DAIKIN

Refrigeration

throughout the whole supply chain

2025
NEW

Daikin is a strong challenger in the refrigeration market. We can create the ideal solution for each customer's specific situation.

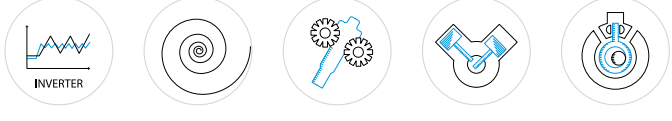
As our products contain the latest technologies we ensure the highest energy efficiency. Our units are rigorously tested in order to provide you reliable operation.

With the acquisition of the Zanotti, Tewis and AHT groups, we expand our refrigeration business providing a larger and more diverse product line for all aspects in the cold chain.

Cold Chain

Any refrigeration system that contains fluorinated greenhouse gases is in scope of the F-gas regulations. For fully/partially pre-charged equipment: contains fluorinated greenhouse gases. Actual refrigerant charge depends on the final unit construction, details can be found on the unit labels.
For non pre-charged equipment (including, but not limited to racks): its functioning relies on fluorinated greenhouse gases.
The F-gas regulations do not apply to systems that contain only natural refrigerants such as propane (R-290) and carbon dioxide (R-744).

Refrigerant	GWP AR4	GWP AR5
R-134A	1,430	1,300
R-407C	1,774	1,620
R-407F	1,825	1,670
R-407H	1,490	1,380
R-410A	2,088	1,920
R-448A	1,387	1,270
R-449A	1,397	1,280
R-452A	2,141	1,945
R-290	3	3
R-744	1	1



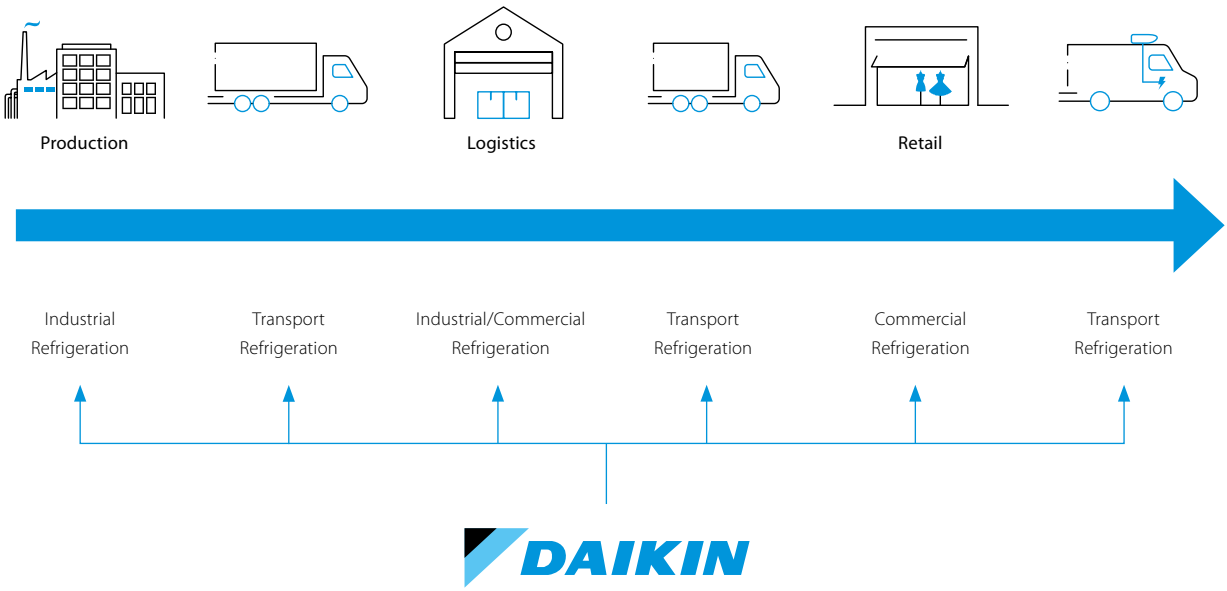
Inverter technology | Scroll compressor | Screw compressor | Reciprocating compressor | Swing compressor

For latest data, please consult **my.daikin.eu**

Cold Chain Expertise
From production to delivery

Reshaping the future of cold chain supply
Combining refrigeration expertise with innovative technology, Daikin's comprehensive product portfolio delivers integrated temperature control solutions that improve quality and safety through every link in the distribution process from point of origin to the final consumer. Our range of products and services provide the flexibility to meet diverse customer needs across a range of applications, during production, storage, retail and transit. Energy-efficient technologies with low-GWP refrigerants provide reliable and cost-effective operation, safeguarding perishable supplies, whatever the climate, while protecting the environment. We will leverage our strengths **to cover the entire cold chain.**

Covering the entire cold chain
Industrial-Commercial-Transport Refrigeration



Vision 2050

Daikin Environmental Policy

Adopted in 2015, the Paris Agreement contains a target for the latter half of this century of reducing greenhouse gas emissions to net zero and limiting global warming by less than 2°C compared to pre-industrial levels. In the spirit of the Paris Agreement, Daikin has formulated Environmental Vision 2050, with a target of reducing greenhouse gas emissions to net zero by 2050. We have established a reduction target for 2030 and incorporated this into our efforts under the Fusion 25 Strategic Management Plan.

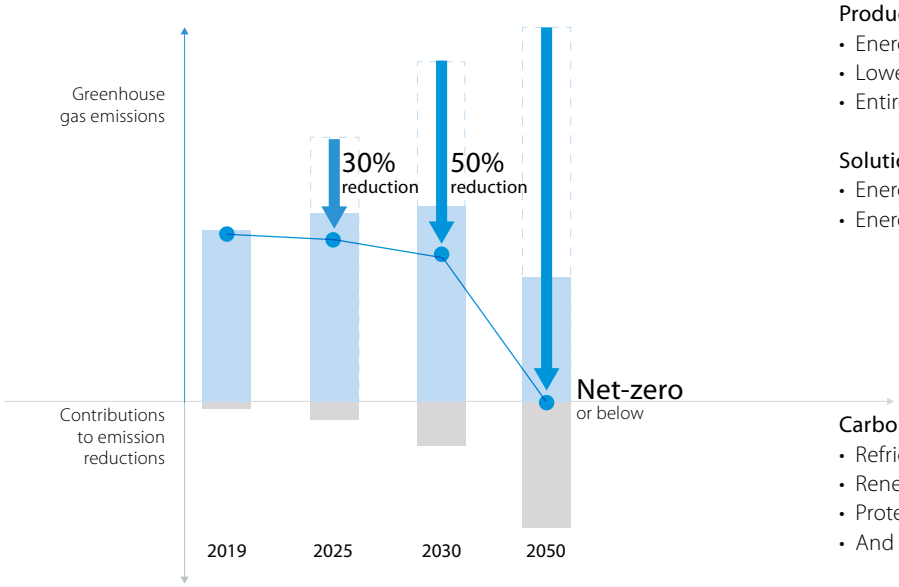
Our Vision 2050

We will effectively eliminate the greenhouse gas emissions generated throughout the entire lifecycle of our products by 2050. Furthermore, we are committed to creating solutions that link society and customers as we work with stakeholders to reduce greenhouse gas emissions to net-zero. Using IoT and open innovation, we will meet the world's needs for air solutions by providing safe and healthy air environments while at the same time contributing to solving global environmental problems.

Refrigeration Medium-Term Outlook

In our Cold Chain business, we are moving towards low-GWP and HFC-free natural refrigerants, while ensuring the correct safety standards are established in our markets. We maintain continuous focus on reducing the energy consumption of all our products. In the Transport Refrigeration industry, we will strive to lead the shift towards electrification and phasing-down of the reliance on combustion engine technologies.

Net-zero product lifecycle



Products
- Energy efficient products
- Lower global warming refrigerants
- Entire product lifecycle

Solutions
- Energy management systems
- Energy services

Carbon Offset
- Refrigerant recovery and recycle
- Renewable energy use
- Protecting forests
- And more...

Why choose Daikin?

We know refrigeration inside out

- We have over 100 years of experience in the Refrigeration business.
- We can meet all refrigeration needs from farm to fork, thanks to our wide range of refrigeration products.
- Innovative and reliable own technology and expertise on refrigerants, controls and compressors!
- Your advisor for solutions to meet your needs in line with legislation (F-gas regulation, ecodesign,...) and with focus on reliability, safety, Total Equivalent Warming Impact and running cost.

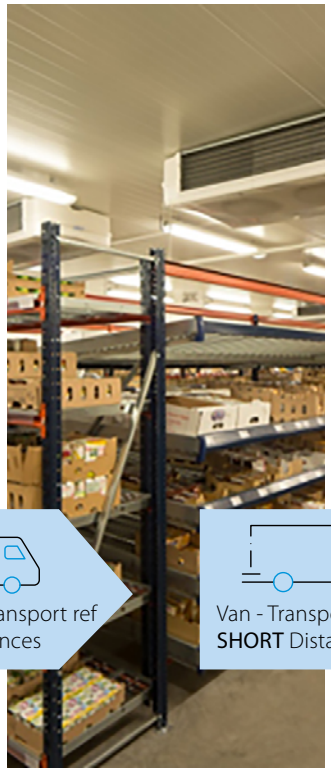
Controlled temperatures throughout the whole supply chain

Post harvest processing

Truck - Transport ref
Long Distances

Food processing

Light truck - Transport ref
MEDIUM Distances



Warehousing

Van - Transport ref
SHORT Distances

Food retail

Restaurants/pubs

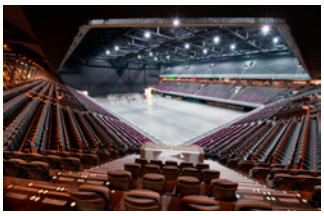
Home delivery solutions

Pharma solutions

We can meet all refrigeration needs from farm to fork

Our extended product line-up is able to provide solutions for:

Food retail



Event spaces

Cold storage

Catering

Chilled transport

Hotels

Ice skating rinks

Cleanrooms/hospitals

Brewery

Bar

Fishery

Seasoning (cheese/meat)

Butchers

Restaurants

Industry

We can fulfill any refrigeration need

...

Daikin Refrigeration – United Beyond Cold

Daikin Europe N.V. is a major European producer of air conditioners, heating systems and refrigeration equipment, with approximately 5,500 employees throughout Europe and major manufacturing facilities based in Belgium, the Czech Republic, Germany, Italy, Turkey and the UK. Globally, Daikin is renowned for its pioneering approach to product development and the unrivalled quality and versatility of its integrated solutions.

Hubbard Products Ltd., is one of the UK's leading designers, manufacturers and suppliers of commercial cooling equipment and has earned an enviable Global reputation for innovation and design-led excellence.

AHT develops, manufactures and sells refrigerating and freezing showcases specifically suited for food retailers. Leading the "plug-in" type showcases segment, AHT leads the market by the active launch of new products corresponding to evolving store layouts. Furthermore, utilizing its technological capabilities and business resources, AHT serves large accounts which include major food retail chains worldwide.

Tewis is a leading company in the design and engineering of refrigeration systems. Along with their expertise in customising controls (including monitoring), Tewis offers total comprehensive solutions for Refrigeration and Climate applications. Over the last few years, Tewis has focused on developing a range of CO_2 based refrigeration systems and has established a long-lasting relationship with key Spanish and Portuguese food retailers. Its mission and philosophy to date has been to achieve high reliability and realise remarkable energy savings for their customer base.

Zanotti is a refrigeration specialist founded in 1962. With over 50 years of experience in food storing services covering the needs of commercial and industrial refrigeration, but also the needs of the transportation of fresh and frozen products. Zanotti changed the refrigeration world from the early days with the introduction of the Uniblock, an all in one plug and play refrigeration unit for cold rooms. Today they employ more than 600 people, with three production facilities and an annual turnover of approx 130 million Euro.

Meeting customer needs!

Depending on type of application, location and customers interest/values, the optimal refrigeration solution for the customer can potentially be different! **Thanks to our wide product portfolio, Daikin can offer what a customer really needs!**

The DNA of our Advice is:

- ☑ Safety and Reliability
- ☑ Reducing the Total Equivalent Warming Impact (TEWI)

TEWI =

DIRECT warming impact	+	INDIRECT warming impact
Refrigerant used		CO_2 emissions of electricity production
TACKLED BY		
F-gas legislation		Eco design directive
POTENTIAL IMPACT (when leakage occurs)		GUARANTEED IMPACT linked to energy consumption

Reduction of CO_2 emissions is one of the main priorities for the future. A refrigeration plant's global warming effect is the combination of the possible refrigerant losses (Direct warming impact) and the CO_2 emissions caused by electricity production (Indirect warming impact). Country per country situation is different, however on average in Europe CO_2 release at energy production is quite high (average 0.45kg/kwh of Electrical Energy)! Due to this, there is a significant greenhouse effect over the lifetime of the refrigeration plant and efficiency is thus one of the crucial focus points in reducing TEWI!
When various refrigeration solutions are being compared it is thus important to take into account both aspects as in some cases optimizing the direct warming impact (eg: changing refrigerant) will have an opposite effect on the indirect warming impact!

☑ Reducing your running cost

Through focus on reliability & quality, through extensive testing on each product, and energy efficiency our aim is to reduce your operational cost to the absolute minimum!

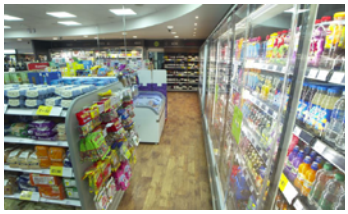
E. Leclerc, hypermarket
ZEAS

Beer cooling facility,
chilled with ZEAS

Edeka, supermarket
Conveni-pack (2) and ZEAS (1)

Coombe Fisheries
High-performance Zanotti LT refrigeration equipment

Ziggo dome, event hall
ZEAS for cooling (6) and freezing (2)



Service station
ZEAS

Monoblocks

LMS/LMC

The monoblock of the future

Inverter technology & EEV

Benefits

- Efficiency – lower running costs (up to 40%)
- Stable cold room temp (less dehumidification and better food conservation)
- Less defrost cycles (more energy savings)
- No peak currents

Smart controls

Benefits

- Smart controls for end user
- Advance controls for installers including remote monitoring (life)

3 Year warranty

Benefits

- Peace of mind that ROI will take place

One unit for all needs and applications (low and medium temp)

Benefits

- Flexible use of Cold room
- Lower stock for Wholesalers

R290 + Low refrigerant charge

Benefits

- 1. Daikin quality
- Future proof (GWP = 0.02)
- Low ecological footprint
- No specific safety countermeasure required

Ceiling- and Wall-mounted range

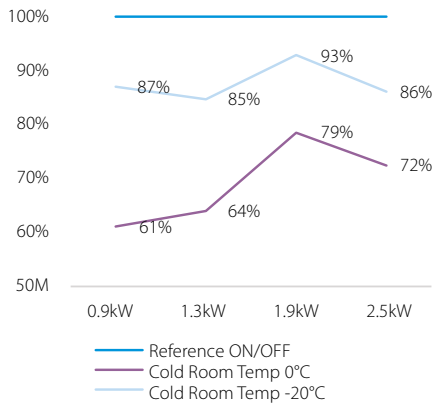
Benefits

- Installation flexibility
- A monoblock for any situation
- Combinable with other solution (SPI)

Proven efficiency in all climate areas

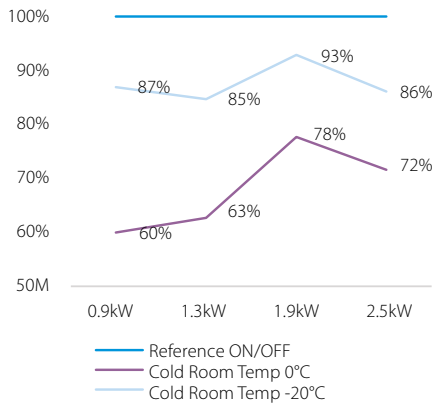
Cold climate: Stockholm

Yearly energy consumption



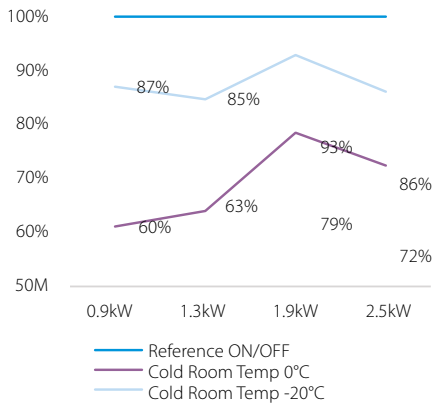
Average climate: Munich

Yearly energy consumption



Hot climate: Madrid

Yearly energy consumption



The full controls of LMC in your hands

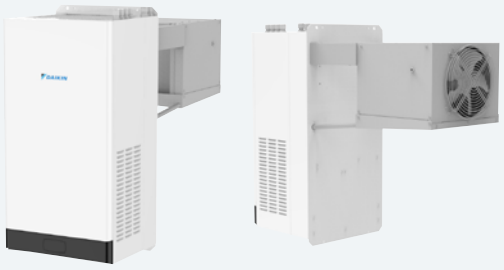
End user: Extended control

- Extended functionalities and controls over the LMS/LMC without the need to get close to the unit

Installer: Full control

- Extended functionalities and controls over the LMS/LMC only accessible for the installer
- Real Remote monitoring, enabling installers to monitor their customers units real-time

Inverter Monoblock for Refrigeration | Model A



Model A

Inverter technology

Reciprocating compressor

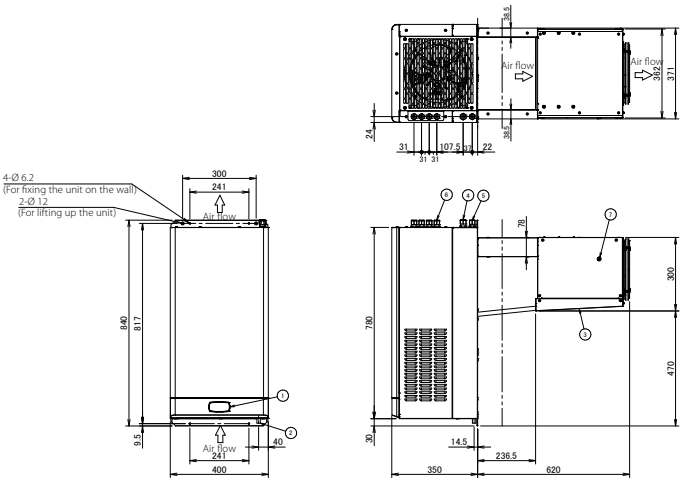
Auto fan speed

Auto-restart

Self-diagnosis

Standard equipment

- Inverter driven hermetic reciprocating compressor
- 50/60 Hz power supply
- CE certified
- Microchannel condenser
- Filter dryer
- Condenser fan ON/OFF controlled by temperature probe
- Electronic thermal expansion valve
- Condensate evaporation tray
- Hot gas defrost
- Propane refrigerant charge => 150gr
- Electronic control board
- Electrical switchboard with protection fuses
- Fixed calibration HP switch with automatic reset
- Automatic elimination of condensation water
- 5 m cable for power supply
- 2 m cold room lighting cable (Light bulb and bulb as option)
- 5 m micro-switch door cable (Microswitch as option)
- 5 m cable for door heater



LMSEY

			LMSEY1A-AVM01	LMSEY1A09AVM01	LMSEY1A13AVM01
Dimensions of the unit	Height	mm	780		
	Depth	mm	970		
	Width	mm	400		
Dimensions of the packaged unit	Height	mm	1,030		
	Depth	mm	1,050		
	Width	mm	500		
Weight of the unit	Weight	kg	52		
Weight of the packaged unit	Weight	kg	66		
Characteristics of the hole where to accommodate the units (through the wall installation	Height	mm	335		
	Width	mm	375		
Characteristics of the holes where to accommodate the units (straddle installation)	Height	mm	83		
	Width	mm	43		
Refrigerant	Type		R290		
	GWP		3		
N° of circuits			1		
Refrigerant	Charge per circuit	kg	0.15		
Power supply	Voltage/phase/frequency	V/ph/Hz	230/1/50-60		
Voltage range (Min/Max)		V	207V/253V		
Rated input power		W	807 (MT) / 523 (LT)		1,103 (MT) / 750 (LT)
Rated input current		A	3,593 (MT) / 2,357 (LT)		4,912 (MT) / 3,380 (LT)
MCA (Max Current Amps)		A	5.9		7.6
MFA (Max Fuse Amps)		A	15		
TOCA (Total overcurrent Amps)		A	9.3		
Compressor	Type		Hermetic reciprocating inverter driven		
Air flow rate condenser (1)		m^3/h	555		
Air flow rate evaporator (1)		m^3/h	597		
Air throw evaporator (2)		m	9.6		
PED category			I		
IP category			20		
Defrost	Type		Hot gas		
Operating sound pressure (3)		dBA	39.4		
Operation range ambient temp.	Min	°C	5		
	Max	°C	45		
Operation range cold room temp.	Min	°C	-25		
	Max	°C	10		

(1) According to EN ISO 5801 | (2) According to CECOMAF GT 6-001 (final velocity = 0.25 m/s) | (3) According to UNI EN ISO 3746

Inverter Monoblock for Refrigeration | Model B

Model B

Inverter technology

Reciprocating compressor

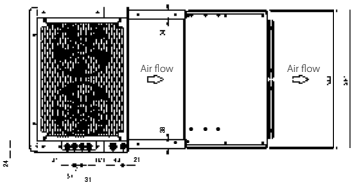
Auto fan speed

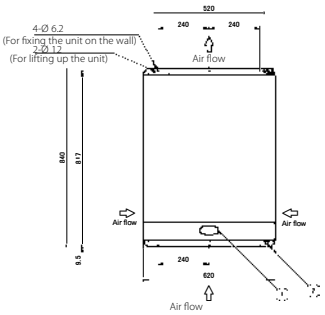
Auto-restart

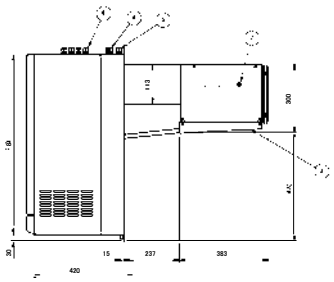
Self-diagnosis

Standard equipment

- Inverter driven hermetic reciprocating compressor
- 50/60 Hz power supply
- CE certified
- Microchannel condenser
- Filter dryer
- Condenser fan ON/OFF controlled by temperature probe
- Electronic thermal expansion valve
- Condensate evaporation tray
- Hot gas defrost
- Propane refrigerant charge (each circuit) => 130gr
- Electronic control board
- Electrical switchboard with protection fuses
- Fixed calibration HP switch with automatic reset
- Automatic elimination of condensation water
- 5 m cable for power supply
- 2 m cold room lighting cable (Light bulb and bulb as option)
- 5 m micro-switch door cable (Microswitch as option)
- 5 m cable for door heater





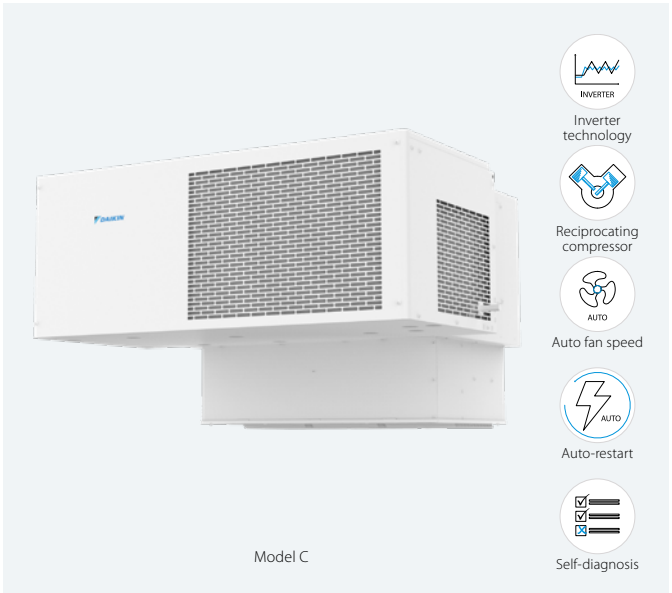


LMSEY

			LMSEY2A-AYE01	LMSEY2A19AYE01	LMSEY2A25AYE01
Dimensions of the unit	Height	mm	780		
	Depth	mm	1,040		
	Width	mm	620		
Dimensions of the packaged unit	Height	mm	1,030		
	Depth	mm	1,120		
	Width	mm	720		
Weight of the unit	Weight	kg	83.5		
Weight of the packaged unit	Weight	kg	107.5		
Characteristics of the hole where to accommodate the units (through the wall installation	Height	mm	335		
	Width	mm	595		
Characteristics of the holes where to accommodate the units (straddle installation)	Height	mm	177		
	Width	mm	43		
Refrigerant	Type		R290		
	GWP		3		
N° of circuits			2		
Refrigerant	Charge per circuit	kg	0.13		
Power supply	Voltage/phase/frequency	V/ph/Hz	400/3/50-60		
Voltage range (Min/Max)		V	360V/440V		
Rated input power		W		1,765 (MT) / 1,208 (LT)	2,275 (MT) / 1,563 (LT)
Rated input current		A		4,645 (MT) / 3,179 (LT)	5,987 (MT) / 4,113 (LT)
MCA (Max Current Amps)		A		11.3	14.6
MFA (Max Fuse Amps)		A	25		
TOCA (Total overcurrent Amps)		A	18.5		
Compressor	Type		Hermetic reciprocating inverter driven		
Air flow rate condenser (1)		m^3/h	939		
Air flow rate evaporator (1)		m^3/h	1,114		
Air throw evaporator (2)		m	9.6		
PED category			I		
IP category			20		
Defrost	Type		Hot gas		
Operating sound pressure (3)		dBA	43.9		
Operation range ambient temp.	Min	°C	5		
	Max	°C	45		
Operation range cold room temp.	Min	°C	-25		
	Max	°C	10		

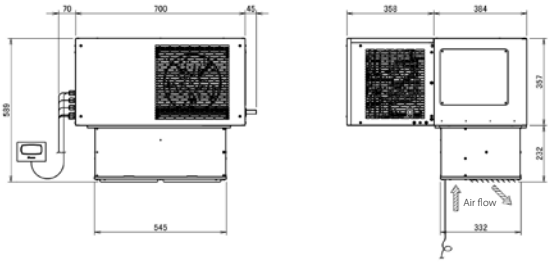
(1) According to EN ISO 5801 | (2) According to CECOMAF GT 6-001 (final velocity = 0.25 m/s) | (3) According to UNI EN ISO 3746

Inverter Monoblock for Refrigeration | Model C



Standard equipment

- Inverter driven hermetic reciprocating compressor
- 50/60 Hz power supply
- CE certified
- Filter dryer
- Electronic expansion valve
- Hot gas defrost
- Electronic control board
- Electrical switchboard with protection fuses
- Fixed calibration HP switch with automatic reset
- 5 m cable for power supply
- 2 m cold room lighting cable (Light bulb and bulb as option)
- 5 m micro-switch door cable (Microswitch as option)
- 5 m cable for door heater
- Remote control panel (as standard)
- 5m cable for remote control panel
- Microchannel air cooled condenser

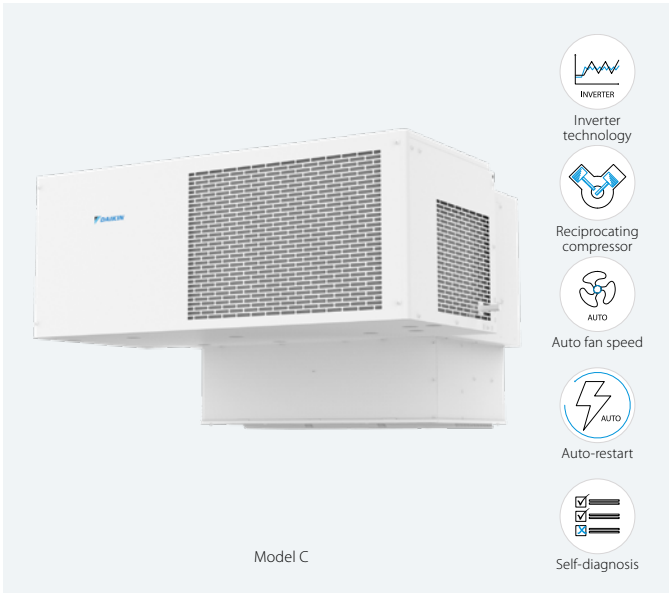


LMCEY

				LMCEY1A13AVM01
Dimensions of the unit	Height		mm	578
	Depth		mm	742
	Width		mm	700
Dimensions of the packaged unit	Height		mm	754
	Depth		mm	780
	Width		mm	882
Weight of the unit	Weight		kg	60
Weight of the packaged unit	Weight		kg	81
Characteristics of the hole where to accommodate the units (through the wall installation	Height		mm	337
	Width		mm	550
Refrigerant	Type			R-290
	GWP			3
N° of circuits				1
Refrigerant	Charge per circuit		kg	0.15
Power supply	Voltage/phase/frequency		V/ph/Hz	230/1/50-60
Voltage range (Min/Max)			V	230 +/-10%
MCA (Max Current Amps)			A	7.6
MFA (Max Fuse Amps)			A	15
Compressor	Type			Hermetic reciprocating inverter driven
Air flow rate condenser (1)			m^3/h	532
Air flow rate evaporator (1)			m^3/h	336
Air throw evaporator (2)			m	1.3
PED category				Art4.3
IP category				20
Defrost		Type		Hot gas
Operating sound pressure (3)			dBA	38
Operation range ambient temp.		Min	°C	5
		Max	°C	45
Operation range cold room temp.		Min	°C	-25
		Max	°C	10

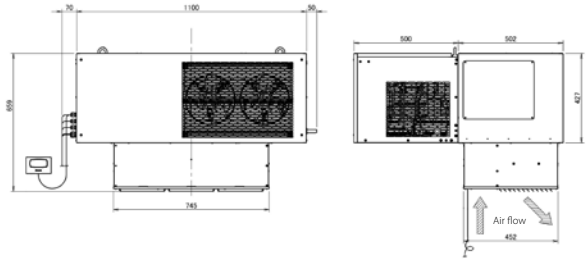
(1) According to EN ISO 5801 | (2) According to CECOMAF GT 6-001 (final velocity = 0.25 m/s) | (3) According to UNI EN ISO 3746

Inverter Monoblock for Refrigeration | Model D



Standard equipment

- Inverter driven hermetic reciprocating compressor
- 50/60 Hz power supply
- CE certified
- Filter dryer
- Electronic expansion valve
- Hot gas defrost
- Electronic control board
- Electrical switchboard with protection fuses
- Fixed calibration HP switch with automatic reset
- 5 m cable for power supply
- 2 m cold room lighting cable (Light bulb and bulb as option)
- 5 m micro-switch door cable (Microswitch as option)
- 5 m cable for door heater
- Remote control panel (as standard)
- 5m cable for remote control panel
- Microchannel air cooled condenser



LMCEY

				LMCEY2A19AYE01	LMCEY2A25AYE01
Dimensions of the unit	Height		mm	659	659
	Depth		mm	1,002	1,002
	Width		mm	1,100	1,100
Dimensions of the packaged unit	Height		mm	881	881
	Depth		mm	1,061	1,061
	Width		mm	1,300	1,300
Weight of the unit	Weight		kg	101	101
Weight of the packaged unit	Weight		kg	154	154
Characteristics of the hole where to accommodate the units (through the wall installation	Height		mm	458	458
	Width		mm	750	750
Refrigerant	Type			R-290	R-290
	GWP			3	3
N° of circuits				2	2
Refrigerant	charge per circuit		kg	0.13	0.13
Power supply	Voltage/phase/frequency		V/ph/Hz	400/3/50-60	400/3/50-60
Voltage range (Min/Max)			V	400 +/-10%	400 +/-10%
MCA (Max Current Amps)			A	11.3	14.6
MFA (Max Fuse Amps)			A	25	25
Compressor	Type			Hermetic reciprocating inverter driven	Hermetic reciprocating inverter driven
Air flow rate condenser (1)			m^3/h	1,030	1,030
Air flow rate evaporator (1)			m^3/h	865	865
Air throw evaporator (2)			m	1.7	1.7
PED category				Art4.3	Art4.3
IP category				20	20
Defrost		Type		Hot gas	Hot gas
Operating sound pressure (3)			dBA	44	44
Operation range ambient temp.		Min	°C	5	5
		Max	°C	45	45
Operation range cold room temp.		Min	°C	-25	-25
		Max	°C	10	10

(1) According to EN ISO 5801 | (2) According to CECOMAF GT 6-001 (final velocity = 0.25 m/s) | (3) According to UNI EN ISO 3746

On/Off Monoblock for Refrigeration

PS

Ceiling mounted version coming soon!

