	Light work seated 1.5 met	350	80
Workshops, handling rooms	IDA 2, good quality	Light work standing 2 met	500	75
Cutting rooms	IDA 3, medium quality	Moderate work 1.5 met	800	60
Warehouses, packing rooms, loading and unloading	IDA 4, low quality	Moderate work 1.5 met	1 200	50

Table 1.* Estimated ventilation flow for rooms where contamination is due solely to worker respiration, with good air mixing by dilution.

230 V-I-50 Hz | Ventilation | R-290

	Series / Model	Recovered power (W)	Cooling capacity (W)	Total cooling power (W)*	Ventilation air flow (m^3/h)	Available impulsion static pressure (Pa)	Impulsion temperature	Max. current (A)	Input power (kW)	Weight (kg)	SPL (dBA) from 3 m	Price (€)
R-290	TCH-1	4 700	4 800	9 500	1 000	50	15.0	16	2,37	110	49	6 811
					750	80	13.5					
					500	100	12.0					

Options

- CO_2 and VOCs level control. By request

* Nominal performance for outdoor ambient conditions of 35 ºC 40 % RH and indoor conditions of 12 ºC.

intarSANIT | air sterilization and purification

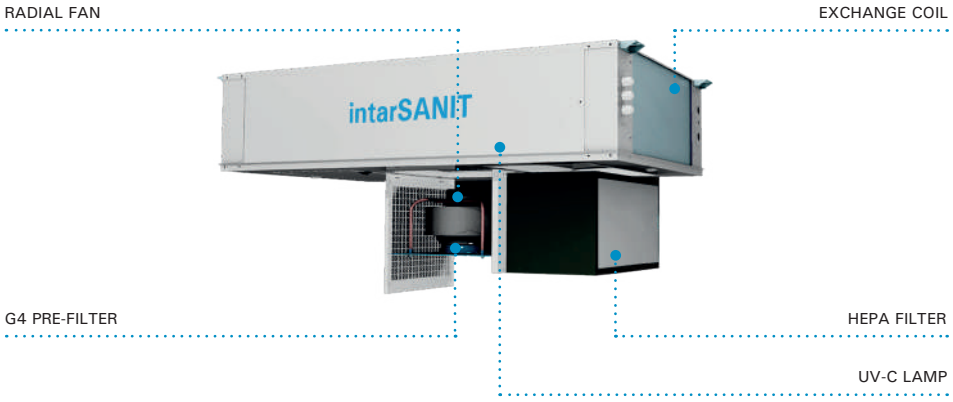
- ❄ Air cold room filtration, sterilization and purification.
- ❄ Double sterilizing effect: UV-C radiation and HEPA filtration.
- ❄ Easy ceiling installation.
- ❄ Sterilization system integrated in double flow evaporator unit.

intarSANIT-TPD is the solution for the sterilization and purification of the air in food handling rooms, industrial kitchens, clean rooms and other establishments.

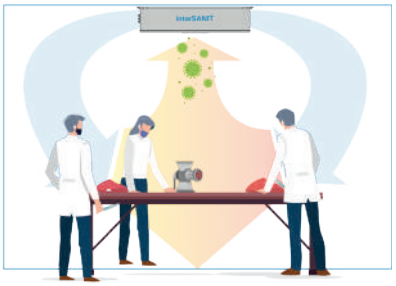
Ultraviolet irradiation renders the DNA of micro-organisms useless, preventing their reproduction. HEPA filtration with 99.995 % efficiency in 300 nm particles.

Features

- 230 V-I-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- Built-in a white coated aluminium frame.
- Compact and lightweight design.
- G4 pre-filter.
- UV-C germicidal irradiation.
- HEPA filters.
- Radial variable speed EC fan.



Installation scheme



HEPA filtration

The HEPA filters have a retention efficiency of 300 nm particles of 99.995 %. That is, for every 100 000 particles of 0.3 microns in diameter, only 5. As shown in figure 2, the droplet size (1 micron) is greater than the MPPS (300 nm), which allows to conclude that the HEPA filter is effective at retaining aerosols.

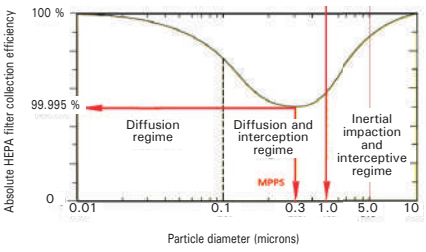


Fig. 1. Filtration efficiency of a HEPA filter. The UNE EN 1822 standard defines the filtration efficiency of a HEPA filter as the filtration performance of the particle with the highest penetration MPPS (Maximum Penetration Particle size). Particles around 0.3 μm are the most difficult for an absolute HEPA filter to trap and are what dictate the efficiency of the filter. The smallest nano-particles are easier to trap through the diffusion phenomenon, the larger ones through the impact, inertial and interception mechanisms.

230 V-I-50 Hz | Purification

Series / Model	Flow (m^3/h) Min	Flow (m^3/h) Max.	Recommended room volume (m^3)	Cooling capacity (kW) (optional) SC1: 10 °C 85 % RH DT1 = 10 K V. Min.	V. Max.	Coil (optional) Fin spacing (mm)	Surf. (m^2)	Vol. (L)	Fan Type	Ø mm	Max. current (A)	Input power	Range (m)	Weight (kg)	SPL (dBA) from 3 m	Price (€)
TPD-3	1 500	3 000	100 - 200	4.0	6.0	5.0	13	5.8	Radial EC	1x Ø 280	2.9	0.7	6	95	49	8 115
TPD-6	3 000	6 000	200 - 400	8.0	12.0	5.0	26	7.6	Radial EC	2x Ø 280	5.8	1.3	6	180	52	15 030

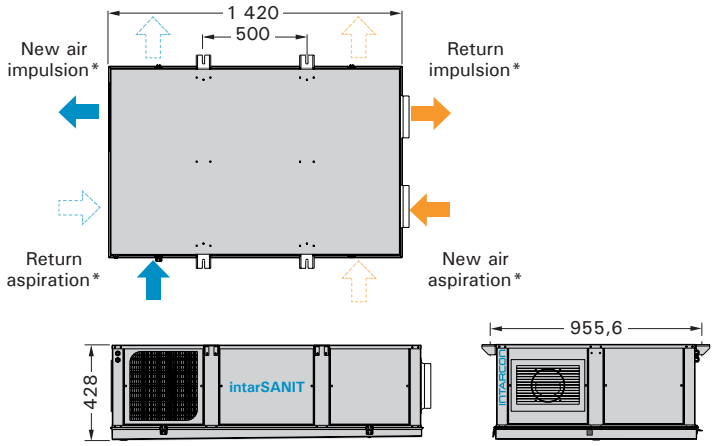
Options

- Carbon filter. By request
- Cooling coil. By request

* Nominal performance for outdoor ambient conditions of 35 ºC 40 % RH and indoor conditions of 12 ºC.

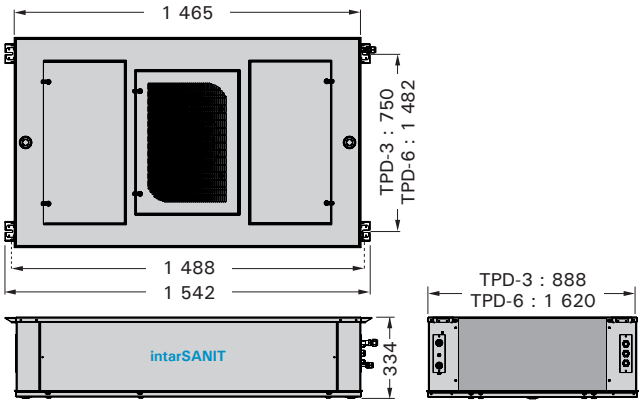
Dimensions

TCH series



* Interchangeable air connection sides.

TPD series



Measuring mm.

Control

iPro electronic control with distance digital display.

- Air supply temperature control.
- Room temperature control.
- Control option: remote touch display.
- Serial communication (TCH).
- Filter status control (TCH).
- Air flow control (TPD).
- External communication (TPD).

Air pathogens transmission

When talking, coughing or sneezing, small droplets are emitted that evaporate quickly and give rise to aerosols of very small particles. These micro-particles can remain in the air for hours and be transported long distances. It has been shown that the survival of viruses and bacteria in these particles is greater the lower the air temperature. The transmission of pathogens by air in closed places is favoured by the recirculation of air without sterilization or filtration treatment and the absence of ventilation with outside air, and it has been shown that these aerosols are the main contagion route of COVID-19.

The simulation of the transmission of aerosols in a process room shows that the probability of contagion in a room without ventilation is 15 times higher than a room equipped with a minimum renewal of outside air and an adequate level of filtration.

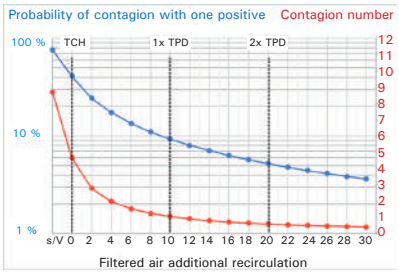


Fig. 2. Simulation of the probability of contagion given a positive in a 200 m² work room with 13 workers at a temperature of 12 ºC. Source: Prof. José L. Jiménez, Dept. of Chem. And CIRES, Univ. of Colorado-Boulder.

Ultraviolet light sterilization

Ultraviolet UV-C radiation of wavelengths of 280 nm - 200 nm damages the DNA of many micro-organisms and prevents them from reproducing. In this way, bacteria, viruses and fungi can be eliminated without leaving residues. The ultraviolet light is placed in the ventilation section to concentrate its biocidal action on the HEPA filters, the G4 pre-filter and the access doors, keeping the interior air treatment section sterile; This guarantees the best hygiene during filter replacement and unit cleaning.

Fig 3. intarSANIT complies with UNE 0048/20 June 2020, on the protection of the health and safety of workers against the risks related to exposure to artificial optical radiation.

Waterloop system

Indirect condensation system

Complies with Ecodesign

VRC multi-service version

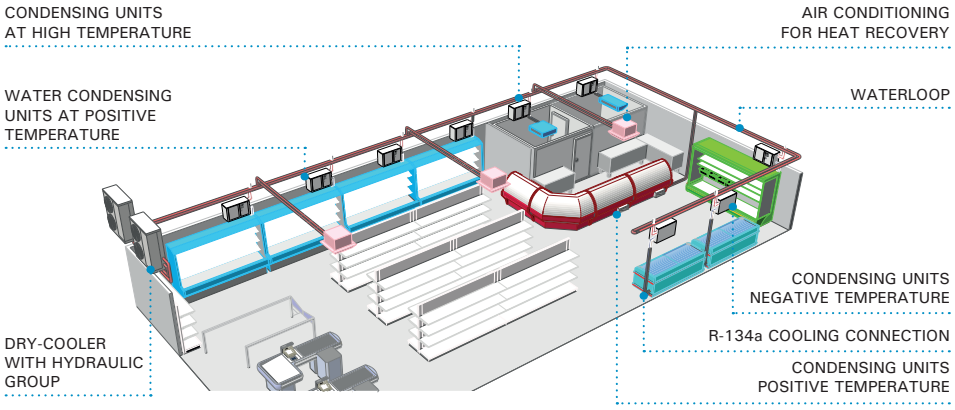
Low noise construction

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.

