

intarCUBE A2L approved



- ❄️ **A2L certified units.**
- ❄️ **R-449A and R-454C refrigerants.**
- ❄️ **Free of F-Gas tax (R-454C).**
- ❄️ **F-Gas 2022 and Ecodesign compliant.**

The intarCUBE A2L approved range of footprint condensing units has been designed for medium capacity centralised commercial refrigeration applications, equipped with semi-hermetic compressors and designed to operate with either R-449A refrigerant or low GWP (< 150) slightly flammable R-454C refrigerant.

The new intarCUBE A2L approved units are positioned as an efficient and safe, low-cost investment, becoming a very good alternative to comply with the medium-term regulatory framework on fluorinated gases in the European Union.

Features

- ▶ 400V 3N 50Hz power supply. Available in 60Hz. Other voltages by request.
- ▶ Semi-hermetic Bitzer Ecoline compressors, with rotalock service valves, mounted on dampers, with crankcase resistance.
- ▶ Compressor compartment with safety ventilation against the risk of explosive atmospheres.
- ▶ Condenser coil with copper pipes and aluminium fins, with air circuit separated from the compressor compartment.
- ▶ Axial or EC radial condensation fans, with independent air volumes.
- ▶ Refrigeration circuit equipped with high and low pressure switches, ceramic dryer filter, liquid receiver and sight glass.
- ▶ Individualised electronic oil injection system per compressor (on 2-compressor models)
- ▶ Full control panel integrated in the unit, with differential, MCB protection for compressors and fans.
- ▶ Certification of the condensing unit as a whole (Ecodesign, pressure equipment, etc.).

A2L approved

A2L approved units are factory certified for use with A2L class flammable refrigerants. They are equipped with approved components and are CE-certified in accordance with European directives:

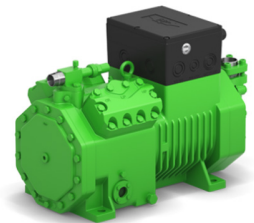
- Pressure Equipment Directive 2014/68/EU (PED) according to category III.
- Directive 2014/34/EU (ATEX).

According to the European standard UNE EN 378, the use of A2L refrigerants in this equipment does not require an explosive atmosphere risk assessment study (ATEX) within the following charge limits:

Category A of premises (supermarket, etc.)	
- Split system (cold room in back room not sectorised)	11.4 kg
- Centralised system (wall displays and showcases in sales room)	56.7 kg
Category C of premises (factories, industrial kitchens)	
- Split system with high occupancy (e.g. workshop > 1 person per 10m2)	25 kg
- In general (cold stores)	without limit

Bitzer semi-hermetic compressors

The Bitzer Ecoline series combines high performance, quiet running, robust design and high reliability.



Centrifugal version for machine room

The intarCUBE centrifugal version is supplied with the necessary safety measures for installation in machine rooms with the corresponding risk assessment for explosive atmospheres in accordance with the UNE EN-60079 standard.



400V 3N 50Hz | Positive temperature | Semi-hermetic compressor | R-449A / R-454C

Compressor	Axial version Series / Model	Compressor		R-449A		R-454C					Condenser				Radial version				
		HP	Model	Cooling capacity (kW) ⁽¹⁾		Input power (kW)	Cooling capacity (kW) ⁽¹⁾		Input power (kW)	SEPR ⁽²⁾	Max. current (A)	Fan Ø (mm)	Air flow (m³/h)	Liq-Gas Cooling Connection	Weight (kg)	SPL dB(A) ⁽³⁾	Series / Model	Air flow (m³/h)	ASP (Pa) ⁽⁴⁾
				Average evaporating temperature 0 °C	-10 °C		Average evaporating temperature 0 °C	-10 °C											
1x Sh.	MDV-TQ-6 0091	9	4CES-9Y	27.5	18.7	7.8	24.2	16.4	6.7	3.5	25	2x Ø 450	2x 4 750	1/2"-1 3/8"	289	33	MDV-TCQ-6 0091	2x 4 800	160
	MDV-TQ-6 0121	12	4TES-12Y	32.4	22.1	9.3	28.8	19.4	7.9	3.3	30	2x Ø 450	2x 4 750	5/8"-1 3/8"	337	33	MDV-TCQ-6 0121	2x 4 800	160
2x Semihermético	MDV-TQ-6 0062	6	2x 2DES-3Y	22.8	15.2	6.2	20.0	13.3	5.3	4.1	22	2x Ø 450	2x 4 750	1/2"-1 1/8"	344	31	MDV-TCQ-6 0062	2x 4 800	160
	MDV-TQ-6 0102	10	2x 4FES-5Y	29.8	20.4	8.6	26.4	17.8	7.4	4.2	26	2x Ø 450	2x 4 750	1/2"-1 3/8"	380	32	MDV-TCQ-6 0102	2x 4 800	160
	MDV-TQ-6 0142	14	2x 4DES-7Y	39.4	27.6	12.6	35.5	24.3	10.9	3.9	38	2x Ø 450	2x 4 750	5/8"-1 5/8"	390	35	MDV-TCQ-6 0142	2x 4 800	160
	MDV-TQ-7 0182	18	2x 4CES-9Y	52.2	36.3	15.8	46.6	31.7	13.7	4.1	47	3x Ø 450	3x 4 750	7/8"-1 5/8"	483	36	MDV-TCQ-7 0182	2x 7 125	250
	MDV-TQ-7 0242	24	2x 4TES-12Y	60.5	42.3	18.7	54.6	37.2	16.1	4.0	57	3x Ø 450	3x 4 750	7/8"-2 1/8"	579	36	MDV-TCQ-7 0242	2x 7 125	250

