



INTARCON



# CO<sub>2</sub> cooling system



Investment  
sustainable



100 %  
natural solution



Plug & Play  
installation

# ECO<sub>2</sub>CUBE

## Transcritical CO<sub>2</sub> compact condensing units



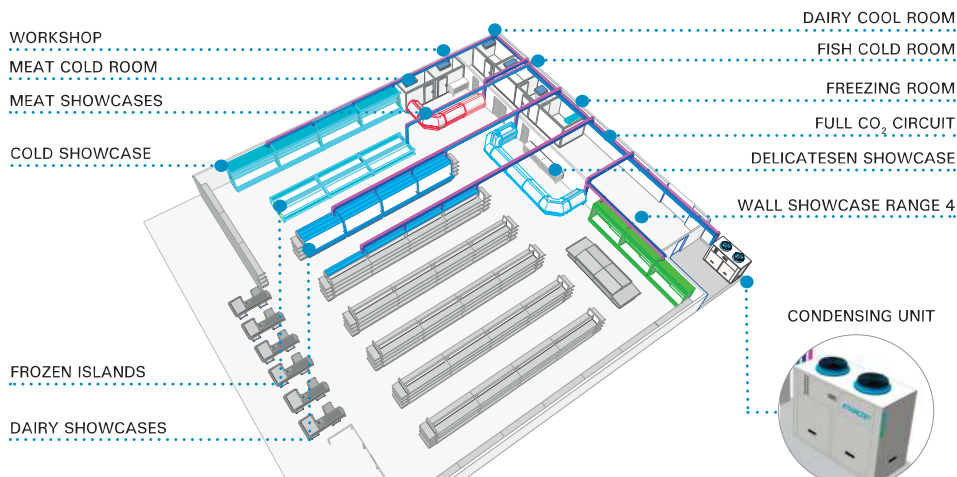
- ❄ High reliability and energy efficiency in hot climates.
- ❄ Environmental sustainability.
- ❄ Fast Plug & Play installation.
- ❄ F-Gas 2022 compliant.

Transcritical CO<sub>2</sub> condensing units with built-in gas cooler for simultaneous production of positive and negative cooling in commercial applications from 30 to 100 kW cooling capacity.



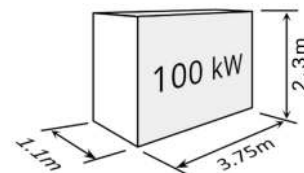
### Example of installation in a supermarket

ECO<sub>2</sub>CUBE has been designed to meet the refrigeration needs at different temperatures of medium-sized supermarkets and other commercial establishments.



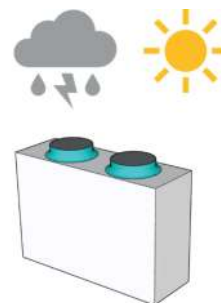
### Compact design

ECO<sub>2</sub>CUBE offer high performance in a small space, integrating all cooling elements in a compact design.

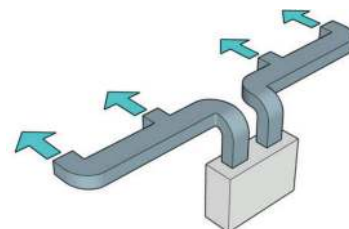


### Outdoor or machine room installation

ECO<sub>2</sub>CUBE can be installed in outdoors.



Or in the machine room, with a reduced air discharge flow through ducts to comply with the most stringent municipal regulations.

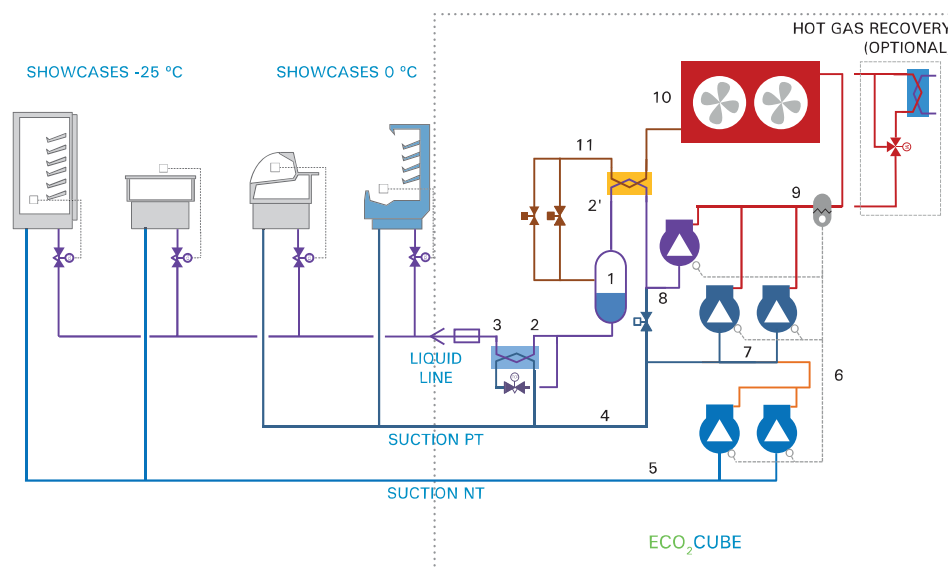


## Features

- ▶ 400 V-III-50 Hz power supply. Available at 60 Hz. Others voltages by request.
- ▶ Casing built with galvanized steel sheet with epoxy paint for outdoor use with electrical panel and gas cooler.
- ▶ Set of semihermetic CO<sub>2</sub> compressor with parallel compression.
  - 2 positive temperature transcritical compressors with Inverter.
  - 1 Inverter parallel compressor.
  - Up to 3 negative temperature booster compressors with Inverter.
- ▶ Variable speed EC axial motor fans.
- ▶ High pressure sector (SP: 120 bar) made with K65 copper microtubes and equipped with
  - Separator - oil trap accumulator with filter and electronic oil injection on each compressor.
  - Condenser / gas cooler, made with copper microtubes and aluminium fins.
  - Internal economizer to ensure sufficient superheat in the parallel compressor suction.
  - High pressure switch, double safety valve.
  - Double gas cooler pressure control valve.
- ▶ Intermediate pressure sector (SP: 52 bar) made of copper tubing and equipped with:
  - CO<sub>2</sub> container with double safety valve (PS: 52 bar).
  - Pressure regulating valve with medium pressure relief.
  - Subcooler to ensure subcooling of the liquid line.
  - Filter drier and liquid sight glass.
- ▶ Positive temperature suction line (SP: 45 bar), made of copper tubing and equipped with a double safety valve.
- ▶ Negative temperature suction line (SP: 30 bar), made of copper tubing and equipped with a double safety valve.