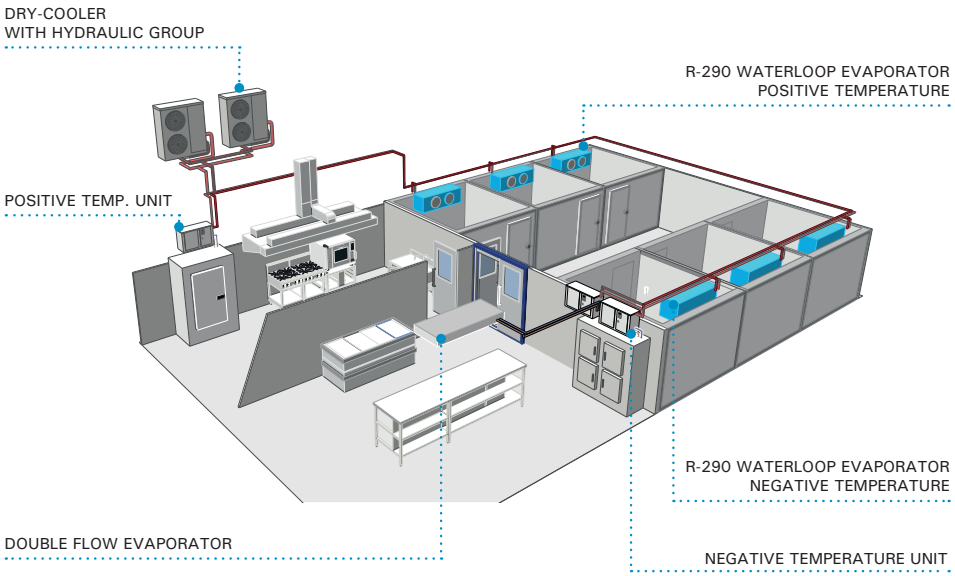
Supermarkets and food stores applications

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 plant 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.

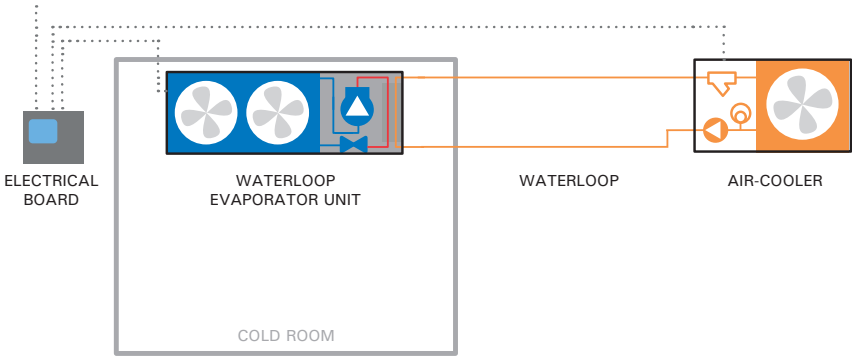
The waterloop can be made with polypropylene pipe without insulation, with service valves in each refrigeration unit, thus providing great flexibility in modifying the installation.

Tropicalised design

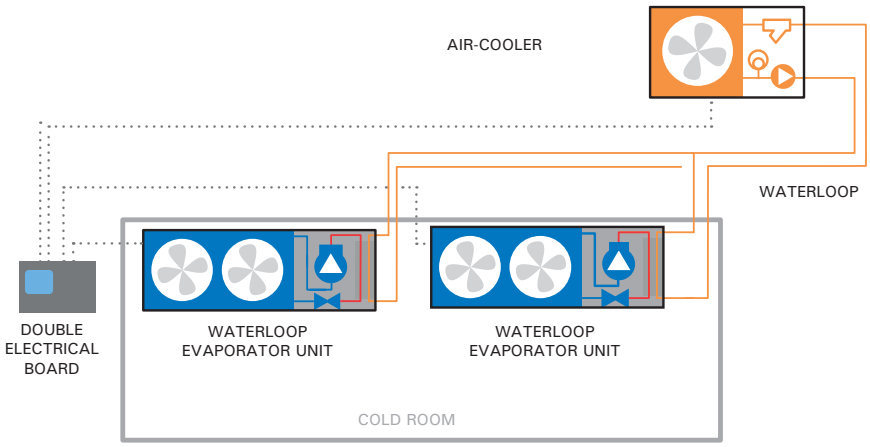
Unlike other systems on the market, the waterloop system is designed to work properly even with extreme ambient temperatures of up to 45 °C, with condensation water temperatures of up to 55 °C, and without the need to incorporate additional cooling equipment.

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

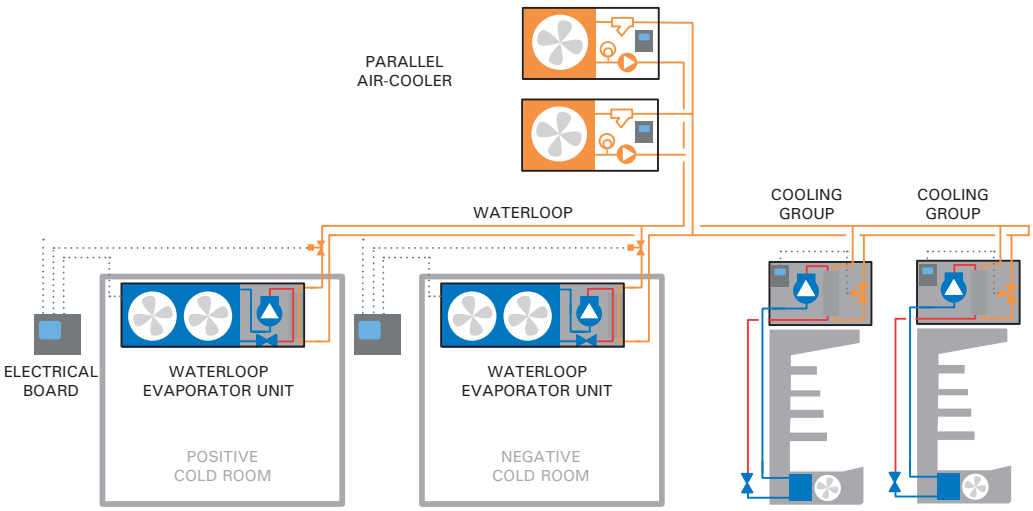
Simple installation example 1 + 1



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.

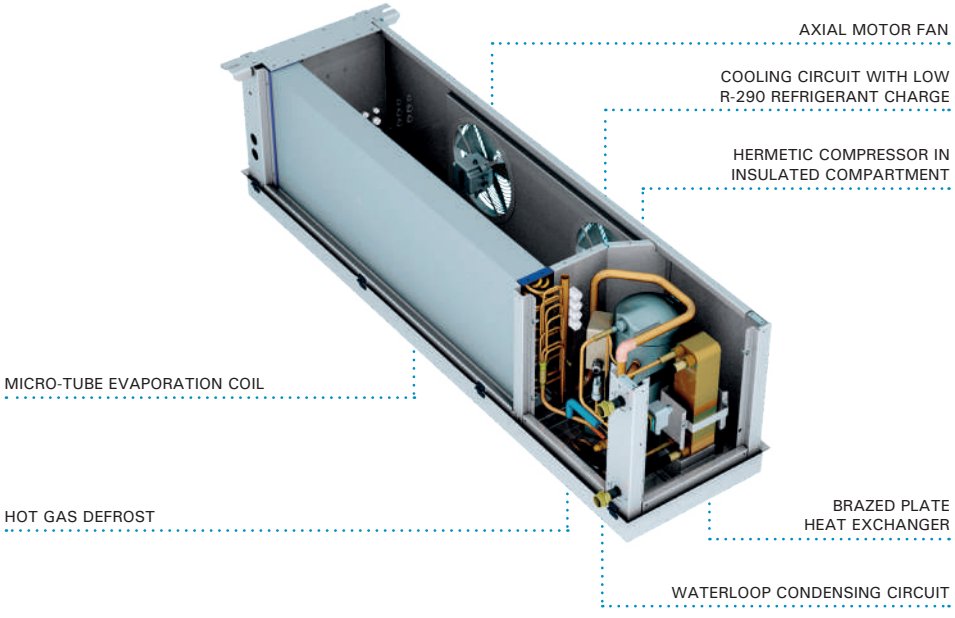
Waterloop evaporating units

- 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 low refrigerant charge.
- 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.
- 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 regulation (optional).



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 (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.

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

		Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / cold room volume (W) [1] 0 °C W	0 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. water flow (l/h)	PdC (kPa) [2]	Hydraulic connection	Refrigerant charge (g) [3]	Weight (g)	Price (€)	Dry-cooler model [4]	Set price (€)
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/.	50	3 202	CWF-0	6 435
		MCC-ND-1 034	1 1/2	230 V-I	2 230	24	1,4	16,4	1 600	600	3	3/4"	/5.	59	3 689	CWF-0	6 922
	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"	043	62	5 088	CWF-1	9 530
		MCC-SD-2 017	2	400 V-III	3 850	51	2,0	9,0	1 700	1 000	5	1"	02.	72	6 180	CWF-2	11 692

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

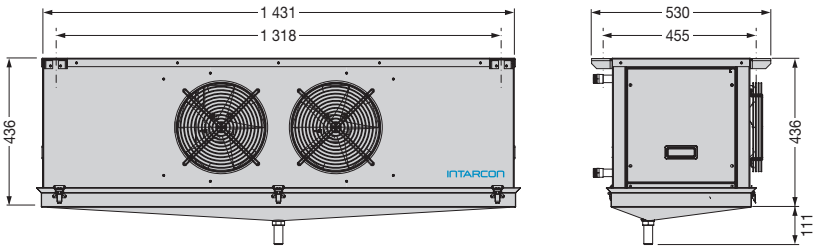
		Series / Model	Compressor HP	Compressor Power supply	Cooling capacity / cold room volume (W) [1] -20 °C W	-20 °C m³	Input power (kW)	Max. current (A)	Evap. air flow (m³/h)	Conden. water flow (l/h)	PdC (kPa) [2]	Hydraulic connection	Refrigerant charge (g) [3]	Weight (g)	Price (€)	Dry-cooler model [4]	Set price (€)
R-290	1xH	BCC-ND-1 034	1	230 V-I	970	9	1,0	11.0	1 600	350	3	3/4"	/3.	59	3 657	CWF-0	6 890
	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"	/4.	68	5 035	CWF-0	8 268
		BCC-SD-2 017	2	400 V-III	1 900	24	1,8	8.9	1 700	750	3	1"	/6.	72	6 000	CWF-1	10 442

Options

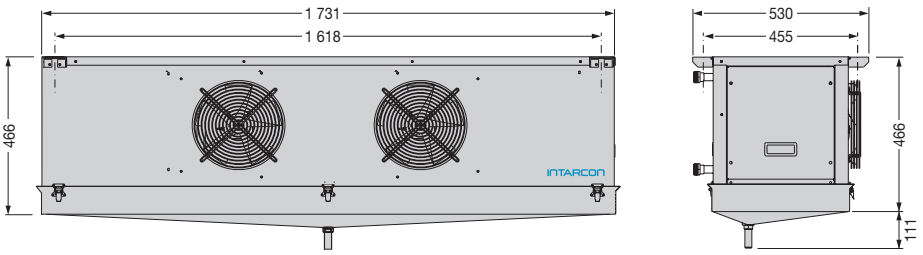
- Electrical board for one unit. + 742 €
- Electrical board for two units in the same cold room. + 848 €
- Water solenoid valve for multi-equipment waterloop installation. + 159 €

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 40 °C. Estimated cold room volume according to conditions of the calculation bases (page 8).

[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.

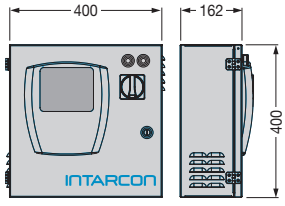
[4] Recommended air cooler model to combine with the evaporator unit.

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:

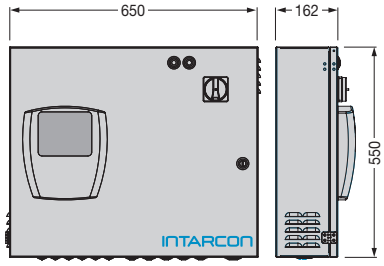
Cabinet - Evaporator	Connection
Compressor for single-phase units (except MCC-ND-1 034)*	3 x 1.5 mm² + T
Compressor for three-phase units and MCC-ND-1 034	3 x 2.5 mm² + T
Manoeuvre	7 x 1 mm²
Probes	5 x 1 mm²
Cabinet - Dry-cooler	**Connection**
Pump (1 + 1 system)	2 x 1.5 mm² + T
Fan (1 + 1 system)	3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

Electrical board dimensions



Dimensions in mm.

Electrical board dimensions - Twin installation



Dimensions in mm.