Standard equipment

- 1 year warranty
- 50 Hz power supply
- CE certified
- Ambient working temperature: +5°C ÷ +45°C
- Cold room working temperature: MT +10°C / -5°C | LT -15°C / -25°C
- MT and LT in separate models
- Hermetic reciprocating compressor
- Suitable for 100mm and 150mm panel
- Fin&tube condenser
- Fin&tube evaporator
- Filter dryer
- Thermal expansion valve
- Condensate evaporation tray with automatic elimination of condensation water
- Fixed calibration HP switch with automatic reset
- Hot gas defrost
- Propane refrigerant charge 150 gr max per circuit
- Electronic control board
- Master slave connection
- Serial output
- Predisposition for connection of "Man in cold room" alarm

- 5m cable for power supply
- 2m cold room lighting cable (Light bulb holder and bulb as option)
- 5m microswitch door cable (Microswitch as option)
- 5m cable for door heater (LT units only)

			MPS1107YA11A	MPS1110YA11A	MPS3112YA11A	MPS3220YA11A	BPS3112YA11A	BPS3115YA11A	BPS3224YA11A	BPS3230YA11A
Application			Medium temperature units				Low temperature units			
Dimensions of the unit	Height	mm	745		850					
	Depth	mm	935		1,010					
	Width	mm	400		650					
Dimensions of the packaged unit	Height	mm	982		1,082					
	Depth	mm	985		1,040					
	Width	mm	445		684					
Weight of the unit	Weight	kg	50		87.6	93	87.6		105.4	
Weight of the packaged unit	Weight	kg	62.5		110.1	115.5	110.1		127.9	
Characteristics of the hole where to accommodate the units (through the wall installation)	Height	mm	335		335					
	Width	mm	375		585					
Characteristics of the holes where to accommodate the units (straddle installation)	a	mm	43		40					
	b	mm	288		470					
	c	mm	43		60					
	d	mm	88		145					
	e	mm	19							
	f	mm	28							
	g	mm	321		320	420	320		420	
Refrigerant	Type		R290							
	GWP		3							
N° of circuits			1			2	1		2	
Refrigerant	Charge per circuit	kg	0.15 max / circuit							
Power supply	Voltage/phase/frequency	Vac/ph/Hz	230/1N~/50Hz							
Voltage range (Min/Max)		V	207-250							
Rated input power		W	580	750	1,430	1,840	1,090	1,240	1,740	2,040
Rated input current		A	3.76	3.68	6.86	8.58	5.62	6.06	9.22	10.1
Max input power		W	900	920	1,680	2,140	1,310	1,680	2,250	2,985
MCA (Max Current Amps)		A	4.89	4.99	9.12	11.62	7.12	9.12	12.22	16.22
MFA (Max Fuse Amps)		A	10							
TOCA (Total overcurrent Amps)		A	23	29	49	68	37	43	72	84
Compressor	Type		Hermetic reciprocating (ON/OFF controlled)							
Air flow rate condenser (1)		m^3/h	530	530	930	1,030	930	930	1,030	1,030
Air flow rate evaporator (1)		m^3/h	590	590	1,150	1,230	1,150	1,150	1,230	1,230
Air throw evaporator (2)		m	5	5	5	5	5	5	5	5
PED category			I							
IP category			IPX0							
Defrost			Hot gas							
Condenser operating sound pressure (3)		dBA (10m)	38.5		47.5					
Operation range ambient temperature	Min	°C	5							
	Max	°C	45							
Operation range cold room temperature	Min	°C	-5				-25			
	Max	°C	10				-15			

(1) According to EN ISO 5801 | (2) According to CECOMAF GT 6-001 (final velocity = 0.25 m/s) | (3) According to UNI EN ISO 3746

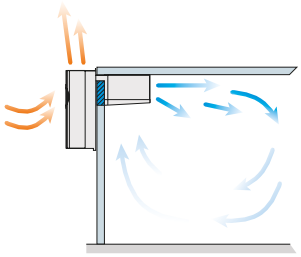
Water-cooled monoblock system for low and medium temperature refrigeration

For wall mounted installation in small and medium sized cold rooms

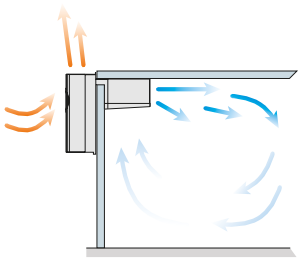
- Rapid mounting on the wall of the cold room by straddlemounting, which is ideal for new installations or through-wall mounting and refurbishment projects
- Metallic grey coloured finish of the outdoor unit
- The white colour of the evaporator blends unobtrusively with the
- cold room walls
- BHPE condenser (Brazed Plate Heat Exchanger)
- The units are provided with a control panel with an easy-to-use interface

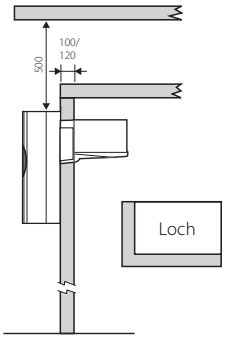
Installation type

Through- wall model

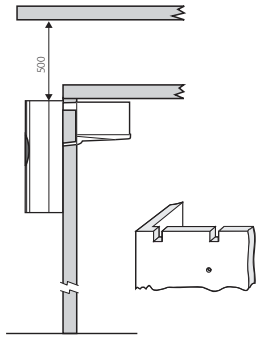


Straddle model



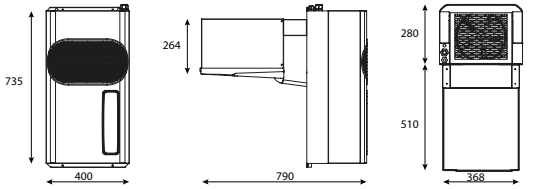


Through- wall model

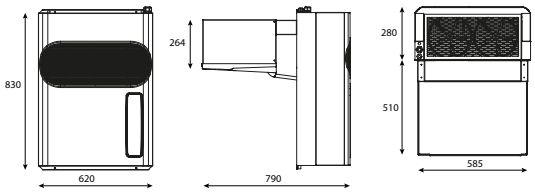


Straddle model

MGM1280-BGM0870



MGM2210



Medium temperature units		MGM1280Y1WAA	MGM2210Y1WAA
Refrigerant		R290	
Power supply	V/Ph~/Hz	220-230/1N~/50	
HP compressor		0.56	0.9
Defrost		Hot gas	
PED category		0	
Working temperature	°C	+10/-5	
Cooling capacity [TC=0°C | TW=32°C]	Watt	1,338	2,266

Low temperature units		BGM0870Y1WAA
Refrigerant		R290
Power supply	V/Ph~/Hz	220-230/1N~/50
HP compressor		0.9
Defrost		Hot gas
PED category		0
Working temperature	°C	-15/-25
Cooling capacity [TC=-20°C | TW=32°C]	Watt	881

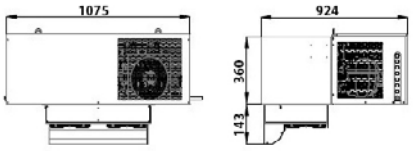
Water-cooled monoblock system for low and medium temperature refrigeration

For roof mounted installation in small

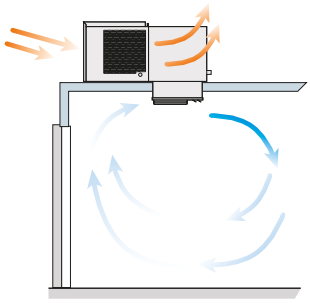
and medium sized cold rooms

- Rapid mounting on the roof of the cold room
- Ceiling assembly leaves the space inside the cold room completely free
- The white colour of the evaporator blends unobtrusively with the cold room walls
- Extremely fast to assemble, reducing installation time and cost
- Best surface-to-capacity ratio
- BHPE condenser (Brazed Plate Heat Exchanger)
- Remote electronic command station with easy-to-use user interface programmable according to various system requirements

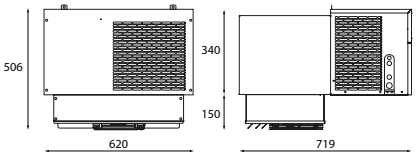
BSB1710



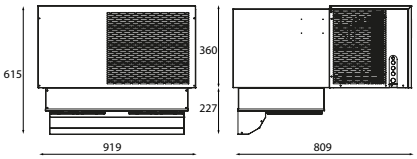
Installation type



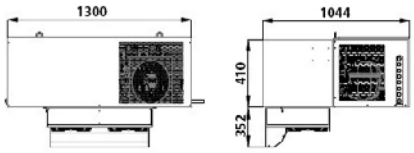
MSB1310 - BSB0870



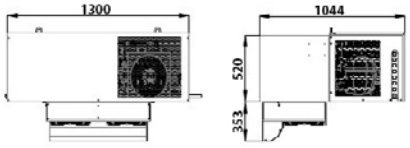
MSB2181



MSB3371

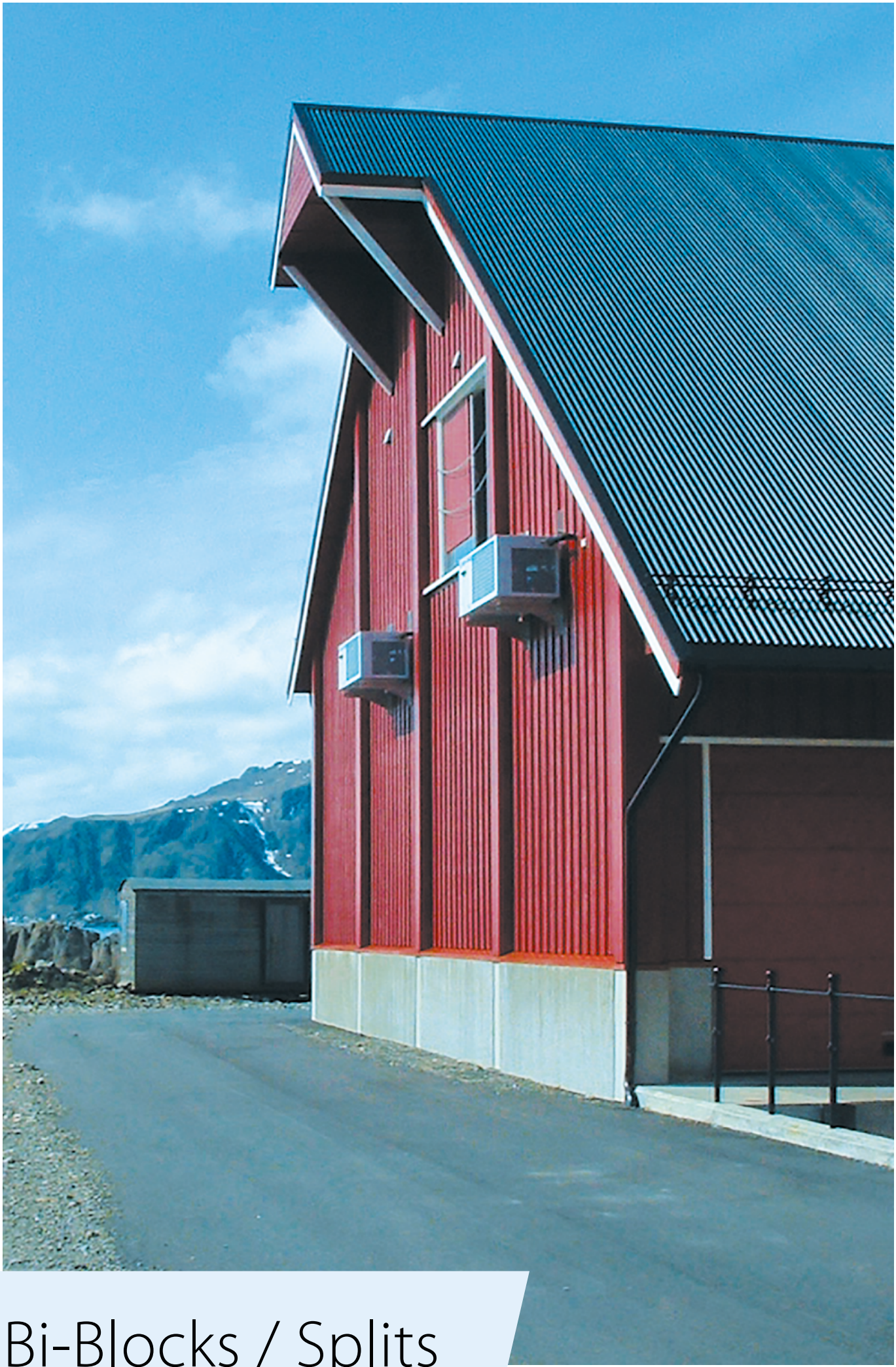


MSB5821-BSB2651



Medium temperature units		MSB1310Y1WAA	MSB2181Y1WAA	MSB3371Y2WAA	MSB5821Y3WBA
Refrigerant		R290			
Power supply	V/Ph~/Hz	220-230/1N~/50			380-400/3N~/50
HP compressor		0.56	0.9	2x0.56	3x0.9
Defrost		Hot gas			
PED category		0			
Working temperature	°C	+10/-5			
Cooling capacity [TC=0°C | TW=32°C]	Watt	1,348	2,231	3,563	5,988

Low temperature units		BSB0870Y1WAA	BSB1710Y2WAA	BSB2651Y3WBA
Refrigerant		R290		
Power supply	V/Ph~/Hz	220-230/1N~/50		380-400/3N~/50
HP compressor		0.9	2x0.9	3x0.9
Defrost		Hot gas		
PED category		0		
Working temperature	°C	-15/-25		
Cooling capacity [TC=-20°C | TW=32°C]	Watt	877	1,747	2,851



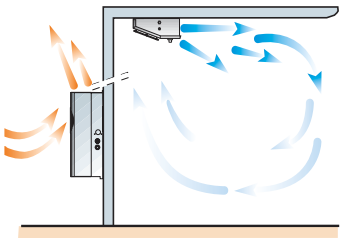
Bi-Blocks / Splits

Refrigeration split type units designed for use in small to medium rooms

Condensing unit for wall mounted installation

- Wide versatility of installation of condensing part and evaporating part
- Condensing part body with metallic grey finishing
- The white color of the evaporator part blends discreetly with the walls of the cold room
- Compressor compartment is ready to be insulated with suitable sound-absorbing material to reduce noise levels
- Micro-channel condensers available to reduce the refrigerant charge as much as possible and ensure higher energy efficiency

Installation type



GS

Medium temperature units		SB.MGS103EA12XX	SB.MGS105EA12XX	SB.MGS106EA12XX	SB.MGS107EA12XX	SB.MGS110EA12XX	SB.MGS211EA12XX	SB.MGS212EB12XX	SB.MGS315EB13XX	SB.MGS320EB13XX
Refrigerant		R134a								
Power supply	V/Ph~/Hz	220-230/1N~/50						380-400/3N~/50		
HP compressor		1/2	5/8	3/4	1	1.2		2.3	3	3.5
Defrost		Electric								
PED category		0								
Working temperature	°C	+10 ÷ -5								
Cooling capacity [TC=0°C | TA=30°C]	Watt	855	978	1,120	1,315	1,351	1,806	2,034	3,079	3,351

Low temperature units		SB.BGS110DA12XX	SB.BGS112DA12XX	SB.BGS117DA12XX	SB.BGS218DA12XX	SB.BGS220DB12XX	SB.BGS320DB13XX	SB.BGS330DB13XX	SB.BGS340DB13XX
Refrigerant		R452A							
Power supply	V/Ph~/Hz	220-230/1N~/50				380-400/3N~/50			
HP compressor		1	1.2	1.7		2		3	4
Defrost		Electric							
PED category		0							2
Working temperature	°C	-15 ÷ -25							
Cooling capacity [TC=-20°C | TA=30°C]	Watt	679	889	1,155	1,429	1,688	2,491	2,701	3,160

Split units suitable for outdoor installation and for small-medium cold rooms

Condensing unit for floor standing or roof mounted installation

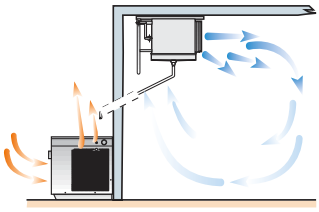
- Condensing unit for floor or roof installation and evaporator for ceiling mounting
- Thermostatic expansion valve for an optimal refrigerant flow rate and for higher energy efficiency
- Extremely quick mounting thanks to the quick coupling joints
- Reduced installation times and costs
- Best surface-capacity ratio

Floor standing condenser

Remote control

Ceiling evaporator

Installation type



DB-O

Medium temperature units		SB.MDB106EA12XX	SB.MDB107EA12XX	SB.MDB212EB12XX	SB.MDB315EB13XX	SB.MDB320EB13XX	SB.MDB425EB13XX
Refrigerant		R134a					
Power supply	V/Ph~/Hz	220-230/1N~/50			380-400/3N~/50		
HP compressor		3/4	1	1.2	3	3.5	4
Defrost		Electric					
PED category		1					
Working temp.	°C	+10 ÷ -5					
Cooling capacity [TC=0°C | TA=30°C]	Watt	1,140	1,422	1,816	3,188	3,492	3,948
Cooling capacity [TC=-20°C | TA=30°C]	Watt	-					

Medium temperature units		SB.MDB530EB13XX	SB.MDB635EB13XX	SB.MDB645EB13XX	SB.MDB706EB13XX	SB.MDB707EB13XX
Refrigerant		R134a				
Power supply	V/Ph~/Hz	380-400/3N~/50				
HP compressor		3.7	4.8	6.3	7.4	9.5
Defrost		Electric				
PED category		2				
Working temp.	°C	+10 ÷ -5				
Cooling capacity [TC=0°C | TA=30°C]	Watt	5,070	7,293	8,779	11,014	14,069
Cooling capacity [TC=-20°C | TA=30°C]	Watt					

Low temperature units		SB.BDB110DA12XX	SB.BDB112DA12XX	SB.BDB117DA12XX	SB.BDB218DA12XX	SB.BDB220DB12XX	SB.BDB320DB13XX	SB.BDB330DB13XX
Refrigerant		R452A						
Power supply	V/Ph~/Hz	220-230/1N~/50				380-400/3N~/50		
HP compressor		1	1.5	1.7		2		3
Defrost		Electric						
PED category		1						
Working temp.	°C	-15 ÷ -25						
Cooling capacity [TC=0°C | TA=30°C]	Watt	-						
Cooling capacity [TC=-20°C | TA=30°C]	Watt	662	905	1,164	1,436	1,719	2,384	2,581

Low temperature units		SB.BDB440DB13XX	SB.BDB445DB13XX	SB.BDB550DB13XX	SB.BDB660DB13XX	SB.BDB680DB13XX	SB.BDB710DB13XX	SB.BDB713DB13XX
Refrigerant		R452A						
Power supply	V/Ph~/Hz	380-400/3N~/50						
HP compressor		3.5	4	3.7	5.5	7.5	9.6	11
Defrost		Electric						
PED category		2						
Working temp.	°C	-15 ÷ -25						
Cooling capacity [TC=0°C | TA=30°C]	Watt	-						
Cooling capacity [TC=-20°C | TA=30°C]	Watt	3,283	3,604	4,925	7,492	8,940	11,537	12,735

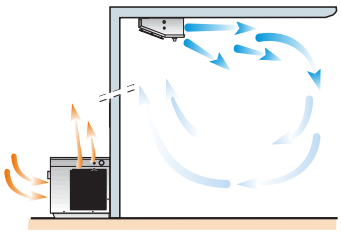
* Only for external use

Refrigeration split type units suitable for small-medium cold rooms

Condensing unit for floor standing or roof mounted installation

- Condensing unit for floor or roof installation and evaporator for ceiling mounting
- Extremely quick mounting thanks to the quick coupling joints
- Reduced installation times and costs
- Best surface-capacity ratio

Installation type



SP-O

Medium temperature units		SB.MSP106EA12XX	SB.MSP107EA12XX	SB.MSP212EA12XX	SB.MSP315EB13XX	SB.MSP320EB13XX
Refrigerant		R134a				
Power supply	V/Ph~/Hz	220-230/1N~/50			380-400/3N~/50	
HP compressor		3/4	1	1.2	3	3.5
Defrost		Electric				
PED category		0				
Working temperature	°C	+10 ÷ -5				
Cooling capacity [TC=0°C | TA=30°C]	Watt	1,140	1,422	1,816	3,188	3,492

Low temperature units		SB.BSP110DA12XX	SB.BSP112DA12XX	SB.BSP117DA12XX	SB.BSP218DA12XX	SB.BSP220DB12XX	SB.BSP320DB13XX	SB.BSP330DB13XX
Refrigerant		R452A						
Power supply	V/Ph~/Hz	220-230/1N~/50				380-400/3N~/50		
HP compressor		1	1.5	1.7		2		3
Defrost		Electric						
PED category		0						
Working temperature	°C	-15 ÷ -25						
Cooling capacity [TC=-20°C | TA=30°C]	Watt	662	905	1,164	1,436	1,719	2,384	2,581

Bi-block system for wine application

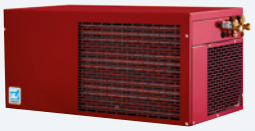
Compact condensing unit and small-sized wall or ceiling mounted evaporators

- Accurate humidity and temperature control to guarantee the quality of products (e.g. wines)
- Thermostatic expansion valve ensuring optimum capacity in accordance with the required load for better energy efficiency
- Integrated humidifier available depending on model to have one unit which covers it all: perfect humidity & temperature control
- Electronic controller managing both temperature and humidity of the cold room

Ceiling evaporator

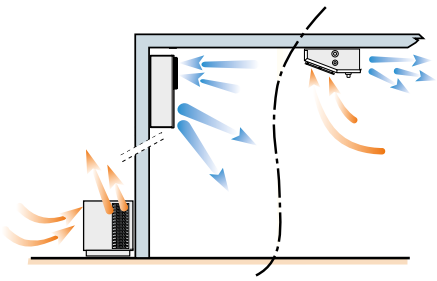
Reciprocating compressor

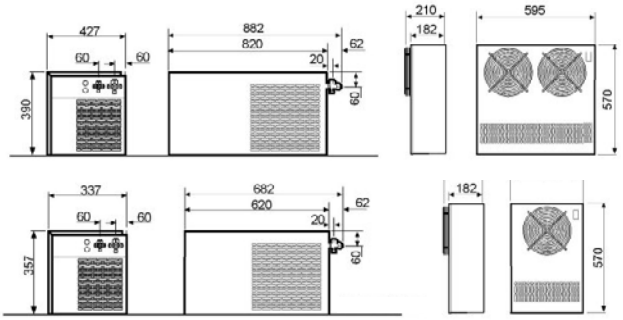
Wall evaporator



RDV Condensing unit

Installation type





RDV

		SB.RDV103EA12S3	SB.RDV105EA12S3	SB.RDV206EA12S3	SB.RDV207EA12S3	SB.RDV103EA12S7	SB.RDV105EA12S7	SB.RDV206EA12S7	SB.RDV207EA12S7
Refrigerant		R134a				R134a			
Power supply	V/Ph~/Hz	220-230/1N~/50				220-230/1N~/50			
HP compressor		1/3	3/8	1/2	3/4	1/3	3/8	1/2	3/4
Evaporator type		Wall mounting evaporator				Ceiling mounting evaporator			
PED category		1				1			
Working temperature	°C	+20 ÷ +10				+20 ÷ +10			
Range RH	%	60-80				60-80			
Cooling capacity [TC=10°C | TA=30°C]	Watt	593	912	1,336	1,935	593	912	1,336	1,935

Condensing units

Condensing unit for commercial refrigeration with reciprocating technology

Refrigeration solution for small food retailers

- Designed specifically for small capacity refrigeration applications in small food stores (eg. in bakeries and butchers), cold rooms, bottle coolers and display cabinets
- Compact and lightweight for even the smallest of city centre locations
- All components can be accessed, making maintenance quick and easy
- Ideal for urban applications: sound proofing and low operating sound levels mean the unit is quiet
- The optimised compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes
- Micro channel heat exchanger technology reduces the amount of refrigerant used in the system, lowering environmental impact