## Schematic diagram of installation principle

Configuration of 3 medium temperature compressors and 2 low temperature compressors, and optional transcritical recuperator.



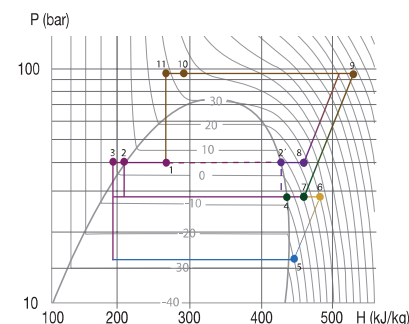
## Operational reliability

System dimensioned for operation at high ambient temperatures due to parallel compression.

To ensure continuity of operation, all components are duplicated or backed up in case of failure.

## High efficiency

Parallel compression ensures high efficiency of the transcritical CO<sub>2</sub> cycle under extreme ambient temperatures.



## Plug &amp; Play

Each ECO<sub>2</sub>CUBE unit is factory tested and adjusted prior to shipment.

They are provided with leak test and pressure test (ASP) certificates for the assembly and do not require ASP certification on site.

Refrigeration lines up to 100 kW can be executed in standard thick reinforced refrigerant copper pipe without ASP classification (application art. 4.3 of Directive 2014/68/EU).

Cooling line	PS (bar)	Max. diameter
Liquid	52	7/8" x 1.15
Suction PT	45	1 1/8" x 1.25

## Hot gas defrost option

Low-pressure recirculated hot gas can meet the needs of a commercial refrigeration installation, where only part of the services require defrosting with heat supply.

The hot gas is extracted from the discharge of the low temperature compressors at a temperature of about 50 °C, and is expanded and desuperheated in the medium or low temperature services in the defrost cycle.

The available heat output for defrosting is 25 % of the cooling capacity at low temperature.

Refrigerant	Application	Series / Model	Compressor		Cooling capacity (kW) <sup>(1)</sup> at 32 °C ambient temp.		Input power (kW)	Max. current (A)	Ecodesign SEPR	Heat recovery capacity (kW) <sup>(2)</sup>		Condenser		Cooling connection Liq-Gas
			PT	NT	MT Evap. temp. -8 °C	BT Evap. temp. -28 °C				Water 35/40 °C	Water 55/60 °C	Fan Ø (mm)	Air flow (m³/h)	
R-744	Positive and negative temperature	MET-DE-2 23003		-	38.0	0.0	20.8	61	3.5					5/8"-7/8"
		DET-DE-2 23014		CDS101B	30.6	5.2	20.9	64	-					
		DET-DE-2 23024	3x CD4 75-4,7H	CDS151B	28.1	6.9	20.8	68	-	39	20	2x Ø 630	24 000	5/8"-7/8"-5/8"
		DET-DE-2 23025		2x CDS101B	24.4	9.6	20.9	67	-					
		DET-DE-2 23035		2x CDS151B	19.9	12.7	21.0	68	-					
		MET-DE-2 27003		-	52.2	0.0	28.6	72	3.5					5/8"-7/8"
		DET-DE-2 27014		CDS101B	44.8	5.2	28.6	75	-					
		DET-DE-2 27024	3x CD4 90-6,4H	CDS151B	42.4	6.9	28.5	78	-	54	27	2x Ø 630	24 000	5/8"-7/8"-5/8"
		DET-DE-2 27025		2x CDS101B	38.6	9.6	28.5	78	-					
		DET-DE-2 27035		2x CDS151B	34.2	12.7	28.6	79	-					
		DET-DE-2 27045		2x CDS181B	27.1	17.7	28.9	81	-					5/8"-7/8"-7/8"
		MET-DE-2 28003		-	59.2	0.0	32.4	72	3.5					5/8"-7/8"
		DET-DE-2 28014		CDS101B	51.7	5.2	32.4	75	-					
		DET-DE-2 28024	3x CD4 90-7,3H	CDS151B	49.3	6.9	32.2	78	-	61	30	2x Ø 630	24 000	5/8"-7/8"-5/8"
		DET-DE-2 28025		2x CDS101B	45.6	9.6	32.2	78	-					
		DET-DE-2 28035		2x CDS151B	41.1	12.7	32.3	79	-					
		DET-DE-2 28045		2x CDS181B	34.0	17.7	32.6	81	-					5/8"-7/8"-7/8"
		MET-DE-2 36004		-	69.0	0.0	35.0	96	3.5					7/8"-1 1/8"
		DET-DE-2 36015		CDS101B	62.1	4.9	35.1	99	-					
		DET-DE-2 36025	4x CD4 90-6,4H	CDS151B	59.8	6.5	34.9	102	-	66	33	3x Ø 630	36 000	7/8"-1 1/8"-5/8"
		DET-DE-2 36026		2x CDS101B	56.2	9.0	35.0	102	-					
		DET-DE-2 36036		2x CDS151B	52.1	12.0	35.1	103	-					
		DET-DE-2 36046		2x CDS181B	45.4	16.6	35.5	105	-					7/8"-1 1/8"-7/8"
		MET-DE-3 36003		-	74.6	0.0	40.8	76	3.5					7/8"-1 1/8"
		DET-DE-3 36014		CDS101B	67.1	5.2	40.7	79	-					
		DET-DE-3 36024		CDS151B	64.7	6.9	40.4	82	-					
		DET-DE-3 36025	3x CD4 120-9,2H	2x CDS101B	61.0	9.6	40.4	82	-	77	38	3x Ø 630	36 000	7/8"-1 1/8"-5/8"
		DET-DE-3 36035		2x CDS151B	56.5	12.7	40.4	83	-					
		DET-DE-3 36045		2x CDS181B	49.4	17.7	40.8	85	-					7/8"-1 1/8"-7/8"
		DET-DE-3 36066		3x CDS181B	38.0	25.8	41.1	89	-					
		MET-DE-3 36004		-	78.1	0.0	39.6	100	3.5					7/8"-1 1/8"
		DET-DE-3 36015		CDS101B	71.1	4.9	39.6	103	-					
		DET-DE-3 37025		CDS151B	68.8	6.5	39.4	106	-					
		DET-DE-3 36026	4x CD4 90-7,3H	2x CDS101B	65.3	9.0	39.5	106	-	74	37	3x Ø 630	36 000	7/8"-1 1/8"-5/8"
		DET-DE-3 36036		2x CDS151B	61.1	12.0	39.6	107	-					
		DET-DE-3 36046		2x CDS181B	54.4	16.6	40.0	109	-					7/8"-1 1/8"-7/8"
		DET-DE-3 36067		3x CDS181B	43.7	24.2	40.5	113	-					
		MET-DE-3 48004		-	99.0	0.0	49.9	101	3.5					7/8"-1 1/8"
		DET-DE-3 48015		CDS101B	92.0	4.9	49.9	104	-					
		DET-DE-3 48025		CDS151B	89.0	6.5	49.6	107	-					
		DET-DE-3 48026	4x CD4 120-9,2H	2x CDS101B	85.8	9.0	49.6	107	-	94	47	3x Ø 630	36 000	7/8"-1 1/8"-5/8"
		DET-DE-3 48036		2x CDS151B	81.6	12.0	49.7	108	-					
		DET-DE-3 48046		2x CDS181B	74.9	16.6	50.1	110	-					
		DET-DE-3 48067		3x CDS181B	64.1	24.2	50.6	114	-					7/8"-1 1/8"-7/8"