Waterloop *water-cooled condensing units*

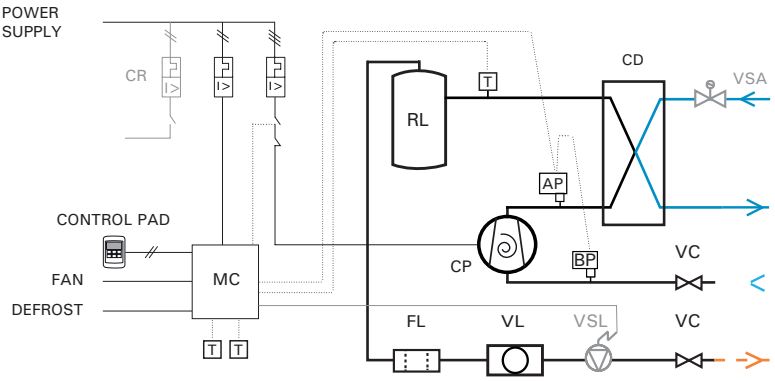
- Indirect condensation by a water circuit.
- Low noise level.
- Simple installation.
- Reduced refrigerant load.
- According to F-Gas.

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

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages 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.
- Rotary compressor (MDM-P / BDM-P).
- Stainless steel brazed plates heat exchanger. Cooling circuit with ceramic dryer filter, sight glass, HP and LP and services valves.
- Hydraulic condensation circuit made of copper pipe with threaded connections.
- Electrical control panel with thermomagnetic protection.
- Liquid injection system for negative temperature models with R-449A.

Refrigeration and electrical sheme

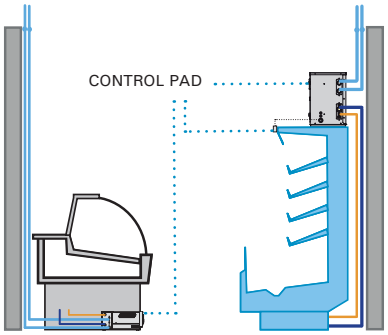


STANDARD
AP: HIGH PRESSURE SWITCH
BP: LOW PRESSURE SWITCH
CD: HEAT EXCHANGER
CP: COMPRESSOR
FL: FILTER
MC: MICRO-CONTROLLER
RL: LIQUID VESSEL
T: PROBE
VC: SHUT-OFF VALVE
VL: SIGHT GAUGE

OPTIONAL
CR: DEFROST CONTACTOR
VSA: WATER SOLENOID VALVE
VSL: LIQUID SOLENOID VALVE
OPTIONAL WITH ELECTRONIC CONTROL
MC: ELECTRONIC MICRO-CONTROLLER

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://intarcon.calcooling.com/

MDM / BDM series

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

		Series / Model	Compressor HP	Compressor Model	Compressor Power supply	Cooling capacity (W) [1] Evaporation temperature 0 °C	-5 °C	-10 °C	Input power (kW)	Max. current (A)	Condensing flow (l/h)	Hydraulic connection	Pressure drop (mca)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [2] 1 m	Price without electronic control (€)
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	1 584
		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	1 924
	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	3 015
		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	3 800
		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	4 231
		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	4 767
		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	5 221
		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	5 505
		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	6 360
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	1 596
		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	1 993
	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	3 249
		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	3 619
		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	4 031
		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	4 539
		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	4 972
		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	5 438

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

		Series / Model	Compressor HP	Compressor Model	Compressor Power supply	Cooling capacity (W) [1] Evaporation temperature -20 °C	-25 °C	-30 °C	-35 °C	Input power (kW)*	Max. current (A)	Condensing flow (l/h)	Hydraulic connection	Pressure drop (mca)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [2] 1 m	Price without electronic control (€)
R-449A	1x R	BDM-PG-0 004	1	HGA-2446Z	230 V-I	985	785	615	470	0,6	5	150	3/4"	5	1/4"-1/2"	23	45	2 372
	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	4 724
		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	5 408
		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	5 632
		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	5 830
		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	6 390
		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	7 053
		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	52	8 417

Options

- Change to 230 V-I-50 Hz 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. + 172 €
- Water solenoid valve. + 172 €
- Flow regulation manual valve. + €
- Hot gas defrost. By request

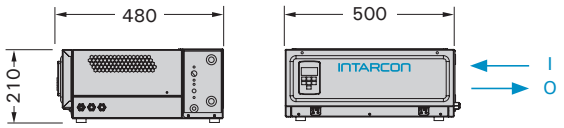
[1] Cooling capacity at nominal performances refer to operation at evaporation temperature -10 °C (PT) and -30 °C (NT), water temperature of 40 °C, 10 K super-heating and 3 K sub-cooling.

[2] Sound pressure in dB (A) in open field at 1 m from the unit.

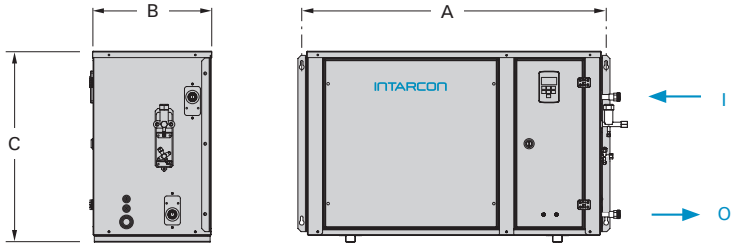
* Available units with 230 V-I-50 Hz power supply.

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 valve, security valve, filter, thermomanometers and auto-fill valve included.
- Threaded hydraulic connections.
- Electric power panel with protection of hydraulic pump, fan motor and speed regulator (except CWF-0 and CWF-1).

Electronic control

Waterloop dry-coolers (CWF-2 up to 8) 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.

230 V-I-50 Hz | Positive temperature | Water

	Series / Model	Flow control	Exchange capacity (W) [1]	Air flow (m^3/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 (€)
Water	**CWF-0**	Constant	3 000	1 700	1x Ø 360	500	0,14	1,1	100	3/4"	76	30	**2 491**
	CWF-1	Constant	4 700	3 200	1x Ø 450	750	0,22	1,8	100	3/4"	79	26	**3 700**
	CWF-2	Variable	6 000	3 700	1x Ø 450	1 000	0,24	2,0	100	1"	81	26	**4 770**
	CWF-3	Variable	10 000	6 500	2x Ø 450	1 500	0,44	3,6	100	1"	101	29	**5 926**
	CWF-4	Variable	12 000	7 000	2x Ø 450	2 000	0,48	3,9	100	1 1/4"	113	29	**6 350**
	CWF-6	Variable	20 000	13 000	4x Ø 450	3 000	0,88	7,0	100	1 1/2"	160	32	**9 964**
	CWF-8	Variable	24 000	14 000	4x Ø 450	4 000	0,96	7,5	100	1 1/2"	185	32	**11 024**

Options

- Water coil anti-corrosion polyurethane coating. + 8 %
- Coil protection grille:
  - Series 0 up to 4. + 108 €
  - Series 6 and 8. + 190 €

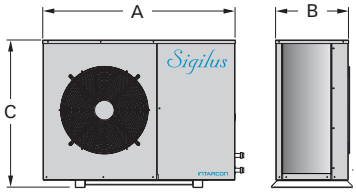
[1] Estimated heat exchange power with air temperature of 35 °C, and water inlet / outlet temperature of 45 / 40 °C.

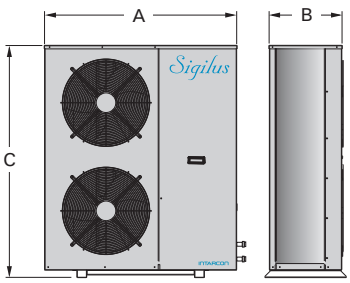
[2] Available circuit pressure.

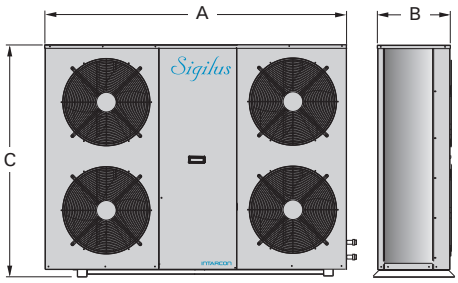
[3] Sound pressure in dB (A) in open field at 10 m from the unit.

Dimensions

Dimensions (mm)	A	B	C
0 and 1 series	1 030	375	580
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







Condensing units

Complies with Ecodesign

VRC multi-service version

Low noise construction

Sigilus

ErP ecodesign

- Tropicalised design for high ambient temperature up to 50 °C.
- Multi-service version with VRC cooling capacity modulation system.
- Liquid injection system for compressor refrigeration.

Low noise condensing units for positive and negative refrigeration with hermetic alternative compressor with noise insulation and low speed axial motor fan.

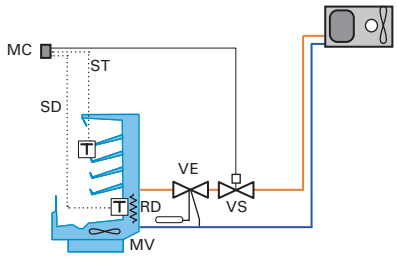
Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-134a or R-449A refrigerant, other refrigerants by request.
- Reciprocating hermetic compressor, acoustically insulated with discharge muffler, mounted on shock absorbers, with crankcase heater and internal klixon.
- Large-surface condensing coil made of copper tubes and aluminium fins, with tropicalised dimensioning for ambient temperatures up to 50 °C.
- Low speed axial motor fan.
- Refrigeration circuit equipped with high and low pressure switches, ceramic filter and sight gauge.
- Digital control of condensation pressure with the optional electrical board, and all-nothing condensation control in condensers without electrical panel.
- Proportional control of condensing pressure through fan speed variation (included from MDF-NY-2086 and MDF-NG-1038 without electronic control).
- Full control and power board with compressor and motor fan protection.
- Evaporator electronic control board (-N version with optional electrical board).
- Built-in oil separator (-V multi-service version).
- Liquid injection system for negative temperature models with R-449A.

Versions

- -N version: Without electrical board. Designed for on/off operation depending on the suction pressure (pump-down).
  With electrical board as an option. Electronic controller to manage the condensing unit and the evaporator built-in solenoid valve as an option.
- -V version (multi-service): The multi-service version features VRC system to adjust the refrigerant flow to the demand of the evaporators, keeping the pressure constant in suction the line. The VRC system is composed of a set of pressure and temperature regulation valves to progressively modulate cooling capacity from 100 % to 10 % of its nominal capacity, while reducing energy consumption and preventing compressor overheating.

Installation without electrical board (-N version)



MC: CONTROL PAD
MV: MOTOR FAN
RD: DEFROST HEATER
ST: THERMOSTAT PROBE
SD: DEFROST PROBE
VE: EXPANSION VALVE
VS: SOLENOID VALVE

Oil separator (optional)

Sigilus condensing units connected to a single evaporator usually not require an oil separator. This is recommended for long pipe lengths (> 30 m) being necessary for a suitable circuit design to ensure oil return.

Proportional condensation control

Sigilus condensing units incorporate proportional condensation control by speed variation for prolonged running times at low ambient temperature.

Triple noise insulation

Sigilus units incorporate triple noise insulation as standard:

- Insulated compressor compartment separated from air flow.
- Acoustic compressor jacket (three-phase models) and discharge muffler (hermetic models).
- Low-noise and low-speed fans, mounted on shock absorbers.