Reciprocating compressor

JEHCCU-CM1/CM3

JEHCCU-CM3 JEHCCU-CM1

Medium Temperature Refrigeration					JEHCCU-CM1/CM3	0040CM1	0050CM1	0051CM1	0063CM1	0067CM1	0077CM1	0095CM1	0100CM1	0113CM1	0140CM1	0170CM1	0140CM3	0170CM3
Refrigerating capacity	Medium temperature (1)	R-134a	Nom	kW		0.59	-	0.89	1.06	-	1.29	1.60		-		-	-	-
		R-407A	Nom	kW		-	0.80		-	1.07		-	1.33	1.66	1.92	-	1.92	-
		R-407F	Nom	kW		-	0.86		-	1.15		-	1.41	1.74	2.08	-	2.08	-
		R-448A	Nom	kW		-	0.87		-	1.12		-	1.35	1.64	2.15	2.57	2.15	2.57
		R-449A	Nom	kW		-	0.87		-	1.12		-	1.35	1.64	2.15	2.57	2.15	2.57
		R-452A	Nom	kW		-	0.95		-	1.23		-	1.48	1.79	2.20	2.69	2.20	2.69
Seasonal energy performance ratio SEPR	R-134a	Te -10°C				1.50	-	1.77	1.77	-	1.85	1.86		-			-	-
	R-407A	Te -10°C				-	1.59		-	1.62		-	1.66	1.78	1.74	-	1.66	-
	R-407F	Te -10°C				-	1.77		-	1.76		-	1.77	1.85	1.93	-	1.85	-
	R-448A	Te -10°C				-	1.66		-	1.64		-	1.64	1.71	2.09	1.73	2.00	1.76
	R-449A	Te -10°C				-	1.66		-	1.64		-	1.64	1.71	2.09	1.73	2.00	1.76
	R-452A	Te -10°C				-	1.67		-	1.67		-	1.68	1.73	1.92	1.65	1.83	1.73
Parameters at full load and ambient temp. 25°C	R-134a	Te -10°C	Declared COP (COP2)			1.84	-	2.01	2.05	-	2.22	2.30		-			-	
	R-407A	Te -10°C	Declared COP (COP2)			-	1.69		-	1.69		-	1.74	1.90	1.87	-	2.09	-
	R-407F	Te -10°C	Declared COP (COP2)			-	1.93		-	1.94		-	1.95	2.07	2.22	-	1.78	-
	R-448A	Te -10°C	Declared COP (COP2)			-	1.91		-	1.90		-	1.89	1.95	2.42	1.93	2.11	2.01
	R-449A	Te -10°C	Declared COP (COP2)			-	1.91		-	1.90		-	1.89	1.95	2.42	1.93	2.32	2.01
	R-452A	Te -10°C	Declared COP (COP2)			-	1.90		-	1.90		-	1.90	1.98	2.18	1.85	2.32	1.99
Parameters at full load and ambient temp. 32°C (Point A)	R-134a	Te -10°C	Rated COP (COPA)			1.5	-	1.77	1.77	-	1.85	1.86		-		-	-	-
	R-407A	Te -10°C	Rated COP (COPA)			-	1.59		-	1.62		-	1.66	1.78	1.74	-	1.66	-
	R-407F	Te -10°C	Rated COP (COPA)			-	1.77		-	1.76		-	1.77	1.85	1.93	-	1.85	-
	R-448A	Te -10°C	Rated COP (COPA)			-	1.66		-	1.64		-	1.64	1.71	2.09	1.73	2.00	1.76
	R-449A	Te -10°C	Rated COP (COPA)			-	1.66		-	1.64		-	1.64	1.71	2.09	1.73	2.00	1.76
	R-452A	Te -10°C	Rated COP (COPA)			-	1.67		-	1.67		-	1.68	1.73	1.92	1.65	1.83	1.73
	R-134a	Te -10°C	Rated cooling capacity (PA)	kW		0.59	-	0.89	1.06	-	1.29	1.60		-		-	-	-
	R-407A	Te -10°C	Rated cooling capacity (PA)	kW		-	0.80		-	1.07		-	1.33	1.66	1.92	-	1.92	-
	R-407F	Te -10°C	Rated cooling capacity (PA)	kW		-	0.86		-	1.15		-	1.41	1.74	2.08	-	2.08	-
	R-448A	Te -10°C	Rated cooling capacity (PA)	kW		-	0.87		-	1.12		-	1.35	1.64	2.15	2.57	2.15	2.57
	R-449A	Te -10°C	Rated cooling capacity (PA)	kW		-	0.87		-	1.12		-	1.35	1.64	2.15	2.57	2.15	2.57
	R-452A	Te -10°C	Rated cooling capacity (PA)	kW		-	0.95		-	1.23		-	1.48	1.79	2.20	2.69	2.20	2.69
	R-134a	Te -10°C	Rated power input (DA)	kW		0.39	-	0.50	0.60	-	0.70	0.86		-		-	-	-
	R-407A	Te -10°C	Rated power input (DA)	kW		-	0.50		-	0.66		-	0.80	0.94	1.11	-	1.16	-
	R-407F	Te -10°C	Rated power input (DA)	kW		-	0.49		-	0.65		-	0.79	0.94	1.07	-	1.12	-
	R-448A	Te -10°C	Rated power input (DA)	kW		-	0.53		-	0.68		-	0.82	0.96	1.03	1.49	1.08	1.46
	R-449A	Te -10°C	Rated power input (DA)	kW		-	0.53		-	0.68		-	0.82	0.96	1.03	1.49	1.08	1.46
	R-452A	Te -10°C	Rated power input (DA)	kW		-	0.57		-	0.74		-	0.88	1.03	1.15	1.63	1.20	1.55
Parameters at full load and ambient temp. 43°C	R-134a	Te -10°C	Declared COP (COP3)			1.42	-	1.40	1.40	-	1.49	1.50		-		-	-	-
	R-407A	Te -10°C	Declared COP (COP3)			-	1.42				-				1.56	-	1.47	-
	R-407F	Te -10°C	Declared COP (COP3)			-	1.46				-				1.58	-	1.49	-
	R-448A	Te -10°C	Declared COP (COP3)			-	1.27		-	1.26		-	1.25	1.33	1.62	1.42	1.53	1.43
	R-449A	Te -10°C	Declared COP (COP3)			-	1.27		-	1.26		-	1.25	1.33	1.62	1.42	1.53	1.43
	R-452A	Te -10°C	Declared COP (COP3)			-	1.31		-	1.32		-	1.34	1.37	1.52	1.35	1.44	1.39
	R-134a	Te -10°C	Cooling capacity (P3)	kW			-	0.75	0.86	-	1.06	1.34		-		-	-	
	R-407A	Te -10°C	Cooling capacity (P3)	kW			0.75				-				1.79	-	1.78	
	R-407F	Te -10°C	Cooling capacity (P3)	kW			0.79				-				1.85	-	1.84	
	R-448A	Te -10°C	Cooling capacity (P3)	kW		-	0.73		-	0.91		-	1.10	1.34	1.79	2.23	1.77	2.20
	R-449A	Te -10°C	Cooling capacity (P3)	kW		-	0.73		-	0.91		-	1.10	1.34	1.79	2.23	1.77	2.20
	R-452A	Te -10°C	Cooling capacity (P3)	kW		-	0.80		-	1.01		-	1.23	1.46	1.83	2.28	1.81	2.26
	R-134a	Te -10°C	Power input (D3)	kW		0.36	-	0.53	0.62	-	0.71	0.89		-		-	-	-
	R-407A	Te -10°C	Power input (D3)	kW		-	0.53				-				1.15	-	1.21	-
	R-407F	Te -10°C	Power input (D3)	kW		-	0.54				-				1.17	-	1.23	-
	R-448A	Te -10°C	Power input (D3)	kW		-	0.58		-	0.73		-	0.88	1.01	1.11	1.57	1.16	1.54
	R-449A	Te -10°C	Power input (D3)	kW		-	0.58		-	0.73		-	0.88	1.01	1.11	1.57	1.16	1.54
	R-452A	Te -10°C	Power input (D3)	kW		-	0.61		-	0.77		-	0.92	1.06	1.20	1.69	1.26	1.62
Dimensions	Unit	HeightxWidthxDepth		mm		607x876x420									662x1,101x444			
Weight	Unit			kg		49		57		56	58		57	58	67	68	67	68
Compressor	Type					Reciprocating compressor												
	Piston displacement			m^3/h		1.8		3.18	3.79	2.64	4.51	5.69	3.18	4.21	4.52	4.52	4.52	4.52
Fan	Type					Axial												
Sound pressure level	Nom.			dBA		28									32	33	32	33
Piping connections	Liquid line connection			inch		1/4"				3/8"								
	Suction line connection			inch		3/8"				1/2"					5/8		5/8	
Refrigerant	Type/GWP					R-134a/ 1,430	R-452A/ 2,141	R-134a/1,430		R-452A/ 2,141	R-134a/1,430		R-452A/2,141			R-452A/ 2,141	R-407A/ 2,107	R-452A/ 2,141
	Type 2 - GWP Type 2					-	R-407A/ 2,107	-		R-407A/ 2,107	-		R-407A/2,107			R-448A/ 1,387	R-407F/ 1,825	R-448A/ 1,387
	Type 3 - GWP Type 3					-	R-407F/ 1,825	-		R-407F/ 1,825	-		R-407F/1,825			R-449A/ 1,397	R-448A/ 1,387	R-449A/ 1,397
	Type 4 - GWP Type 4					-	R-448A/ 1,387	-		R-448A/ 1,387	-		R-448A/ 1,387	R-449A/ 1,397	R-448A/ 1,387	-	R-449A/ 1,397	-
	Type 5 - GWP Type 5					-	R-449A/ 1,397	-		R-449A/ 1,397	-		R-449A/ 1,397	-	R-449A/ 1,397	-	R-452A/ 1,397	-
	GWP Type 6					-					-						2,140.0	-
Power supply	Phase/Frequency/Voltage			Hz/V		1~/50/230											3~/50/400	

(1) Refer to condition: Outside ambient temperature = 32°C, Evaporation temperature = -10°C and Return Gas 20°C (medium temperature application) | (2) Average sound pressure level is measured at 10m in anechoic room

Condensing unit for commercial refrigeration with scroll technology

Refrigeration solution for small food retailers

- Designed specifically for small capacity refrigeration applications in small food stores (eg. in bakeries and butchers), cold rooms, bottle coolers and display cabinets
- Compact and lightweight for even the smallest of city centre locations
- All components can be accessed, making maintenance quick and easy
- Ideal for urban applications: sound proofing and low operating sound levels mean the unit is quiet
- The optimised compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes
- Micro channel heat exchanger technology reduces the amount of refrigerant used in the system, lowering environmental impact

Scroll compressor

JEHSCU-CM1/CM3

JEHSCU-CM1 JEHSCU-CM3

Medium Temperature Refrigeration					JEHSCU-CM1/CM3	0200CM1	0250CM1	0300CM1	0200CM3	0250CM3	0300CM3	0350CM3	0360CM3	0400CM3	0500CM3	0600CM3	0680CM3	0800CM3	1000CM3
Refrigerating capacity	Medium temperature (1)	R-134a	Nom	kW		2.13	-		2.24	-		3.48	3.80	4.37	-	-	-	8.21	10.75
		R-407A	Nom	kW		3.48	4.09	-	3.45	4.05	4.69	-	5.77	6.76	8.28	9.54	10.7	12.95	-
		R-407F	Nom	kW		3.33	3.82	4.63	3.33	3.94	4.58	-	5.73	6.75	8.18	9.59	-	12.9	-
		R-407H	Nom	kW			-		3.30	3.76	4.51	-	-	5.96	-	9.24	10.3	12.3	-
		R-448A	Nom	kW		3.33	3.82	4.73	3.33	3.82	4.73	5.46	5.76	6.37	7.88	9.45	10.5	12.8	15.85
		R-449A	Nom	kW		3.33	3.82	4.73	3.33	3.82	4.73	5.46	5.76	6.37	7.88	9.45	10.5	12.8	15.85
Seasonal energy performance ratio SEPR	R-134a	Te -10°C				1.92	-		2.19	-		2.08	2.36	2.36	-	-	-	3.10	3.37
	R-407A	Te -10°C				2.18	2.06	-	2.12	1.99	1.92	-	3.48	3.79	3.21	3.19	2.96	3.12	-
	R-407F	Te -10°C				1.92	1.83	1.74	1.88	1.83	1.69	-	3.22	3.49	3.07	3.12	-	2.95	-
	R-407H	Te -10°C					-		1.93	2.02	1.80	-	3.15	3.03	-	2.90	2.68	3.24	-
	R-448A	Te -10°C				2.02	1.93	1.85	2.02	1.93	1.85	2.72	3.02	3.13	2.97	3.22	2.96	2.88	2.83
	R-449A	Te -10°C				2.02	1.93	1.85	2.02	1.93	1.85	2.72	3.02	3.13	2.97	3.22	2.96	2.88	2.83
Annual electricity consumption Q	R-134a	Te -10°C										-						16,257	19,586
	R-407A	Te -10°C			kWh/a				-				10,187	10,973	15,848	18,408	22,240	25,491	-
	R-407F	Te -10°C			kWh/a				-				10,933	11,873	16,401	18,903	-	26,882	-
	R-407H	Te -10°C			kWh/a				-				10,664	12,082	-	19,576	23,664	-	
	R-448A	Te -10°C			kWh/a			-				12,363	11,736	12,512	16,305	18,395	22,298	27,302	34,432
	R-449A	Te -10°C			kWh/a			-				12,363	11,736	12,512	16,305	18,395	22,298	27,302	34,432
Parameters at full load and ambient temp. 25°C	R-134a	Te -10°C	Declared COP (COP2)			2.21	-		2.62	-		2.46	2.86	2.90			-		
	R-407A	Te -10°C	Declared COP (COP2)			2.61	2.44	-	2.55	2.36	2.26					-			
	R-407F	Te -10°C	Declared COP (COP2)			2.46	2.33	2.21	2.39	2.29	2.14					-			
	R-407H	Te -10°C	Declared COP (COP2)				-		2.37	2.48	2.21					-			
	R-448A	Te -10°C	Declared COP (COP2)			2.53	2.32	2.23	2.53	2.32	2.23					-			
	R-449A	Te -10°C	Declared COP (COP2)			2.53	2.32	2.23	2.53	2.32	2.23					-			
Parameters at part load and ambient temp. 25°C (Point B)	R-134a	Te -10°C	Declared COP (COPB)									-						2.49	2.7
	R-407A	Te -10°C	Declared COP (COPB)						-				2.77	2.90	2.60	2.51	2.37	2.55	-
	R-407F	Te -10°C	Declared COP (COPB)						-				2.53	2.66	2.36	2.39	-	2.5	-
	R-407H	Te -10°C	Declared COP (COPB)						-				2.47	2.37	-	2.32	2.17	2.68	-
	R-448A	Te -10°C	Declared COP (COPB)					-				2.18	2.56	2.51	2.41	2.39	2.18	2.33	2.26
	R-449A	Te -10°C	Declared COP (COPB)					-				2.18	2.56	2.51	2.41	2.39	2.18	2.33	2.26
Parameters at full load and ambient temp. 32°C (Point A)	R-134a	Te -10°C	Rated COP (COPA)			1.92	-		2.19	-		2.08	2.36	2.36	-	-	-	2.2	2.21
	R-407A	Te -10°C	Rated COP (COPA)			2.18	2.06	-	2.12	1.99	1.92	-	2.24	2.28	2.11	2.05	1.93	2.08	-
	R-407F	Te -10°C	Rated COP (COPA)			1.92	1.83	1.74	1.88	1.83	1.69	-	1.97	2.10	1.88	1.91	-	2.1	-
	R-407H	Te -10°C	Rated COP (COPA)				-		1.93	2.02	1.80	-		1.89	-	1.92	1.78	2.2	-
	R-448A	Te -10°C	Rated COP (COPA)			2.02	1.93	1.85	2.02	1.93	1.85	1.77	2.04	1.98	1.78	1.96	1.79	2.05	1.83
	R-449A	Te -10°C	Rated COP (COPA)			2.02	1.93	1.85	2.02	1.93	1.85	1.77	2.04	1.98	1.78	1.96	1.79	2.05	1.83
	R-134a	Te -10°C	Rated cooling capacity (PA)	kW		2.13	-		2.24	-		3.48	3.80	4.37	-	-	-	8.21	10.75
	R-407A	Te -10°C	Rated cooling capacity (PA)	kW		3.48	4.09	-	3.45	4.05	4.69	-	5.77	6.76	8.28	9.54	10.7	12.95	-
	R-407F	Te -10°C	Rated cooling capacity (PA)	kW		3.33	3.82	4.63	3.33	3.94	4.58	-	5.73	6.75	8.18	9.59	-	12.9	-
	R-407H	Te -10°C	Rated cooling capacity (PA)	kW		-	-	-	3.30	3.76	4.51	-	-	5.96	-	9.24	10.3	12.3	-
	R-448A	Te -10°C	Rated cooling capacity (PA)	kW		3.33	3.82	4.73	3.33	3.82	4.73	5.46	5.76	6.37	7.88	9.45	10.5	12.8	15.85
	R-449A	Te -10°C	Rated cooling capacity (PA)	kW		3.33	3.82	4.73	3.33	3.82	4.73	5.46	5.76	6.37	7.88	9.45	10.5	12.8	15.85
	R-134a	Te -10°C	Rated power input (DA)	kW		1.11	-		1.03	-		1.68	1.61	1.85	-	-	-	3.74	4.86
	R-407A	Te -10°C	Rated power input (DA)	kW		1.60	1.99	-	1.63	2.04	2.45	-	2.58	2.97	3.93	4.65	5.54	6.24	-
	R-407F	Te -10°C	Rated power input (DA)	kW		1.74	2.09	2.66	1.78	2.16	2.71	-	2.91	3.21	4.36	5.03	-	6.13	-
	R-407H	Te -10°C	Rated power input (DA)	kW			-		1.71	1.86	2.50	-		3.15	-	4.82	5.79	5.58	-
	R-448A	Te -10°C	Rated power input (DA)	kW		1.65	1.98	2.56	1.65	1.98	2.56	3.09	2.83	3.22	4.43	4.83	5.85	6.23	8.68
	R-449A	Te -10°C	Rated power input (DA)	kW		1.65	1.98	2.56	1.65	1.98	2.56	3.09	2.83	3.22	4.43	4.83	5.85	6.23	8.68
Parameters at full load and ambient temp. 43°C	R-134a	Te -10°C	Declared COP (COP3)			1.42			-			1.52			-			1.59	1.60
	R-448A	Te -10°C	Declared COP (COP3)			1.31	1.36	1.31	1.31	1.36	1.31	1.26	1.41	1.37	1.24	1.42	1.32	-	
	R-449A	Te -10°C	Declared COP (COP3)			1.31	1.36	1.31	1.31	1.36	1.31	1.26	1.41	1.37	1.24	1.42	1.32	-	
	R-134a	Te -10°C	Cooling capacity (P3)	kW		1.87			-			3.06			-			7.26	9.46
	R-448A	Te -10°C	Cooling capacity (P3)	kW		2.80	3.35	4.12	2.80	3.35	4.12	4.78	4.99	5.57	6.79	8.29	9.25	-	-
	R-449A	Te -10°C	Cooling capacity (P3)	kW		2.80	3.35	4.12	2.80	3.35	4.12	4.78	4.99	5.57	6.79	8.29	9.25	-	-
	R-134a	Te -10°C	Power input (D3)	kW		1.32			-			2.02			-			4.56	5.92
	R-448A	Te -10°C	Power input (D3)	kW		2.14	2.47	3.14	2.14	2.47	3.14	3.78	3.54	4.08	5.46	5.82	7.00	-	
	R-449A	Te -10°C	Power input (D3)	kW		2.14	2.47	3.14	2.14	2.47	3.14	3.78	3.54	4.08	5.46	5.82	7.00	-	
Parameters at part load and ambient temp. 15°C (Point C)	R-134a	Te -10°C	Declared COP (COPC)						-				3.71	4.02	3.43	-		3.26	3.58
	R-407A	Te -10°C	Declared COP (COPC)						-				3.46	3.69	3.24	3.35	3.13	3.34	-
	R-407F	Te -10°C	Declared COP (COPC)						-				3.34	3.22	-	3.3	-	3.14	-
	R-407H	Te -10°C	Declared COP (COPC)						-				3.18	3.34	3.20	3.06	2.84	3.47	-
	R-448A	Te -10°C	Declared COP (COPC)					-				2.88	3.18	3.34	3.20	3.15	2.85	3.02	3.01
	R-449A	Te -10°C	Declared COP (COPC)					-				2.88		-		3.15	2.85	3.26	3.01
Parameters at part load and ambient temp. 5°C (Point D)	R-134a	Te -10°C	Declared COP (COPD)						-				4.85	5.41	4.40	-		4.25	4.66
	R-407A	Te -10°C	Declared COP (COPD)						-				4.48	5.05	4.43	4.49	4.1	4.25	-
	R-407F	Te -10°C	Declared COP (COPD)						-				4.45	4.3	-	4.5	-	3.90	-
	R-407H	Te -10°C	Declared COP (COPD)						-				4.05	4.32	4.12	4.03	3.67	4.36	-
	R-448A	Te -10°C	Declared COP (COPD)					-				3.77		-		4.05	3.68	3.92	3.96
	R-449A	Te -10°C	Declared COP (COPD)					-				3.77	4.05	4.32	4.12	4.05	3.68	3.92	3.96
Dimensions	Unit	HeightxWidthxDepth		mm		662x1,101x444							872x1,353x575					1,727x1,348x641	
Weight	Unit			kg		70	72	74	70	72	74	74	112	119	123	125	126	222	226
Compressor	Type					Reciprocating compressor						Scroll compressor	Reciprocating compressor						
	Piston displacement			m^3/h		5.9	6.8	8.6	5.9	6.8	8.6	9.9	9.9	11.4	14.4	17.1	18.8	22.1	29.1
Fan	Type					Axial													
Sound pressure level	Nom.			dBA		33	34	36	33	34	36	39	37	37	38	40	40	43	43
Piping connections	Liquid line connection			inch		3/8"									1/2"			3/4"	
	Suction line connection			inch		3/4"							3/4"	7/8"		1 1/8"			1 3/8"
Refrigerant	Type/GWP					R-134a/1,430	R-407A/2,107	R-407A/2,107	R-134a/1,430	R-407A/2,107	R-407A/2,107	R-134a/1,430.0	R-134a/1,430	R-134a/1,430	R-407A/2,107	R-407A/2,107	R-407A/2,107	R-134a/1,430	R-134a/1,430
	Type 2 - GWP Type 2					R-407A/2,107	R-407F/1,825	R-448A/1,387	R-407A/2,107	R-407F/1,825	R-407F/1,825	-	R-407A/2,107	R-407A/2,107	R-407F/1,825	R-407F/1,825	R-407H/1,495.0	R-407A/2,107	R-448A/1,387
	Type 3 - GWP Type 3					R-407F/1,825	R-448A/1,387	R-449A/1,397	R-407F/1,825	R-407H/1,495.0	R-407H/1,495.0	-	R-407F/1,825	R-407F/1,825	R-448A/1,387	R-407H/1,495.0	R-448A/1,387	R-407F/1,825	R-449A/1,397
	Type 4 - GWP Type 4					R-448A/1,387	R-449A/1,397	-	R-407H/1,495.0	R-448A/1,387	R-448A/1,387	-	R-407H/1,495	R-407H/1,495.0	R-449A/1,397	R-448A/1,387	R-449A/1,397.0	R-407H/1,495	-
	Type 5 - GWP Type 5					R-449A/1,397	-		R-448A/1,387	R-449A/1,397.0	R-449A/1,397.0	-	R-448A/1,387	R-448A/1,387	-	R-449A/1,397.0	-	R-448A/1,387	-
	Type 6 - GWP Type 6						-		R-449A/1,397.0	-			R-449A/1,397.0	R-449A/1,397.0	-			R-449A/1,397	-
Power supply	Phase/Frequency/Voltage			Hz/V		1~/50/230			3~/50/400										

(1) Refer to condition: Outside ambient temperature = 32°C, Evaporation temperature = -10°C and Return Gas 20°C (medium temperature application) | (2) Average sound pressure level is measured at 10m in anechoic room

Condensing unit for commercial refrigeration with scroll / reciprocating technology

JEHCCU/SCU-CL1/CL3

JEHCCU-CL1 JEHSCU-CL3

Refrigeration solution for small food retailers

- Designed specifically for small capacity refrigeration applications in small food stores (eg. in bakeries and butchers), cold rooms, bottle coolers and display cabinets
- Compact and lightweight for even the smallest of city centre locations
- All components can be accessed, making maintenance quick and easy
- Ideal for urban applications: sound proofing and low operating sound levels mean the unit is quiet
- The optimised compressor range and increased condenser surface deliver high levels of energy efficiency and reliability is ensured by using high quality components and production processes
- Micro channel heat exchanger technology reduces the amount of refrigerant used in the system, lowering environmental impact

Low Temperature Refrigeration			JEHCCU-CL1/JEHSCU-CL3			0115CL1	0135CL1	0180CL3	0210CL3	0300CL3	0400CL3	0500CL3	0600CL3	0750CL3	0950CL3 EVI
Refrigerating capacity	Medium temperature (1)		R-407A	Nom	kW			-			2.29	2.77	3.31	4.29	4.96
			R-407F	Nom	kW			-			2.38	2.87	-		4.88
			R-448A	Nom	kW		-	0.98	1.36	1.62	2.53	-	3.49	4.81	4.86
			R-449A	Nom	kW		-	0.98	1.36	1.62	2.53		-		4.86
			R-452A	Nom	kW	0.64	0.81	1.13	1.53			-			
Seasonal energy performance ratio SEPR	R-407A	Te -35°C						-			1.67	1.67	1.64	-	1.76
	R-407F	Te -35°C						-			1.65	1.64	-		1.63
	R-448A	Te -35°C					-	1.00	1.00	0.97	1.67	-	1.64	1.64	1.76
	R-449A	Te -35°C					-	1.00	1.00	0.97	1.67	-	1.64	1.64	1.76
	R-452A	Te -35°C				1.05	0.98	1.07	1.05			-			
Annual electricity consumption Q	R-407A	Te -35°C			kWh/a			-			10,212	12,364	15,026	-	20,958
	R-407F	Te -35°C			kWh/a			-			10,730	13,018	-		22,348
	R-448A	Te -35°C			kWh/a			-			11,276	-	15,878	21,856	20,551
	R-449A	Te -35°C			kWh/a			-			11,276	-	15,878	21,856	20,551
Parameters at full load and ambient temp. 25°C	R-448A	Te -35°C	Declared COP (COP2)				-	1.15	1.09	1.16			-		
	R-449A	Te -35°C	Declared COP (COP2)				-	1.15	1.09	1.16			-		
	R-452A	Te -35°C	Declared COP (COP2)			1.20	1.15	1.26	1.25			-			
Parameters at part load and ambient temp. 25°C (Point B)	R-407A	Te -35°C	Declared COP (COPB)					-			1.24	1.25	1.35	-	1.51
	R-407F	Te -35°C	Declared COP (COPB)					-			1.23	1.23	-		1.35
	R-448A	Te -35°C	Declared COP (COPB)					-			1.30	-	1.29	1.43	1.42
	R-449A	Te -35°C	Declared COP (COPB)					-			1.30	-	1.29	1.43	1.42
Parameters at full load and ambient temp. 32°C (Point A)	R-407A	Te -35°C	Rated COP (COPA)					-			0.98	0.97	0.93	1.03	1.26
	R-407F	Te -35°C	Rated COP (COPA)					-			0.95	0.93	-		1.08
	R-448A	Te -35°C	Rated COP (COPA)				-	1.00	1.00	0.97	1.02	-	0.83	1.18	1.24
	R-449A	Te -35°C	Rated COP (COPA)				-	1.00	1.00	0.97	1.02	-	0.83	1.18	1.24
	R-452A	Te -35°C	Rated COP (COPA)			1.05	0.98	1.08	1.05			-			
	R-407A	Te -35°C	Rated cooling capacity (PA)		kW			-			2.29	2.77	3.31	4.29	4.96
	R-407F	Te -35°C	Rated cooling capacity (PA)		kW			-			2.38	2.87	-		4.88
	R-448A	Te -35°C	Rated cooling capacity (PA)		kW		-	0.98	1.36	1.62	2.53	-	3.49	4.81	4.86
	R-449A	Te -35°C	Rated cooling capacity (PA)		kW		-	0.98	1.36	1.62	2.53	-	3.49	4.81	4.86
	R-452A	Te -35°C	Rated cooling capacity (PA)		kW	0.64	0.81	1.13	1.53			-			
	R-407A	Te -35°C	Rated power input (DA)		kW			-			2.33	2.85	3.57	4.17	3.94
	R-407F	Te -35°C	Rated power input (DA)		kW			-			2.51	3.08	-		4.51
	R-448A	Te -35°C	Rated power input (DA)		kW		-	0.98	1.36	1.67	2.48	-	4.19	4.08	3.93
	R-449A	Te -35°C	Rated power input (DA)		kW		-	0.98	1.36	1.67	2.48	-	4.19	4.08	3.93
	R-452A	Te -35°C	Rated power input (DA)		kW	0.61	0.83	1.06	1.47			-			
Parameters at full load and ambient temp. 43°C	R-407A	Te -35°C	Declared COP (COP3)					-			0.67	0.66	0.64	0.73	-
	R-407F	Te -35°C	Declared COP (COP3)					-			0.62	-	-		-
	R-448A	Te -35°C	Declared COP (COP3)					-			0.68	-	0.46	0.81	-
	R-449A	Te -35°C	Declared COP (COP3)					-		0.68	0.68	-	0.46	0.81	-
	R-452A	Te -35°C	Declared COP (COP3)			0.82	0.71					-			
	R-407A	Te -35°C	Cooling capacity (P3)		kW			-			2.01	2.40	2.88	3.79	-
	R-407F	Te -35°C	Cooling capacity (P3)		kW			-			2.04		-		
	R-448A	Te -35°C	Cooling capacity (P3)		kW			-			2.23	-	2.82	4.26	-
	R-449A	Te -35°C	Cooling capacity (P3)		kW			-		1.43	2.23	-	2.82	4.26	-
	R-452A	Te -35°C	Cooling capacity (P3)		kW	0.49	0.57					-			
	R-407A	Te -35°C	Power input (D3)		kW			-			2.98	3.64	4.48	5.20	-
	R-407F	Te -35°C	Power input (D3)		kW			-			3.30		-		
	R-448A	Te -35°C	Power input (D3)		kW			-			3.29	-	6.15	5.28	-
	R-449A	Te -35°C	Power input (D3)		kW			-		2.11	3.29	-	6.15	5.28	-
	R-452A	Te -35°C	Power input (D3)		kW	0.60	0.81					-			
Parameters at part load and ambient temp. 15°C (Point C)	R-407A	Te -35°C	Declared COP (COPC)					-			1.69	1.69	1.68	-	1.74
	R-407F	Te -35°C	Declared COP (COPC)					-			1.68	1.69	-		1.67
	R-448A	Te -35°C	Declared COP (COPC)					-			1.75	-	1.78	1.71	1.75
	R-449A	Te -35°C	Declared COP (COPC)					-			1.75	-	1.78	1.71	1.75
Parameters at part load and ambient temp. 5°C (Point D)	R-407A	Te -35°C	Declared COP (COPD)					-			2.25	2.25	2.1	-	2.13
	R-407F	Te -35°C	Declared COP (COPD)					-			2.22	2.2	-		1.97
	R-448A	Te -35°C	Declared COP (COPD)					-			2.14	-	2.06	1.94	2.18
	R-449A	Te -35°C	Declared COP (COPD)					-			2.14	-	2.06	1.94	2.18
Dimensions	Unit	Height x Width x Depth			mm	607x876x420	606x876x430	662x1,101x444			872x1,353x575			1,727x1,348x605	
Weight	Unit				kg	55	61	83	81	78	132	132	133	203	200
Compressor	Type									Reciprocating compressor					
	Piston displacement				m^3/h	4.55	6	9.45	11.83	8	11.8	14.5	17.1	21.4	17.1
Fan	Type									Axial					
Sound pressure level	Nom.				dBA	31	27	38		33	37	39	41		37
Piping connections	Liquid line connection				inch			3/8"					1/2"		
	Suction line connection				inch		1/2"		5/8"	3/4"			7/8"		
Refrigerant	Type/GWP					R-404A/3,921.6	R-404A/3,922	R-448A/1,387	R-448A/1,387	R-404A/3,922	R-404A/3,922	R-404A/3,922	R-404A/3,922	R-404A/3,922	R-404A/3,922
	Type 2 - GWP Type 2					-	R-452A/2,141	R-449A/1,397	R-449A/1,397	R-449A/1,397	R-407A/2,107	R-407A/2,107	R-407A/2,107	R-448A/1,387	R-407A/2,107
	Type 3 - GWP Type 3						-	R-452A/2,141	R-452A/2,141	-	R-407F/1,825	R-407F/1,825	R-449A/1,397	R-449A/1,397	R-407F/1,825
	Type 4 - GWP Type 4							-			R-448A/1,387		-		R-448A/1,387
	Type 5 - GWP Type 5							-			R-449A/1,397		-		R-449A/1,397
Power supply	Phase/Frequency/Voltage				Hz/V	1~/50/230		3~/50/400							