## Options

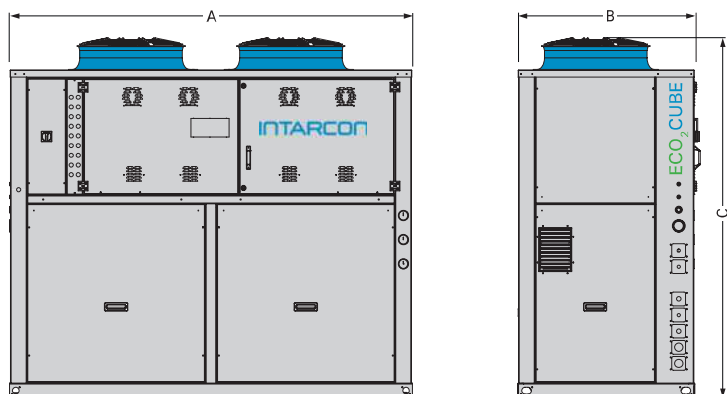
- ▶ Heat recovery for DHW or heating.
- ▶ Pre-configured replacement electronics.
- ▶ Suction filter on low and/or medium temperature lines.
- ▶ Particle separator on low and/or medium temperature suction lines.
- ▶ Emergency unit.
- ▶ Radial fans with EC motor for indoor installation.

<sup>(1)</sup> Nominal performance: ambient temperature 32 °C, evaporating temperature -8 °C (PT) and -28 °C (NT).

<sup>(2)</sup> Maximum recoverable heat output of compressor discharge gas.



## Dimensions



Dimensions (mm)	A	B	C
1 series	2 500	1 100	2 300
2 series	3 750	1 100	2 300

Dimensions in mm.

## Electronic control

ECO<sub>2</sub>CUBE cooling units incorporate a multifunctional electronic controller for transcritical systems, ideal for all climatic conditions, including hot climates, with the following features:

- ▶ Multifunctional electronic controller for control of the control unit:
  - Management of the PT line and NT line with CO<sub>2</sub> in transcritical booster configuration.
  - Management of semihermetic transcritical PT compressors (one of them Inverter).
  - Management of transcritical parallel semihermetic Inverter compressors.
  - Management of BT sub-critical semihermetic compressors (one of them Inverter).
  - Heat recovery management.
  - Management of double gas cooler pressure control valve.
  - Management of flash gas valve.
  - Management of variable speed EC electronic motor fans with floating set point.
  - Dynamic set of liquid receiver pressure: the receiver pressure set changes according to the state of the PT compressors; in this way, the energy consumption of the condensing units decreases due to a shorter running time of the parallel compressor.
  - Safety control and operation alarms for each compressor and fan.
  - Abnormal operation warnings with alarm detail.
  - RS485 connection with MODBUS RTU communication protocol.
- ▶ Digital control unit with display of parameters and operating status of the control unit.



# ECO<sub>2</sub>Watt

## Great cooling capacity CO<sub>2</sub> condensing units



- ❄ Large maintenance access.
- ❄ No engine room.
- ❄ Custom design.

**ECO<sub>2</sub>Watt** are great cooling capacity CO<sub>2</sub> condensing units, single or double suction transcritical cycle with built-in gas cooler, or in cascade cycle, designed according to the needs of the installation for a total cooling capacity between 80 and 300 kW.

### Features

- ▶ Construction in galvanised sheet steel structure with epoxy paint.
- ▶ Sets of 2 or 3 CO<sub>2</sub> compressors equipped with rotalock valves.
- ▶ Inverter capacity control per compressor group.
- ▶ Particulate separator and CO<sub>2</sub> filter.
- ▶ Oil separator and accumulator with oil filter and electronic compressor injection.
- ▶ Medium pressure CO<sub>2</sub> receiver (PS: 60 bar) with double safety valve.
- ▶ Economiser - liquid CO<sub>2</sub> subcooler.
- ▶ Refrigeration circuit made of copper tube.
- ▶ Instrumentation panel with pressure gauges and load taps.
- ▶ Integrated control and power panel with electronic control unit for compressor and electronic valve management.

### Transcritical ECO<sub>2</sub>Watt

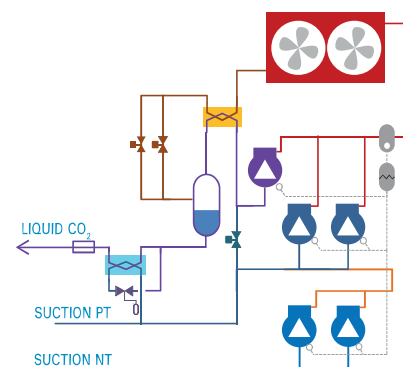
- ▶ Set of 2 or 3 transcritical CO<sub>2</sub> compressors and set of compressors in parallel. Inverter drive in one compressor of each set.
- ▶ Cooler gas pressure regulating valves.
- ▶ Vessel pressure regulating valves.
- ▶ Internal economiser exchanger.
- ▶ Gas cooler with copper tube coils and aluminium fins in parallel.
- ▶ PS: 120 bar. Variable speed EC axial motor fans.

### Cascade ECO<sub>2</sub>Watt

- ▶ Double cascade plate heat exchanger with gravity circulation.
- ▶ High temperature refrigerant R-290 or HFC.
- ▶ Semihermetic high temperature compressors, with Inverter drive in one compressor.
- ▶ High temperature circuit made of copper, with filter, sight glass and electronic expansion valves.
- ▶ Copper tube and aluminium finned coil condenser in parallel V configuration.
- ▶ Variable speed EC axial motor fans.