MDF / BDF series

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temp. | Low-noise condensing units | Hermetic compressor | R-134a / R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity EN13215 (W) [1] Evap. temp. -10 °C	Cooling capacity (W) [2] Evaporation temperature 0 °C	-5 °C	-10 °C	-15 °C	Input power (kW)	(COP) SEPR [3]	Max. current (A)	Fan Ø mm	Flow (m³/h)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [4]	Price without electronic control (€)
R-134a	**MDF-NY-0 010**	3/8	230 V-I	590	870	700	560	430	0.33	(1.75)	4.0	Ø 200	350	1/4"-3/8"	50	28	1 824
	MDF-NY-0 015	1/2	230 V-I	830	1 200	970	770	610	0.46	(1.73)	5.0	Ø 200	350	1/4"-3/8"	52	29	1 946
	MDF-NY-1 015	1/2	230 V-I	890	1 380	1 100	860	650	0.49	(1.78)	5.0	Ø 360	1 700	1/4"-1/2"	66	31	2 055
	MDF-NY-1 026	3/4	230 V-I	1 370	2 140	1 700	1 310	970	0.71	(1.89)	9.0	Ø 360	1 700	1/4"-1/2"	74	31	2 190
	MDF-NY-1 033	1	230 V-I	1 780	2 680	2 150	1 680	1 250	0.82	(2.10)	9.0	Ø 360	1 700	1/4"-5/8"	76	31	2 493
	MDF-NY-1 053	1 1/2	230 V-I *	2 450	3 900	3 060	2 320	1 720	1.22	(1.96)	12.0	Ø 360	1 700	1/4"-3/4"	88	32	2 955
	MDF-NY-1 074	2	230 V-I *	3 510	5 260	4 200	3 260	2 470	1.60	(2.11)	16.0	Ø 360	1 700	1/4"-3/4"	90	36	3 719
	MDF-NY-2 086 (V)	4	400 V-III	4 380	6 670	5 260	4 050	3 030	1.81	(2.32)	13.0	Ø 450	3 600	3/8"-7/8"	98	38	4 174
	MDF-NY-2 108 (V)	5	400 V-III	5 370	8 060	6 370	4 900	3 740	2.20	3.25	16.0	Ø 450	3 600	3/8"-7/8"	100	35	4 423
	MDF-NY-2 136 (V)	6 1/2	400 V-III	6 850	10 180	8 250	6 500	5 040	2.99	2.89	19.0	Ø 450	3 600	3/8"-1 1/8"	103	34	5 073
R-449A	**MDF-NG-0 008**	1/3	230 V-I	620	980	810	650	510	0.37	(1.72)	4.0	Ø 200	350	1/4"-3/8"	51	28	1 718
	MDF-NG-0 010	3/8	230 V-I	800	1 230	1 020	820	650	0.48	(1.72)	5.0	Ø 200	350	1/4"-3/8"	51	29	1 833
	MDF-NG-0 012	1/2	230 V-I	950	1 420	1 180	960	770	0.56	(1.73)	6.0	Ø 200	350	1/4"-3/8"	51	29	1 938
	MDF-NG-1 014	1/2	230 V-I	1 160	1 920	1 560	1 240	960	0.68	(1.74)	6.0	Ø 360	1 700	1/4"-1/2"	66	32	2 065
	MDF-NG-1 016	5/8	230 V-I	1 320	2 250	1 820	1 440	1 080	0.76	(1.80)	7.0	Ø 360	1 700	1/4"-1/2"	76	32	2 231
	MDF-NG-1 018	3/4	230 V-I	1 650	2 690	2 190	1 750	1 360	0.92	(1.87)	8.0	Ø 360	1 700	1/4"-1/2"	76	32	2 347
	MDF-NG-1 024	1	230 V-I	2 110	3 560	2 890	2 280	1 720	1.06	(2.07)	12.0	Ø 360	1 700	3/8"-5/8"	78	32	2 573
	MDF-NG-1 026	1 1/4	230 V-I *	2 370	3 870	3 160	2 530	1 950	1.18	(2.08)	13.0	Ø 360	1 700	3/8"-5/8"	78	32	2 630
	MDF-NG-1 034	1 1/2	230 V-I *	3 060	4 860	3 980	3 200	2 500	1.66	(1.90)	16.0	Ø 360	1 700	3/8"-5/8"	78	32	2 719
	MDF-NG-1 038 (V)	1 3/4	400 V-III	3 360	5 870	4 740	3 720	2 830	1.60	(2.15)	7.0	Ø 450	3 200	3/8"-5/8"	81	29	3 310
	MDF-NG-2 048 (V)	2	400 V-III	4 360	6 990	5 670	4 530	3 530	1.98	(2.26)	8.0	Ø 450	3 600	3/8"-3/4"	85	26	3 717
	MDF-NG-2 054 (V)	2 1/2	400 V-III	4 840	7 860	6 420	5 160	4 070	2.18	(2.34)	9.0	Ø 450	3 600	3/8"-3/4"	86	26	3 935
	MDF-NG-2 060 (V)	3	400 V-III	5 800	8 850	7 290	5 900	4 700	2.59	3.24	10.0	Ø 450	3 600	3/8"-3/4"	87	26	4 295
	MDF-NG-2 068 (V)	3 1/2	400 V-III	6 550	9 810	8 150	6 630	5 300	2.97	3.10	10.0	Ø 450	3 600	1/2"-3/4"	88	25	4 512

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | Low-noise condensing units | Hermetic compressor | R-449A

	Series / Model	Compressor HP	Compressor Power supply	Cooling capacity EN13215 (W) [1] Evap. temp. -35 °C	Cooling capacity (W) [2] Evaporation temperature -25 °C	-30 °C	-35 °C	Input power (kW)	(COP) SEPR [3]	Max. current (A)	Fan Ø mm	Flow (m³/h)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [4]	Price without electronic control (€)
R-449A	**BDF-NG-0 018**	5/8	230 V-I	370	800	600	420	0.44	(0.96)	6.0	Ø 200	350	1/4"-1/2"	61	28	2 392
	BDF-NG-1 026	3/4	230 V-I	590	1 310	950	670	0.69	(0.96)	9.0	Ø 360	1 700	1/4"-1/2"	67	31	2 900
	BDF-NG-1 034	1 1/4	230 V-I	780	1 720	1 260	880	0.93	(0.95)	10.0	Ø 360	1 700	3/8"-5/8"	83	32	3 293
	BDF-NG-1 055	1 3/4	230 V-I *	990	2 350	1 670	1 114	1.10	(0.97)	16.0	Ø 360	1 700	3/8"-5/8"	93	34	3 719
	BDF-NG-1 075	2 1/2	230 V-I *	1 430	3 050	2 286	1 586	1.50	(1.04)	24.0	Ø 360	1 700	3/8"-5/8"	93	36	3 790
	BDF-NG-2 096	3 1/2	400 V-III	1 800	4 130	2 990	2 020	1.67	(1.18)	11.0	Ø 450	3 600	3/8"-3/4"	98	39	5 117
	BDF-NG-2 108	4	400 V-III	2 240	4 790	3 560	2 470	2.05	1.67	13.0	Ø 450	3 600	3/8"-7/8"	98	37	5 475
	BDF-NG-2 136	5	400 V-III	2 950	5 970	4 490	3 230	2.72	1.60	15.0	Ø 450	3 600	3/8"-7/8"	98	32	5 832
	BDF-NG-3 215	7 1/2	400 V-III	4 500	9 300	6 970	4 940	4.03	1.68	24.0	2x Ø 450	6 500	1/2"-1 1/8"	149	39	7 371
	BDF-NG-3 271	10	400 V-III	6 380	11 960	9 160	6 760	5.36	1.70	28.0	2x Ø 450	6 500	1/2"-1 1/8"	149	39	7 691

Options

- Change to 400 V-III-50 Hz power supply. + 8 %
- Built-in oil separator (already included in -V version). + 695 €
- Built-in solenoid valve with body and coil (except -V version). + 172 €
- Anti-corrosion coil coating. + 8 %
- Coil protection grille. + 108 €
- Proportional condensation control by fan speed variator (1 series). + 195 €
- Control and power panel with electronic control unit for management of condenser and evaporator. + 5 %
  - ▷ Larger sized multifunction electronic control. + 178 €

Versions

- Version V - Multi-service version with VRC system (with oil separator). Table models with (V). + 1 166 €

(1) Conditions based on UNE-EN 13215: ambient temp. 32 °C, evap. temp. -10 °C (PT) and -35 °C (NT), 20 °C of suction temperature, refrigerant R-449A.

(2) Cooling capacity in nominal conditions: evaporating temp -10 °C (PT) and -35 °C (NT), ambient temperature of 32 °C, overheating 10 K, refrigerant R-449A.

(3) COP/SEPR: : Coefficient of Performance according to Ecodesign Directive 2015/1095/EU ErP 2015/1095/UE.

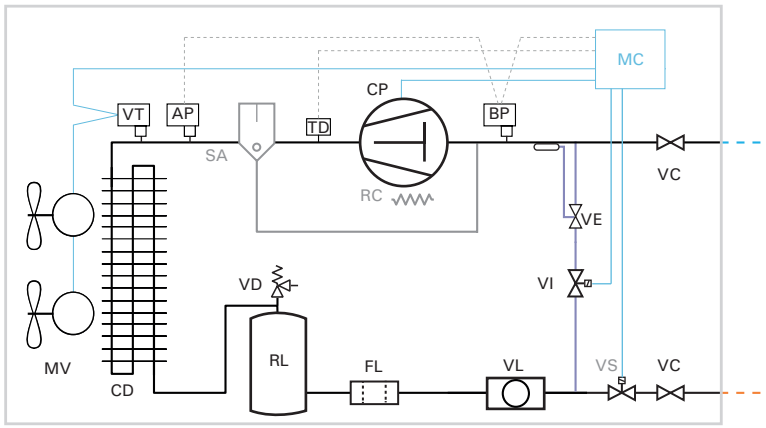
	Cooling capacity	Ecodesign
PT	0,2 < P≤ 1 kW	COP ≥ 1,40
	1 < P≤ 5 kW	COP ≥ 1,60
	5 < P≤ 20 kW	SEPR ≥ 2,55
NT	P≤ 2 kW	COP ≥ 0,95
	2 < P≤ 8 kW	SEPR ≥ 1,60

(4) Sound pressure in dB (A) in open field at 10 m from the unit.

(V) Model that allow VRC system.

* Available units with 400 V-III-50 Hz power supply.

Scheme



STANDARD

AP: HIGH PRESSURE SWITCH
BP: LOW PRESSURE SWITCH
CD: CONDENSER
CP: COMPRESSOR
FL: FILTER
MV: MOTOR FAN
RL: LIQUID VESSEL
RC: CRANKCASE HEATER
VC: SERVICE VALVE
VD: SECURITY VALVE (UP TO 1 HP)
VL: SIGHT GAUGE
VT: VOLTAGE REGULATOR

OPTIONAL

SA: OIL SEPARATOR
VS: SOLENOID VALVE

LIQUID INJECTION SYSTEM (ONLY BDF)

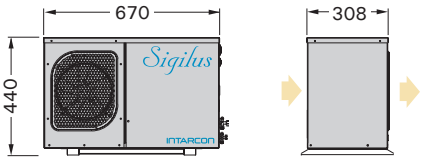
TD: DISCHARGE THERMOSTAT
VE: THERMOSTATIC EXPANSION VALVE
VI: LIQUID SOLENOID VALVE

ADDITIONAL -N VERSION

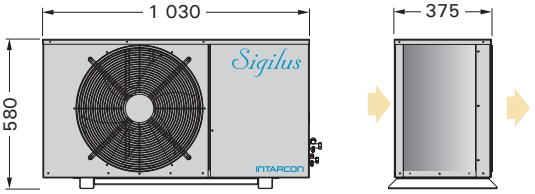
MC: ELECTRONIC MICRO-CONTROLLER

Dimensions (DF)

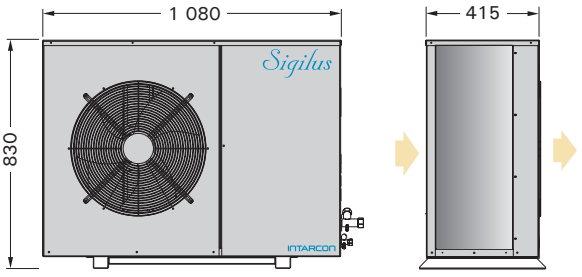
0 series



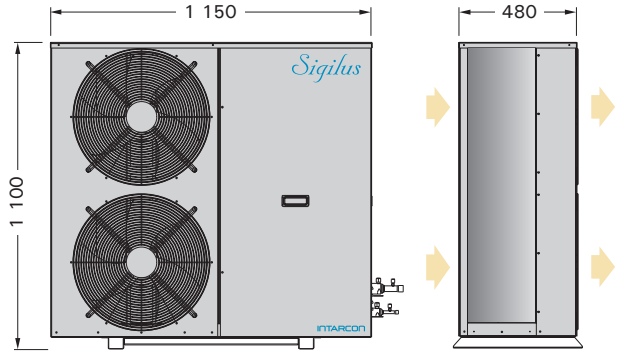
1 series



2 series



3 series



Measuring mm.