1) Refer to condition: Outside ambient temperature = 32°C, Evaporation temperature = -35°C and Return Gas 20°C (low temperature application) | (2) Average sound pressure level is measured at 10m in anechoic room |
* Condition with high discharge temperature

Condensing units with inverter driven compressor

High reliability, low cost and easy installation

- Power supply 380-400/3N~/50
- Pressure controlled fan speed controller
- Crankcase heater
- Oil separator
- Power control box with magnetothermic switches + thermal protection + electronic controller
- Inverter
- Oil separator + condenser fans speed regulator with pressure probe
- Liquid receiver with safety valve + liquid line
- HP + LP pressure switches, Crankcase heater
- Antivibration eliminators on suction and discharge line
- Condenser with 6 poles axial fans
- Condensing unit under nitrogen pressure

CU2 CU3

- Muffler on discharge line
- Residential Soundproofing
- Electrical box: power control box with thermal protection and capacity regulation
- Soundproofing: double noise insulation (residential)

					GCI	GCI2010B3B1D4R	GCI2020B3B1D4R	GCI2022B3B1D4R	GCI2030B3B1D4R	GCI2040B3B1D4R	GCI3050B3B1D4R	GCI3060B3B1D4R	GCI4120B3B1D4R
Frame type								2				3	4
Power supply					V/ph~/Hz				380-400/3N~/50				
Max absorbed current (70Hz)					A	2.7	3.6	4.1	5.6	7.2	8.4	10.3	13.3
Max absorbed power (70Hz)					kW	1.3	1.8	2.1	3.0	4.0	4.7	5.8	7.8
Working temperature					°C				+5 ÷ -20				
Compressor	Type								Semihermetic				
	Brand								Bitzer				
	Model					2HES-1Y	2FES-2Y	2EES-2Y	2CES-3Y	4EES-4Y	4DES-5Y	4CES-6Y	4PES-12Y
	Refrigerant								R134a				
Condenser	Fin pitch				mm				2.1				
	Fans nr.							1				2	
	Fans ø				mm				450				
	Model				ph/p				1ph-6P				
	Air flow				m³/h		2,943			2,701		5,850	5,366
	Noise pressure level at 10 m (50Hz)				dB(A)	33	34	35	35	39	40	41	42
Connections	Suction				Ø mm	16	18	22	22	28	28	35	35
	Liquid				Ø mm			10				12	
	Standard liquid receiver				lt			5.7			10		21
	PED category							1				2	
	Unit net weight				kg	160	170	193	195	210	225	230	300
Cooling capacity	Min./Max.	Tev 5°C	Tamb 20°C		kW	2.63/6.01	3.81/8.43	4.65/10.19	6.6/14.04	8.66/17.46	10.65/22.27	12.72/25.72	18.23/34.95
			Tamb 25°C		kW	2.49/5.68	3.56/7.89	4.37/9.59	6.22/13.23	8.14/16.4	10/20.91	11.95/24.16	17.02/32.63
			Tamb 30°C		kW	2.34/5.36	3.32/7.35	4.1/8.99	5.84/12.42	7.62/15.35	9.35/19.56	11.18/22.61	15.83/30.35
			Tamb 35°C		kW	2.2/5.04	3.08/6.82	3.83/8.4	5.47/11.63	7.1/14.31	8.71/18.22	10.42/21.07	14.66/28.11
			Tamb 40°C		kW	2.07/4.72	2.84/6.28	3.56/7.82	5.09/10.84	6.59/13.28	8.07/16.89	9.66/19.54	13.52/25.91
			Tamb 45°C		kW	1.93/4.41	2.6/5.76	3.3/7.24	4.72/10.05	6.08/12.26	7.44/15.57	8.91/18.02	12.4/23.77
		Tev 0°C	Tamb 20°C		kW	2.18/4.99	3.18/7.04	3.9/8.55	5.59/11.89	7.44/15	9/18.84	10.86/21.97	15.72/30.14
			Tamb 25°C		kW	2.06/4.71	2.97/6.58	3.66/8.03	5.26/11.19	6.98/14.08	8.45/17.69	10.2/20.63	14.66/28.11
			Tamb 30°C		kW	1.94/4.44	2.76/6.12	3.43/7.52	4.94/10.51	6.53/13.17	7.9/16.54	9.55/19.31	13.62/26.11
			Tamb 35°C		kW	1.82/4.16	2.56/5.67	3.2/7.02	4.62/9.83	6.09/12.27	7.36/15.39	8.9/17.99	12.59/24.14
			Tamb 40°C		kW	1.7/3.89	2.36/5.22	2.97/6.52	4.3/9.16	5.65/11.38	6.81/14.25	8.25/16.68	11.58/22.21
			Tamb 45°C		kW	1.58/3.62	2.16/4.78	2.75/6.03	3.99/8.49	5.21/10.5	6.27/13.13	7.6/15.37	10.6/20.33
		Tev -5°C	Tamb 20°C		kW	1.79/4.09	2.61/5.79	3.22/7.06	4.66/9.92	6.3/12.69	7.5/15.69	9.14/18.47	13.32/25.55
			Tamb 25°C		kW	1.69/3.86	2.44/5.4	3.02/6.62	4.38/9.33	5.91/11.91	7.04/14.73	8.58/17.35	12.41/23.8
			Tamb 30°C		kW	1.59/3.62	2.27/5.02	2.82/6.19	4.11/8.75	5.52/11.14	6.58/13.76	8.03/16.23	11.51/22.06
			Tamb 35°C		kW	1.48/3.39	2.1/4.64	2.63/5.77	3.85/8.18	5.14/10.37	6.12/12.8	7.48/15.12	10.61/20.35
			Tamb 40°C		kW	1.38/3.16	1.93/4.27	2.44/5.35	3.58/7.62	4.77/9.61	5.66/11.85	6.93/14.02	9.74/18.67
			Tamb 45°C		kW	1.28/2.93	1.76/3.91	2.25/4.94	3.32/7.06	4.39/8.86	5.21/10.9	6.39/12.92	8.88/17.03
		Tev -10°C	Tamb 20°C		kW	1.45/3.31	2.11/4.68	2.62/5.74	3.82/8.13	5.25/10.57	6.14/12.84	7.55/15.26	11.07/21.22
			Tamb 25°C		kW	1.36/3.11	1.97/4.36	2.45/5.37	3.59/7.65	4.92/9.91	5.76/12.05	7.09/14.34	10.29/19.74
			Tamb 30°C		kW	1.27/2.91	1.83/4.05	2.29/5.01	3.37/7.17	4.6/9.26	5.38/11.26	6.64/13.42	9.52/18.25
			Tamb 35°C		kW	1.19/2.72	1.69/3.74	2.13/4.66	3.15/6.7	4.28/8.62	5/10.46	6.18/12.5	8.75/16.78
			Tamb 40°C		kW	1.1/2.52	1.55/3.43	1.97/4.32	2.93/6.23	3.96/7.98	4.62/9.67	5.73/11.58	8/15.33
			Tamb 45°C		kW	1.02/2.33	1.42/3.14	1.81/3.98	2.71/5.77	3.64/7.34	4.25/8.88	5.28/10.67	7.26/13.91
		Tev -20°C	Tamb 20°C		kW	1.15/2.63	1.68/3.71	2.08/4.57	3.08/6.55	4.29/8.66	4.93/10.32	6.12/12.38	8.99/17.24
			Tamb 25°C		kW	1.08/2.47	1.56/3.45	1.95/4.27	2.89/6.14	4.02/8.11	4.63/9.68	5.75/11.63	8.34/15.99
			Tamb 30°C		kW	1.01/2.3	1.44/3.2	1.81/3.98	2.7/5.75	3.75/7.57	4.32/9.03	5.38/10.88	7.68/14.73
			Tamb 35°C		kW	0.93/2.13	1.33/2.95	1.68/3.69	2.52/5.37	3.49/7.03	4.01/8.38	5.01/10.13	7.03/13.48
			Tamb 40°C		kW	0.86/1.97	1.22/2.7	1.55/3.41	2.34/4.99	3.22/6.49	3.7/7.74	4.64/9.38	6.38/12.23
			Tamb 45°C		kW	0.79/1.81	1.11/2.46	1.43/3.13	2.17/4.61	2.96/5.96	3.39/7.09	4.27/8.63	5.74/11
		Tev -15°C	Tamb 20°C		kW	0.9/2.06	1.3/2.89	1.63/3.57	2.43/5.16	3.45/6.96	3.89/8.13	4.87/9.85	7.12/13.66
			Tamb 25°C		kW	0.84/1.92	1.21/2.67	1.51/3.32	2.27/4.83	3.23/6.5	3.64/7.62	4.58/9.25	6.58/12.62
			Tamb 30°C		kW	0.78/1.78	1.11/2.47	1.4/3.08	2.12/4.51	3/6.05	3.39/7.1	4.28/8.65	6.02/11.55
			Tamb 35°C		kW	0.72/1.64	1.02/2.26	1.3/2.84	1.98/4.2	2.78/5.61	3.14/6.57	3.98/8.04	5.46/10.47
			Tamb 40°C		kW	0.66/1.5	0.93/2.07	1.19/2.61	1.83/3.9	2.56/5.16	2.89/6.04	3.67/7.42	4.9/9.39
			Tamb 45°C		kW	0.6/1.36	0.85/1.88	1.09/2.38	1.69/3.59	2.34/4.72	2.63/5.51	3.36/6.8	4.34/8.32

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- Condenser with 6 poles axial fans
- Condensing unit under nitrogen pressure

CU2 CU3

- Muffler on discharge line
- Residential Soundproofing
- Electrical box: power control box with thermal protection and capacity regulation
- Soundproofing: double noise insulation (residential)

					HCI	HCI2015B2B1D4R	HCI2018B2B1D4R	HCI2020B2B1D4R	HCI2030B2B1D4R	HCI2050B2B1D4R	HCI3060B2B1D4R	HCI4120B2B1D4R	HCI4140B2B1D4R
Frame type						2					3	4	
Power supply					V/ph~/Hz	380-400/3N~/50							
Max absorbed current (70Hz)					A	3.0	3.4	4.3	6.0	7.4	10.1	11.8	14.5
Max absorbed power (70Hz)					kW	1.4	1.7	2.2	3.1	4.2	5.6	6.8	8.5
Working temperature					°C	-15 ÷ -40							
Compressor	Type					Semihermetic							
	Brand					Bitzer							
	Model					2GES-2Y	2FES-2Y	2DES-2Y	4FES-3Y	4DES-5Y	4CES-6Y	4PES-12Y	4NES-14Y
	Refrigerant					R449A							
Condenser	Fin pitch				mm	2.1							
	Fans nr.					1					2		
	Fans ø				mm	450							
	Model				ph/p	1ph-6P							
	Air flow				m³/h	2,943			2,701		5,850	5,366	
	Noise pressure level at 10 m (50Hz)				dB(A)	34	35	36	37	40	42	45	48
Connections	Suction				Ø mm	16		22	28			35	42
	Liquid				Ø mm	10				12			
	Standard liquid receiver				lt	2.3		5.7			10	21	21
	PED category					1						2	
	Unit net weight				kg	170		193	208	215	242	330	335
Cooling capacity	Min./Max.	Tev 5°C	Tamb 20°C		kW	2.27/5.1	2.82/6.22	3.88/8.38	5.18/10.71	7.14/14.06	9.3/19.06	12.68/23.34	15.36/28.01
			Tamb 25°C		kW	2.1/4.73	2.61/5.77	3.6/7.77	4.8/9.92	6.6/13	8.63/17.68	11.65/21.44	14.12/25.76
			Tamb 30°C		kW	1.93/4.34	2.4/5.3	3.32/7.17	4.42/9.15	6.08/11.96	7.97/16.33	10.63/19.57	12.9/23.53
			Tamb 35°C		kW	1.76/3.95	2.18/4.82	3.05/6.58	4.06/8.4	5.57/10.96	7.33/15.02	9.63/17.73	11.7/21.33
			Tamb 40°C		kW	1.58/3.56	1.96/4.33	2.78/6	3.71/7.68	5.07/9.98	6.71/13.75	8.65/15.93	10.5/19.16
			Tamb 45°C		kW	1.41/3.16	1.74/3.84	2.51/5.43	3.38/6.98	4.59/9.04	6.11/12.52	7.7/14.17	9.33/17.01
		Tev 0°C	Tamb 20°C		kW	1.82/4.09	2.27/5.02	3.19/6.89	4.31/8.91	6/11.81	7.77/15.92	10.69/19.69	13.02/23.75
			Tamb 25°C		kW	1.68/3.79	2.1/4.64	2.94/6.36	3.98/8.22	5.53/10.88	7.19/14.73	9.79/18.02	11.95/21.79
			Tamb 30°C		kW	1.54/3.47	1.92/4.25	2.71/5.85	3.66/7.56	5.07/9.98	6.62/13.56	8.9/16.38	10.89/19.86
			Tamb 35°C		kW	1.4/3.15	1.74/3.85	2.47/5.34	3.34/6.91	4.63/9.11	6.07/12.43	8.03/14.78	9.84/17.95
			Tamb 40°C		kW	1.25/2.82	1.55/3.43	2.24/4.85	3.04/6.29	4.2/8.27	5.53/11.34	7.18/13.21	8.81/16.06
			Tamb 45°C		kW	1.1/2.48	1.36/3.01	2.02/4.36	2.75/5.69	3.79/7.46	5.02/10.29	6.34/11.68	7.79/14.21
		Tev -5°C	Tamb 20°C		kW	1.43/3.21	1.79/3.96	2.57/5.55	3.52/7.27	4.94/9.73	6.38/13.07	8.83/16.25	10.82/19.73
			Tamb 25°C		kW	1.32/2.97	1.65/3.65	2.37/5.11	3.24/6.69	4.54/8.93	5.88/12.05	8.04/14.81	9.9/18.06
			Tamb 30°C		kW	1.21/2.71	1.51/3.33	2.16/4.68	2.96/6.12	4.14/8.16	5.4/11.05	7.28/13.4	9/16.41
			Tamb 35°C		kW	1.09/2.45	1.36/3	1.97/4.25	2.69/5.57	3.77/7.41	4.93/10.09	6.53/12.02	8.1/14.77
			Tamb 40°C		kW	0.97/2.17	1.2/2.65	1.77/3.83	2.44/5.04	3.4/6.69	4.48/9.17	5.8/10.68	7.22/13.16
			Tamb 45°C		kW	0.84/1.89	1.04/2.29	1.58/3.42	2.19/4.53	3.05/6	4.04/8.28	5.09/9.37	6.35/11.58
		Tev -10°C	Tamb 20°C		kW	1.09/2.45	1.38/3.05	2.02/4.37	2.81/5.81	3.97/7.82	5.12/10.49	7.1/13.06	8.77/16
			Tamb 25°C		kW	1.01/2.27	1.27/2.8	1.85/4.01	2.57/5.32	3.63/7.15	4.7/9.63	6.43/11.84	8/14.59
			Tamb 30°C		kW	0.92/2.06	1.15/2.54	1.69/3.65	2.34/4.84	3.3/6.5	4.3/8.8	5.78/10.64	7.23/13.2
			Tamb 35°C		kW	0.82/1.84	1.03/2.27	1.52/3.29	2.12/4.38	2.98/5.86	3.9/8	5.14/9.47	6.48/11.82
			Tamb 40°C		kW	0.72/1.61	0.9/1.98	1.36/2.93	1.9/3.94	2.67/5.26	3.53/7.23	4.53/8.33	5.74/10.46
			Tamb 45°C		kW	0.61/1.37	0.76/1.67	1.2/2.59	1.7/3.51	2.38/4.68	3.16/6.48	3.92/7.22	5.01/9.13
		Tev -20°C	Tamb 20°C		kW	0.8/1.81	1.02/2.26	1.55/3.34	2.18/4.51	3.1/6.1	4/8.19	5.51/10.15	6.9/12.59
			Tamb 25°C		kW	0.74/1.66	0.94/2.07	1.41/3.04	1.98/4.1	2.81/5.54	3.65/7.48	4.95/9.12	6.25/11.41
			Tamb 30°C		kW	0.67/1.5	0.84/1.86	1.27/2.74	1.79/3.7	2.53/4.99	3.31/6.79	4.41/8.11	5.61/10.24
			Tamb 35°C		kW	0.59/1.32	0.74/1.64	1.13/2.45	1.61/3.32	2.27/4.46	2.99/6.13	3.87/7.13	4.98/9.09
			Tamb 40°C		kW	0.5/1.12	0.63/1.4	1/2.15	1.43/2.96	2.01/3.96	2.68/5.49	3.35/6.17	4.36/7.96
			Tamb 45°C		kW	0.41/0.92	0.51/1.13	0.86/1.86	1.26/2.61	1.77/3.48	2.38/4.88	2.85/5.25	3.75/6.85
		Tev -15°C	Tamb 20°C		kW	0.56/1.26	0.72/1.58	1.13/2.45	1.63/3.36	2.32/4.56	3/6.15	4.09/7.53	5.22/9.51
			Tamb 25°C		kW	0.51/1.14	0.65/1.44	1.02/2.2	1.46/3.03	2.08/4.09	2.72/5.57	3.62/6.67	4.68/8.53
			Tamb 30°C		kW	0.45/1.01	0.58/1.28	0.91/1.96	1.31/2.7	1.85/3.64	2.44/5.01	3.16/5.82	4.14/7.55
			Tamb 35°C		kW	0.38/0.86	0.5/1.1	0.79/1.71	1.16/2.39	1.63/3.2	2.18/4.46	2.72/5	3.61/6.59
			Tamb 40°C		kW	0.31/0.7	0.4/0.89	0.68/1.47	1.01/2.09	1.42/2.79	1.92/3.94	2.28/4.2	3.1/5.65
			Tamb 45°C		kW	0.23/0.52	0.3/0.66	0.57/1.23	0.87/1.8	1.22/2.39	1.68/3.45	1.86/3.43	2.59/4.73

Hubbard Condensing units with CO_2 refrigerant

- Transcritical CO_2 Commercial Condensing Units for food retailers
- Wide range of capacities: 2 to 10HP MT
- Designed for quiet and energy-saving operation
- Inverter technology reduces energy consumption by up to 30%
- EC fans work efficiently and quietly
- Easy and flexible installation
- Designed as plug & play solutions

F-Gas Free

Protective Case

Plug&Play

Switchboard

Proportional Modulation

Electronic Control

GCU-PXB1

Medium Temperature				GCU 2020 PXB1	GCU 2040 PXB1	GCU 4070PXB1
Capacity *			HP	2	4	10
	Min.		kW	1.80	3.25	6.25
	Max.			3.39	6.50	12.54
Power & Energy EcoDesign (2009/125/EC)			Ph./Hz./VAC	3PH/50Hz/400VAC		
	FLC		A	8.64	16.04	18.25
	COP/SEPR			1.87/3.57 SEPR	3.24 SEPR	2.92 SEPR
			kWh/a	5,840	12,307	26,393
Compressor	Compression			2 Stage (Intercooler)		
	Type			Panasonic Hermetic Rotary		
	Cap Ctrl.			ABB Frequency Inverter		
	RPM			2,200 ~ 4,200	2,200 ~ 4,800	1,800 ~ 3,600
	Qty.			1		
	Oil			DAPHNE PZ68S		
			l	0.7	1.15	1.80
Gas cooler fans	Type			Ebmpapst EC		
	Qty.			1		2
			m^3/s	1.05		2.10
	Ø (dia.)		mm	450		
Sound pressure	(10 m)		dB(A)	40.0	45.0	48.0
Refrigerant	Type/GWP			R744/1		
Reciever volume			l	12.50		20.00
Standard pipe run			m	25	35	40
Liquid connections		Inch/Type		3/8"/K65		1/2"/K65
Suction connections		Inch/Type		3/8"/K65	1/2"/K65	
Oil seperator	Standard			no	yes/Turboil	
Oil level control	Standard			N/A	Cappillary	
Dimensions	Unit	LxDxH	mm	1,452x574x799		1,684x773x1,438
Surface area			m^2	0.83		1.29
Weight			kg	151	155	285
Colour		RAL		Light Grey RAL 7035 (Powder Coated & Baked)		
Controller	Type			CAREL pRack pR300 Electronic Controller		
High side PRV			Bar	N/A	120	
Intermetdiate PRV			Bar	90		80
Compressor HP Switch		Standard		Yes x1		
PED 2014/68/EU	Category			Cat. III		

* Nominal Tevap. -10°C | Tamb +32°C | 10K Superheat

Hubbard Condensing units with CO_2 refrigerant

- Transcritical CO_2 Commercial Condensing Units for food retailers
- Wide range of capacities: 4 to 10HP LT
- Designed for quiet and energy-saving operation
- Inverter technology reduces energy consumption by up to 30%
- EC fans work efficiently and quietly
- Easy and flexible installation
- Designed as plug & play solutions

F-Gas Free

Protective Case

Plug&Play

Switchboard

Proportional Modulation

Electronic Control

HCU-PXB1

Low Temperature				HCU2040PXB1	HCU4070PXB1
Capacity *			HP	4HP	10HP
	Min.		kW	1.7	3.3
	Max.			3.03	6.56
Power & Energy EcoDesign (2009/125/EC)			Ph./Hz./VAC	3PH/50Hz/400VAC	
	FLC		A	16.04	18.25
	COP/SEPR			1.5	1.55
			kWh/a	15,046	31,478
Compressor	Compression			2 Stage (Intercooler)	
	Type			Panasonic Hermetic Rotary	
	Cap Ctrl.			ABB Frequency Inverter	
	RPM			2,700 to 4,800	1,800 to 3,600
	Qty.			1	
	Oil			Daphne PZ68S	
			l	1.15	2.3
Gas cooler fans	Type			Ebmpapst EC	
	Qty.			1	
			m^3/s	1.05	2.1
	Ø (dia.)		mm	450	
Sound pressure	(10 m)		dB(A)	45	48
Refrigerant	Type/GWP			R744/1	
Reciever volume			l	12.5	20
Standard pipe run			m	35	40
Liquid connections		Inch/Type		3/8" (K65)	1/2" (K65)
Suction connections		Inch/Type		1/2" (K65)	
Oil seperator	Standard			Yes/Turboil	
Oil level control	Standard			Capillary	
Dimensions	Unit	LxDxH	mm	1,452x574x799	1,684x773x1,438
Surface area			m^2	0.83	1.29
Weight			kg	161	300
Colour		RAL		Light Grey RAL7035 (Powder Coated & Baked)	
Controller	Type			CAREL pRack pR300 Electronic Controller & Ultracap	
High side PRV			Bar	120	
Intermetdiate PRV			Bar	90	80
Compressor HP Switch		Standard		Yes x1	
PED 2014/68/EU	Category			Cat. III	

* Nominal Tevap -35°C | Tamb +32°C | 10K Superheat

CO_2 ZEAS condensing units

the smart choice for medium and low temperature refrigeration featuring proven ZEAS technology

- Perfect solution for all cooling and freezing applications with variable load conditions and high energy efficiency requirements. Particularly for use in supermarkets, cold storage, blast coolers and freezers, process etc.
- BLDC inverter swing compressor with onboard 2 stage technology with intercooler
- Reduced CO_2 emissions thanks to the use of natural refrigerant (CO_2) and low energy consumption
- Factory tested and pre-programmed for quick and easy installation and commissioning
- Increased installation flexibility thanks to limited dimensions
- Low sound level including "night mode" operation

High energy savings potential

- ☑ Highly efficient operation
- ☑ Cuts energy consumption compared to traditional refrigeration equipment
- ☑ Advanced Daikin BLCD inverter swing compressor technology precisely adapts to the system's needs, protected by 4 patents
- ☑ Eco-design compliant

Intelligent control

- ☑ Can be connected to a third party monitoring system
- ☑ Refrigeration unit can be controlled remotely through a powerful interface
- ☑ Remote control of target evaporation temperature, reset errors and other functions

Comfort

- ☑ Quiet operation, unobtrusive for customers and neighbours
  - High grade sound insulation on compressors
  - Condenser fans designed to limit noise
  - Two low noise operation settings including night mode
- ☑ Wide temperature range (-40°C to +5°C) allows multiple cabinet, freezer and cold room combinations
- ☑ Unified model for freezing, cooling and/or refrigerating applications

Reliable operation

- ☑ CO_2 ZEAS condensing units are rigorously tested on the assembly line
- ☑ Proven inverter swing technology
- ☑ Anti-corrosion treatment on the housing ensures long life even in extreme conditions
- ☑ Daikin condensing units are at the heart of refrigeration applications such as food retail, food processing, logistic center, pharmaceutical and more

Smart refrigeration

with additional advantages

Small footprint

- Extremely compact design
- Best surface to capacity ratio on the market
- Easy to install in the smallest spaces
- Indoor installation possible
- Minimal space required between units in multi-unit installations

Fully packaged

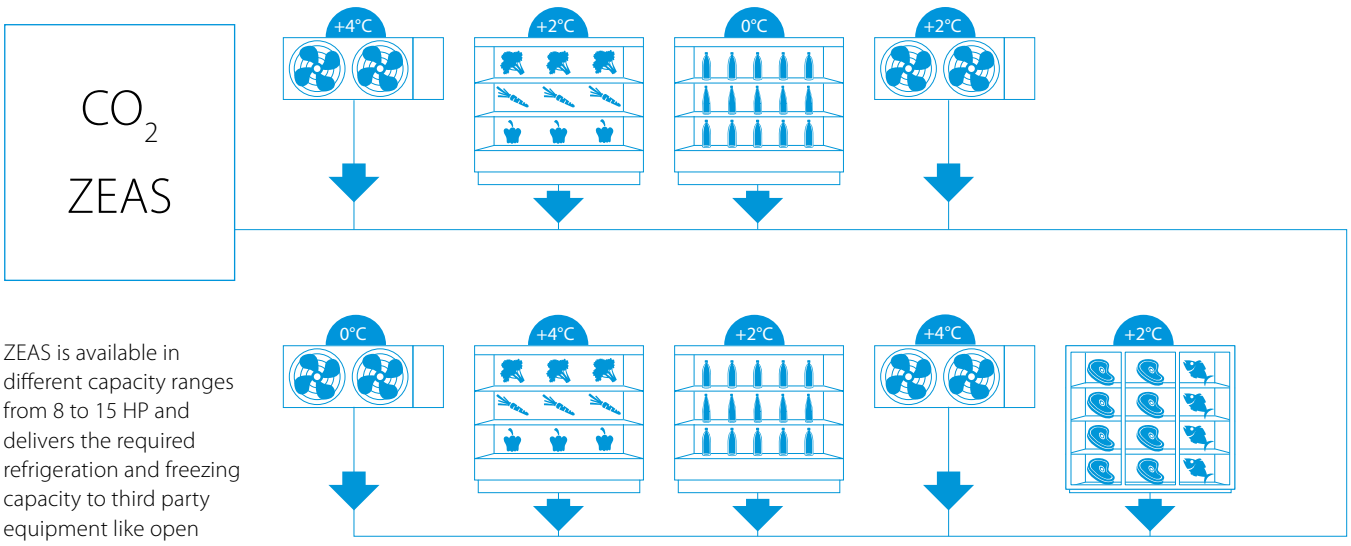
- Component selection risk reduced to zero
- Leak testing and run test in factory
- Built-in controls ensure optimum operation and unit safety

Wide temperature range

- Precise evaporating temperatures from -40°C to +5°C depending on the application

Comprehensive support

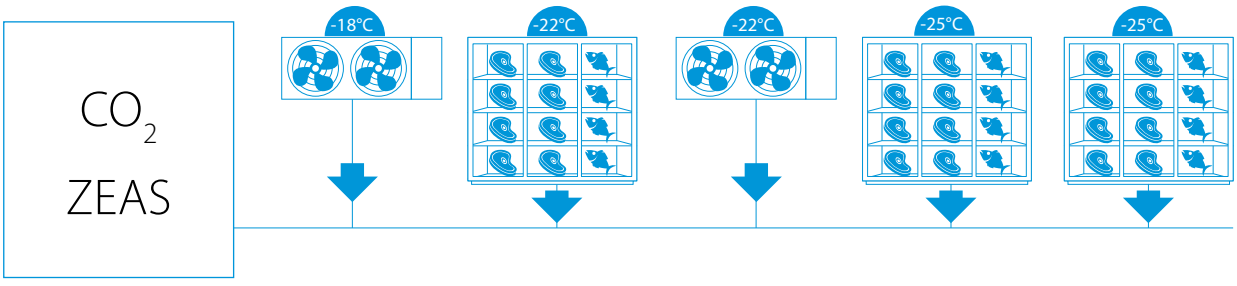
- Daikin provides comprehensive service and maintenance tools



ZEAS is available in different capacity ranges from 8 to 15 HP and delivers the required refrigeration and freezing capacity to third party equipment like open showcases, glass door freezers and evaporators.