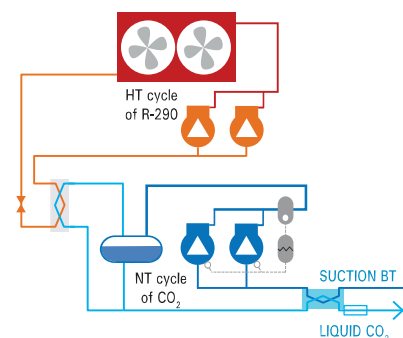
### Transcritical cycle with parallel compression

The transcritical cycle with parallel compression improves energy efficiency at high ambient temperatures.



### Cascade cycle

The CO<sub>2</sub> cascade cycle with a high temperature cycle of R-290 or HFC offers excellent refrigeration performance in low temperature applications (cold rooms or freezer tunnels).



# ECO<sub>2</sub>Rack

## CO<sub>2</sub> compressor rack



- ❄ Large maintenance access.
- ❄ Custom design.

Rack of single or double suction CO<sub>2</sub> compressors in transcritical cycle, or in subcritical cycle condensed by glycol or refrigerant. **ECO<sub>2</sub>Rack** condensing units can be built in various combinations of 2 or 3 compressors to offer a total cooling capacity of 50 to 300 kW.

### Features

- ▶ Construction in galvanised sheet steel structure with epoxy paint.
- ▶ Sets of up to 3 CO<sub>2</sub> compressors equipped with rotalock valves.
- ▶ Inverter capacity control per compressor group.
- ▶ Particulate separator and CO<sub>2</sub> filter.
- ▶ Oil separator and accumulator with oil filter and electronic injection per compressor.
- ▶ Medium pressure CO<sub>2</sub> receiver (PS: 60 bar) with double safety valve led to the outside.
- ▶ Economiser - liquid CO<sub>2</sub> subcooler.
- ▶ Refrigeration circuit made of copper tube, equipped with filter drier.
- ▶ Instrumentation panel with pressure gauges and load taps.
- ▶ Integrated control and power panel with electronic control unit for compressor management and electronic valves.

### Subcritical ECO<sub>2</sub>Rack

- ▶ Double or triple stainless steel plate cascade condenser with double or triple electronic expansion valve.
- ▶ PS: 52 bar.

### Transcritical ECO<sub>2</sub>Rack

- ▶ Parallel CO<sub>2</sub> compressor tandem with Inverter.
- ▶ Gas cooler pressure regulating valves.
- ▶ Vessel pressure regulating valves.
- ▶ Internal economiser exchanger.
- ▶ PS: 120 bar.

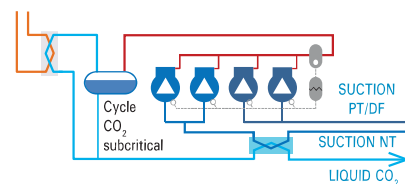
### Options

- ▶ Hot gas heat recovery unit for DHW production by means of stainless steel plate heat exchanger with automatic bypass valve.
- ▶ Hot gas heat recovery unit for heating by means of stainless steel plate heat exchanger.
- ▶ Emergency unit for CO<sub>2</sub> maintenance.

### Single or double suction subcritical cycle

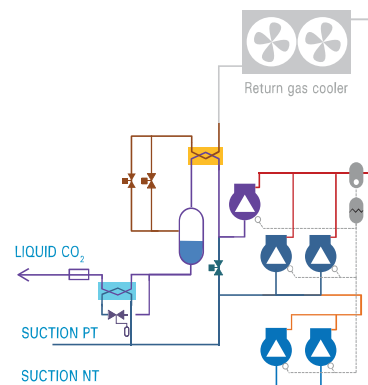
A low-temperature subcritical CO<sub>2</sub> condensing units can be combined in cascade with a water or glycol condensing circuit.

The double suction makes it possible to incorporate the refrigeration production of very negative temperature services (deep-freezing) or even positive temperature services.



### Transcritical cycle with parallel compression

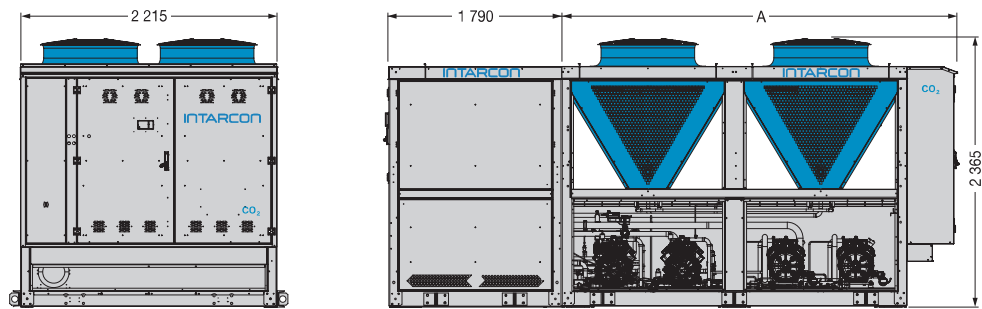
The transcritical cycle with parallel compression improves energy efficiency at high ambient temperatures.



### Standard design pressures (PS)

- High pressure: 120 bar
- Liquid line: 52 bar
- Suction positive temp.: 45 bar
- Suction negative temp.: 30 bar

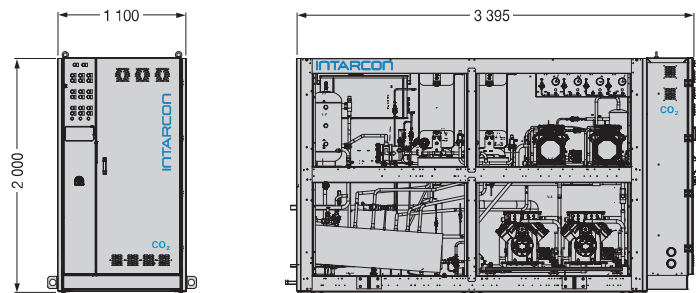
ECO<sub>2</sub>Watt dimensions



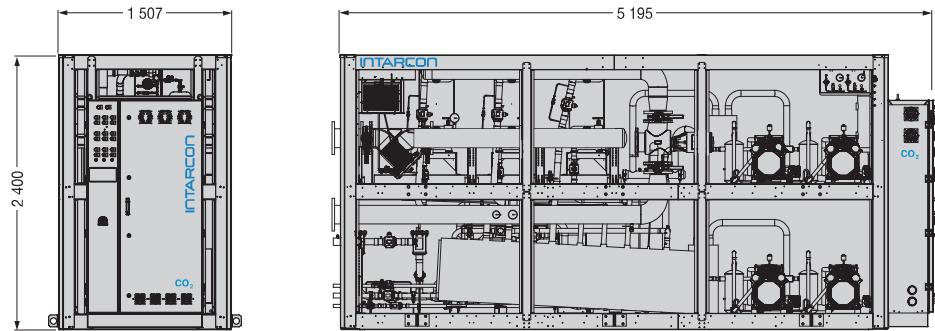
Dimensions (mm)	A
1 series	1 843
2 series	3 319
3 series	4 796
4 series	6 269
5 series	7 742

ECO<sub>2</sub>Rack dimensions

1 series



2 series



Dimensions in mm.