400V 3N 50Hz | Negative temperature | Semi-hermetic compressor | R-449A / R-454C

Compressor	Axial version Series / Model	Compressor		R-449A		R-454C					Condenser				Radial version				
		HP	Model	Cooling capacity (kW) ⁽¹⁾		Input power (kW)	Cooling capacity (kW) ⁽¹⁾		Input power (kW)	SEPR ⁽²⁾	Max. current (A)	Fan Ø (mm)	Air flow (m³/h)	Liq-Gas Cooling Connection	Weight (kg)	SPL dB(A) ⁽³⁾	Series / Model	Air flow (m³/h)	ASP (Pa) ⁽⁴⁾
				Average evaporating temperature -25 °C	-35 °C		Average evaporating temperature -25 °C	-35 °C											
1x Sh.	BDV-TQ-6 0181	18	4HE-18Y	19.2	10.8	7.9	16.8	9.6	7.0	1.9	41	2x Ø 450	2x 4 750	1/2"-1 5/8"	381	38	BDV-TCQ-6 0181	2x 4 800	160
	BDV-TQ-6 0281	28	4FE-28Y	25.3	14.8	11.3	22.4	13.0	10.0	1.8	58	2x Ø 450	2x 4 750	1/2"-2 1/8"	397	43	BDV-TCQ-6 0281	2x 4 800	160
2x Semiherm.	BDV-TQ-6 0182	18	2x 4TES-9Y	20.0	10.9	8.2	17.5	9.6	7.2	2.0	45	2x Ø 450	2x 4 750	1/2"-1 5/8"	476	39	BDV-TCQ-6 0182	2x 4 800	160
	BDV-TQ-6 0282	28	2x 4NES-14Y	25.4	14.2	10.9	22.4	12.5	9.7	2.0	58	2x Ø 450	2x 4 750	1/2"-2 1/8"	482	42	BDV-TCQ-6 0282	2x 4 800	160
	BDV-TQ-7 0362	36	2x 4HE-18Y	36.7	21.0	15.7	32.1	18.5	14.0	2.1	80	3x Ø 450	3x 4 750	5/8"-2 1/8"	667	41	BDV-TCQ-7 0362	2x 7 125	250
	BDV-TQ-7 0562	56	2x 4FE-28Y	47.2	28.3	22.3	42.4	25.0	19.8	2.0	113	3x Ø 450	3x 4 750	5/8"-2 5/8"	699	46	BDV-TCQ-7 0562	2x 7 125	250

Options

- ▶ CRIL capacity control system on compressor.
- ▶ Anti-corrosion coating of condenser coil.
- ▶ Automatic emergency manoeuvre.
- ▶ Low voltage and phase change protection.
- ▶ Heat recovery (20 or 80 % condenser heat) for hot water generation.
- ▶ Safety system for monitoring the risk of explosive atmospheres, for installation in machinery rooms.

⁽¹⁾ Conditions according to UNE-EN 13215: Ambient temp. 32 °C, average evaporating temp. of -10 °C (PT) and -35 °C (NT), SH=10 K, refrigerant R-449A and R-454C.

⁽²⁾ Seasonal Performance Factor (SEPR) according to Commission Regulation (EU) 2015/1095.

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

⁽⁴⁾ Available static pressure condensation for air ducts.

R-454C

The refrigerant R-454C is a very low global warming potential refrigerant (GWP < 150) and is exempt from the prohibitions of the F-Gas regulation.

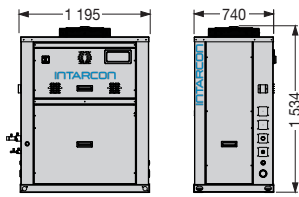
R-454C is a slightly flammable mixture of HFO and HFC refrigerants, which implies additional safety measures in equipment to manage the risk of formation of explosive atmospheres.