Operating range
Ambient temperatures: -20°C to +43 °C
Evaporating temperatures: -40°C to +5°C

* Te= -35°C, Tc = -10°C, 10 K SH, Tamb = 32°C



INVERTER

CO_2 ZEAS refrigeration condensing unit

Refrigeration solution for various application featuring award winning swing technology with heat recovery to water possibility

- Condensing units ideal for commercial and industrial applications with variable cooling capacity
- Compressor controlled by inverter
- Daikin swing compressor
- Suitable for outdoor use in different climatic conditions
- Wide range of capacities

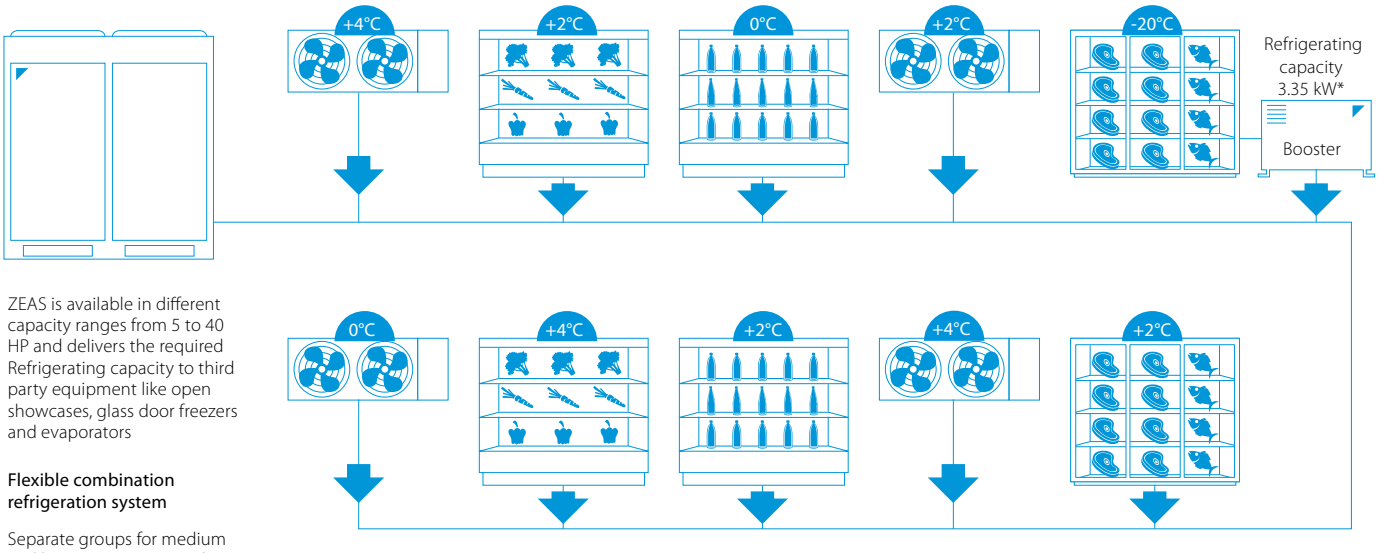
CO_2 ZEAS 8 -10-12 HP

LREN-A

Low Temperature Refrigeration, Medium Temperature Refrigeration, Heat Recovery				LREN	8AY1	10AY1	12AY1	12AY1+LRNUN5AY1
Refrigerating capacity	Low temperature	Nom.		kW	11.2 (1)	13.5 (1)	15.5 (1)	17.3 (1)
	Medium temperature	Nom.		kW	19.8 (2)	23.1 (2)	26.3 (2)	31.7(2)
Power input	Low temperature	Nom.		kW	11.6 (1)	14.1 (1)	16.9 (1)	18.6 (1)
	Medium temperature	Nom.		kW	10.7 (2)	13.2 (2)	15.5 (2)	20.1 (2)
COP	Medium temperature	Nom.			1.86 (2)	1.75 (2)	1.69 (2)	1.58 (2)
Dimensions	Unit	HeightxWidthxDepth		mm	1,680x1,930x765			-
Weight	Unit			kg	547			-
Heat exchanger	Type				Cross fin coil (waffle louver fins and Hi-X tubes)			-
Compressor	Type				Hermetically sealed swing compressor			-
	Output			W	4,600.0			-
	Piston displacement			m^3/h	6.16			-
	Starting method				Direct on line (inverter driven)			-
Fan	Type				Propeller fan			-
	Quantity				3			-
	Air flow rate	Cooling	Nom.	m^3/min	285 (3)		315 (3)	-
Fan motor	Output			W	750			-
	Drive				Direct drive			-
Sound pressure level	Nom.			dBA	61.0 (5)	62.0 (5)	64.0 (5)	65.0 (4)
	Low noise mode 1			dBA	59.0 (4)	59.0 (4)	61.0 (4)	
	Low noise mode 2			dBA	53.0 (4)	54.0 (4)	56.0 (4)	
Piping connections	Liquid	OD		mm	15.9			
	Gas	OD		mm	22.2			
Refrigerant	Type/GWP				R744 (CO_2)/1.0			
	Charge			kg	0.00 (4)			
	Control				Electronic expansion valve			
Power supply	Phase/Frequency/Voltage			Hz/V	3N~/50/380-415			

(1)Rated conditions: saturation temperature equivalent to suction pressure: -35°C (LT),outdoor temp. 32°C, Suction SH 10K | (2)Rated conditions: saturation temperature equivalent to suction pressure: -10°C (MT), outdoor temp. 32°C, Suction SH 10K | (3)Outdoor Unit Total Airflow | (4)The unit is not pre-charged. A minimal rest charge is present related to factory quality inspection | (5)Sound pressure data: measured at 1m in front of unit, at 1.5m height. Nominal operation condition – Medium evaporation temperature (MT) | Minimum load of each individual refrigeration indoor unit: 3 KW (for Medium Temperature Operation) | Minimum load of each individual refrigeration indoor unit: 2 KW (for Low Temperature Operation). | Every compressor equipped with 1 accumulator of 0.909 liters. | Compressor 1 | Compressor 2 | Compressor 3 | Factory charge of unit | For MT (Medium Temperature) Operation | For LT (Low Temperature) Operation | Compressor 1: 2Y190CPCY1P#C; Compressor 2: 2Y190CPCY1P#C; Compressor 3: 2Y190CPDY1P#C | Only K65 (or equivalent) with D.P. 90 bar is allowed to use for refrigeration piping. | For all the LRNUN5A7Y1 specifications, please refer to the related MDM drawing

ZEAS, the smart choice for medium and low temperature refrigeration



ZEAS is available in different capacity ranges from 5 to 40 HP and delivers the required Refrigerating capacity to third party equipment like open showcases, glass door freezers and evaporators

Flexible combination refrigeration system

Separate groups for medium and low temperature cooling, each with multiple cabinets and different temperatures. This flexibility and energy savings of up to 50% are only possible with ZEAS-systems.

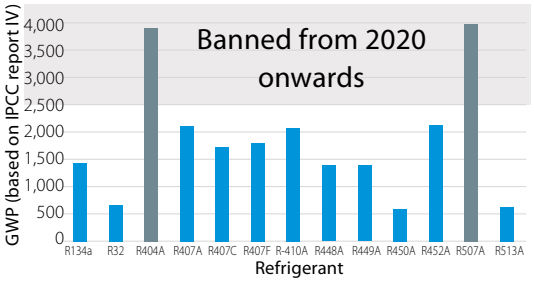
Operating range
Ambient temperatures: -20°C to +43 °C
Evaporating temperatures: -45°C to +10°C

* Te= -35°C, Tc = -10°C, 10 K SH, Tamb = 32°C
* Only Zeas. Not applicable for Mini-Zeas and Multi-Zeas

Why R-410A?

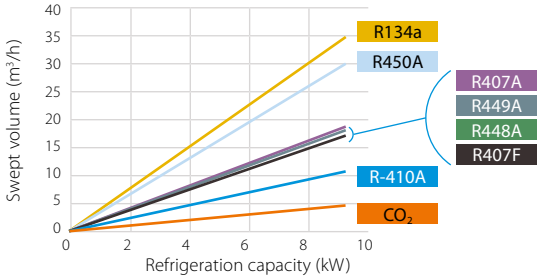
R-410A is a lower GWP refrigerant (less than 2,500) than R404A and is fully F-gas compliant. It's future proof: it can be used even after 2030!

Use of refrigerant in refrigeration system with a refrigeration lower than 40 kW



Contributes to reducing installation cost and refrigerant charge
R-410A is a high pressure refrigerant which for the same swept volume can deliver much more refrigeration capacity than standard mid pressure and low pressure refrigerants.

Delivered capacity per used refrigerant

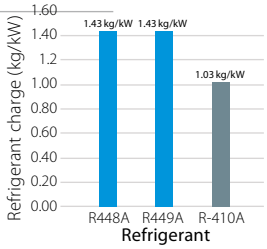


This means that for the same delivered refrigeration capacity we can use smaller components, thus reducing the installation cost and the amount of refrigerant charge in the system!

For a capacity of 8.4 kW (Te = -10°C / Tamb = 32°C)

Refrigerant	Suction piping diameter
R134a	1 1/8"
R407A	7/8"
R407F	7/8"
R448A	7/8"
R449A	7/8"
R450A	1 1/4"
R-410A	3/4"
CO_2	1/2"

Refrigerant charge per used refrigerant (Te = -10°C / Tamb = 32°C)



R-410A is also:
- an easy to handle, common used refrigerant in the air conditioning world, therefore it is easy to find an installer which can work with this refrigerant, compared to CO_2, Ammonia and Propane.
- an A1 refrigerant, therefore no special safety measurements are required.

ZEAS condensing unit for commercial refrigeration with scroll technology

Refrigeration solution for medium to large capacity applications featuring proven VRV technology

- One model for all applications from -45°C to 10°C evaporating temperature
- Perfect solution for all cooling and freezing applications with variable load conditions and high energy efficiency requirements. In particular used in supermarkets, cold storage, blast coolers and freezers etc.
- DC inverter scroll compressor with economiser function results in high energy efficiency and reliable performance
- Reduced CO_2 emissions thanks to the use of R-410A refrigerant and low energy consumption
- Factory tested and pre-programmed for quick and easy installation and commissioning
- VRV (Variable Refrigerant Volume) technology for flexible application range

LREQ-BY1(R)

- Increased installation flexibility thanks to limited dimensions
- Low sound level including „night mode" operation
- For small freezing capacity, single ZEAS units can be connected to a booster unit
- Dedicated unit to allow multi combination of 2 x 15 HP or 2 x 20 HP resulting in less pipework or installation time

LREQ-BY1

				LREQ-BY1	5	6	8	10	12	15	20
Refrigerating capacity	Low temperature	Nom.		kW	5.51 (1)	6.51 (1)	8.33 (1)	10.0 (1)	10.7 (1)	13.9 (1)	15.4 (1)
	Medium temperature	Nom.		kW	12.5 (2)	15.2 (2)	19.8 (2)	23.8 (2)	26.5 (2)	33.9 (2)	37.9 (2)
Power input	Low temperature	Nom.		kW	4.65 (1)	5.88 (1)	7.72 (1)	9.27 (1)	9.89 (1)	12.8 (1)	14.1 (1)
	Medium temperature	Nom.		kW	5.10 (2)	6.56 (2)	8.76 (2)	10.6 (2)	12.0 (2)	15.2 (2)	17.0 (2)
Seasonal energy performance ratio SEPR	R-410A	Te -10°C			3.86	3.79	3.64	3.42	3.51	3.38	3.23
		Te -35°C			1.80	1.77	1.84	1.88	1.80	1.70	1.70
Annual electricity consumption Q	R-410A	Te -10°C		kWh/a	19,907	24,681	33,483	42,794	46,377	61,683	72,030
		Te -35°C		kWh/a	22,805	27,453	33,817	39,747	44,363	61,090	67,325
Parameters at full load and ambient temp. 32°C (Point A)	R-410A	Te -10°C	Rated COP (COPA)		2.45	2.32	2.26	2.25	2.21	2.23	
		Te -35°C	Rated COP (COPA)		1.18	1.11		1.08		1.09	
Parameters at full load and ambient temp. 43°C	R-410A	Te -10°C	Declared COP (COP3)		1.54	1.57	1.40	1.46	1.47	1.46	1.51
		Te -35°C	Declared COP (COP3)		0.76	0.74	0.68	0.70	0.71		0.74
Dimensions	Unit	Height		mm	1,680						
		Width		mm	635		930			1,240	
		Depth		mm	765						
Weight	Unit			kg	166		242			331	337
Heat exchanger	Type				Cross fin coil						
Compressor	Type				Hermetically sealed scroll compressor						
	Output			W	2,600	3,200	2,100	3,000	3,400	2,600	3,400
	Piston displacement			m^3/h	11.18	13.85	19.68	23.36	25.27	32.24	35.8
	Speed			rpm	5,280	6,540	4,320	6,060	6,960	5,280	6,960
	Starting method				Direct on line (inverter driven)						
Compressor 2	Output			W	-		3,600				
	Speed			rpm	-		2,900				
Compressor 3	Output			W	-					3,600	
	Speed			rpm	-					2,900	
Fan	Type				Propeller fan						
	Quantity				1					2	
	Air flow rate	Cooling	Nom.	m^3/min	95	102	171	179	191	230	240
Fan motor	Output			W	350		750			350	750
	Drive				Direct drive						
Fan motor 2	Output			W	-					350	750
Sound pressure level	Nom.			dBA	55.0 (3)	56.0 (3)	57.0 (3)	59.0 (3)	61.0 (3)	62.0 (3)	63.0 (3)
Operation range	Evaporator	Cooling	Max.~Min.	°CDB	10~-45						
Refrigerant	Type / GWP				R-410A/2,087.5						
	Charge			kg	5.2		7.9			11.5	
				TCO_2eq	10.9		16.5			24.0	
	Control				Electronic expansion valve						
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/380-415						

			LREQ-BY1	30	40
System	Outdoor unit module 1			LREQ15BY1R	LREQ20BY1R
	Outdoor unit module 2			LREQ15BY1R	LREQ20BY1R
Refrigerating capacity	Medium temperature	Nom.	kW	67.8 (1)	75.8 (1)
	Low temperature	Nom.	kW	27.8	29.6
Power input	Medium temperature	Nom.	kW	30.4	34.0
	Low temperature	Nom.	kW	25.6	27.6
Sound pressure level	Nom.		dBA	65.0	66.0
Piping connections	Liquid			ø 19.05	
	Gas			ø 41.28	

(1) Cooling: evaporating temp. -10°C; outdoor temp. 32°C; suction SH10°C (2) Cooling: evaporating temp. -35°C; outdoor temp. 32°C; suction SH10°C (3) Sound pressure data: measured at 1m in front of unit, at 1.5m height | RLA is based on following conditions: outdoor temp. 32°CDB; suction SH 10°C; saturated temperature equivalent to suction pressure -10°C

INVERTER

Mini-ZEAS condensing unit

Refrigeration solution for small food retailers

- Inverter technology guarantees optimal food conservation by ensuring an accurate temperature and humidity control
- The economized scroll contributes to a longer lifetime expectation of the refrigeration equipment and less maintenance requirement
- The use of R-410A refrigerant allows the use of smaller piping diameters, thus reducing the refrigerant content in the system helping to lower our CO_2 footprint. R-410A is fully compliant with the latest F-Gas regulation and can be still used after 2020 and beyond
- The DC economized compressor improves drastically the efficiency of the unit, thus helps lowering the energy bill!
- Lowest sound level in the market down to 31 dBA. Sound level can be even further reduced thanks to the low noise modes
- The weight of the unit is very low, therefore the unit can even be mounted on the wall
- Up to 75% smaller than equivalent products in the market, ideal for those places where space is limited
- Advanced software solution for easy system configuration and commissioning

LRMEQ-BY1

Inverter technology

Scroll compressor

LRMEQ-BY1 LRLEQ-BY1

Medium Temperature Refrigeration				LRMEQ/LRLEQ	3BY1	4BY1	3BY1	4BY1
Connectable capacity	Minimum~Maximum			%	50~100			
Refrigerating capacity	Low	Nom.		kW	-		2.78 (1)	3.62 (1)
	Medium	Nom.		kW	5.90	8.40	-	
Power input	Low	Nom.		kW	-		2.60 (1)	3.41 (1)
	Medium	Nom.		kW	2.53	3.65	-	
COP	Medium	Nom.			2.33	2.30	-	
Seasonal energy performance ratio SEPR	R-410A	Te -10°C - Te -35°C			4.17	4.08	1.74	1.68
Annual electricity consumption Q	R-410A	Te -10°C - Te -35°C		kWh/a	8,698	12,651	11,920	16,048
Parameters at part load and ambient temp. 25°C (Point B)	R-410A	Te -10°C - Te -35°C	Declared COP (COPB)		2.93	2.87	1.26	1.23
Parameters at full load and ambient temp. 32°C (Point A)	R-410A	Te -10°C	Rated COP (COPA)		2.33	2.30	-	
		Te -35°C	Rated COP (COPA)		-		1.07	1.06
		Te -10°C - Te -35°C	Rated cooling capacity (PA)	kW	5.90	8.40	2.78	3.62
			Rated power input (DA)	kW	2.53	3.65	2.60	3.41
Parameters at full load and ambient temp. 43°C	R-410A	Te -10°C	Declared COP (COP3)		1.51	1.48	-	
		Te -35°C	Declared COP (COP3)		-		0.59	0.66
		Te -10°C - Te -35°C	Cooling capacity (P3)	kW	5.28	7.22	2.13	3.02
			Power input (D3)	kW	3.50	4.89	3.58	4.57
Parameters at part load and ambient temp. 15°C (Point C)	R-410A		Declared COP (COPC)		4.12	3.92	1.63	
Parameters at part load and ambient temp. 5°C (Point D)	R-410A		Declared COP (COPD)		5.15	5.20	2.13	1.98
Dimensions	Unit	HeightxWidthxDepth		mm	1,345x900x320			
Weight	Unit			kg	126		130	
Heat exchanger	Type				Cross fin coil			
Compressor	Type				Hermetically sealed scroll compressor			
	Starting method				Direct on line (inverter driven)			
Fan	Type				Propeller			
	Quantity				2			
	Air flow rate	Cooling	Nom.	m^3/min	106			
Fan motor	Output			W	70			
	Drive				Direct drive			
Sound pressure level	Nom.			dBA	51 (1)		51.0 (2)	
Piping connections	Liquid	OD		mm	9.52			
	Gas	OD		mm	19.1			
Refrigerant	Type/GWP				R-410A/2,087.5			
Refrigerant	Charge			kg/TCO2Eq	4.50/9.39		6.90/14.4	
	Control				Electronic expansion valve			
Power supply	Phase/Frequency/Voltage			Hz/V	3N~/50/380-415			

(1) Sound pressure data: measured at 1m in front of unit, at 1.5m height | (2)Cooling: evaporating temp. -35°C; outdoor temp. 32°C; suction SH10°C | Cooling: evaporating temp. -10°C; outdoor temp. 32°C; suction SH10°C

Compact CO_2 transcritical

Compact compressor racks fully equipped for cold generation with CO_2 in transcritical cycle

- Double V battery.
- Greater exchange surface, that allows a lower refrigerant flow and charge.
- Possibility of installing a heat recovery unit.
- Electrical panel with controller and disconnect switch with external control.
- Two independent modules to contain the compressors and the gas cooler.
- NV58 drivable EC fans.
- EPOXY resin treatment option for battery protection.
- Complete solution.
- Plug & Play.
- Indoor & outdoor.
- Gas Cooler included.
- 360° access.
- Compact equipment.
- Soundproofing.
- Selectable electronic brand.
- Condenser with 5 mm tubes (high performance) and with low refrigerant charge.
- Optional: proportional compressor.

Selectable electronic brand

NOVA66: 360° accessibility

RHX

RHX

PS 120 / 70 / 52 / 30 Bar

Plug & Play

Emergency unit

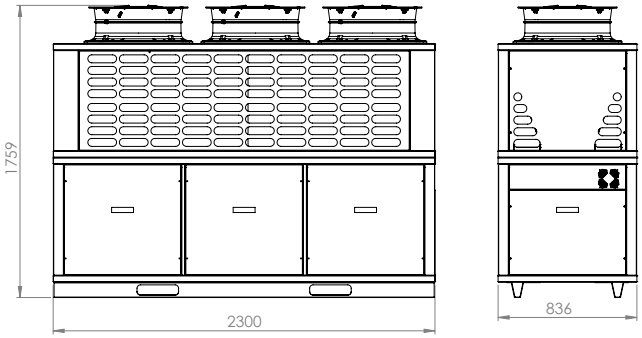
Compact design

Axial version NV66

Fans
- 3x Ø500 mm

Air flow
- 24,000 m³/h

Sound pressure at 10 m
- 46 up to 57 dB(A)



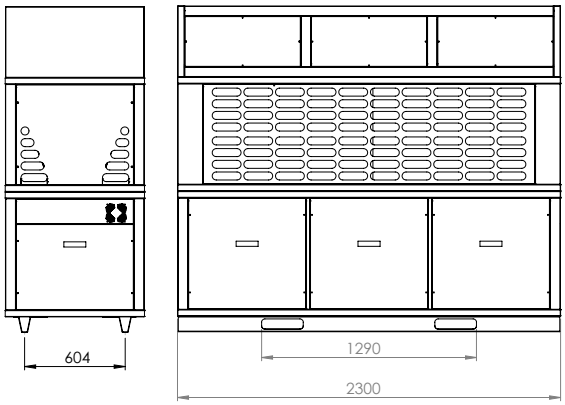
Radial version NV66

Fans
- 3x Ø500 mm

Air flow
- 22,500 m³/h

Available pressure
- 100 Pa

Sound pressure at 10 m
- 50 up to 56 dB(A)



NV66 CO_2					
Application		MT		MT + CP	
Cooling capacity	kW	44 kW	54 kW	63 kW	40 + 4 kW
Number of compressors	nº	2	3	2 + 1	2 + 1
Inverter compressors	nº	1	1	1 + 1	1 + 0 (opt.)
Extra equipment	Tipo	IHX/RHX	IHX/RHX	IHX/RHX	IHX/RHX
Recovery (max)	kW	30 kW	38 kW	40 kW	30 kW

* Calculation conditions: Tev MT -8ºC, Tev LT -32ºC, Tsgc +35ºC.

Compact transcritical CO_2 compressor racks

Compact compressor racks fully equipped for cold generation with CO_2 in transcritical cycle

- Double V battery with great exchange surface and lower flow rate required.
- Two independent modules to contain the compressors and the gas cooler.
- 360° accessible.
- Up to 5 compressors.
- 3 air outlet configurations.
- Electrical panel with controller.
- Multiple possibilities of loading and transportation.
- Complete solution.
- Plug & Play.
- Indoor & outdoor.
- Gas Cooler included.
- 360° access.
- Compact equipment.
- Soundproofing.
- Selectable electronic brand.
- Parallel compressor (option).
- Oil separator accumulator.
- 90 l liquid receiver with internal exchanger for connection to the emergency unit.
- Two electronic refrigerant level sensors (high and low level).
- Emergency unit on board.
- Parallel compressor (option).
- Copper pipes and connections.
- Frequency inverter for the first MT compressor and optional for the LT compressor.
- Selectable electronic brands: Tewis (EWCM9000pro), Danfoss (AK-PC 772) or Carel (pRack PR300T).
- Axial/radial fans option.
- RHX option.
- Design pressures:
  - MP (MT Suction): 52 bar.
  - LP (LT Suction): 30 bar.
  - IP (Receiver and liquid line): 70 bar.
  - HP (Discharge): 120 bar.

Selectable electronic brand

RHX

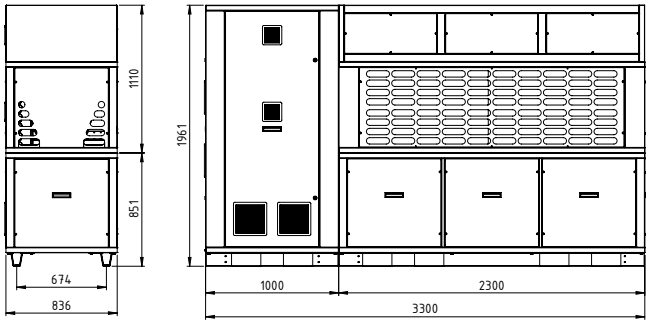
Emergency unit

PS 120 / 70 / 52 / 30 Bar

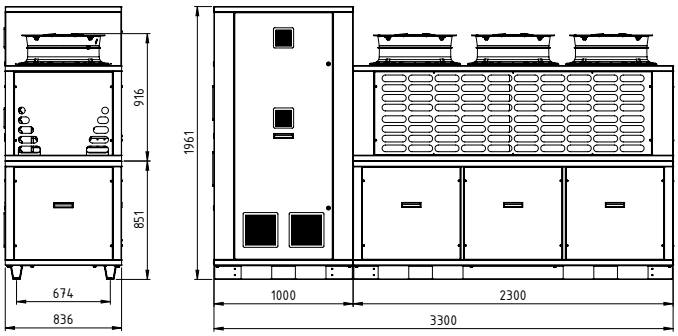
Compact design

Plug & Play

Radial version



Axial version



		GNV66**291XBX	GNV66**045XBX	TNV66**951YBX	TNV66**921YBX	TNV66**170XBX	TNV66**042XBX	TNV66**301XBX	TNV66**965YBX	TNV66**767XDX
Application		MT		MT + LT						
Compressor		Bitzer								Dorin
Capacity MT*	kW	47.37	70.05	43.44	49.33	66.12	46.52	63.31	28.42	37.27
Capacity LT*	kW	–	–	3.9	3.9	3.9	6.68	6.68	6.68	7.27
MT compressors		1x 4JTC-15K (V.F.) + 1x 4HTC-15K	1x 4JTC-15K (V.F.) + 2x 4HTC-15K	1x 4JTC-15K (V.F.) + 1x 4HTC-15K	1x 4MTC-10K (V.F.) + 2x 4KTC-10K	1x 4JTC-15K (V.F.) + 2x 4HTC-15K	1x 4MTC-10K (V.F.) + 2x 4KTC-10K	1x 4JTC-15K (V.F.) + 2x 4HTC-15K	1x 4MTC-10K (V.F.) + 1x 4KTC-10K	1x CD4120-9.2H (V.F.) + 1x CD490-9.2M
LT compressors		–	–	1x 2MSL-07K	1x 2MSL-07K	1x 2MSL-07K	2x 2MSL-07K	2x 2MSL-07K	2x 2MSL-07K	2x CDS101B

		TNV66**919YBX	TNV66**762XDX	TNV66**768XDX	TNV66**310XBX	TNV66**322XBX	TNV66**966YBX	TNV66**769XDX	TNV66**775XDX	TNV66**323XBX
Application		MT + LT								
Compressor		Bitzer	Dorin		Bitzer			Dorin		Bitzer
Capacity MT*	kW	44.96	26.44	34.8	42.09	58.88	23.99	30.85	41	55.82
Capacity LT*	kW	8.26	9.68	9.68	11.1	11.1	11.1	13.54	13.54	14.16
MT compressors		1x 4MTC-10K (V.F.) + 2x 4KTC-10K	1x CD490-6.4H (V.F.) + 1x CD490-9.2M	1x CD4120-9.2H (V.F.) + 1x CD490-9.2M	1x 4MTC-10K (V.F.) + 2x 4KTC-10K	1x 4JTC-15K (V.F.) + 2x 4HTC-15K	1x 4MTC-10K (V.F.) + 1x 4KTC-10K	1x CD4120-9.2H (V.F.) + 1x CD490-9.2M	1x CD490-6.4H (V.F.) + 2x CD490-9.2M	1x 4JTC-15K (V.F.) + 2x 4HTC-15K
LT compressors		1x 2JSL-2K	2x CDS151B	2x CDS151B	2x 2KSL-1K	2x 2KSL-1K	2x 2KSL-1K	2x CDS181B	2x CDS181B	2x 2JSL-2K

* Calculation conditions: Tev MT -8ºC, Tev LT -32ºC, Tsgc +35ºC.

Multi-compressor packs and racks

Compressor packs & racks

Multi compressor units

Standard configuration

Basic frame version:

- Basic frame made from folded and painted steel sheet, screwed with bolts to make a basic structure to fix the components on it

Basic refrigeration system:

- Each compressor is fitted with shut-off valves on suction line and discharge line
- The compressors are fixed to the frame through rubber anti vibration supports
- The oil system is through a oil separator, oil equalization is through a header fitted in the compressors oil sight glasses
- According to the number of compressors fitted, there are one or two oil level indicators, fitted into the equalization header
- The refrigerating system is equipped with liquid receiver, if the receiver is more than one, the installation is made in parallel with a safety valve; a dehydration cartridge filter, interchangeable, liquid level alarm, liquid sight glass and shut off valves
- On suction line there is a mechanical cartridge filter, interchangeable

Options and accessories:

- Mechanical oil equalization system
- Electronic oil distribution system
- Closed frame
- Closed frame with simple sound proofing material
- Closed frame with double layer sound proofing material
- Anti-vibration supports
- Oversized liquid receiver
- Different voltage and/or frequency
- EWCM 4180 Electronic card
- XC1000D-EWCM9100 Electronic card

Standard features

- Metal open frame with electrical switchboard
- Compressor parallel with discharge and suction header
- Liquid receiver
- Liquid line
- High and low pressure switch
- Electrical switchboard complete with electronic control

Single Screw compressor

The single screw compressor consists of a main single screw and two gate rotors. They are designed for high capacities and optimal performances through the step less capacity control.