## JB-NE series – Low profile CO<sub>2</sub> evaporators



Slim-type commercial CO<sub>2</sub> evaporating units, with inbuilt control valves and electronic control, built in aluminium with polyester paint, for positive and negative temperature cold rooms.

### Features

- ▶ 230 V-I-50 Hz power supply. Available in 60 Hz. Other voltages by request.
- ▶ High-flow axial motor fans.
- ▶ Electronic expansion valve.
- ▶ High efficiency air cooling coil, made of copper tubes and aluminium fins, with 5 mm et 6 mm fin pitch.
- ▶ Refrigerant connections for soldering, with suction line siphon integrated in the unit.

### Options

- ▶ Electric defrosting by means of heating elements. Flexible drain resistor (negative temperature models).
- ▶ Hot CO<sub>2</sub> defrosting (consult us).
- ▶ Control panel with electrical protection and electronic control unit for control of the expansion valve driver, fans and defrosting, light alarm and CO<sub>2</sub> leak detector.
- ▶ Anti-corrosion coil coating.

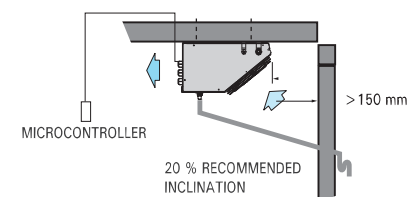
- ❄ High efficiency coils.
- ❄ Electronic expansion valves.
- ❄ Factory set equipment for optimum cooling performance.
- ❄ Electronic control.

### High efficiency finned coils

The efficiency of a tube and fin coil is an index of the utilisation of its exchange surface, associated with a higher temperature homogeneity. INTARCON coils have an efficiency of 85 % to 90 %.

### Installation recommendations

The installation of the evaporator units inside the cold store should be carried out according to the following recommendations:



- Place the unit at one end of the cold room, avoiding placing it above the door of the cold room and preferably driving it longitudinally in the cold room and transversally to the entrance door.

230 V-I-50 Hz | **Positive temperature** | **Negative temperature** | **R-744**

Refrigerant	Application	Series / Model	Cooling capacity according to cold room temperature (W) <sup>(1)</sup>			Coil			Fans				Electrical defrost		Liq-Gas Cooling Connection	Weight (kg)	
			SC2	SC3	SC4	Fin spacing (mm)	Area (m²)	Vol. (litres)	Air flow (m³/h)	Nx Ø (mm)	Power (W)	I max. (A)	Range (m)	W			A
			0 °C 85 % RH DT1 = 8 K	-18 °C 95 % RH DT1 = 8 K	-25 °C 95 % RH DT1 = 6 K												
R-744	Positive and negative	MJB-NE-0 117 BJB-NE-0 117	650	510	410	5	2.0	0.6	300	1x Ø 172	62	0.3	3	1x 250	2.2	3/16"-3/16" 3/16"-3/8"	12
		MJB-NE-1 120 BJB-NE-1 120	1 210	940	770	6	3.5	1.0	550	1x Ø 200	70	0.3	4	1x 450	3.9	3/16"-3/16"	16
		MJB-NE-2 220 BJB-NE-2 220	1 990	1 550	1 270	6	6.3	1.6	1 050	2x Ø 200	140	0.5	4	1x 700	6.1	3/16" - 1/4"	24
		MJB-NE-3 325 BJB-NE-3 325	3 450	2 680	2 190	6	11.8	2.9	1 725	3x Ø 254	210	1.4	6	2x 800	10.4	1/4"-1/4"	45
		MJB-NE-4 430 BJB-NE-4 430	5 940	4 620	3 770	6	18.1	4.7	3 100	4x Ø 300	480	3.5	8	3x 1 000	13.0	1/4" - 3/8"	55

## JD-NE series – Double-flow CO<sub>2</sub> evaporating units



- ❄ High-efficiency batteries.
- ❄ Electronic expansion valve.
- ❄ 100 % factory tested and adjusted units for the highest performance.
- ❄ Electronic control.
- ❄ High comfort with low noise level.

Double-flow CO<sub>2</sub> evaporating units, in a low-profile design, with built-in control valves, built in galvanised steel structure and aluminium bodywork with polyester paint.

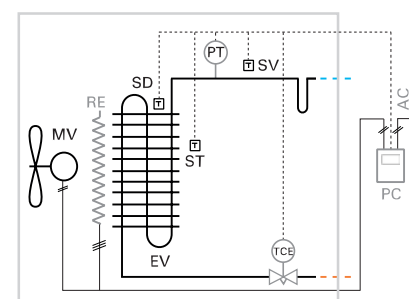
### Features

- ▶ 230 V-I-50 Hz power supply. Available in 60 Hz. Other voltages by request.
- ▶ High efficiency coils, in copper pipes and aluminium fins, with 6 mm fin spacing.
- ▶ Electronic expansion valve.
- ▶ Low-noise and low-speed axial motor fan.
- ▶ Ready-to-solder cooling connections, with built-in suction trap.
- ▶ Integrated condensate pump.

### Options

- ▶ Electric defrosting by means of heating elements.
- ▶ Hot CO<sub>2</sub> defrosting (consult us).
- ▶ Electric defrosting by means of heating elements. Control panel with electrical protection and electronic control unit for controlling the expansion valve driver, fans and defrosting, light alarm and CO<sub>2</sub> leak detector.
- ▶ Anti-corrosion coil coating.
- ▶ Integrated condensate pump.