The working pressures and mass displacement of the compressor are somewhat lower than those of the R-449A refrigerant, so the cooling capacity developed is also 10-15% lower.

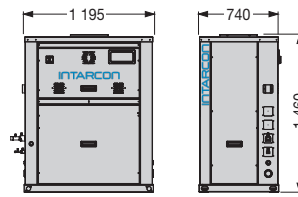
Features	R-449A	R-454C
Composition	HFC-HFO	HFO-HFC
Molecular weight	87.2	90.8
Relative density	3.1	3.2
Flammability limit	-	7,7%-15%
Boiling point [°C]	-46	-46
Slip [K]	6.1	7.8
PS (63°C) [bar] GWP (IPCC AR4)	30.2	26.8
GWP (IPCC AR4)	1398	146
Safety class	A1	A2L

Dimensions

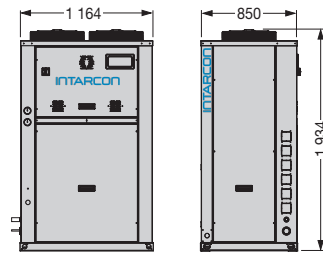
5 series - axial



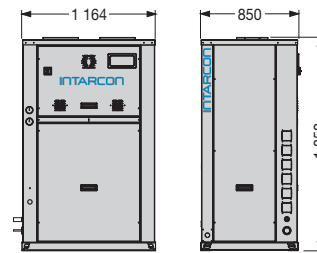
5 series - centrifugal



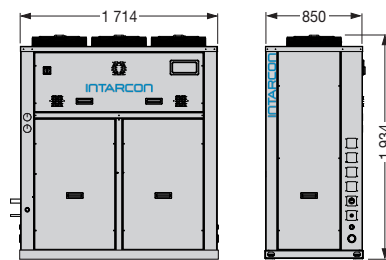
6 series - axial



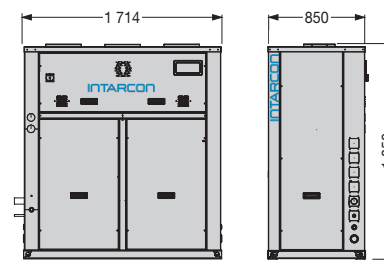
6 series - centrifugal or radial with vertical drive



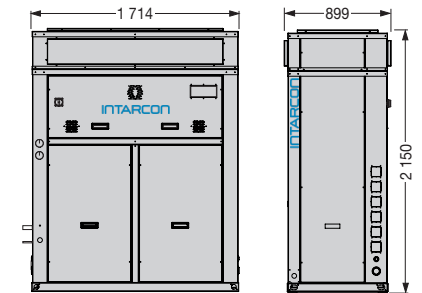
7 series - axial



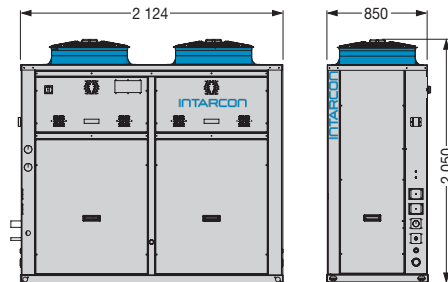
7 series - centrifugal



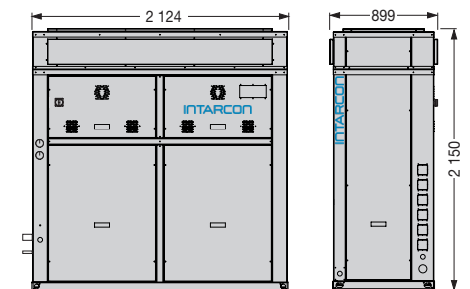
7 series - radial with vertical drive



8 series - axial



8 series - radial with vertical drive



Dimensions in mm.

Electronic control

XC control for mini refrigeration units: intarCUBE condensing units are equipped with an electronic controller:

- ▶ Capacity control by suction pressure.
- ▶ Compressor and fan management with proportional condensation control.
- ▶ Low and high pressure transducers.
- ▶ Safety control.
- ▶ Optional emergency manoeuvre by means of adjustable pressure switches with manual or automatic activation.
- ▶ Evaporator solenoid permit.



Optional

XM670K Control for cold room: intarCUBE units with one or two compressors can be equipped with joint control of evaporator and condensing unit.

- ▶ Capacity control by temperature, with management of up to 2 compressors or two power stages.
- ▶ Control of up to two independent defrosts for two evaporators in the same cold room.
- ▶ Proportional condensation control.
- ▶ Remote control.