MDF-N and BDF-N (with optional electronic control)

Sigilus condensing units with optional electronic control incorporate an advanced electronic controller XM670K for the management of the condensing unit and the evaporator, being able to optionally integrate the solenoid valve.

- Multifunction remote digital control.
- Electronic board integrated in the condensing unit for 6 control relays for: compressor, condensing fan, evaporator fan, defrost, light and alarm.
- Possibility of interconnection and synchronization of up to 8 devices by LAN, managed from a single control.

Liquid injection system

Negative temperature condensing units incorporate a safety cooling system for the motor by liquid injection into the compressor suction.

R-499A and R-448A refrigerants have high gas discharge temperature under conditions of high compression ratio and high suction gas superheat.
To protect the motor windings and preserve oil stability, compressor cooling is necessary in certain situations.

intarbox

- ❄ **Designed for ambient temperature up to 45 °C.**
- ❄ **Multi-service version with VRC cooling capacity modulation system.**
- ❄ **Liquid injection system for compressor refrigeration.**

Air-cooled packaged condensing units at positive or negative temperature, in horizontal construction with an alternative hermetic compressor, and low speed axial or centrifugal motor fan.

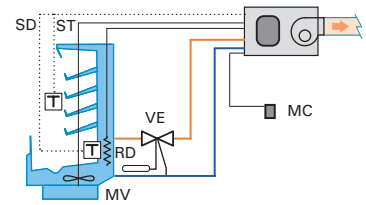
Features

- 230 V-I-50 Hz or 400 V-III-50 Hz power supply. Available in 60 Hz. Others voltages by request.
- R-134a or R-449A refrigerant, other refrigerants by request.
- Hermetic reciprocating compressor mounted on shock absorbers, with discharge muffler and internal klixon.
- High performance condensing coil in copper pipes and aluminium fins.
- Centrifugal motor fan with available static pressure for a ducted outlet of condenser hot air (centrifugal version).
- Refrigeration circuit equipped with HP and LP switches, filter dryer, liquid receiver and sight gauge.
- Digital control of condensation pressure with the optional electrical board, and all-nothing condensation control with condensers without electrical panel.
- Proportional control of condensing pressure through fan speed variation (included in MDH series 4).
- Full control and power board with compressor and motor fan protection.
- Electronic regulation with evaporator control pad (-N version with optional electrical board).
- Built-in oil separator (-V multi-service version).
- Liquid injection system for negative temperature models with R-449A.

Versions

- Version -N: Without electrical board. Designed for on/off operation depending on the suction pressure (pump-down).
  With electrical board as an option. Electronic controller to manage the condensing unit and the evaporator built-in solenoid valve as an option.
- Version -V (multi-service): The multi-service version features VRC system to adjust the refrigerant flow to the demand of the evaporators, keeping the pressure constant in suction the line. The VRC system is composed of a set of pressure and temperature regulation valves to progressively modulate cooling capacity from 100 % to 10 % of its nominal capacity, while reducing energy consumption and preventing compressor overheating.

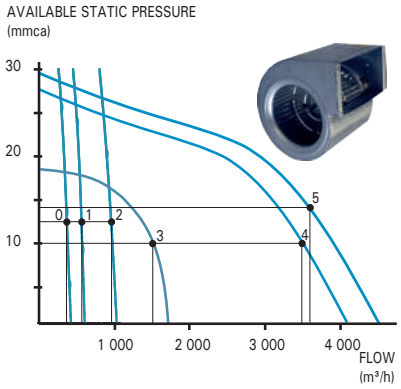
Installation scheme (-C version with electronic control)



MC: CONTROL PAD
MV: MOTOR FAN
RD: DEFROST HEATER
ST: THERMOSTAT PROBE
SD: DEFROST PROBE
VE: EXPANSION VALVE
VS: SOLENOID VALVE

Centrifugal fan (centrifugal version)

intarbox condensing units feature centrifugal motor fans for a ducted outlet of condenser hot air.



Exhaust duct

Recommended size for 20 m long steel, PVC or fibreglass ducts (each elbow equals 5 m length). For flexible or semi-flexible ducts use a larger size.

0 series:	200 x 150 mm or Ø 150 mm
1 series:	200 x 200 mm or Ø 150 mm
2 series:	250 x 150 mm or Ø 200 mm
3 series:	200 x 300 mm or Ø 250 mm
4 and 5 series:	350 x 400 mm or Ø 360 mm

230 V-I-50 Hz / 400 V-III-50 Hz | Positive temperature | Hermetic compressor | R-134a / R-449A

	Axial verison Series / Model	Compressor HP	Power supply	Cooling capacity EN13215 (W) [1] Evap. temp. -10 °C	Cooling capacity (W) [2] Evaporation temperature 0 °C	-5 °C	-10 °C	-15 °C	Input power (kW)	(COP) SEPR [3]	Max. current (A)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [4]	Price without electronic control (€)	Centrifugal version Series / Model	Flow (m³/h)	ASP (mmca) [5]	Price without electronic control (€)
R-134a	MDH-NY-0 010	3/8	230 V-I	590	880	710	560	430	0.37	(1.54)	4.0	1/4"-3/8"	37	29	1 479	MDH-CY-0 010	375	8	1 694
	MDH-NY-0 015	1/2	230 V-I	830	1 210	980	780	600	0.51	(1.58)	5.0	1/4"-3/8"	40	32	1 624	MDH-CY-0 015	375	8	1 911
	MDH-NY-1 015	1/2	230 V-I	870	1 290	1 040	820	625	0.50	(1.69)	5.0	1/4"-1/2"	41	32	1 692	MDH-CY-1 015	575	8	2 039
	MDH-NY-1 026	3/4	230 V-I	1 270	1 890	1 520	1 190	920	0.72	(1.72)	9.0	1/4"-1/2"	48	30	2 017	MDH-CY-1 026	575	8	2 179
	MDH-NY-1 033	1	230 V-I	1 630	2 310	1 880	1 500	1 170	0.84	(1.87)	9.0	1/4"-1/2"	50	33	2 076	MDH-CY-1 033	575	8	2 566
	MDH-NY-2 053	1 1/2	230 V-I *	2 250	3 470	2 760	2 120	1 560	1.25	(1.77)	12.0	1/4"-5/8"	63	38	2 643	MDH-CY-2 053	1 000	12	3 123
	MDH-NY-3 074	2	230 V-I *	3 410	5 080	4 080	3 180	2 390	1.61	(2.06)	16.0	1/4"-3/4"	84	44	3 240	MDH-CY-3 074	1 500	14	3 568
	MDH-NY-4 086 [V]	4	400 V-III	4 310	6 620	5 240	4 040	3 040	1.97	(2.13)	14.0	3/8"-7/8"	107	48	3 861	MDH-CY-4 086 [V]	3 500	10	4 893
	MDH-NY-4 108 [V]	5	400 V-III	5 260	7 920	6 350	4 910	3 690	2.39	2.88	17.0	3/8"-7/8"	109	45	4 310	MDH-CY-4 108 [V]	3 500	10	5 340
	MDH-NY-4 136 [V]	6 1/2	400 V-III	6 700	9 570	7 810	6 210	4 730	3.24	2.59	20.0	3/8"-1 1/8"	112	44	4 712	MDH-CY-4 136 [V]	3 500	10	5 745
R-449A	MDH-NG-0 008	1/3	230 V-I	620	990	810	650	510	0.42	(1.53)	4.0	1/4"-3/8"	46	31	1 366	MDH-CG-0 008	375	8	1 558
	MDH-NG-0 010	3/8	230 V-I	800	1 250	1 030	830	660	0.52	(1.57)	5.0	1/4"-3/8"	46	34	1 409	MDH-CG-0 010	375	8	1 729
	MDH-NG-0 012	1/2	230 V-I	950	1 435	1 190	980	780	0.60	(1.61)	6.0	1/4"-3/8"	46	34	1 476	MDH-CG-0 012	375	8	1 848
	MDH-NG-1 014	1/2	230 V-I	1 150	1 770	1 460	1 190	950	0.69	(1.69)	6.0	1/4"-1/2"	50	34	1 605	MDH-CG-1 014	575	8	1 921
	MDH-NG-1 016	5/8	230 V-I	1 290	2 020	1 660	1 340	1 040	0.78	(1.71)	7.0	1/4"-1/2"	60	34	1 784	MDH-CG-1 016	575	8	2 053
	MDH-NG-1 018	3/4	230 V-I	1 560	2 360	1 960	1 600	1 270	0.94	(1.72)	8.0	1/4"-1/2"	60	34	1 876	MDH-CG-1 018	575	8	2 253
	MDH-NG-2 024	1	230 V-I	2 070	3 270	2 680	2 150	1 680	1.10	(1.93)	12.0	3/8"-5/8"	60	35	2 059	MDH-CG-2 024	1 000	12	2 583
	MDH-NG-2 026	1 1/4	230 V-I *	2 300	3 550	2 930	2 370	1 870	1.24	(1.91)	13.0	3/8"-5/8"	61	36	2 091	MDH-CG-2 026	1 000	12	2 782
	MDH-NG-2 034	1 1/2	230 V-I *	2 870	4 300	3 590	2 920	2 310	1.73	(1.71)	16.0	3/8"-5/8"	61	37	2 152	MDH-CG-2 034	1 000	12	2 913
	MDH-NG-3 038 [V]*	1 3/4	400 V-III	3 270	4 970	4 100	3 310	2 610	1.56	(2.12)	6.0	3/8"-5/8"	78	40	2 719	MDH-CG-3 038 [V]*	1 500	14	3 751
	MDH-NG-4 048 [V]	2	400 V-III	4 330	6 850	5 580	4 460	3 490	2.14	(2.08)	13.0	3/8"-3/4"	95	36	3 325	MDH-CG-4 048 [V]	3 500	10	4 355
	MDH-NG-4 054 [V]	2 1/2	400 V-III	4 970	7 660	6 300	5 070	4 010	2.38	(2.14)	14.0	3/8"-3/4"	96	36	3 720	MDH-CG-4 054 [V]	3 500	10	4 752
	MDH-NG-4 060 [V]	3	400 V-III	5 720	8 590	7 130	5 800	4 620	2.84	2.98	15.0	3/8"-3/4"	97	36	4 179	MDH-CG-4 060 [V]	3 500	10	5 281
	MDH-NG-4 068 [V]	3 1/2	400 V-III	6 450	9 490	7 920	6 500	5 210	3.26	2.87	15.0	1/2"-3/4"	98	35	4 301	MDH-CG-4 068 [V]	3 500	10	5 877

230 V-I-50 Hz / 400 V-III-50 Hz | Negative temperature | Hermetic compressor | R-449A

	Axial version Series / Model	Compressor HP	Power supply	Cooling capacity EN13215 (W) [1] Evap. temp. -35 °C	Cooling capacity (W) [2] Evaporation temperature -25 °C	-30 °C	-35 °C	Input power (kW)	(COP) SEPR [3]	Max. current (A)	Liq-Gas cooling connection	Weight (kg)	SPL dB(A) [4]	Price without electronic control (€)	Centrifugal version Series / Model	Flow (m³/h)	ASP (mmca) [5]	Price without electronic control (€)
R-449A	BDH-NG-1 026	3/4	230 V-I	590	1 220	930	670	0.69	(0.96)	9.0	1/4"-1/2"	51	31	2 185	BDH-CG-1 026	575	8	2 377
	BDH-NG-1 034	1 1/4	230 V-I	780	1 520	1 170	860	0.92	(0.95)	10.0	1/4"-1/2"	52	33	2 256	BDH-CG-1 034	575	8	2 433
	BDH-NG-2 055	1 3/4	230 V-I *	980	2 195	1 630	1 110	1.20	(0.95)	16.0	3/8"-5/8"	69	38	2 878	BDH-CG-2 055	1 000	12	3 090
	BDH-NG-2 075	2 1/2	230 V-I *	1 400	2 785	2 130	1 560	1.50	(1.02)	24.0	3/8"-5/8"	69	41	2 948	BDH-CG-2 075	1 000	12	3 159
	BDH-NG-3 096	3 1/2	400 V-III	2 080	3 663	2 733	1 940	1.69	(1.15)	11.0	3/8"-3/4"	88	49	4 263	BDH-CG-3 096	1 500	14	4 637
	BDH-NG-4 108	4	400 V-III	2 240	4 690	3 500	2 470	2.15	1.62	14.0	3/8"-7/8"	117	47	5 438	BDH-CG-4 108	3 500	10	5 868
	BDH-NG-5 136	5	400 V-III	2 950	6 080	4 560	3 230	2.83	1.61	16.0	3/8"- 1 1/8"	152	42	7 296	BDH-CG-5 136	3 600	10	7 799
	BDH-NG-5 215	7 1/2	400 V-III	4 500	8 870	6 670	4 820	4.07	1.60	24.0	1/2"- 1 1/8"	183	49	7 775	BDH-CG-5 215	3 600	10	8 298

Options

- Change to 400 V-III-50 Hz power supply. + 8 %
- Proportional control of condensing pressure through speed variation (axial 3 series and centrifugal 0 up to 3 series). + 295 €
- Built-in oil separator (already included in -V version). + 695 €
- Crankase heater. + 72 €
- Built-in solenoid valve with body and coil (except for -V version). + 172 €
- Anti-corrosion coil coating. + 8 %
- Non-return damper (centrifugal version). + 65 €
- Adaptation of air discharge to circular duct. + 119 €
- Vertical discharge (centrifugal version).
- Control and power panel with electronic control unit for management of condenser and evaporator. + 5 %
  - ▷ Larger sized multifunction electronic control. + 178 €

Versions

- -V version - Multi-service version with VRC system (with oil separator). Table models with [V]. + 1 166 €

[1] Conditions based on UNE-EN 13215: ambient temp. 32 °C, evap. temp. -10 °C (PT) and -35 °C (NT), 20 °C of suction temperature, refrigerant R-449A.