Compact CO_2 mini compressor racks

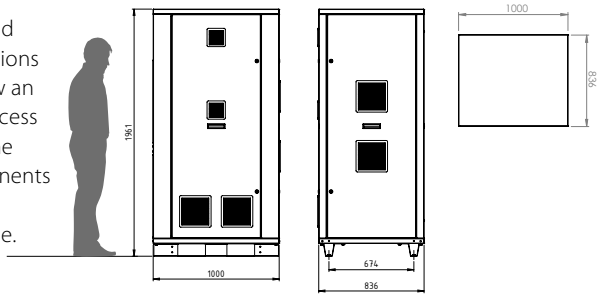
Mini compact compressor racks with less than 1 m^2 footprint, highly competitive, with CO_2 in transcritical cycle for cold generation

- Highly accessible front opening door with hinges.
- Lateral practicable door.
- Vertical liquid receiver with exchanger prepared for connection to the emergency unit.
- Practicable electrical panel with controller and complete wiring.
- Compatible with Tewis remote management systems.
- Adapted design for proper loading and transportation.
- Up to 2 MT compressors and 1 LT compressor.
- 360º access for easy maintenance.
- Oil separator accumulator.
- Two refrigerant level electronic sensors (high and low level).
- Frequency inverter for the first MT compressor and optional for the LT compressor.
- Optional frame for outdoor use.
- 48l liquid receiver, with internal exchanger for connection to the emergency unit.
- Optional connection to an external RHX. RHX can be installed on MT models.
- Emergency unit not included (junctions included). Required power: 280 W @R134a Tev +5°C.
- Selectable electronic brands: Tewis (EWCM9000pro), Danfoss (AK-PC 772) or Carel (pRack PR300T Medium).
- Bitzer & Dorin compressors.
- Design pressures:
  - MP (MT suction): 52 bar.
  - LP (LT suction): 30 bar.
  - IP (Receiver and liquid line): 70 bar.
  - HP (Discharge): 120 bar.

360º access, with lateral practicable door.

NS21

Reduced dimensions to allow an easy access to all the components of the machine.



RHX — RHX

Plug & Play — Plug & Play

Compact design — Compact design

PS 120 / 70 / 52 / 30 Bar — PS 120 / 70 / 52 / 30 Bar

Sound-proofing [Optional] — Sound-proofing [Optional]

Maintan. costs — Maintan. costs

BITZER		GNS21JC302XBX	GNS21JC872YBX	GNS21JC882YBX	TNS21JC304XBX	TNS21JC881YBX	TNS21JC880YBX
Application		MT			MT+LT		
Capacity MT*	kW	18.17	22.63	35.15	14.24	31.88	31.22
Capacity LT*	kW	-			3.90	3.23	3.90
GC needed	kW	32.08	39.96	62.08	32.08	62.08	62.08
MT Compressors	nº	1x 2MTE-5K + 1x 2KTE-7K	1x 4PTC-7K + 1x 4MTC-7K	1x 4MTC-10K + 1x 4KTC-10K	1x 2MTE-5K + 1x 2KTE-7K	1x 4MTC-10K + 1x 4KTC-10K	1x 4MTC-10K + 1x 4KTC-10K
LT Compressors	nº	-			1x 2MSL-07K	1x 2NSL-05K	1x 2MSL-07K
Lp**	dB(A)	38.7	46.7	47.3	39.4	47.4	47.4

DORIN		GNS21JC677XDX	GNS21JC684XDX	GNS21JC750XDX	TNS21JC670XDX	TNS21JC679XDX	TNS21JC678XDX	TNS21JC658XDX	TNS21JC753XDX	TNS21JC659XDX
Application		MT			MT+LT					
Capacity MT*	kW	25.58	36.35	44.71	21.07	27.93	30.33	31.83	34.05	40.19
Capacity LT*	kW	-			4.37	8.15	5.83	4.37	10.30	4.37
GC Capacity	kW	45.17	64.18	78.95	45.17	64.18			78.95	
MT Compressors	nº	1x CD475-4.7H + 1x CD475-6.4M	1x CD490-6.4H + 1x CD490-9.2M	1x CD4120-9.2H + 1x CD490-9.2M	1x CD475-4.7H + 1x CD475-6.4M	1x CD490-6.4H + 1x CD490-9.2M	1x CD490-6.4H + 1x CD490-9.2M	1x CD490-6.4H + 1x CD490-9.2M	1x CD4120-9.2H + 1x CD490-9.2M	1x CD4120-9.2H + 1x CD490-9.2M
LT Compressors	nº	-			1x CDS101B	1x CDS181B	1x CDS151B	1x CDS101B	1x CDS301B	1x CDS101B
Lp**	dB(A)	39.6	41.2	42.1	39.7	41.3			42.2	42.1

* Calculation conditions: Tev MT -8ºC, Tev LT -32ºC, Tsgc +35ºC. | **Sound pressure at 10m, considering a spherical surface, in open ground and with soundproofing. Tolerance ±2 dB.

AXIAL		GNV58PE	GNV58PE LPS	GNV66PE	GNV66PE LPS
Capacity	kW	58.84	52.15	88.4	79.27
Air flow	m³/h	16,400	12,800	24,000	19,200
Sound pressure 10m	dBA	52	46	53	45
Fans	nº	2x Ø500 EC		3x Ø500 EC	

RAD.		GNV58NE	GNV66NE
Capacity	kW	56.28	85.61
Air flow	m³/h	15,000	22,500
Sound pressure 10m	dBA	49	50
Fans	nº	2x Ø500 EC	3x Ø500 EC

* Calculation conditions: Air T. 35ºC, GC outlet 37ºC, Gas Inlet T. 115ºC, Gas Pressure 92 bar. Available pressure radial models. 100 Pa

GNV58 GNV66

CO_2 compact compressor rack

Compact compressor racks fully equipped for the generation of cold with CO_2 in transcritical cycle

- Horizontal liquid receiver: 92/120/160 lit.
- Tubular chassis.
- Electrical panel located above the compressors.
- Separator accumulator.
- Up to 6 compressors.
- Easy start-up and maintenance: all connections on the same side.
- Reduced width of 790 mm that allows it to pass through any standard door.
- Oil separator accumulator.
- 92/120/160 l liquid receiver, with internal exchanger for connection to emergency unit.
- Two electronic refrigerant level sensors (high and low levels).
- Frequency inverter for the first MT compressor and optional for the LT compressor.
- Selectable electronics brand: Tewis (EWCM9000pro), Danfoss (AK-PC 772 or 782) or Carel (pRack PR300T Medium or Large).
- All copper connections.
- Design pressures:
  - MP (MT suction): 52 bar.
  - LP (LT suction): 30 bar.
  - IP (Receiver and liquid line): 70 bar.
  - HP (Discharge): 120 bar.

RHX — RHX

Emergency unit — Emergency unit

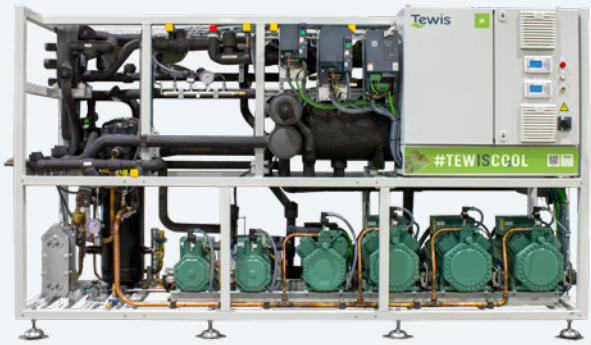
Plug & Play — Plug & Play

PS 120 / 70 / 52 / 30 Bar — PS 120 / 70 / 52 / 30 Bar

Compact design — Compact design

40 to 140KW — 40 to 140KW

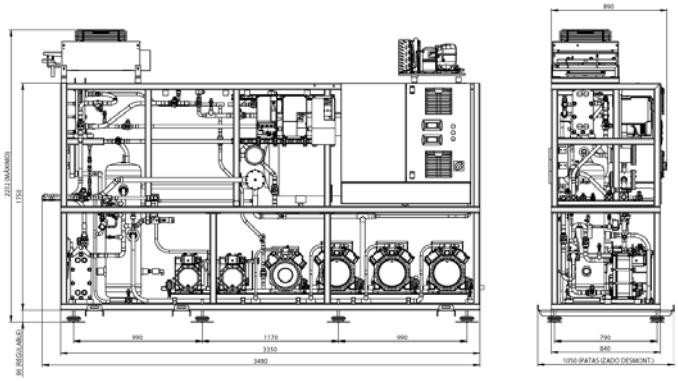
Receiver up to 160l — Receiver up to 160l



Smart Rack

Three different frame sizes available:

- 4 compressors: lenght 1,900 mm
- 5 compressors: lenght 2,650 mm
- 6 compressors: lenght 3,350 mm



			GSR2FJ_093YBX	GSR2FJ_041YBX	TSR2EJ_585XBX	TSR2FJ_092XBX	TSR2FJ_086YBX	TSR2FJ_089YBX
Application			MT		MT+LT			
Capacity MT*	70 Hz	kW	94.9	114.67	36.84	62.7	75.26	81.48
Capacity LT*	70 Hz	kW	-		5.79	6.48	6.48	6.48
MT Compressors		nº	1x 4JTE-15K (V.F.) + 2x 4JTE-15K	1x 4HTE-20K (V.F.) + 1x 4FTE-20K	1x 4JTE-15K (V.F.) + 1x 4JTE-15K	1x 4HTE-20K (V.F.) + 1x 4FTE-20K	1x 4HTE-20K (V.F.) + 2x 4HTE-20K	1x 4HTE-20K (V.F.) + 1x 4HTE-20K
Parallel Compressors		nº	1x 4MTE-10K	1x 4JTE-15K	-			1x 4MTE-10K
LT Compressors		nº	-		1x 2KSL-1K	1x 2KSL-1K	1x 2KSL-1K	1x 2KSL-1K

			TSR2FJ_439YBX	TSR2FJ_090YBX	TSR2FJ_490YBX	TSR2FJ_489YBX	TSR2EJ_112XBX	TSR2FJ_128XBX
Application			MT+LT					
Capacity MT*	70 Hz	kW	70.61	37.97	62.01	73.76	20.47	50.81
Capacity LT*	70 Hz	kW	11.1	12.7	14.16	14.16	18.5	18.33
MT Compressors		nº	1x 4HTE-20K (V.F.) + 2x 4HTE-20K	1x 4JTE-15K (V.F.) + 1x 4HTE-20K	1x 4JTE-15K (V.F.) + 1x 4JTE-15K	1x 4HTE-20K (V.F.) + 1x 4HTE-20K	1x 4JTE-15K (V.F.) + 1x 4JTE-15K	1x 4HTE-20K (V.F.) + 1x 4FTE-20K
Parallel Compressors		nº	—	1x 4MTE-10K	1x 4MTE-10K	1x 4MTE-10K	-	
LT Compressors		nº	1x 2KSL-1K + 1x 2KSL-1K	1x 2GSL-3K	1x 2JSL-2K + 1x 2JSL-2K	1x 2JSL-2K + 1x 2JSL-2K	1x 2HSL-3K + 1x 2HSL-3K	1x 2HSL-3K + 1x 2HSL-3K

			TSR2FJ_128XBX	TSR2EJ_893XBX	TSR2FJ_193YBX	TSR2EJ_895XBX	TSR2FJ_444YBX	TSR2FJ_088YBX
Application			MT+LT					
Capacity MT*	70 Hz	kW	80.75	22.5	82.91	22.81	46.8	76.79
Capacity LT*	70 Hz	kW	18.5	21.06	21.77	28.07	27.82	27.82
MT Compressors		nº	1x 4HTE-20K (V.F.) + 2x 4FTE-20K	1x 4JTE-15K (V.F.) + 1x 4HTE-20K	1x 4HTE-20K (V.F.) + 2x 4FTE-20K	1x 4HTE-20K (V.F.) + 1x 4HTE-20K	1x 4JTE-15K (V.F.) + 2x 4HTE-20K	1x 4HTE-20K (V.F.) + 2x 4FTE-20K
Parallel Compressors		nº	—	—	—	—	—	—
LT Compressors		nº	2x 2HSL-3K	1x 2GSL-3K + 1x 2GSL-3K	1x 2GSL-3K + 1x 2GSL-3K	1x 2FSL-4K + 1x 2FSL-4K	1x 2FSL-4K + 1x 2FSL-4K	1x 2FSL-4K + 1x 2FSL-4K

			TSR2GJ_001ZBX	TSR2GJ_002ZBX	TSR2GJ_003ZBX	TSR2GJ_004ZBX	TSR2GJ_995YBX	TSR2GJ_005ZBX
Application			MT+LT					
Capacity MT*	70 Hz	kW	66.43	72.4	106.38	118.19	70	134.08
Capacity LT*	70 Hz	kW	6.68	11.1	14.16	21.77	25	27.82
MT Compressors		nº	1x 4MTE-10K (V.F.) + 2x 4MTE-10K	1x 4MTE-10K (V.F.) + 2x 4KTE-10K	1x 4JTE-15K (V.F.) + 2x 4HTE-15K	1x 4HTE-20K (V.F.) + 2x 4HTE-15K	1x 4JTE-15K (V.F.) + 2x 4HTE-20K	1x 4HTE-20K (V.F.) + 2x 4FTE-20K
Parallel Compressors		nº	1x 4MTE-10K (V.F.)	1x 4MTE-10K (V.F.)	1x 4JTE-15K (V.F.)	1x 4HTE-20K (V.F.)	1x 4MTE-10K (V.F.)	1x 4HTE-20K (V.F.)
LT Compressors		nº	1x 2MSL-07K (V.F.) + 1x2MSL-07K	1x 2KSL-1K (V.F.) + 1x 2KSL-1K	1x 2JSL-2K (V.F.) + 1x 2JSL-2K	1x 2GSL-3K (V.F.) + 1x 2GSL-3K	1x 2FSL-4K (V.F.) + 1x 2FSL-4K	1x 2FSL-4K (V.F.) + 1x 2FSL-4K

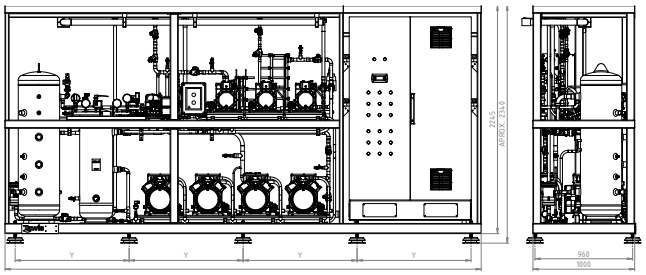
* Calculation conditions: Tev MT -8ºC, Tev LT -32ºC, Tsgc +35ºC. | Design pressures: MP (MT suction): 52 bar, LP (LT suction): 30 bar, IP (Container and liquid line): 70 bar, HP (Discharge): 120 bar | Temperature, LT = Low Temperature, pc = Parallel compressor

CO_2 compact compressor rack

Smart Duplex compressor racks offer the highest powers for the commercial refrigeration range with CO_2 at 2 temperatures

- Profitability and energy savings.
- 100% CO_2 = low enviromental impact.
- Compact and simple design (only 1 m depth).
- High capacity up to 9 compressors.
- Vertical liquid receiver with high capacity (up to 2x250 l).
- Extreme flexibility.
- Remote control (accessible anywhere).
- Easy commissioning and maintainance.
- Possibility of 2 RHX, one for DHW and one for air conditioning.
- Tubular chassis.
- Oil separator accumulator.
- High capacity liquid receiver (up to 2x250 l).
- Up to 9 compressors.
- Frequency inverter for MT & LT.
- Two electronic sensors for refrigerant levels.
- All copper connections.

Smart Duplex



from 4.7 up to 6 m (depending on model)

Depth: just 1 m

RHX — RHX

Plug & Play

M2 — 1,000 - 2,500 m²

PS 120 / 60 / 52 / 30 Bar

Emergency uni

Compact design

80 to 250KW

Liquid receiver up to 2x250

< Maintan. costs

			GSD3KJ_048ZBX	GSD3MJ_049ZBX	TSD3JJ_028ZBX	TSD3JJ_030ZBX	TSD3JJ_031ZBX	TSD3KJ_033ZBX
Application			MT		MT+LT			
Capacity MT*	70 Hz	kW	179.56	266.6	52	64.41	77.52	105.43
Capacity LT*	70 Hz	kW	-		20.37	31.32	26.38	34.14
MT Compressors		nº	1x 4HTE-20K (V.F. @70 Hz) + 4x 4FTE-30K	1x 4FTE-30K (V.F. @70 Hz) + 4x 4CTE-30K	1x 4JTE-15K (V.F. @70 Hz) + 2x 4HTE-20K	1x 4JTE-15K (V.F. @70 Hz) + 3x 4HTE-20K	1x 4HTE-20K (V.F. @70 Hz) + 2x 4FTE-30K	1x 4HTE-20K (V.F. @70 Hz) + 3x 4FTE-30K
Parallel Compressors		nº	-					
LT Compressors		nº	-		1x 2JSL-2K (V.F. @70 Hz) + 2x 2JSL-2K	1x 2GSL-3K (V.F. @70 Hz) + 2x 2GSL-3K	1x 2HSL-3K (V.F. @70 Hz) + 2x 2HSL-3K	1x 2HSL-3K (V.F. @70 Hz) + 3x 2HSL-3K

			TSD3JJ_035ZBX	TSD3JJ_034ZBX	TSD3JJ_050ZBX	TSD3JJ_051ZBX	TSD3MJ_052ZBX	TSD3MJ_053ZBX
Application			MT+LT					
Capacity MT*	70 Hz	kW	122.55	113.46	155.36	172.74	184.04	213.73
Capacity LT*	70 Hz	kW	18.62	26.81	36.44	36.44	75.88	48.21
MT Compressors		nº	1x 4HTE-20K (V.F. @70 Hz) + 3x 4FTE-30K	1x 4HTE-20K (V.F. @70 Hz) + 3x 4FTE-30K	1x 4HTE-20K (V.F. @70 Hz) + 3x 4CTE-30K	1x 4FTE-30K (V.F. @70 Hz) + 3x 4CTE-30K	1x 4FTE-30K (V.F. @70 Hz) + 4x 4CTE-30K	1x 4FTE-30K (V.F. @70 Hz) + 4x 4CTE-30K
Parallel Compressors		nº	-					
LT Compressors		nº	1x 2HSL-3K (V.F. @70 Hz) + 1x 2HSL-3K	1x 2JSL-2K (V.F. @70 Hz) + 2x 2GSL-3K	1x 2GSL-3K (V.F. @70 Hz) + 2x 2FSL-4K	1x 2GSL-3K (V.F. @70 Hz) + 2x 2FSL-4K	1x 2DSL-5K (V.F. @70 Hz) + 3x 2DSL-5K	1x 2GSL-3K (V.F. @70 Hz) + 3x 2FSL-4K

			TSD3JJ_037ZBX	TSD3JJ_039ZBX	TSD3JJ_042ZBX	TSD3JJ_040ZBX	TSD3JJ_044ZBX	TSD3KJ_041ZBX
Application			MT+LT					
Capacity MT*	70 Hz	kW	85.97	110.01	123.56	119.33	130.4	123.71
Capacity LT*	70 Hz	kW	31.32	26.81	14.38	35.02	24.67	36.44
MT Compressors		nº	1x 4JTE-15K (V.F. @70 Hz) + 2x 4HTE-20K	1x 4HTE-20K (V.F. @70 Hz) + 2x 4HTE-20K	1x 4HTE-20K (V.F. @70 Hz) + 2x 4HTE-20K	1x 4JTE-15K (V.F. @70 Hz) + 2x 4FTE-30K	1x 4JTE-15K (V.F. @70 Hz) + 2x 4FTE-30K	1x 4HTE-20K (V.F. @70 Hz) + 3x 4HTE-20K
Parallel Compressors		nº	1x 4JTE-15K (V.F.)	1x 4HTE-20K (V.F.)	1x 4HTE-20K (V.F.)	1x 4HTE-20K (V.F.)	1x 4HTE-20K (V.F.)	1x 4HTE-20K (V.F.)
LT Compressors		nº	1x 2GSL-3K (V.F. @70 Hz) + 2x 2GSL-3K	1x 2JSL-2K (V.F. @70 Hz) + 2x 2GSL-3K	1x 2JSL-2K (V.F. @70 Hz) + 1x 2JSL-2K	1x 2ESL-4K (V.F. @70 Hz) + 1x 2ESL-4K	1x 2GSL-3K (V.F. @70 Hz) + 1x 2FSL-4K	1x 2GSL-3K (V.F. @70 Hz) + 2x 2FSL-4K

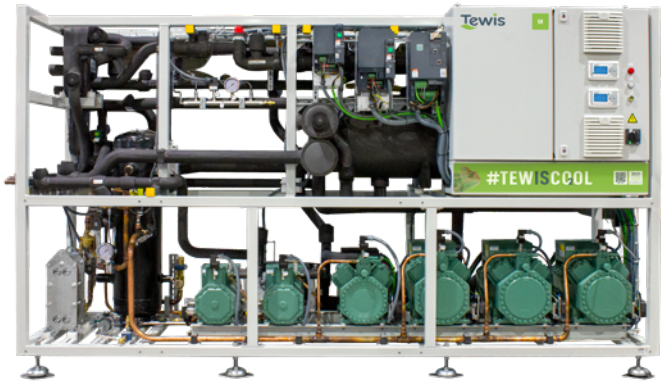
			TSD3KJ_041ZBX	TSD3JJ_045ZBX	TSD3KJ_046ZBX	TSD3KJ_047ZBX	TSD3KJ_096ZBX
Application			MT+LT				
Capacity MT*	70 Hz	kW	123.71	130.05	174.7	188.76	204.69
Capacity LT*	70 Hz	kW	36.44	31.32	49.61	36.44	26.38
MT Compressors		nº	1x 4HTE-20K (V.F. @70 Hz) + 3x 4HTE-20K	1x 4HTE-20K (V.F. @70 Hz) + 2x 4FTE-30K	1x 4HTE-20K (V.F. @70 Hz) + 3x 4FTE-30K	1x 4HTE-20K (V.F. @70 Hz) + 3x 4FTE-30K	1x 4GTE-30K (V.F. @70 Hz) + 2x 4DTE-25K
Parallel Compressors		nº	1x 4HTE-20K (V.F.)	1x 4HTE-20K (V.F.)	1x 4FTE-30K (V.F.)	1x 4FTE-30K (V.F.)	1x 4HTE-20K (V.F.) + 1x 4HTE-20K
LT Compressors		nº	1x 2GSL-3K (V.F. @70 Hz) + 2x 2FSL-4K	1x 2GSL-3K (V.F. @70 Hz) + 2x 2GSL-3K	1x 2ESL-4K (V.F. @70 Hz) + 2x 2ESL-4K	1x 2GSL-3K (V.F. @70 Hz) + 2x 2FSL-4K	1x 2HSL-3K (V.F. @70 Hz) + 1x 2HSL-3K

*Calculation conditions: Tev MT -8ºC, Tev LT -32ºC, Tsgc +35ºC.

Switchboard & electronic control

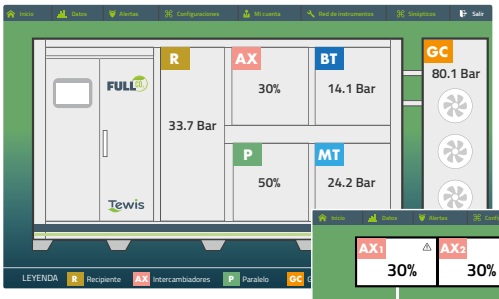
Switchboard

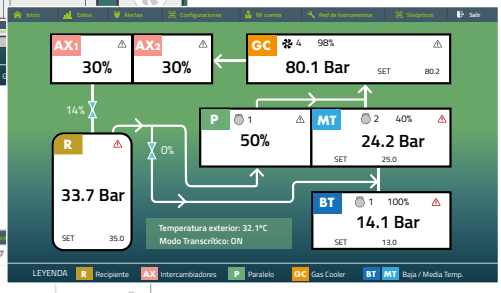
- Bench-mounted switchboard, including complete wiring.
- Power supply at 400V / 3F + N / 50Hz
- Frequency inverter in the first compressor in sections BT, MT and parallel
- Booster components and remote gas coolers electrically protected against overcurrents and short circuits.
- Option: electrical connections of power supply to the auxiliary unit

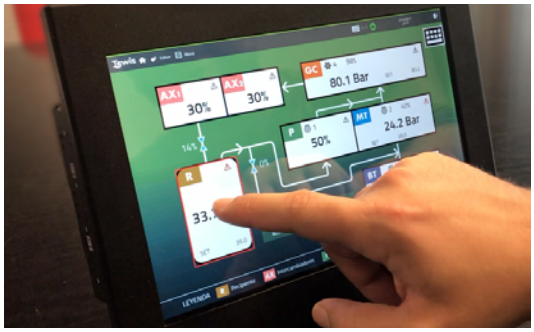


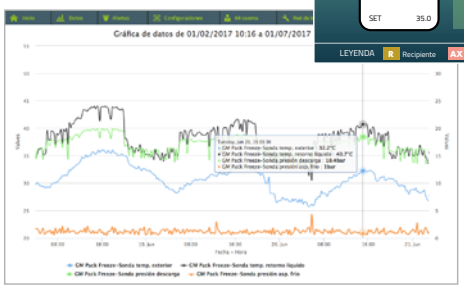
Electronic control

- It represents the best option for transcritical and subcritical CO_2 solutions with Booster circuit and allows to manage up to two circuits for the recovery of heat.
- Televis System compatible and open for the integration of Modbus RTU / TCP or BACnet MS / TP (optional) systems.
- Touch screen with synoptic and real-time data.
- Data logging and alarms.
- Historical charts and data tables.
- Parameter management.







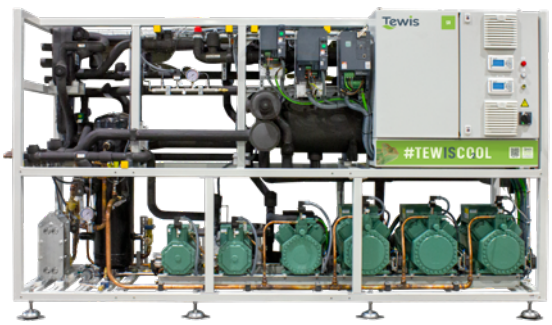


DAIKIN

Fresh ideas
for reliable performance

Choose the better solution – with Tewis Full CO_2 refrigeration systems

Why do so many widely-known retail chains count on Tewis? Because Tewis offers a well-thought-out, complete range of efficient refrigeration systems. Especially when working with R-744 under high pressure, best quality solutions count double. Avoid problems – with Tewis features like full stainless steel piping or surprisingly intuitive control systems.



www.daikin.eu

Tewis
a member of DAIKIN group

Integrated solutions

Freezing (Low temperature) (-20°C / +35°C)

Chilling (Medium temperature) (0°C / +35°C)

Cooling/AC (High Temperature) (+20°C/+10°C)

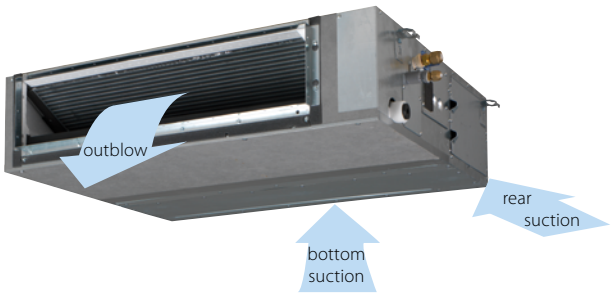
Heating

Model	Product name	Capacity (kW)	0	2	5	10	25	50	100	150	300	450
Integrated solution for chilling, freezing, comfort cooling and heating	Conveni-Pack LRYEQ-AY 		LT MT A/C HR + HP									
	CO_2 Conveni-Pack LRNUN-AY1, LRYEN-AY1 		MT AC HR									

Indoor units compatible with CO_2 Conveni-Pack

NEW

CO_2 Round Flow Cassette
FXFN-A



Concealed Ceiling Unit
FXSN-A2

Service station (Ranst, Belgium)
Conveni-Pack
Discover why a Belgian petrol station owner chose Daikin for its shop comfort and refrigeration needs.
www.youtube.com/DaikinEurope

Conveni-Pack,

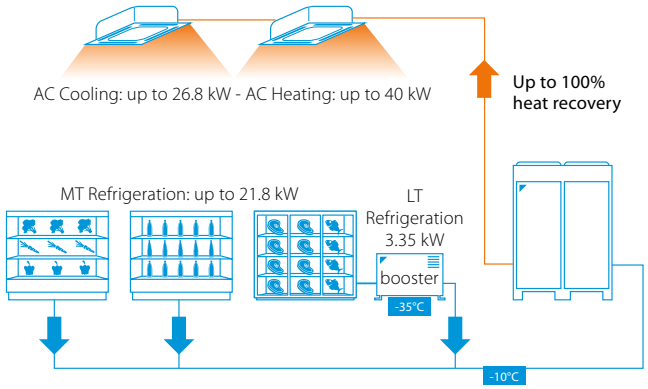
integrated solution for commercial refrigeration, heating and air conditioning

Why choose Conveni-Pack?

Competition in the retail food sector is fierce. This does not just affect the income you can earn from sales - operating costs are also a determing factor for success.

Energy efficient heat recovery system

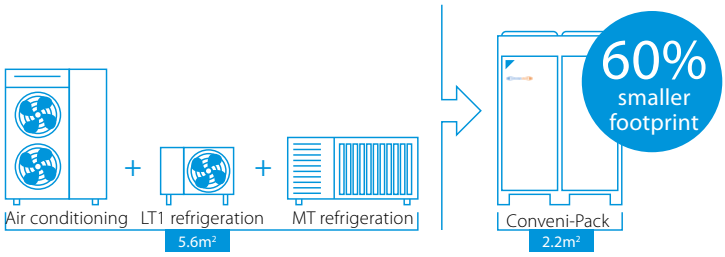
- Conveni-Pack recovers up to 100% of the heat extracted from supermarket refrigeration cases and re-uses it to heat the retail space and improve shop comfort at no additional cost (heat recovery system)
- Savings of up to 50% on energy costs
- Daikin inverter scroll compressor with economizer technology



Above-mentioned scheme is an example of what can be delivered depending on predefined conditions. For more detailed information, please consult the technical specifications in this catalogue.