### Cooling and electrical schematic



AC: ELECTRICAL CONNECTION  
EV: EVAPORATOR  
MV: MOTOR FAN  
PT: PRESSURE TRANSDUCER  
SD: DEFROST PROBE  
ST: COLD ROOM PROBE  
SV: EXPANSION VALVE PROBE  
TCE: ELECTRONIC EXPANSION VALVE  
PC: CONTROL PANEL (OPTIONAL)  
RE: DEFROSTING RESISTOR (OPTIONAL)

### \* Electrical heater defrost (as an option)

AJD series are also available featuring electrical heater defrost as an option, for operation at cold room temperature between -5 °C and 5 °C.

AJD models of series 3 to 5, with electrical heater defrost, unlike the others models require 400 V-III power supply.

### 230 V-I-50 Hz | Positive temperature | R-744

Refrigerant	Application	Series / Model	Cooling capacity according to cold room temperature (W) <sup>(1)</sup>	Coil			Fans				Electrical defrost		Liq-Gas Cooling Connection	Weight (kg)	SPL dB(A) <sup>(2)</sup>	
			SC2 0 °C 85 % RH DT1 = 8 K	Fin spacing (mm)	Area (m²)	Vol. (litres)	Air flow (m³/h)	Nx Ø (mm)	Power (W)	I max. (A)	Range (m)	W				A
R-744	Quasi-static	MJD-NE-1 136	2 570	6	8.2	1.9	1 200	1x Ø 360	85	0.4	4	2x 450	3.9	1/4"-1/4"	32	33
		MJD-NE-2 236	3 850	6	12.5	3.3	2 000	2x Ø 360	170	0.8	4	2x 700	6.1	1/4"-1/4"	45	36
		MJD-NE-3 236*	6 700	6	23.4	5.4	3 300	3x Ø 360	255	1.2	4	6x 800*	6.9	1/4"-3/8"	65	38
		MJD-NE-4 245*	9 360	6	36.1	8.7	4 400	2x Ø 450	290	1.3	6	6x 1 000*	8.7	3/8"-1/2"	70	42

\* Units available in 400 V-III-50 Hz.

## JC-NE series – Commercial cubic type CO<sub>2</sub> evaporating units



Commercial cubic type CO<sub>2</sub> evaporating unit, with built-in control valves and electronic board, for high, positive and negative temperature cold rooms, built in galvanised steel structure and aluminium bodywork with polyester paint.

### Features

- ▶ 230 V-I-50 Hz power supply. Available in 60 Hz. Other voltages by request.
- ▶ High efficiency air cooling coil, made of copper tubes and aluminium fins, 6 mm fin pitch.
- ▶ Electronic expansion valve.
- ▶ High-flow axial motor fans.
- ▶ Cooling connections to be soldered, with suction line siphon integrated in the unit.
- ▶ Flexible drainage resistor (only for negative temperature models).

### Options

- ▶ Electric defrosting by means of coil and condensate tray overlapping heating elements.
- ▶ Hot CO<sub>2</sub> defrosting (consult us).
- ▶ Electric defrosting by means of heating elements. Control panel with electrical protection and electronic control unit for controlling the expansion valve driver, fans and defrosting, light alarm and CO<sub>2</sub> leak detector.
- ▶ Humidification / dehumidification / heating kit.
- ▶ Anti-corrosion coil coating.

- ❄ High-efficiency batteries.
- ❄ Electronic expansion valve and suction siphon.
- ❄ 100 % factory tested and adjusted units for the highest performance.

### Electric control panel

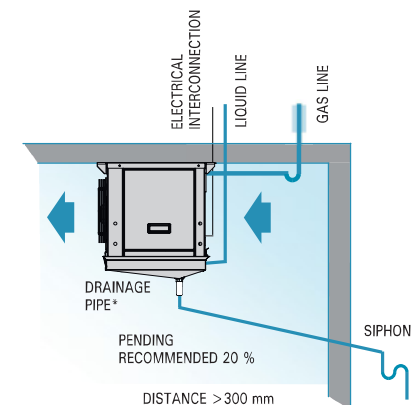
All units can be combined with an advanced multi-function controller, consisting of an electronic board integrated in the control panel and digital control unit.



### Installation recommendations

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

\* Minimum drain pipe inclination of 20 % for negative temperature models.



230 V-I-50 Hz | **Positive temperature** | **Negative temperature** | **R-744**

Refrigerant	Application	Series / Model	Cooling capacity according to cold room temperature (W) <sup>(1)</sup>			Coil			Fans				Electrical defrost		Liq-Gas Cooling Connection	Weight (kg)	
			SC2	SC3	SC4	Fin spacing (mm)	Area (m²)	Vol. (litres)	Air flow (m³/h)	Nx Ø (mm)	Power (W)	I max. (A)	Range (m)	W			A
			0 °C 85 % RH DT1 = 8 K	-18 °C 95 % RH DT1 = 7 K	-25 °C 95 % RH DT1 = 6 K												
R-744	Positive and negative	MJC-NE-1 225 BJC-NE-1 225	2 650	2 050	1 670	6	8.4	2.7	1 600	2x Ø 254	140	1.0	4	2x 700	6.1	1/4"-1/4" 3/16"-1/4"	42
		MJC-NE-2 225 BJC-NE-2 225	3 130	2 410	1 970	6	11.5	3.7	1 750	2x Ø 254	140	1.0	4	2x 800	7.0	1/4"-1/4"	48
		MJC-NE-2 325 BJC-NE-2 325	3 870	2 970	2 420	6	11.5	3.7	2 400	3x Ø 254	210	1.4	6	3x 800	10.4	1/4"-3/8"	52
		MJC-NE-3 425 BJC-NE-3 425	4 990	3 840	3 140	6	18.3	5.0	3 000	4x Ø 254	280	1.9	6	4x 800	13.9	1/4"-3/8"	65

## KC-NE series – Cubic type CO<sub>2</sub> evaporating units



- ❄ High efficiency coils.
- ❄ Electronic expansion valves and suction siphon.
- ❄ 100 % factory tested and adjusted units for the highest performance.
- ❄ Double insulated defrost tray in negative temperature models.

Cubic type CO<sub>2</sub> evaporating unit, with built-in control valves, for high, positive and negative temperature cold rooms, built in galvanised steel shell with polyester coating.

### Features

- ▶ 230 V-I-50 Hz power supply. Available in 60 Hz. Other voltages by request.
- ▶ High efficiency coils, in copper pipes and aluminium fins, with 6 mm fin spacing.
- ▶ Electronic expansion valve.
- ▶ Double stainless steel draining pan and insulation for negative temperature.
- ▶ Motor fans axial with high air flow.
- ▶ Ready-to-solder refrigeration connections, with built-in suction trap.