[2] Conditions based on UNE-EN 13215: ambient temp. 32 °C, evap. temp. -10 °C (PT) and -35 °C (NT), overheating 10 K, R-449A refrigerant.

[3] COP / SEPR: Coefficient of Performance according to Ecodesign Directive 2015/1095/EU.

	Cooling capacity	Ecodesign
PT	0,2 < P≤ 1 kW	COP ≥ 1.40
	1 < P≤ 5 kW	COP ≥ 1.60
	5 < P≤ 20 kW	SEPR ≥ 2.55
NT	P≤ 2 kW	COP ≥ 0.95
	2 < P≤ 8 kW	SEPR ≥ 1.60

[4] Sound pressure in dB (A) in open field at 10 m from the unit.

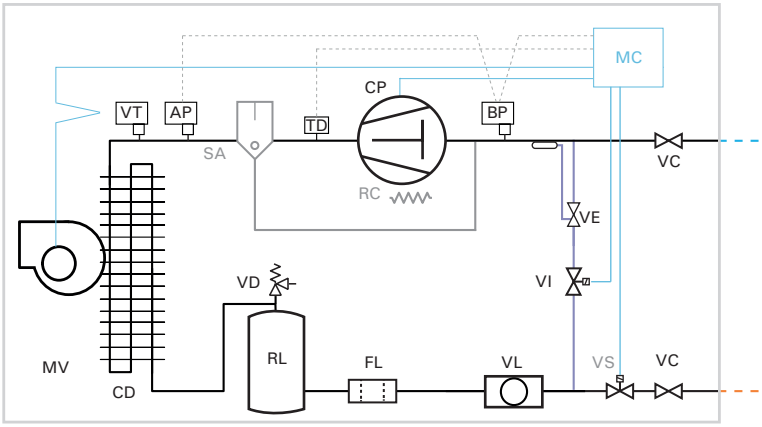
[5] Available static pressure condensation.

[V] Model that allow VRC system.

[V]* Requires proportional control of condensing pressure.

* Units available with 400 V-III-50 Hz power supply.

Refrigeration scheme DH - Centrifugal



STANDARD

CD: CONDENSER
CP: COMPRESSOR
FL: FILTER DRYER
MV: MOTOR FAN
RL: LIQUID RECEIVER
VL: SIGHT GAUGE
VC: 3 WAYS SERVICE VALVE (UP TO 3/4" CONNECTIONS)
VD: SECURITY VALVE

OPTIONAL

RC: CRANKCASE HEATER
SA: OIL SEPARATOR
VS: SOLENOID VALVE

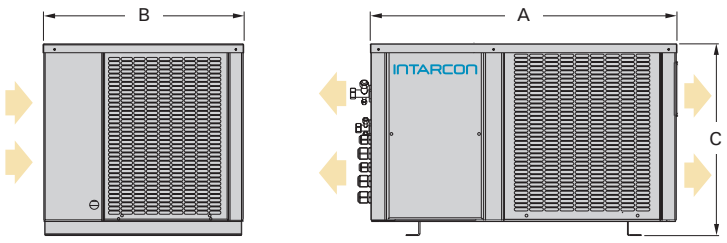
LIQUID INJECTION SYSTEM (ONLY BDH)

TD: DISCHARGE THERMOSTAT
VE: EXPANSION VALVE
VI: LIQUID SOLENOID VALVE

ADDITIONAL - N VERSION

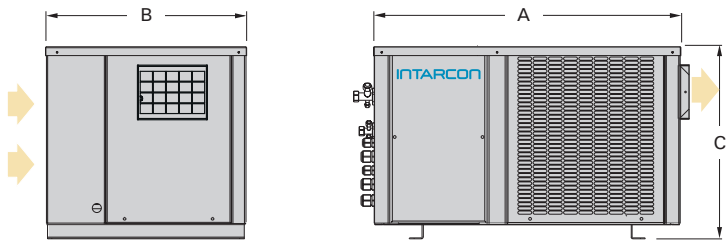
MC: ELECTRONIC MICRO-CONTROLLER

Dimensions DH - Axial



Dimensions (mm)	A	B	C
0 series	600	395	355
1 series	665	435	416
2 series	835	435	500
3 series	925	580	515
4 series	1 000	615	585
5 series	1 290	755	656

Dimensions DH - Centrifugal



Dimensions (mm)	A	B	C	Fan outlet	Hopper
0 series	600	395	355	185 x 115	Ø 150
1 series	665	435	416	185 x 115	Ø 150
2 series	835	435	500	230 x 130	Ø 200
3 series	925	580	515	266 x 236	Ø 250
4 series	1 000	615	585	305 x 266	Ø 360
5 series	1 290	755	656	305 x 266	Ø 360

MDH-N and BDH-N (with optional electronic control)

intarbox condensing units with the optional electronic control incorporate an advanced electronic controller XM670K for the management of the condensing unit and the evaporator, being able to optionally integrate the solenoid valve.

- Multifunction remote digital control.
- Electronic board integrated in the condensing unit for 6 control relays for: compressor, condensing fan, evaporator fan, defrost, light and alarm.
- Possibility of interconnection and synchronization of up to 8 devices by LAN, managed from a single control.

Ecodesign of condensing units

Regulation (EU) 2015/1095 establishes a series of Ecodesign requirements. For condensing units up to 5 kW and 2 kW in PT and NT respectively, a minimum value requirement is established for the coefficient of performance COP, while for higher power unit the requirement refers to a normalized seasonal performance SEPR.

At INTARCON we have redesigned our product range to adapt to the Ecodesign directive, incorporating energy efficiency technologies, electronic motor fans and floating condensation control.

Variable Refrigerant Capacity

VRC system

- Cooling capacity regulation.
- Constant evaporation pressure.
- Set services refrigeration production centralization.

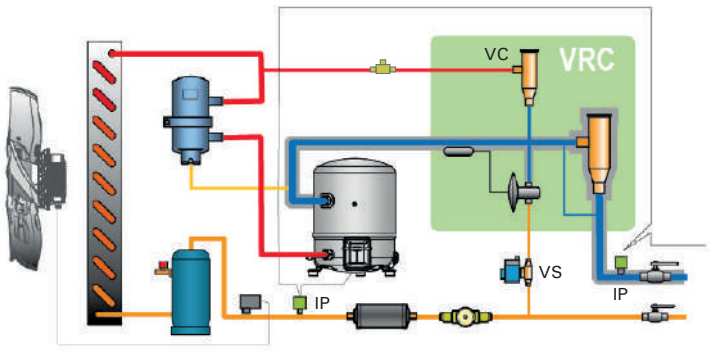
Multi-service version, featuring VRC system (Variable Refrigerant Capacity), of refrigeration capacity regulation, applicable to hermetic alternative compressors, consisting of:

- Suction pressure valve (VP).
- By-pass pressure valve (VC).
- Thermostatic expansion valve for liquid injection (VE).
- Pressure control switch (IP).
- Built-in oil separator.

Multi-service versions of condensing units:

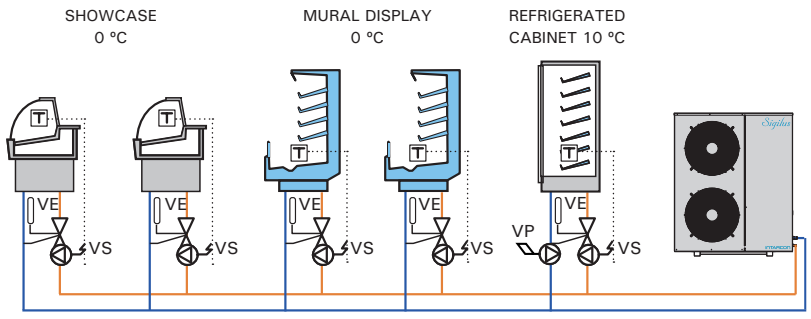
- Horizontal axial or centrifugal multi-service version. intarbox-multi: MDH-CV/-V series.
- Horizontal axial low-noise multi-service version. Sigilus-multi: MDF-V series.

Scheme



Example of multi-service installation

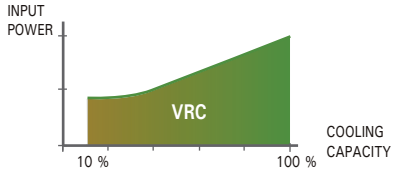
Units specifically designed for the centralisation of cooling production of several evaporators.



VRC system is composed of a set of pressure and temperature valves capable of progressive variation of a compressor's cooling capacity between 100 % and 10 % of this rated power, at the same time the system reduces electrical input power and protects the compressor, maintaining its compression ratio within security margins, eliminating the risk of overheating.

VRC system: Variable Refrigerant Capacity

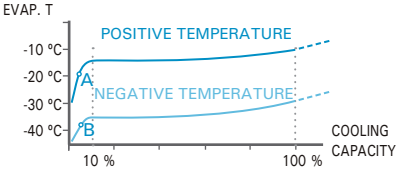
VRC system applied to a reciprocating hermetic compressor adjusts the flow of refrigerant to the evaporator unit's demand by maintaining constant pressure in the suction line.



VRC system is characterized by:

- Consisting exclusively of high reliability mechanical components.
- Keeps the evaporation pressure constant.
- Protects the compressor against the risk of engine overheating.
- Maintains the compression ratio of the compressor within the safety limits.

Condensing units equipped with VRC system allow centralizing the refrigeration production of a set of services, maintaining constant the pressure and temperature of the refrigerant in the evaporators.



VRC system can be easily regulated to set a minimum evaporation pressure. The factory setting provides the following minimum evaporation temperatures:

- Positive temperature units: -13 °C
- Negative temperature units: -35 °C

With demand below 10 % of the nominal power, the characteristic of the evaporation pressure curve falls towards the minimum value admitted by the compressor, disconnecting the low pressure switch (points A and B) and stopping the compressor.

In this way, the multi-service condensing units are designed for low-pressure stop / start control (drop down or pump down).

Alternatively, the compressor running stop can be done through an external open / closed contact.

Cooling connections

INTARCON commercial range split units are delivered pre-adjusted in factory, with a R-134a or R-449A refrigerant load enough for up to 10 m of cooling pipes.

Condensing units feature service valves and Flare-type connections for a flared copper pipe for diameters up to 3/4"and ready-to-solder connections for diameters from 7/8".