Installing a compact solution

- Easy to install, even in small spaces
- Small footprint (up to 60% smaller footprint than conventional systems) and low weight
- Reduced piping requirements
- Minimal planning groundwork and lower assembly costs



Unique combination

- First mass-produced, whole-building system to combine medium and low refrigeration, heating, air conditioning in one circuit

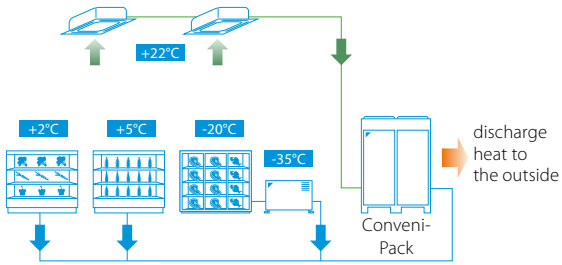
Reliable operation

- Error-proof component selection
- Factory leak-tested and pre-charged

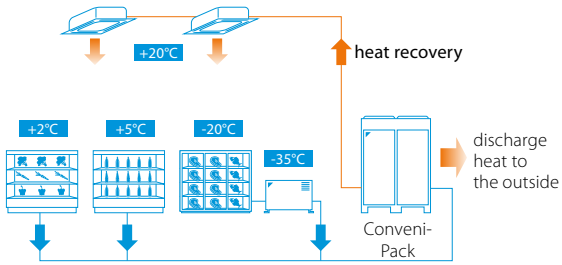
Year-round climate comfort

- Quiet operation: Improved acoustics thanks to night operation mode, inverter control and inverter driven fans with optimised blades and grills
- High grade sound insulation on both panels and compressors
- Specially designed fan blades to limit sound emissions
- 4 low sound operation settings including night mode
- The heat recovered from refrigerated and freezer display cabinets can be used to provide heating for the shop.

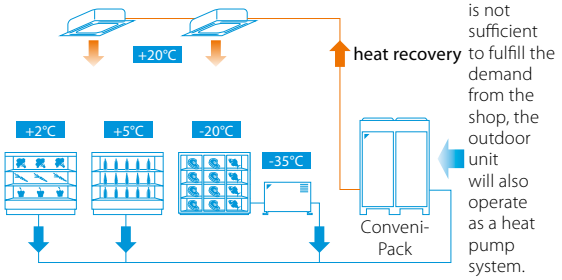
Summer



Spring/Autumn



Winter



If available heat from the cabinet is not sufficient to fulfill the demand from the shop, the outdoor unit will also operate as a heat pump system.

Internationally awarded

Winner of several awards* thanks to the innovating technology used and environmental friendly solution offered:

- Winner of UK Environmental Product of the Year, Cooling Industry Awards - 2006
- Winner of Incentive Prize, German Environment Ministry - 2007
- Winner of the Innovation Trophy, equipmag (exhibition in France) - 2008
- Winner of 2014 Institute of Refrigeration Ireland (IRI) Environmental award
- Environmental Friendliness category of the Top Retail Product Awards 2014 in Germany

Reference

Edeka Buschkühle supermarket (Germany)
2 Conveni-Pack systems supply 32 meters of service counters, 12.5 meters of convenience fridges, one cooling storage room for fruit, an air curtain and 5 indoor units; the ZEAS system supplies two deep-freeze cabinets with a total capacity of 5 kW.

Discover more references on
www.daikineurope.com/references

Benefits for installers/ consultants

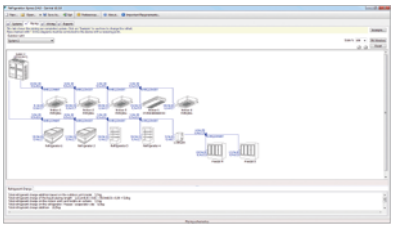
- Integrated electrical & control box
- Unit already pre-charged with refrigerant
- Established VRV technology ensuring optimised installation and maintenance
- Reduced delivery time thanks to European manufacturing plant
- Flexible system for multiple applications
- Connectable to all grocery refrigeration applications and supplied with a wide range of air conditioning indoor units to meet shop requirements
- Outdoor units can be positioned up to 35m above or 10m below the indoor units
- Piping length possible up to 130m
- Suitable for indoor installation through the use of high ESP fans

Benefits for shop owners

- Thought design for supermarkets and smaller retail outlets
- Maximised retail sales space available as Conveni-Pack has a footprint up to 60% smaller than conventional grocery refrigeration systems
- Reduced energy consumption by up to 50% through heat recovery
- Quiet operation, thus ideal for densely populated urban areas

Marketing tools

Refrigeration Xpress
User-friendly design software for Conveni-Pack, CCU, SCU and ZEAS condensing units. Its detailed report includes a list of materials, piping and wiring diagrams, and device options.



Short videos

- Watch a short animation on the unique refrigeration solution Conveni-Pack

CO_2 Conveni-Pack

Why choose CO_2 Conveni-pack?

- ☑ DX Refrigeration, Heating & Space cooling by CO_2, for those whom demand a totally natural solution
- ☑ Heat recovery, and for those colder days automatic heat pump operation
- ☑ Fully assembled & packaged unit, providing low noise levels
- ☑ Mass produced in Daikin Europe's award winning factory
- ☑ Each unit is fully factory & run tested
- ☑ All units in stock, fast delivery
- ☑ Reduces annual energy consumption by up to 50%, compared to other manufacturers solutions.
- ☑ Hermetic swing compressor, complete with two stage compression, for lower running temperatures
- ☑ Oversized DC Brushless motor technology for improved reliability & efficiency
- ☑ Automatically balances refrigeration & space heating / cooling loads
- ☑ "Plug and Play" technology, reduced "On site" commissioning
- ☑ Optimized control logic for reliability and efficiencies
- ☑ Adaptable evaporation temperature control


DAIKIN
CQ ZEAS

Natural HVACR 4 life:

the birth of CO_2 CVP and CO_2 round-flow cassette!

Life Project subject: "A sustainability-focused research project exploring the use of CO_2 as a natural refrigerant led by Daikin Europe and co-funded by the EU" (https://www.naturalhvacr4life.eu/)

Actions

- **Demonstrate a Conveni-Pack prototype with R744 as refrigerant.**

- **Install, operate and monitor** the performance of multiple Conveni-Pack prototypes in supermarkets across Europe, ranging from average to warm climates (Germany and Spain) → extended to United Kingdom, Belgium, France and Italy.

- **Research and develop an economically viable cassette indoor** unit for comfort cooling and heating.

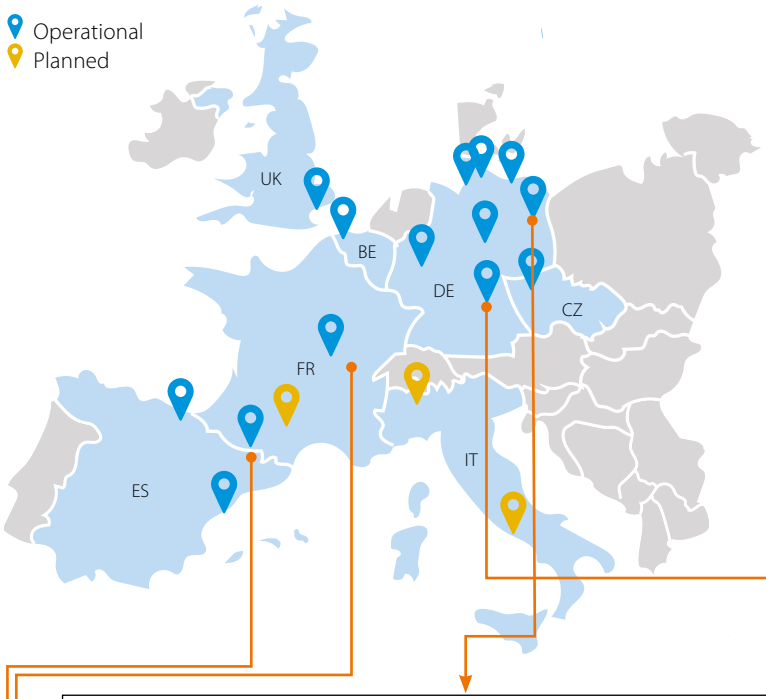
- Evaluate the potential of adding **cold storage / adiabatic** cooling to further reduce carbon emissions.

- Communicate about the Life project through exhibitions, conferences and online tools / Share project insights with policymakers and standardization bodies to facilitate the update of safety and energy related standards and labels.

- **Replicability - business plan and transfer of technology know how** to similar products → technology used on the CVP has been reused on the CO_2 ZEAS and further improved, this to fullfill new high ambient needs. (Tambient > 38°C)

CO_2 ZEAS range (8 till 15 HP)

12 food retail shops accross EU



Average climate zone

- Germany:
  - PENNY [4 shops]
  - BIO COMPANY [1 shop]
  - ebl Naturkost [2 shops]
- France: coccinelle [1 shop]
- UK: (co op [1 shop])
- CZECH: Factory shop [1 shop]
- Belgium:
  - Factory shop [1 shop]
  - (Q8 [1 shop])

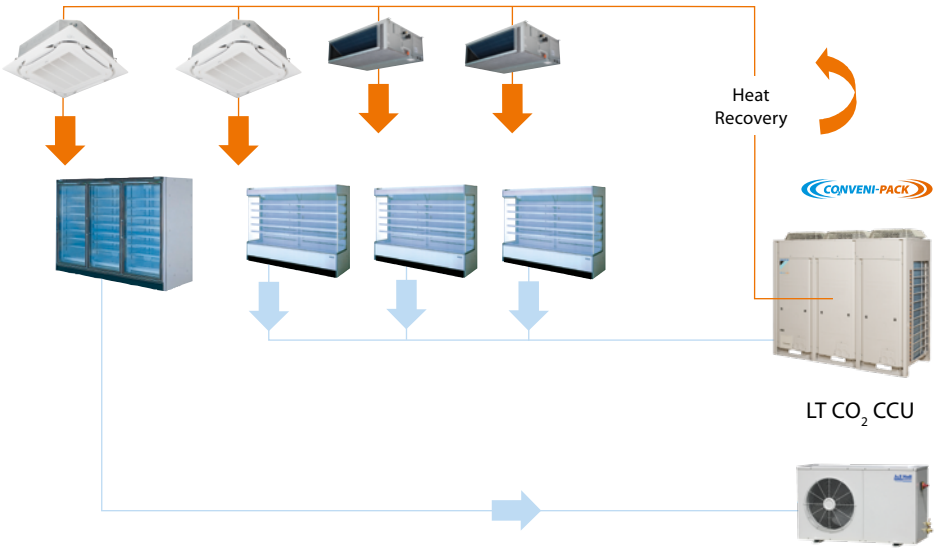
Hot climate zone

- France: Carrefour [2 shops]
- Italy: naturasi [2 shops]
- Spain: Tewis fact. Test facility

Low Temperature Showcases

Optional CO_2 CCU's are also available for Remote LT applications (not connected to Conveni-pack)

Plugin LT showcases with propane or LT condensing units with CO_2 are available to satisfy also freezer capacity needs.

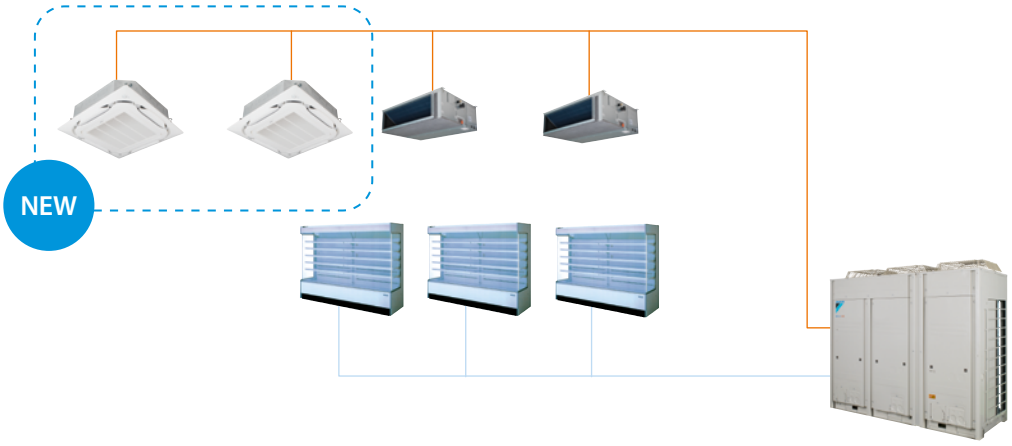


CO_2 Conveni-Pack refrigeration system with heat recovery

Refrigeration solution for food retailers featuring award winning technology for heat recovery

- Integrates high and low temperature refrigeration and air conditioning (including heating) into one system
- By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50% or more, compared to conventional systems
- Lower associated CO_2 emissions thanks to the heat pump technology
- Conveni-pack's modular design allows it to be used for smaller as well as larger shops
- The modularity of the Conveni-pack system maximises installation flexibility. Outdoor units can be grouped into blocks or rows, or distributed around the building, to meet individual installation constraints
- The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop at no extra cost
- Low sound level including „night mode" operation

LRYEN-AY1



LRYEN-AY1

Medium Temperature Refrigeration, Cooling Only, Heating Only			LRYEN	10AY1
Parameters at part load and ambient temp. 25°C (Point B)				-
Parameters at part load and ambient temp. 25°C (Point B)				-
Dimensions	Unit	HeightxWidthxDepth	mm	1,680x1,930x765
Weight	Unit		kg	563
Heat exchanger	Type			Cross fin coil
Compressor	Type			Hermetically sealed swing compressor
	Output		W	4,600.0
	Piston displacement		m^3/h	6.16
	Starting method			Direct on line (inverter driven)
Fan	Type			Propeller fan
	Quantity			3
	Air flow rate	Cooling Nom.	m^3/min	300
Fan motor	Output		W	750
Sound pressure level	Nom.		dBA	64.0
Refrigerant	GWP			1.0
	Type 2			R-744
	Charge		kg	6.30
	Control			Electronic expansion valve
Power supply	Phase/Frequency/Voltage		Hz/V	3N~/50/380-415

LRYEN10A7Y1+LRNUN5A7Y1 | Compressor 1 | Compressor 2 | Compressor 3 | Factory charge of unit | Only K65 with D.P. 120 bar is allowed to use for AC piping connections. | The safety valve pressure is indicated as gauge pressure. | Only K65 with D.P. 90 bar is allowed to use for refrigeration piping.

Capacity-up module for CO_2 Conveni-Pack

- Integrates high and low temperature refrigeration and air conditioning (including heating) into one system
- By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50% or more, compared to conventional systems
- Lower associated CO_2 emissions thanks to the heat pump technology
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- The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop at no extra cost
- Low sound level including „night mode" operation

LRNUN-AY1

Inverter technology

Swing compressor

8.5 kW of New Refrigeration added, Q-up installed to existing CO_2 CVP for additional capacity

LRNUN-AY1

Model	Refrigeration Capacity*	HR Capacity
DAIKIN CO_2 CVP AC10	3 - 14.5 kW	22 kW

Q-up can also easily be added later, as part of a system upgrade

Model	Refrigeration Capacity*	HR Capacity
DAIKIN CO_2 CVP AC10 + Q-up	3- 21 kW	22 kW

* Refrigeration capacity given under following conditions: Te = -10°C, 10 K SH and ambient = 32°C

Medium Temperature Refrigeration			LRNUN
			5AY1
Parameters at part load and ambient temp. 25°C (Point B)			-
Parameters at part load and ambient temp. 25°C (Point B)			-
Dimensions	Unit	HeightxWidthxDepth mm	1,680x635x765
Weight	Unit	kg	173
Heat exchanger	Type		Cross fin coil
Compressor	Type		Hermetically sealed swing compressor
	Output	W	4,600.0
	Piston displacement	m^3/h	6.16
	Starting method		Direct on line (inverter driven)
Fan	Type		Propeller fan
	Quantity		1
	Air flow rate	Cooling Nom. m^3/min	102
Fan motor	Output	W	350
Sound pressure level	Nom.	dBA	65.0 (1)
Refrigerant	GWP		1.0
	Type 2		R-744
	Charge	kg	3.20
	Control		Electronic expansion valve
Power supply	Phase/Frequency/Voltage	Hz/V	3N~/50/380-415

(1)LRYEN10A7Y1+LRNUN5A7Y1 | Compressor 1 | Compressor 2 | Compressor 3 | Factory charge of unit | Only K65 with D.P. 120 bar is allowed to use for AC piping connections. | The safety valve pressure is indicated as gauge pressure. | Only K65 with D.P. 90 bar is allowed to use for refrigeration piping.

CO_2 Cascade

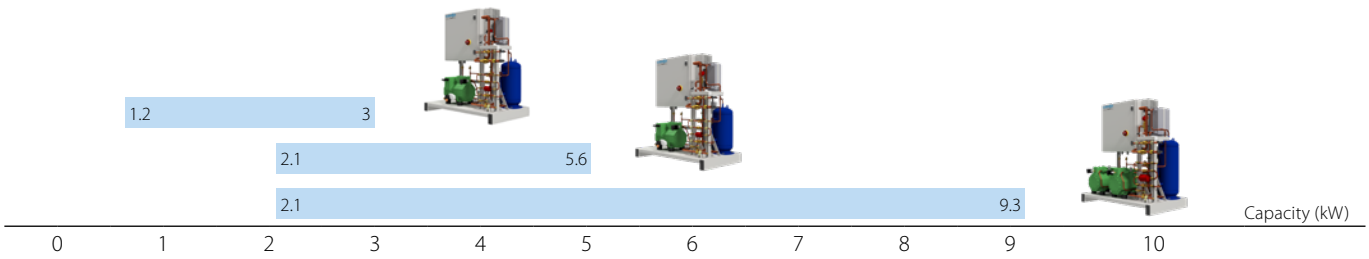
Allows you to combine medium and low temperature into one application

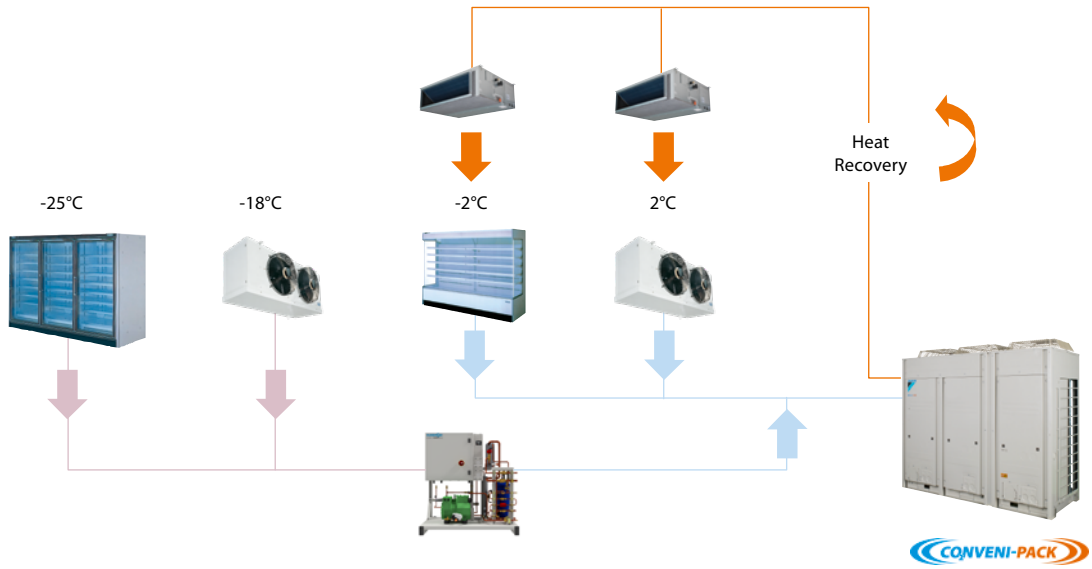
- Controls: you have the choice between Carel (C) and Wurm (W)
- Large liquid receiver of 15 liters to allow a correct operation of the unit
- The necessary safety requirements are standard foreseen in the equipment
  - HP side: Dual PRV 53 bar,
  - LP side: Single PRV 30 bar
- Standard accessories (included):
  - Filter drier and sight glass
  - Pressure dial gauges on High & Low pressure side

LBCLN030AY1C/W
LBCLN045AY1C/W

LBCLN085AY1C/W

CO_2 cascade capacity range NEW
(Te = -32°C, Tc = 0°C, 2K SC, 10 K SH)



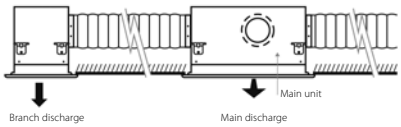


Technical Specifications				LCBLN030AY1C/W	LCBLN045AY1C/W	LCLLN085AY1C/W
Compressor	Quantity			1	1	2
	Type / Brand			Bitzer Semi-hermetic Reciprocating		
	Model			2NSL-05K-40S	2LSL-1K-40S	
	Starting method			Inverter		Inverter + ON/OFF
Dimensions	Unit	Height	mm	1,203		
		Width	mm	1,100		
		Depth	mm	616		
Weight	Unit		kg	217		260

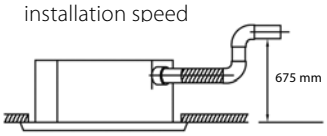
CO_2 Round Flow Cassette

360° air discharge for optimum efficiency and comfort

- Automatic filter cleaning results in higher efficiency & comfort and lower maintenance costs.
- Two optional intelligent sensors improve energy efficiency and comfort
- Widest choice ever in decoration panels: designer panels in white (RAL9010) and black (RAL9005) and standard panels in white (RAL9010) with grey louvers or full white
- Bigger flaps and unique swing pattern improve equal air distribution
- Individual flap control: flexibility to suit every room layout without changing the location of the unit!
- Lowest installation height in the market: 214mm for class 20-63
- Optional fresh air intake
- Branch duct discharge allows to optimize air distribution in irregular shaped rooms or to supply air to small adjacent rooms



- Standard drain pump with 675mm lift increases flexibility and installation speed



FXFN-A

BRC1H52W,

Round flow cassette panel (7 types)
Daikin Round Flow Cassette with 360° airflow, wide flaps and optional intelligent sensors

1. Standard Panel (White & Black)

White standard

Full-White standard

Black standard

2. Auto-cleaning Panel (White & Black)

White auto cleaning

Black auto cleaning

3. Designer Panel (White & Black)

White design panel

Black design panel

FXFN-A

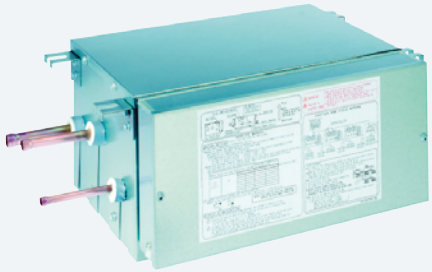
					FXFN-A	50	71	112
Capacity (H tap)	Cooling	Nom.		kW		5.6	8.0	12.5
	Heating	Nom.		kW		6.3	9.0	14.0
Dimensions	Unit	HeightxWidthxDepth		mm		246x840x840		288x840x840
Weight	Unit	gross		kg		29		32
		net		kg		26		29
Fan	Type					Turbo fan		
	Quantity					1		
Air flow rate	Cooling/heating		high/medium/low	m^3/h		15.5/12.8/10.7	23.2/19.4/13.8	32.7/27.6/20.6
Fan motor	Output			W				
Sound power level	Cooling			dBA		53	58	63
Sound pressure level	Cooling	high/medium/low		dBA		35/33/31 (4)	40/36/33 (4)	46/43/38 (4)
	Heating	high/medium/low		dBA		36/34/31 (1)(4)	41/37/33 (1)(4)	47/44/39 (1)(4)
Piping connection	Brazing type		Liquid	mm		9.52		
			Gas	mm		12.7		
Operation range	Indoor	Cooling		°C(WB)		14~24 (2)		
		Heating		°C(WB)		15~27		
Refrigerant	Type					R744		
Power supply	Phase/Frequency/Voltage			Hz/V		1~50/60Hz 220~240/220V		

(1) Update of sound pressure level in heating on 2.3.2020 bases on test results (for 71 and 112 class) | (2) update of Cooling max (25 -> 24°C) operation range on 2.3.2020 based on test result | (3) The panel lineup is the same as the existing machine lineup | (4) Sound of designer panel: +3dB

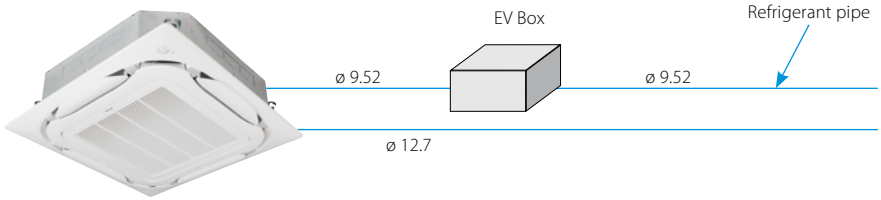
Expansion valve box

EV Box

- EV Box is the unit which include EV & Control
- 1 unit of EV box must be used toghether with 1 unit of CO_2 Cassette.



EV Box



CO_2 Cassette

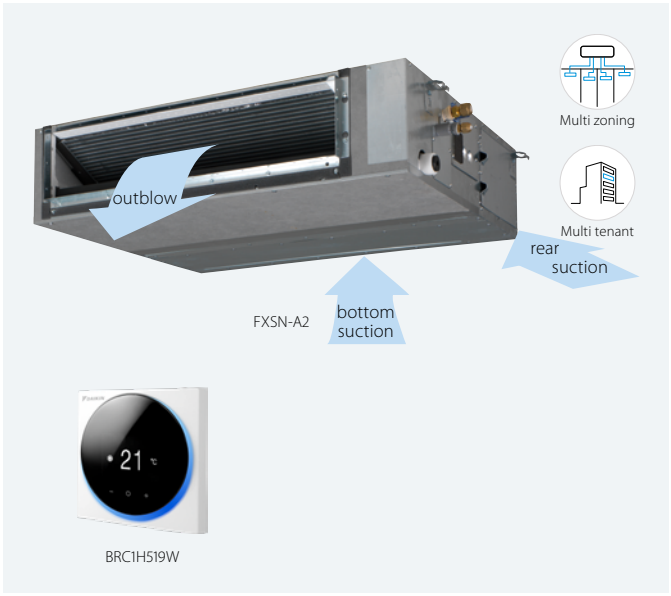
Combination with Cassette Indoor unit

Cassette indoor unit / EV Box	FXFN50A2VEB	FXFN71A2VEB	FXFN112A2VEB
BEV2N112A7V1B	✓	✓	✓

Specifications			BEV2N-A	BEV2N112A7V1B
Power supply				1~, 50/60Hz, 220~240/220V
Dimension	Height	mm		207
	Wide	mm		388
	Depth	mm		326
Mass	Unit	kg		12 (Tentative)
Refrigerant Type				R744 (CO_2)
Piping connections Liquid	Type			Brazing
	OD	mm		ø 9.52

Concealed ceiling unit with medium ESP for CO_2 Conveni-pack

To respond to all shop requirements for comfort cooling and heating, a wide range of air conditioning indoor units are available



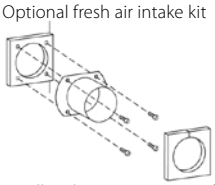
- Slimmest unit in class, only 245mm (300mm built-in height) and therefore narrow ceiling voids are no longer a challenge

- Medium external static pressure up to 150Pa facilitates using flexible ducts of varying lengths
- Possibility to change ESP via wired remote control allows optimisation of the supply air volume
- Discretely concealed in the wall: only the suction and discharge grilles are visible
- Multi zoning kit allows multiple individually-controlled climate zones to be served by one indoor unit
- Reduced energy consumption thanks to specially developed DC fan motor and drain pump
- Optional fresh air intake

Fresh air intake opening in casing

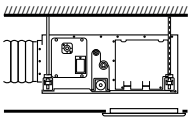
* Brings in up to 10% of fresh air into the room

Optional fresh air intake kit

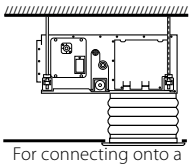


* Allow larger quantities of fresh air to be brought in

- Flexible installation: air suction direction can be altered from rear to bottom suction and choice between free use or connection to optional suction grilles

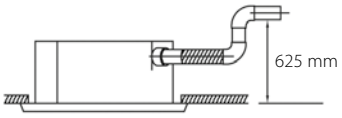


For free use into a false ceiling



For connecting onto a suction canvas (not supplied by Daikin)

- Standard built-in drain pump with 625mm lift increases flexibility and installation speed

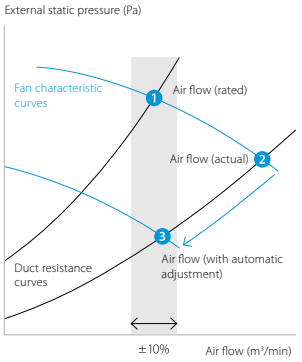


Automatic Airflow Adjustment function

Automatically selects the most appropriate fan curve to achieve the units' nominal air flow within ±10%

Why?