### Options

- ▶ Electrical heater defrost with heaters inside the coil (change to 400 V-III-50 Hz power supply).
- ▶ Hot CO<sub>2</sub> defrosting (consult us).
- ▶ Electric defrosting by means of heating elements. Control panel with electrical protection and electronic control unit for controlling the expansion valve driver, fans and defrosting, light alarm and CO<sub>2</sub> leak detector.
- ▶ Humidification / dehumidification / heating kit.
- ▶ Anti-corrosion coil coating.

### Electric control panel

All units can be combined with an advanced multi-function controller, consisting of an electronic board integrated in the control panel and digital control unit.

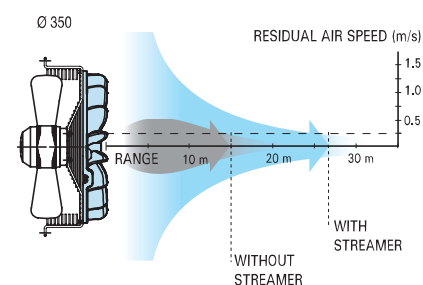


### Electronic expansion valve

The evaporator units are optionally equipped with an electronic pulse expansion valve.

### Long-range fan streamer (optional)

Optionally, a streamer is installed on the fan outlet to get a longer range.



230 V-I-50 Hz | Positive temperature | Negative temperature | R-744

Refrigerant	Application	Series / Model	Cooling capacity according to cold room temperature (W) <sup>(1)</sup>			Coil			Fans				Electrical defrost		Liq-Gas Cooling Connection	Weight (kg)	
			SC1	SC2	SC3	Fin spacing (mm)	Area (m²)	Vol. (litres)	Air flow (m³/h)	Nx Ø (mm)	Power (W)	I max. (A)	Range (m)				
			0 °C	-18 °C	-25 °C												
			85 % RH DT1 = 8 K	95 % RH DT1 = 7 K	95 % RH DT1 = 6 K												
R-744	Positive and negative	MKC-NE-0 135 BKC-NE-0 135	3 790	2 910	2 380	6	9.6	3.2	2 100	1x Ø 350	165	0.7	15	6x 450	3.9	1/4"-1/4"	43
		MKC-NE-1 135 BKC-NE-1 135	4 850	3 790	3 090	6	17.1	5.4	2 700	1x Ø 350	160	0.7	15	6x 700	6.1	1/4"-3/8"	56
		MKC-NE-2 235 BKC-NE-2 235	7 690	5 970	4 870	6	21.2	7.4	4 150	2x Ø 350	325	1.4	15	6x 800	7.0	3/8"-1/2"	72
		MKC-NE-3 235 BKC-NE-3 235	9 540	7 440	6 070	6	31.8	9.6	5 200	2x Ø 350	315	1.4	15	9x 800	10.4	3/8"-1/2"	89
		MKC-NE-3 335 BKC-NE-3 335	11 550	8 950	7 310	6	31.8	9.6	6 200	3x Ø 350	485	2.1	15	9x 800	10.4	3/8"-1/2"	94
		MKC-NE-4 435 BKC-NE-4 435	15 080	11 690	9 540	6	42.4	12.8	8 300	4x Ø 350	645	2.9	15	9x 1 000	13.0	3/8"-1/2"	118

# KH-NE series – Industrial cubic type CO<sub>2</sub> evaporating units



- ❄ Quick Plug & Play installation.
- ❄ High efficiency batteries optimised for CO<sub>2</sub>.
- ❄ Built-in electronic valve pre-set at the factory.

Industrial cubic type CO<sub>2</sub> evaporating units, with built-in control valves and control board, for positive and negative temperature cold rooms, built in galvanised steel structure and bodywork with thermosetting polyester coating.

## Features

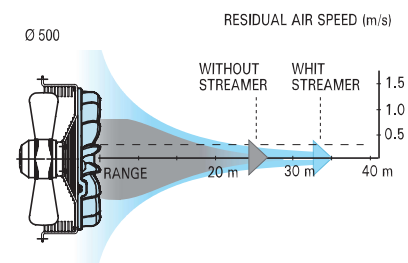
- ▶ 400 V-III-50 Hz power supply. Available in 60 Hz. Other voltages by request.
- ▶ Air-cooled high efficiency coils, in copper pipes and aluminium fins, with 5, 7 and 10 mm fin spacing.
- ▶ Built-in solenoid valve in liquid line and thermostatic expansion valve.
- ▶ Ready-to-solder refrigeration connections, with built-in suction oil trap.

## Options

- ▶ Electric defrosting by means of coil and condensate tray overlapping heating elements.
- ▶ Control panel with electrical protection and electronic control unit for controlling the expansion valve driver, fans and defrosting, and light alarm.
- ▶ Humidification / dehumidification / heating kit.
- ▶ Anti-corrosion coil coating.

## Long-range fan streamer (optional)

Optionally, a streamer is installed on the fan outlet to get a longer range.



Fan (mm)	Without streamer (m)	With streamer (m)
Ø 450	22	28
Ø 500	26	34

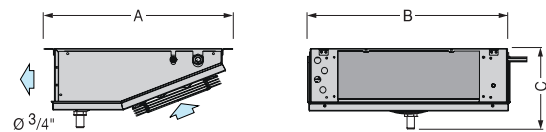
400 V-III-50 Hz | Positive temperature | Negative temperature | Deep-freezing | R-744