We recommend using the following nominal pipe diameters for both, liquid and gas lines, according to the length of the cooling pipes. For total length longer than 10 m some extra refrigerant and polyester oil (POE) load must be added as indicated in the following table:

		Model	Connections	Connection and recommended liquid-gas pipe diameter depending on pipe length						Additional charge in grams of refrigerant / oil			
				5 m	10 m	15 m	20 m	25 m	30 m	15 m	20 m	25 m	30 m
R-134a	HIGH TEMPERATURE	- 015	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"							
		- 026	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"			125 / 100			
		- 033	Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	125 / 150	250 / 300	375 / 450	500 / 450
		- 053	Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	300 / 200	600 / 400	900 / 600	1 200 / 600
		- 074	Flare 3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	300 / 200	600 / 400	900 / 600	1 200 / 600
		- 086	Weld 3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	300 / 250	600 / 500	900 / 750	1 200 / 750
		- 108	Weld 3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	300 / 250	600 / 500	900 / 750	1 200 / 750
		- 136	Weld 1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	600 / 250	1 200 / 500	1 800 / 750	2 400 / 750
		- 160	Weld 1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 3/8"	1/2"-1 3/8"	600 / 250	1 200 / 600	1 800 / 900	2 400 / 900
		- 215	Weld 1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	600 / 300	1 200 / 600	1 800 / 900	2 400 / 900
	POSITIVE TEMPERATURE	- 010	Flare 1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-1/2"							
		- 0 015	Flare 1/4"-3/8"	1/4"-3/8"	1/4"-1/2"	1/4"-1/2"							
		- 1 015	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-5/8"			125 / 100			
		- 026	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-5/8"	1/4"-5/8"			125 / 100			
		- 033	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-5/8"	1/4"-5/8"	1/4"-3/4"		125 / 100	250 / 300		
			Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-3/4"		125 / 100	250 / 300		
		- 053	Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-3/4"	1/4"-3/4"		125 / 150	250 / 300		
			Flare 1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"		125 / 150	250 / 300		
		- 074	Flare 1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	3/8"-7/8"	3/8"-7/8"	125 / 150	1 200 / 400	1 500 / 600	1 800 / 600
			Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	300 / 150	600 / 400	900 / 600	1 200 / 600
		- 068	Flare 1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	125 / 150	800 / 400	1 100 / 600	1 400 / 600
			Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	300 / 200	600 / 400	900 / 600	1 200 / 600
		- 086	Weld 3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	300 / 200	600 / 400	900 / 750	1 200 / 750
		- 108	Weld 3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	3/8"-1 1/8"	300 / 200	600 / 500	900 / 750	1 200 / 750
		- 136 - / - 171	Weld 3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	300 / 250	600 / 500	900 / 750	1 200 / 750
		- 215	Weld 3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	1/2"-1 1/8"	1/2"-1 3/8"	1/2"-1 3/8"	600 / 250	1 200 / 600	1 800 / 900	2 400 / 900
		- 271	Weld 1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	600 / 300	1 200 / 600	1 800 / 900	2 400 / 900
R-449A	HIGH TEMPERATURE	- 008 / - 010	Flare 1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"							
		- 012	Flare 1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"			100 / 25			
		- 014	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	300 / 50	600 / 100	900 / 150	1 200 / 150
		- 016	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	300 / 50	600 / 100	900 / 150	1 200 / 150
		- 018	Flare 1/4"-1/2"	1/4"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	3/8"-1/2"	300 / 50	600 / 100	900 / 150	1 200 / 150
		- 024 / - 026	Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	300 / 100	600 / 200	900 / 300	1 200 / 300
		- 034	Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-3/4"	3/8"-3/4"	300 / 100	600 / 450	900 / 600	1 200 / 600
		- 038	Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	300 / 150	600 / 450	900 / 600	1 200 / 600
		- 048	Flare 1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-7/8"	600 / 150	1 100 / 300	1 700 / 800	2 300 / 800
		- 054	Flare 1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-7/8"	1/2"-7/8"	600 / 150	1 100 / 600	1 700 / 800	2 300 / 800
		- 060 / - 068	Weld 1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	900 / 400	1 800 / 800	2 700 / 1200	3 600 / 1 200
		- 086 / - 108	Weld 5/8"-1 1/8"	5/8"-1 1/8"	5/8"-1 1/8"	5/8"-1 1/8"	5/8"-1 1/8"	5/8"-1 1/8"	5/8"-1 1/8"	900 / 400	1 800 / 800	2 700 / 1200	3 600 / 1 200
	POSITIVE TEMPERATURE	- 008 / - 010	Flare 1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-3/8"							
		- 012	Flare 1/4"-3/8"	1/4"-3/8"	1/4"-3/8"	1/4"-1/2"	1/4"-1/2"			100 / 50			
		- 014	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"			100 / 50			
		- 016	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"		100 / 50	200 / 100		
		- 018	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"		100 / 50	200 / 100		
		- 024	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	3/8"-1/2"	3/8"-1/2"		100 / 50	900 / 100		
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	300 / 100	600 / 200	900 / 300	1 200 / 300
		- 026	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	3/8"-5/8"	100 / 25	200 / 50	300 / 100	1 000 / 250
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	300 / 100	600 / 200	900 / 300	1 200 / 300
		- 034	Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	3/8"-3/4"	3/8"-3/4"	100 / 25	200 / 50	800 / 200	1 000 / 250
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	300 / 100	600 / 200	900 / 300	1 200 / 300
		- 038	Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	100 / 25	500 / 125	800 / 200	1 000 / 250
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-3/4"	3/8"-3/4"	300 / 100	600 / 450	900 / 600	1 200 / 600
		- 048	Flare 1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-7/8"	1/2"-7/8"	500 / 125	100 / 250	1 500 / 350	2 000 / 500
			Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	300 / 75	500 / 125	800 / 200	1 000 / 250
		- 054	Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	300 / 150	600 / 300	900 / 450	1 200 / 450
		- 060	Flare 1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-1 1/8"	500 / 125	1 000 / 250	1 500 / 350	2 000 / 500
			Flare 1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-1 1/8"	500 / 125	1 000 / 250	1 500 / 350	2 000 / 500
			Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	300 / 75	500 / 125	800 / 250	1 000 / 250
		- 068	Flare 1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-3/4"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	600 / 300	1 100 / 600	1 700 / 800	2 300 / 800
			Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	250 / 60	500 / 125	700 / 200	800 / 200
		- 086	Weld 1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	600 / 300	1 100 / 600	1 700 / 800	2 300 / 800
		- 108	Weld 1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-7/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	600 / 400	1 100 / 800	1 700 / 1 200	2 300 / 1 200
		- 136	Weld 1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	600 / 400	1 100 / 800	1 700 / 1 200	2 300 / 1 200
	NEGATIVE TEMPERATURE	- 018	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"							
			Flare 3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	250 / 200	500 / 400	750 / 500	1 000 / 750
		- 026	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	1/4"-1/2"			100 / 100			
		- 034	Flare 1/4"-1/2"	1/4"-1/2"	1/4"-1/2"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"		300 / 100	600 / 200		
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	300 / 300	600 / 450	900 / 600	1 200 / 600
		- 055	Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	100 / 75	200 / 150	250 / 200	300 / 250
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	300 / 300	600 / 450	900 / 800	1 200 / 800
		- 075	Flare 1/4"-5/8"	1/4"-5/8"	1/4"-5/8"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	1/4"-3/4"	100 / 75	200 / 130	250 / 200	350 / 250
			Flare 3/8"-5/8"	3/8"-5/8"	3/8"-5/8"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	300 / 300	600 / 450	900 / 800	1 200 / 800
		- 096	Flare 1/4"-3/4"	1/4"-3/4"	1/4"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	250 / 200	500 / 350	700 / 500	1 000 / 750
			Flare 3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-3/4"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	300 / 300	600 / 600	900 / 800	1 200 / 800
		- 108	Flare 1/4"-7/8"	1/4"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	250 / 200	500 / 350	750 / 550	1 000 / 750
			Weld 3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	300 / 300	600 / 600	900 / 1 200	1 200 / 1 200
		- 136	Weld 3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-7/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	300 / 400	600 / 800	900 / 1 200	1 200 / 1 200
			Weld 3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	3/8"-1 1/8"	250 / 200	500 / 350	750 / 550	1 000 / 750
		- 215	Weld 1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 3/8"	600 / 400	1 100 / 800	1 700 / 1 200	2 300 / 1 200
		- 271	Weld 1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 1/8"	1/2"-1 3/8"	1/2"-1 3/8"	1/2"-1 3/8"	600 / 500	1 100 / 1 000	1 700 / 1 500	2 300 / 1 500
			Weld 1/2"-1 3/8"	1/2"-1 3/8"	1/2"-13/8"	1/2"-13/8"	1/2"-13/8"	1/2"-13/8"	1/2"-13/8"	500 / 350	1 000 / 750	1 500 / 1 150	2 000 / 1 500

Electronic regulation

All our units incorporates state-of-the-art electronic controls, which ensures the safety of the cold room and care for the environment and the refrigeration equipment.

Features / Control	XM670K	XW270K	XH240K	XW60LH
Standard	Split systems	Monoblocks	With humidity control	R-290 monoblocks
Cold room temperature control	●	●	●	●
Digital control of condensing temperature	●	●		●
Cold room relative humidity control			●	
Time and temperature fast cooling cycle	●			
Time and temperature defrost cycle	●	●		●
Stop control with gas collection (pump-down)	●			
Energy save night operating mode	●	●		●
Time program with internal clock	●			
Digital condensing temperature control (2 speeds)	●	●		●
Proportional control of condensation with floating set-point	●			
Door opening contact	●	●		●
Recording of maximum and minimum temperatures		●		●
Maintenance quick access menu	●			
Available additional functions:	●	●		●
- Cold room light	●	●		●
- External alarm	●	●		●
- Heating resistance control	●	●		
- Safety heating	●	●		
- Liquid injection (split system at NT with R-449A)	●	●		
- Ventilation control	●			
Units synchronization	●			

Complete features of electronic controllers available at: www.intarcon.com

Self-diagnosis

The new XM electronics incorporate advanced self-diagnostic algorithms to detect anomalous operation, such as ice accumulation in the evaporator, or lack of gas. It also detects component malfunctions (defrosting resistors, fans or compressor) or probe failures, in anticipation of a potential break in the cold room.

XM670K

Standard control of:

- SH / SF / DH / DF / DM / HF

XW270K

Standard control of:

- CR / CV (except CV-L)

XH240K

Standard control of:

- HSF / VSF / VSH / VCR

XW60LH

Standard control of:

- CV-L / CP

kiconex

Advanced Connectivity Solutions
for Smart Installations (IoT)

INTARCON

Supervision and control system specialized in refrigeration and HVAC installations:

- Plug & Play installation.
- Compatible with all brands.
- Hyper-connectivity (Wifi, 3G or Ethernet).
- Secure cloud data storage.

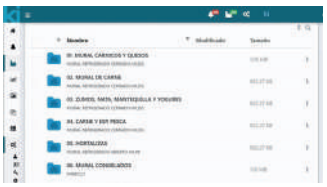
Real time remote control of the installation.

Alarms management and sending.

Historical temperatures recording.

Remote assistance for problem analysis.

kiconex features:



- Geolocation of installations.
- Multiple devices.
- Layout and installation synoptic.
- See parameters in real time.
- Temperatures and data history.
- Values recovery.
- Multi-user with access profiles.
- Smart programming.
- Units manuals and schematics.

kiconex service packages: we propose three service packages depending on the size of the installation to be controlled and the functions and features available.

	Basic	Professional	Premium
Device number	s/plan	s/plan	s/plan
Data history	3 months	1 year	3 years
Number of users/groups	1	3	No limit
Units configuration	○	●	●
Online update	○	●	●
Graphics design	○	●	●
Alarm display	○	●	●
Documentation display	○	●	●
Diagrams design		●	●
Alarm design		●	●
Documentation design		200 Mb	1 Gb
Extra libraries design		1 extra	5 extra
Rules design			●

kiconex 2 (2 devices)	600 €	1 000 €	1 500 €
kiconex 8 (8 devices)	1 000 €	1 500 €	3 000 €
kiconex 16 (16 devices)	1 200 €	2 000 €	4 000 €
kiconex 32 (32 devices)	1 500 €	3 000 €	5 000 €
Wire 100 m 2 x 1 mm	160 €		
kiconex board 350 x 300	350 €		
kiconex board 400 x 400	400 €		
Router WiFi / 3G	400 €		
kiwi (kiconex wireless)	180 €		

kiconex modules

kiBox data acquisition module:

Connection to devices via ModBUS RTU protocol in RS485 network (2 wires) or TCP-IP. Connection to cloud server via Ethernet, 3G / 4G or Wifi modem.

kiwi wireless network module:

RS485 - Wifi link.

Package dimensions

Series		Model	Standard packaging (road transport)						Reinforced packaging (marine transport)					
			Package dimensions (mm)			Package/s dimensions (mm)			Package dimensions (mm)			Package/s dimensions (mm)		
			Length	Width	Height	Length	Width	Height	Length	Width	Height	Length	Width	Height
Monoblocks	intartop	CR - 0	860	665	640	-	-	-	900	705	700	-	-	-
		CR - 1	920	820	725	-	-	-	960	860	785	-	-	-
		CR - 2	980	920	810	-	-	-	1 020	960	870	-	-	-
		CR - 3	1 230	1 050	980	-	-	-	1 270	1 090	1 040	-	-	-
	intarblock	CP - 0/1	1 070	940	590	-	-	-	1 110	980	650	-	-	-
		CV - L - 0	620	435	990	-	-	-	660	475	1 050	-	-	-
		CV - L - 1	765	435	990	-	-	-	805	475	1 050	-	-	-
		CV - 0	600	450	840	-	-	-	640	490	900	-	-	-
		CV - 1	1 095	650	1 050	-	-	-	940	475	1 080	-	-	-
		CV - 2	1 095	650	1 050	-	-	-	940	690	1 110	-	-	-
		CV - 3	895	760	1 080	-	-	-	935	800	1 140	-	-	-
		CV - I - 1	900	430	1 195	-	-	-	940	470	1 255	-	-	-
		CV - I - 2	900	650	1 360	-	-	-	940	690	1 420	-	-	-
		CV - I - 3	890	760	1 390	-	-	-	930	800	1 450	-	-	-
Split systems	intarsplit	SH-N - 0/00	720	480	750	-	-	-	760	520	810	-	-	-
		SH-N - 1/11	805	510	820	-	-	-	845	550	880	-	-	-
		SH-N - 2/22	1 080	550	900	-	-	-	1 120	590	960	-	-	-
		SH-N - 3/33	1 035	670	700	1 790	595	400	1 075	710	760	1 830	635	460
		SH-N - 4/43/44	1 165	690	740	1 790	595	400	1 205	730	800	1 830	635	460
		SH-N - 44	1 165	690	740	2 170	650	440	1 205	730	800	2 210	690	500
		SH-Q - 30	1 035	670	700	930	650	770	1 075	710	760	970	690	830
		SH-Q - 40	1 165	690	740	930	650	770	1 205	730	800	970	690	830
		SH-Q - 41	1 165	690	740	1 270	650	740	1 205	730	800	1 310	690	800
		SH-Q - 42	1 165	690	740	1 660	650	740	1 205	730	800	1 700	690	800
		SH-Q - 52	1 475	815	820	1 660	650	740	1 515	855	880	1 700	690	800
		SH-Q - 53	1 475	815	820	1 970	650	740	1 515	855	880	2 010	690	800
		SH-Q - 54	1 475	815	820	2 670	650	840	1 515	855	880	2 710	690	900
	Sigilus	SH-D - 1/11	850	830	980	-	-	-	890	870	1 040	-	-	-
		SH-D - 2014 up to 2018	995	820	980	-	-	-	1 035	860	1 040	-	-	-
		SH-D - 2/22	995	820	1 220	-	-	-	1 035	860	1 280	-	-	-
		SH-D - 3/33	1 035	670	700	1 790	910	500	1 075	710	760	1 830	950	560
		SH-D - 4/43	1 165	690	740	1 790	910	500	1 205	730	800	1 830	950	560
		SH-D - 44	1 165	690	740	2 190	1 000	550	1 205	730	800	2 230	1 040	610
		SF-N - 0/00	730	500	835	-	-	-	770	540	895	-	-	-
		SF-N - 1/11/2/12	1 170	520	990	-	-	-	1 210	560	1 050	-	-	-
		SF-N - 3/13	1 160	445	730	1 790	595	400	1 200	485	790	-	-	-
		SF-N - 4/23	1 220	480	970	1 790	595	400	1 260	520	1 030	1 830	635	460
		SF-N - 24	1 220	480	970	2 170	650	440	1 260	520	1 030	2 210	690	500
		SF-N - 34	1 310	550	1 270	2 670	650	840	1 350	590	1 310	2 710	690	900
		SF-Q - 10	1 160	445	730	930	650	770	1 200	485	790	970	690	830
		SF-Q - 20	1 220	480	970	930	650	770	1 260	520	1 030	970	690	830
		SF-Q - 21	1 220	480	970	1 270	650	740	1 260	520	1 030	1 310	690	800
		SF-Q - 22	1 220	480	970	1 660	650	740	1 260	520	1 030	-	-	-
		SF-Q - 32	1 310	550	1 250	1 660	650	740	1 350	590	1 310	-	-	-
		SF-Q - 33	1 310	550	1 250	1 970	650	740	1 350	590	1 310	-	-	-
		SF-Q - 34	1 310	550	1 250	2 670	650	840	1 350	590	1 310	-	-	-
		SF-Q - 43	1 340	580	1 500	1 970	650	740	1 380	620	1 560	-	-	-
		SF-Q - 44	1 340	580	1 500	2 670	650	840	1 380	620	1 560	-	-	-
	Special applications	SF-D - 1024 up to 1018/11	1 160	775	910	-	-	-	1 200	815	970	-	-	-
		SF-D - 1024 up to 1034/12	1 160	750	1 220	-	-	-	1 200	790	1 280	-	-	-
		SF-D - 1038/13	1 160	445	730	1 790	910	550	1 200	485	790	1 830	950	610
		SF-D - 14	1 160	445	730	2 190	1 000	550	1 200	485	790	2 230	1 040	610
		SF-D - 2/23	1 220	480	970	1 790	910	500	1 260	520	1 030	1 830	950	560
		SF-D - 24	1 220	480	970	2 190	1 000	550	1 260	520	1 030	2 230	1 040	610
		SF-D - 3	1 310	550	1 250	1 790	910	500	1 350	590	1 310	1 830	950	560
		SF-D - 34	1 310	550	1 250	2 190	1 000	550	1 350	590	1 310	2 230	1 040	610
		SF-D - 4/44	1 340	580	1 500	2 190	1 000	550	1 380	620	1 560	2 230	1 040	610
		VSF / VSH - 0/00	870	700	800	-	-	-	910	740	860	-	-	-
		VSF / VSH - 10	1 160	750	800	-	-	-	1 200	790	860	-	-	-
		VSF / VSH - 11/1014	1 160	750	890	-	-	-	1 200	790	950	-	-	-
		VSF / VSH - 12/1024/1034	1 160	750	1 220	-	-	-	1 200	790	1 280	-	-	-
		VSF / VSH - 2/23	1 220	480	970	1 790	975	395	1 260	520	1 030	1 830	1 015	455
		VSF / VSH - 3/33	1 310	550	1 250	1 790	975	395	1 350	590	1 310	1 830	1 015	455
intarSANIT		TCH - 1	1 560	1 030	650	-	-	-	1 600	1 070	710	-	-	-
		TPD - 3	1 700	950	600	-	-	-	1 740	990	660	-	-	-
		TPD - 6	1 700	1 680	600	-	-	-	1 740	1 720	660	-	-	-

Series		Model	Standard packaging (road transport)						Reinforced packaging (marine transport)					
			Package dimensions (mm)			Package/s dimensions (mm)			Package dimensions (mm)			Package/s dimensions (mm)		
			Length	Width	Height	Length	Width	Height	Length	Width	Height	Length	Width	Height
Waterloop system		CC - 0	1 590	600	650	-	-	-	1 630	640	710	-	-	-
		CC - 1	1 890	600	680	-	-	-	1 930	640	740	-	-	-
		DM - 0	600	500	380	-	-	-	640	540	440	-	-	-
		DM - 1	1 000	420	680	-	-	-	1 040	460	740	-	-	-
		DM - 2	1 170	450	760	-	-	-	1 210	490	820	-	-	-
		CWF - 0 / 1	1 190	440	720	-	-	-	1 230	480	780	-	-	-
		CWF - 2	1 220	480	970	-	-	-	1 260	520	1 030	-	-	-
		CWF - 3	1 310	550	1 250	-	-	-	1 350	590	1 310	-	-	-
		CWF - 4	1 340	580	1 500	-	-	-	1 380	620	1 560	-	-	-
		CWF - 6	1 900	580	1 250	-	-	-	1 940	620	1 310	-	-	-
		CWF - 8	1 900	580	1 500	-	-	-	1 940	620	1 560	-	-	-
Condensing units	intarbox	DH - 0	720	480	500	-	-	-	760	520	560	-	-	-
		DH - 1	810	510	560	-	-	-	850	550	620	-	-	-
		DH - 2	995	515	650	-	-	-	1 035	555	710	-	-	-
		DH - 3	1 035	670	700	-	-	-	1 075	710	760	-	-	-
		DH - 4	1 165	690	740	-	-	-	1 205	730	800	-	-	-
		DH - 5	1 475	815	820	-	-	-	1 515	855	880	-	-	-
	Siglus	DF - 0	730	365	565	-	-	-	770	405	625	-	-	-
		DF - 1	1 160	445	730	-	-	-	1 200	485	790	-	-	-
		DF - 2	1 220	480	970	-	-	-	1 260	520	1 030	-	-	-
		DF - 3	1 310	550	1 250	-	-	-	1 350	590	1 310	-	-	-

Sales terms

Except in case of agreement with INTARCON, the following general sales terms prevail.

Price
The prices indicated in this list, except for typographical errors, are retail prices with cash payment, do not include VAT or indirect taxes, and will remain in force during the period of validity of this catalogue or until a new edition.

Installation
The buyer admits that INTARCON's products are capital goods for integration in a refrigeration installation. To that effect, the buyer assumes obedience to any applicable law and to guarantee the quality of the installation, which, in any case, is to be done by an authorised installer.

Orders
The orders are to be placed in writing and to be confirmed by the seller through a pro forma invoice indicating the shipping date. The seller reserves the right to refuse an order. Once manufacturing has started, no cancellations will be accepted.

Packaging
Prices include standard packaging for road transport, not suitable for overseas transport.

Delivery
The delivery of INTARCON goods is according to FCA INTARCON (Pl Los Santos, 14900 Lucena - Spain) according to Incoterms 2020 of the ICC. The only accepted delivery claims are those received in written on the delivering note within 24 hours from the delivery.

Refunds
No refunds will be accepted without prior authorisation from the manufacturer and, in any case, an amount no less than 10 % of the purchasing price will be deducted as a return cost.

Technical-features
The information and features in this catalogue are given as an indication, technical data can be changed with no prior communication, and should be confirmed when placing an order.

Warranty
The seller guarantees the product against any manufacturing default for 12 months from delivering date.

During the warranty period the manufacturer will cover the repair of the product in its facilities, the replacement of the product or the supply of spare parts for defective components, which is less burdensome and technically feasible. The cost and taxes on the refrigerant are expressly excluded from the warranty coverage when it has not been supplied by the manufacturer in hermetically sealed appliances. The warranty does not cover on-site labour for the replacement of the product or spare parts, nor the indirect damages or consequential losses that may be attributed to the malfunction of the product. Specifically, the manufacturer may not be responsible for the Tax on Fluorinated Gases stipulated in Law 16/2013, emitted into the atmosphere as a result of a leakage of a refrigeration unit subject to a tightness and resistance test by the refrigeration installer and a periodic leak control according to Regulations 517-2014 on F-Gas and Safety for Refrigeration Installations, RD 138/2011.

Payment
Unless agreement with the manufacturer, the payment of the invoices will be in cash. The seller of the goods reserves the right to block delivery of the orders in the case that any risk in payment is perceived.

Lawsuits
INTARCON's product trade is ruled by Spanish laws. Any conflict or argument is to be submitted to the judgment of the Córdoba Chamber of Commerce. In case of disagreement, both parties will relinquish to any jurisdiction to which may pertain and they will submit to the Court of Lucena (Córdoba) Spain.

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www.intarcon.com

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