Refrigerant	Application	Series / Model	Cooling capacity according to cold room temperature (W) <sup>(1)</sup>			Coil			Fans				Electrical defrost		Liq-Gas Cooling Connection	Weight (kg)	
			0 °C 85 % RH DT1 = 8 K	-18 °C 95 % RH DT1 = 7 K	-25 °C 95 % RH DT1 = 6 K	Fin spacing (mm)	Area. (m²)	Vol. (litres)	Air flow (m³/h)	Nx Ø (mm)	Power (W)	I max. (A)	Range (m)	W			A
R-744	Positive	MKH-NE-1 145	10 550			5	36	12	4 200	1x Ø 450	0.5	1.1	22	6x 700	6	3/8"-1/2"	72
		MKH-NE-2 150	15 230			5	52	17	6 100	1x Ø 500	0.7	1.4	26	6x 700	6	3/8"-1/2"	93
		MKH-NE-1 245	20 230			5	73	23	8 400	2x Ø 450	1.0	2.1	22	9x 800	10	1/2"-5/8"	99
		MKH-NE-2 250	30 100			5	105	33	12 200	2x Ø 500	1.3	2.8	26	12x 800	14	1/2"-5/8"	132
		MKH-NE-1 345	30 290			5	109	33	12 600	3x Ø 450	1.5	3.2	22	12x 1 000	17	1/2"-5/8"	153
		MKH-NE-2 350	43 340			5	157	48	18 300	3x Ø 500	2.0	4.2	26	15x 1 000	22	5/8"-7/8"	175
		MKH-NE-1 445	40 300			5	145	44	16 800	4x Ø 450	2.0	4.3	22	12x 1 250	22	5/8"-7/8"	197
	MKH-NE-2 450	59 020			5	210	64	24 400	4x Ø 500	2.6	5.6	26	15x 1 250	27	5/8"-7/8"	260	
	Negative	BKH-NE-1 145	9 430	7 530	6 150	7	27	12	4 500	1x Ø 450	0.5	1.1	22	6x 700	6	3/8"-1/2"	70
		BKH-NE-2 150	13 580	10 850	8 860	7	39	17	6 500	1x Ø 500	0.6	1.4	26	6x 700	6	3/8"-1/2"	90
		BKH-NE-1 245	18 230	14 560	11 890	7	54	23	9 000	2x Ø 450	1.0	2.1	22	9x 800	10	3/8"-5/8"	95
		BKH-NE-2 250	26 890	21 480	17 540	7	79	33	13 000	2x Ø 500	1.3	2.8	26	12x 800	14	1/2"-5/8"	127
		BKH-NE-1 345	27 260	21 780	17 780	7	82	33	13 500	3x Ø 450	1.4	3.2	22	12x 1 000	17	1/2"-5/8"	147
		BKH-NE-2 350	38 930	31 100	25 390	7	118	48	19 500	3x Ø 500	1.9	4.2	26	15x 1 000	22	5/8"-7/8"	167
		BKH-NE-1 445	36 200	28 920	23 610	7	109	44	18 000	4x Ø 450	1.9	4.3	22	12x 1 250	22	5/8"-7/8"	189
	BKH-NE-2 450	52 860	42 230	34 470	7	157	64	26 000	4x Ø 500	2.5	5.6	26	15x 1 250	27	5/8"-7/8"	250	
	Deep-freezing	UKH-NE-1 145	7 290	5 830	4 760	10	25	12	4 800	1x Ø 450	0.5	1.1	22	6x 700	6	3/8"-1/2"	70
		UKH-NE-2 150	10 940	8 740	7 130	10	37	17	6 750	1x Ø 500	0.6	1.4	26	6x 700	6	3/8"-1/2"	90
		UKH-NE-1 245	14 710	11 750	9 590	10	50	23	9 600	2x Ø 450	0.9	2.1	22	9x 800	10	3/8"-5/8"	94
		UKH-NE-2 250	21 770	17 400	14 200	10	75	33	13 500	2x Ø 500	1.2	2.8	26	12x 800	14	1/2"-5/8"	126
		UKH-NE-1 345	21 640	17 290	14 110	10	75	33	14 400	3x Ø 450	1.4	3.2	22	12x 1 000	17	1/2"-5/8"	146
		UKH-NE-2 350	32 110	25 650	20 940	10	112	48	20 250	3x Ø 500	1.8	4.2	26	15x 1 000	22	5/8"-7/8"	166
		UKH-NE-1 445	28 560	22 820	18 630	10	99	44	19 200	4x Ø 450	1.9	4.3	22	12x 1 250	22	5/8"-7/8"	187
	UKH-NE-2 450	43 620	34 850	28 450	10	149	64	27 000	4x Ø 500	2.4	5.6	26	15x 1 250	27	5/8"-7/8"	248	



Dimensions

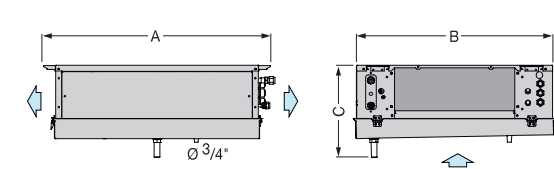
JB-NE series



Dimensions (mm)	A	B	C
0 series	417	549	185
1 series	460	643	235
2 series	460	993	235
3 series	538	1 691	235
4 series	590	2 064	285

All dimensions see page 53.

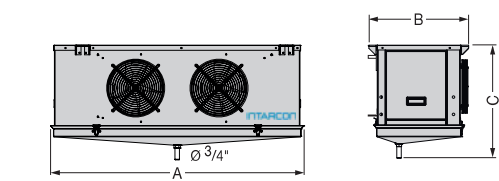
JD-NE series



Dimensions (mm)	A	B	C
1 series	852	736	310
2 series	852	1 086	310
3 series	852	1 786	310
4 series	942	2 186	360
5 series	942	2 186	360

All dimensions see page 55.

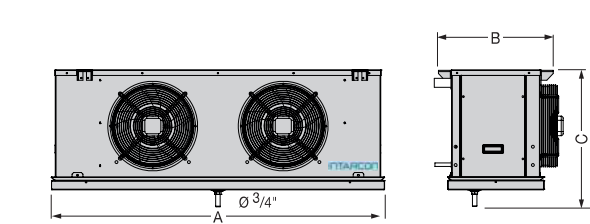
JC-NE series



Dimensions (mm)	A	B	C
1 series	1 200	530	547
2 series	1 500	530	547
3 series	1 500	530	547
4 series	1 900	530	547

All dimensions see page 59.

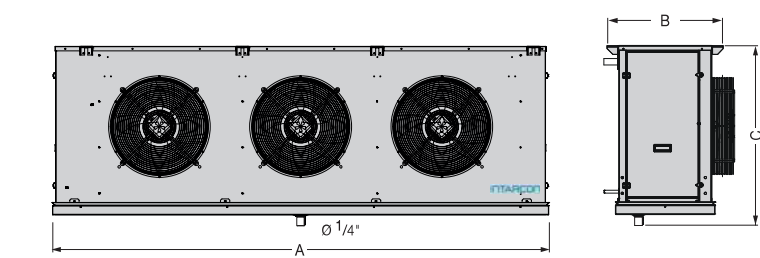
KC-NE series



Dimensions (mm)	A	B	C
0 series	880	530	581
1 series	1 230	530	581
2 series	1 530	530	581
3 series	1 930	530	581
4 series	2 430	530	581

All dimensions see page 61.

KH-NE series



Dimensions (mm)	A	B	C
11 series	1 180	625	730
21 series	1 180	625	980
12 series	1 930	625	730
22 series	1 930	625	982
13 series	2 680	625	730
23 series	2 680	625	982
14 series	3 430	625	730
24 series	3 430	625	982

All dimensions see page 65.