After installation the real ducting will frequently differ from the initially calculated air flow resistance ✳ the real air flow may be much lower or higher than nominal, leading to a lack of capacity or uncomfortable air temperature Automatic Airflow Adjustment function will adapt the unit's fan speed to any ducting automatically (10 or more fan curves are available on every model), making installation much faster



FXSN-A2

Indoor unit				FXSN	50A2	71A2	112A2
Cooling capacity	Total capacity	Nom.		kW	5.60	8.00	12.50
Heating capacity	Total capacity	Nom.		kW	6.30	9.00	14.0
Power input - 50Hz	Cooling	Nom.		kW	0.186	0.258	0.388
	Heating	Nom.		kW	0.181	0.253	0.383
Dimensions	Unit	HeightxWidthxDepth		mm	245x700x800	245x1,000x800	245x1,400x800
Weight	Unit			kg	31.0	40.0	50.0
Casing	Material				Galvanised steel plate		
Fan	Air flow rate - 50Hz	Cooling	High / Medium / Low	m^3/min	15.2/13.0/11.0	23.0/19.5/16.0	36.0/31.5/26.0
		Heating	High / Medium / Low	m^3/min	15.2/13.0/11.0	23.0/19.5/16.0	36.0/31.5/26.0
	External static pressure - 50Hz	Factory set / High		Pa	30/150	40/150	50/150
Air filter	Type				Resinnet		
Sound power level	Cooling	At high fan speed		dBA	61	63	66
Sound pressure level	Cooling	High / Medium / Low		dBA	36.0/33.0/31.0	37.0/34.0/32.0	40.0/38.0/34.0
	Heating	High / Medium / Low		dBA	38.0/35.0/32.0	39.0/36.0/33.0	42.0/40.0/38.0
Refrigerant	Type/GWP				R-744/1.0		
Piping connections	Liquid	OD		mm	9.52		
	Gas	OD		mm	12.7		
	Drain				VP20 (I.D. 20/O.D. 26), drain height 625 mm		
Power supply	Phase/Frequency/Voltage			Hz/V	1~/50/60/220-240/220		
Current - 50Hz	Maximum fuse amps (MFA)			A	16		
Control systems	Infrared remote control				BRC4C65 / BRC4C66		
	Wired remote control				BRC1H52W/S/K		

Contains fluorinated greenhouse gases

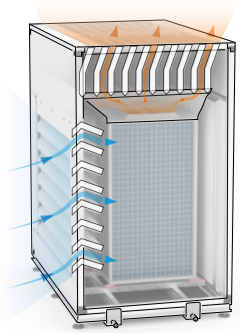
Acoustic solution for Conveni-pack

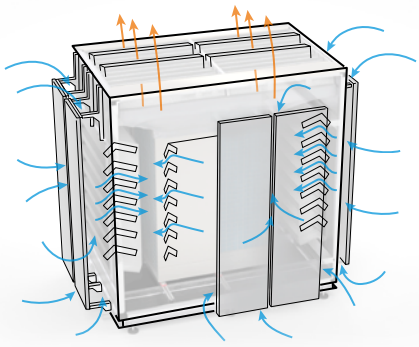
- Complete & professional housing solution, series KVD specially designed for Daikin CVP units
- Stable and storm proof construction, tested and verified by TÜV Austria
- Extremely low static pressure drop, measured by TÜV Austria
- Highest soundproofing values thanks to multi-layered sound insulation
- Already assembled ex works -> ensures very quick installation of the outdoor unit
- Base frame made of steel-profiles, insulated bottom and drain pan are standard
- Housing can be modified for an even higher dampening with additional deflection plates and hoods

KVD330-PV-UL

Housing with redirection hood

Housing with deflector plates





Please contact:
Kellner Engineering GmbH
kellner.r@kellner-engineering.com
www.kellner-engineering.com
Office: +43-2236-660048

suitable for 1x Daikin LRYEN10AY1 (10 HP)

acoustic housing type	external dimensions (HxWxD)	sound dampening[1] on average Ø	sound dampening[1] vertically	pressure drop[2]	weight
Kellner KVD300-PV Standard	2,350x3,071x1,461 mm	-18 dB(A)	-13 dB(A)	< 20 Pa	850 kg
+ deflection plates (8 pc.)	2,350x3,671x1,761 mm	-21 dB(A)	-13 dB(A)	< 25 Pa	320 kg
+ redircetion hood (exhaust front)	3,100x3,671x1,761 mm	-24 dB(A)	-24 dB(A)	< 32 Pa	300 kg
Kellner KVD300-PV-UL Ultra	2,550x3,071x1,461 mm	-20 dB(A)	-18 dB(A)	< 25 Pa	875 kg
+ deflection plates (8 pc.)	2,550x3,671x1,761 mm	-23 dB(A)	-18 dB(A)	< 30 Pa	320 kg
+ redircetion hood (exhaust front)	3,300x3,671x1,761 mm	-25 dB(A)	-26 dB(A)	< 37 Pa	300 kg

suitable for 1x Daikin LRYEN10AY1 (10 HP) + 1x Daikin LRNUN5AY1 (5 HP)

acoustic housing type	external dimensions (HxWxD)	sound dampening[1] on average Ø	sound dampening[1] vertically	pressure drop[2]	weight
Kellner KVD310-PV Standard	2,350x3,871x1,461 mm	-18 dB(A)	-13 dB(A)	< 20 Pa	975 kg
+ deflection plates (10 pc.)	2,350x4,471x1,761 mm	-21 dB(A)	-13 dB(A)	< 25 Pa	400 kg
+ redircetion hood (exhaust front)	3,100x4,471x1,761 mm	-24 dB(A)	-24 dB(A)	< 32 Pa	350 kg
Kellner KVD310-PV-UL Ultra	2,550x3,871x1,461 mm	-20 dB(A)	-18 dB(A)	< 25 Pa	1,000 kg
+ deflection plates (10 pc.)	2,550x4,471x1,761 mm	-23 dB(A)	-18 dB(A)	< 30 Pa	400 kg
+ redircetion hood (exhaust front)	3,300x4,471x1,761 mm	-25 dB(A)	-26 dB(A)	< 37 Pa	350 kg

(1) NORM EN ISO 9614-2:1997 - Determination of the sound power level of noise sources from sound intensity measurements
EN ISO 11546-1:2010 - Determination of the sound insulation of soundproofing capsules
EN ISO 717-1:2013 - Assessment of sound insulation in buildings and building components

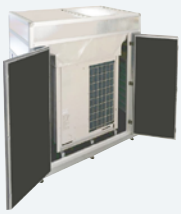
(2) total pressure drop at maximum air-flow

Accoustic solution for Conveni-Pack

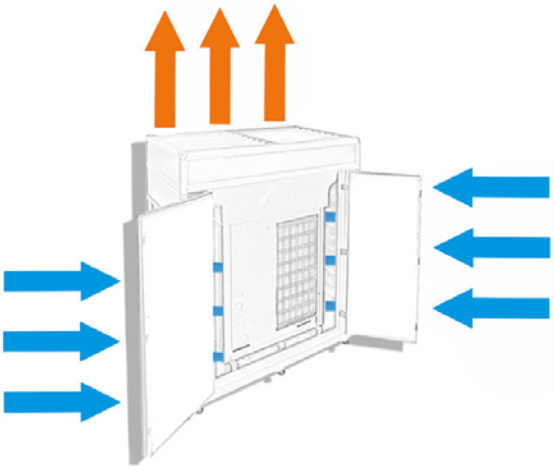
- Solflex acoustic solutions have been developed to reduce the sound emissions of outdoor units without limiting functionality.
- Nominal sound reduction measured according to DIN EN ISO 3744 by a renomated and independent laboratory.
- Exterior surfaces are standard available in RAL7016 anthracite grey, RAL9006 white aluminium, RAL9010 pure white or in galvanised steel.
- Online technical data and configuration including sound evaluation to norm accepted by many authorities to obtain building permission.
- On demand custom made acoustic solutions with site assistance including installation for large scale projects.
- Very large variety of standard acoustic solutions available for all type of HVACR units.

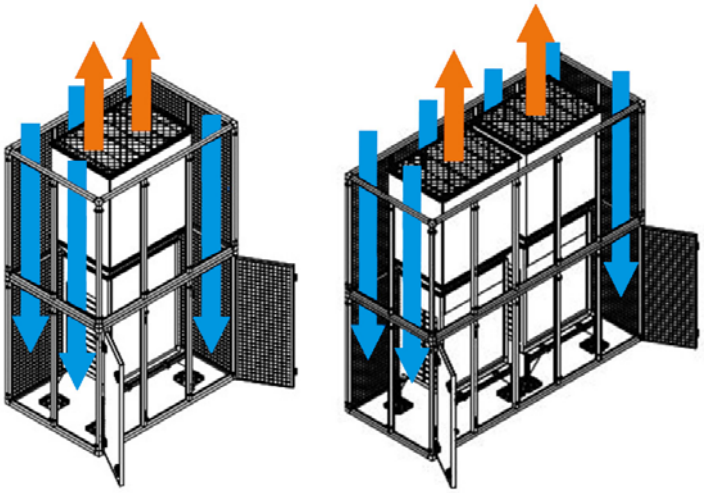
V200NA

SQV200NP



XV200NA





For more info, please contact:
Solflex GmbH
office@solflex.eu
www.solflex.eu

suitable for 1x Daikin LRYEN10AY1 (10 HP)

acoustic housing type	external dimensions (HxWxD)	Nominal Sound Insulation[1]	pressure drop[2]	weight
SDW 211763-1 A	2,450x3,150x1,600 mm	Rw(Ctr, 50-5,000): 20 dB	< 5 Pa	550 kg
V 211763-2 A	2,600x3,100x1,650 mm	D(e): 19 dB(A)	<15 Pa	1,250 kg
XV 211763-3 A	2,600x3,500x1,900 mm	D(e): 23 dB(A)	<25 Pa	1,450 kg
SQVY 211763-4 A	3,800x3,150x1,600 mm	D(e): 25 dB(A)	<25 Pa	950 kg

suitable for 1x Daikin LRYEN10AY1 (10 HP) + 1x Daikin LRNUN5AY1 (5 HP)

acoustic housing type	external dimensions (HxWxD)	Nominal Sound Insulation[1]	pressure drop[2]	weight
SDW 211763-1 B	2,450x3,925x1,600 mm	Rw(Ctr, 50-5,000): 20 dB	< 5 Pa	630 kg
V 211763-2 B	2,600x3,800x1,650 mm	D(e): 19 dB(A)	<15 Pa	1,350 kg
XV 211763-3 B	2,600x4,200x1,900 mm	D(e): 23 dB(A)	<25 Pa	1,600 kg
SQVY 211763-4 B	3,800x3,925x1,600 mm	D(e): 25 dB(A)	<25 Pa	1,140 kg

(1) NORM DIN EN ISO 10140-2 - Specifies a laboratory method for measuring the airborne sound insulation of building products
DIN EN ISO 3744 - Specifies methods for determining the sound power level or sound energy level of a noise source

(2) total pressure drop at maximum air-flow

CONVENI-PACK

R-410A Conveni-Pack refrigeration system with heat recovery

Refrigeration solution for food retailers featuring award winning technology for heat recovery

- Integrates high and low temperature refrigeration and air conditioning (including heating) into one system
- By using heat recovery, optimised controls and state of the art compressor technology, Conveni-pack can reduce annual energy consumption up to 50% or more, compared to conventional systems
- Lower associated CO_2 emissions thanks to the heat pump technology
- Conveni-pack's modular design allows it to be used for smaller as well as larger shops
- The modularity of the Conveni-pack system maximises installation flexibility. Outdoor units can be grouped into blocks or rows, or distributed around the building, to meet individual installation constraints
- The heat extracted from the refrigeration showcases or evaporators can be re-used for comfort heating of the shop at no extra cost
- Low sound level including „night mode" operation

Inverter technology

Scroll compressor

LRYEQ16AY

Conveni pack, in combination with a ZEAS unit.
This store was nominated by spar as its 'local supermarket of the year', thanks in part to its owner's strategic investment in a key department: Refrigeration.
By installing a Conveni pack in combination with Zeas, it was possible to **save around €10,000 on energy costs each year**, from money that would otherwise have spent on heating. **SPAR, Supermarket.**

LRYEQ-AY

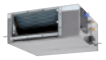
Medium Temperature Refrigeration				LRYEQ-AY	16
Cooling capacity	Air conditioning	Nom.		kW	14.0 (1)
	Refrigeration	Nom.		kW	21.8 (2)
Heating capacity	Air conditioning	Nom.		kW	27.0 (3)
	Refrigeration	Nom.		kW	21.8 (4)
Dimensions	Unit	Height		mm	1,680
		Width		mm	1,240
		Depth		mm	765
Weight	Unit			kg	370
Heat exchanger	Type				Cross fin coil
Compressor	Type				Hermetically sealed scroll compressor
	Piston displacement			m^3/h	13.34
	Speed			rpm	6,300
	Output			W	2,500
	Starting method				Direct on line (inverter driven)
	Frequency ON/OFF				Less than 6 times/hour
Compressor 2	Speed			rpm	2,900
	Output			W	3,600
Compressor 3	Speed			rpm	2,900
	Output			W	4,500
Fan	Type				Propeller fan
	Quantity				2
	Air flow rate	Cooling	Nom.	m^3/min	230
Fan motor	Output			W	750
	Drive				Direct drive
Sound pressure level	Nom.			dBA	62.0
Operation range	Evaporator	Cooling	Min.~Max.	°CDB	-20~10
	Cooling	Ambient	Min.~Max.	°CDB	-5~43
	Heating	Ambient	Min.~Max.	°CDB	-15~21
Refrigerant	Type				R-410A
	GWP				2,087.5
	Charge			kg	11.5
				TCO_2eq	24.0
	Control				Electronic expansion valve
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/380-415

(1) Cooling priority mode: indoor temp. 27°CDB, 19°CWB; outdoor temp. 32°CDB; piping length: 7.5m; level difference: 0m (2) Cooling priority mode: evaporating temp. -10°C; outdoor temp. 32°CDB; Suction SH: 10°C (3) Heat recovery 100% mode: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; refrigeration load 18kW; piping length: 7.5m; level difference: 0m (4) Saturated temperature equivalent to suction pressure (refrigeration side): -10°C (under chilled condition); connection capacity for indoor air conditioner: 10HP, when heat recovery is 100%

Indoor units and Biddle air curtains for connection to **R-410A** Conveni-Pack

To respond to all shop requirements for comfort cooling and heating, a wide range of air conditioning indoor units and Biddle air curtains are available.

Capacity class (kW)

Model	Product name		50	63	71	80	100	125	140	200	250
Cooling capacity (kW)[1]			5.6	7.1	8.0	9.0	11.2	14.0	16.0	22.4	28.0
Heating capacity (kW)[2]			6.3	8.0	9.0	10.0	12.5	16.0	18.0	25.0	31.5
Round flow cassette	FXFQ-A		•	•		•	•	•			
2-way blow ceiling mounted cassette	FXCQ-A		•	•		•		•			
Ceiling mounted corner cassette	FXKQ-MA			•							
Concealed ceiling unit with inverter driven fan	FXSQ-A		•	•		•	•	•			
Concealed ceiling unit with inverter driven fan	FXMQ-P7		•	•		•	•	•			
Large concealed ceiling unit	FXMQ-MB									•	•
Ceiling suspended unit	FXHQ-A			•			•				
4-way blow ceiling suspended unit	FXUQ-A				•		•				
Floor standing unit	FXLQ-P		•	•							
Concealed floor standing unit	FXNQ-A		•	•							

Capacity class (kW)

Model	Product Name		80	100	125	140	200	250
Heating capacity (kW)2			7.4 - 9.2	11.6 - 13.4	15.6	16.2 - 19.9	29.4	29.4 - 31.1
Biddle air curtain free hanging	CYVS-DK		•	•	•	•	•	•
Biddle air curtain cassette	CYVM-DK		•	•	•	•	•	•
Biddle air curtain recessed	CYVL-DK		•	•	•	•	•	•

[1] Nominal cooling capacities are based on: indoor temperature: 27°CDB / 19°CWB, outdoor temperature: 35°CDB, piping length: 7.5m, level difference: 0m
[2] Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB / 6°CWB, piping length: 7.5m, level difference: 0m

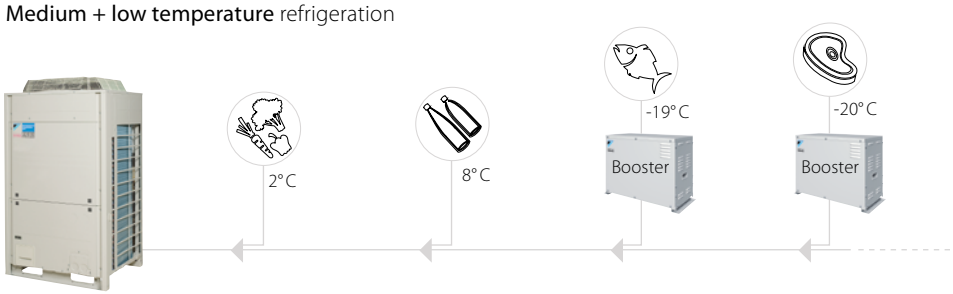
Booster unit for **R-410A**

- A booster unit allows to connect freezer showcases / rooms to ZEAS and Conveni-Pack outdoor units
- Reduced piping requirements, from 4 to 2 pipes, compared to a conventional system
- Low sound mode available reducing sound emissions significantly without giving in on Refrigerating capacity

LCBKQ3AV1

Booster with ZEAS:

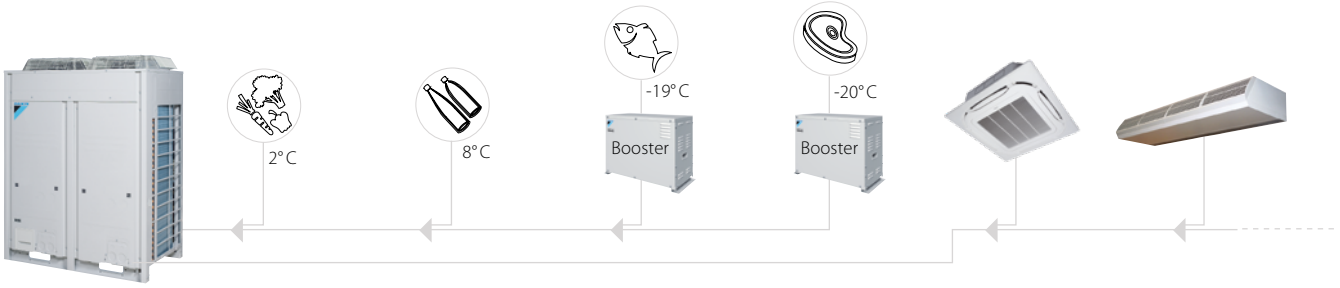
Medium + low temperature refrigeration



LCBKQ-AV1

Booster with R-410A Conveni-Pack:

Medium + low temperature refrigeration + space air conditioning + Biddle air curtain



Low Temperature Refrigeration				LCBKQ-AV1	3
Refrigerating capacity	Low temperature		Nom.	kW	3.35 (1)
Dimensions	Unit	Height		mm	480
		Width		mm	680
		Depth		mm	310
Weight	Unit			kg	47
Compressor	Type				Hermetically sealed swing compressor
	Piston displacement			m^3/h	10.16
	Number of revolutions			rpm	6,540
	Output			W	1,300
	Starting method				Direct on line (inverter driven)
	Frequency ON/OFF				Less than 6 times/hour
Fan	Type				Propeller fan
	Air flow rate	Cooling	Nom.	m^3/min	1.6
Operation range	Evaporator	Cooling	Min.~Max.	°CDB	-45~-20
	Ambient temperature	Min.~Max.		°C	-15~43
Refrigerant	Type				R-410A
	GWP				2,087.5
	Control				Electronic expansion valve
Piping connections	For outdoor unit	Liquid	OD	mm	6.35
	To indoor unit	Liquid	OD	mm	6.35
	For indoor unit	Gas	OD	mm	15.9
	To outdoor unit	Gas	OD	mm	9.5
Power supply	Phase/Frequency/Voltage			Hz/V	1~/50/220-240

(1) Evaporating temp. -35°C; outdoor temp. 32°C; suction SH 10K; saturated temp. to discharge pressure of booster unit -10°C

Drying and ageing units

Bi-block unit for drying and ageing of meat and cheese

For small and medium size coldrooms

- Quick and easy installation
- Low noise and vibration
- Electronic control
- Constant and detailed control of temperature and humidity level during operation
- Compact and functional, with removable panels to allow easy access to internal components
- More units available suitable for large coldrooms

Bi-block

SAS: Drying and ageing units for small and medium cold rooms
- Coldroom temperature: **+10°C to +25°C**
- Humidity: **till 60%**

SAR: Units for post-salting resting of hams for small and medium cold rooms
- Coldroom temperature: **+2°C to +4°C**
- Humidity: **till 40%**

Cooling capacity:
- from 2,900 to 15,900 Watt

		Bi-block units		
SAR		**SB.SAR212DB13SS**	**SB.SAR320DB13SS**	**SB.SAR430DB13SS**
Refrigerant		R452A		
Power supply	V/Ph~/Hz	380-400/3N~/50		
HP compressor		1.5	2	4
Defrost		Hot gas		
PED category		1		2
Working temperature	°C	+10 ÷ -5		
Range RH	%	40-60		
Cooling capacity [TC=10°C | TA=30°C]	Watt	2,900	4,500	7,250

		Bi-block units				
SAS		**SB.SAS212EB10SS**	**SB.SAS320EB10SS**	**SB.SAS430EB10SS**	**SB.SAS545EB10SS**	**SB.SAS660EB10SS**
Refrigerant		R134a				
Power supply	V/Ph~/Hz	380-400/3N~/50				
HP compressor		1	1.5	3	5	7.5
Drying	m^3	5	11	23	36	45
Drying	kg	200	400	600	950	1,200
Ageing	m^3	20	40	70	125	160
Ageing	kg	600	1,000	2,000	3,000	4,000
PED category		1		2		
Working temperature	°C	+25 ÷ +10				
Range RH	%	60-80				
Cooling capacity [TC=10°C | TA=30°C]	Watt	3,400	4,900	8,200	12,800	15,900

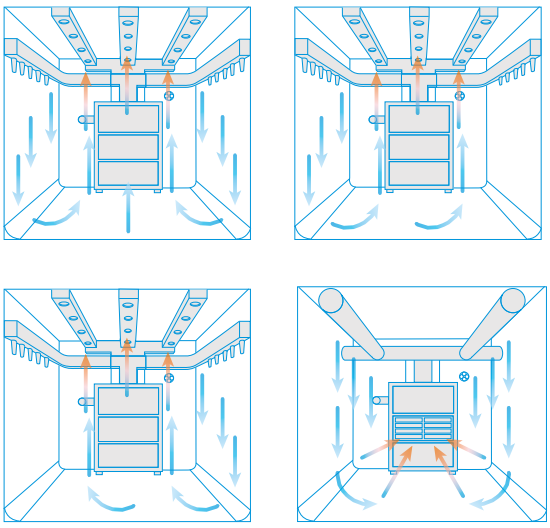
Air Handling Units for industrial drying

Main Characteristics

- Frascold semihermetic compressor + Thermal overload protection
- Power supply 380-400/3N~/50
- Air + Axial fan (remote)
- Embedded main electrical switchboard and remote control panel with Vision Touch controller + switch to select static/ventilated evaporator
- Hot gas defrost
- Magnetothermal switches
- Liquid line predisposition for connection to static evaporators
- Cataphoresis to the evaporator and heat recovery coil
- Remote air cooled condenser
- Soft start on centirfugal fan (starting from 15HP unit)
- Liquid Receiver + Liquid receiver shut off valves
- Safety valve
- Filter dryer
- Sight glass
- Four-pole condenser fan
- Thermostatic valve expansion
- Evaporator centrifugal fan
- Air suction duct
- Condensing unit with refrigerant charge
- Switchboard with automatic switches
- Adjustable calibration Hp switch with manual reset
- Adjustable calibration Lp switch with automatic reset
- Pressure controlled condenser fan speed regulator
- Humidity control during dehumidification with heat recovery
- Temperature control in hot with electric heaters
- Humidity control in humidification with automatic water supply
- Crankcase heater
- Fresh air intake
- Evaporator/heat recovery coil Copper/Aluminium with cataphoresis treatment
- Heat recovery coil + heating with electrical heaters
- Embedded main switchboard and remote control panel with Vision Touch Controller

Air distribution systems with textile channels

The UAV industrial drying units are equipped with large and efficient evaporators with centrifugal fan, capable of generating air flow from 1,500 to 14,600m^3/h.
This allows, thanks to the special galvanized sheet T-shaped ducts designed according to the room dimensions, an optimized distribution of the treated air in the room suitable for the required process.
The T-shaped ducts are complete with motorized damper.



For customized options,
please contact your sales representative.

		SB.UAV102 RBB12EAX	SB.UAV203 RBB12EAX	SB.UAV204 RBB12EAX	SB.UAV305 RBB12EAX	SB.UAV307 RBB12EAX	SB.UAV410 RBB12EAX	SB.UAV515 RBB12EAX	SB.UAV520 RBB12EAX	SB.UAV625 RBB12EAX	SB.UAV630 RBB12EAX	SB.UAV735 RBB12EAX
Refrigerant		R449A										
Power supply	V/Ph~/Hz	380-400/3N~/50										
HP compressor		2	3	4	5	7.5	10	15	20	25	30	35
Cold room volume	m^3	20	30	40	60	75	90	130	160	180	200	250
Product quantity	kg	400	800	1,200	1,600	2,000	2,400	3,200	4,800	6,400	8,000	10,000
PED category		2										
Working temperature	°C	+25 ÷ +10										
Range RH	%	60-80										
Cooling capacity [TC=10°C | TA=30°C]	Watt	7,200	10,600	13,000	14,400	27,000	33,000	38,000	45,500	59,000	68,000	87,000

Air handling units for industrial ageing

Main Characteristics

- Frascold semihermetic compressor + Thermal overload protection
- Power supply 380-400/3N~/50
- Air + Axial fan (remote)
- Embedded main electrical switchboard and remote control panel with Vision Touch controller + switch to select static/ventilated evaporator
- Hot gas defrost
- Magnetothermal switches
- Liquid line predisposition for connection to static evaporators
- Cataphoresis to the evaporator and heat recovery coil
- Remote air cooled condenser
- Soft start on centirfugal fan (starting from 15HP unit)
- Liquid Receiver + Liquid receiver shut off valves
- Safety valve
- Filter dryer
- Sight glass
- Four-pole condenser fan
- Thermostatic valve expansion
- Evaporator centrifugal fan
- Air suction duct
- Condensing unit with refrigerant charge
- Switchboard with automatic switches
- Adjustable calibration Hp switch with manual reset
- Adjustable calibration Lp switch with automatic reset
- Pressure controlled condenser fan speed regulator
- Humidity control during dehumidification with heat recovery
- Temperature control in hot with electric heaters
- Humidity control in humidification with automatic water supply
- Crankcase heater
- Fresh air intake
- Evaporator/heat recovery coil Copper/Aluminium with cataphoresis treatment
- Heat recovery coil + heating with electrical heaters
- Embedded main switchboard and remote control panel with Vision Touch Controller

SV

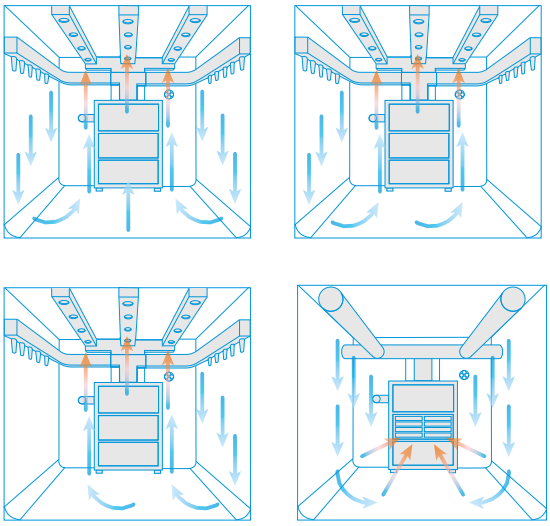
Ceiling evaporator

Air distribution systems with textile channels

The USV industrial drying units are equipped with large and efficient evaporators with centrifugal fan, capable of generating air flow from 1,500 to 14,600m^3/h.

This allows, thanks to the special galvanized sheet T-shaped ducts designed according to the room dimensions, an optimized distribution of the treated air in the room suitable for the required process.

The T-shaped ducts are complete with motorized damper.



For customized options, please contact your sales representative.

		SB.USV102 RBB12EAX	SB.USV203 RBB12EAX	SB.USV204 RBB12EAX	SB.USV305 RBB12EAX	SB.USV307 RBB12EAX	SB.USV410 RBB12EAX	SB.USV515 RBB12EAX	SB.USV520 RBB12EAX	SB.USV625 RBB12EAX	SB.USV630 RBB12EAX	SB.USV735 RBB12EAX
Refrigerant		R449A										
Power supply	V/Ph~/Hz	380-400/3N~/50										
HP compressor		2	3	4	5	7.5	10	15	20	25	30	35
Cold room volume	m^3	75	90	120	180	225	240	390	490	550	680	800
Product quantity	kg	1,200	2,400	3,600	5,400	7,200	9,000	10,800	14,400	19,200	24,000	30,000
PED category		2										
Working temperature	°C	+25 ÷ +10										
Range RH	%	60-80										
Cooling capacity [TC=10°C | TA=30°C]	Watt	7,200	10,600	13,000	14,400	27,000	33,000	38,000	45,500	59,000	68,000	87,000

Accessories

for ZEAS and Conveni-Pack

		CO_2 Conveni-Pack		Conveni-Pack	ZEAS						Multi-ZEAS	
		LRYEN10AY1	LRNUN5AY1	LRYEQ16AY	LREQ5BY1	LREQ6BY1	LREQ8BY1	LREQ10BY1	LREQ12BY1	LREQ15BY1	LREQ20BY1	LREQ15BY1Rx2	LREQ20BY1Rx2
SEE NEXT PAGE Digital pressure gauge kit		-		BHGP26A1									
Pressure gauge kit		-		KHGP26B140									
Pressure Reduction Kit		EKPRV1		-									
Snowbreak hood*	(a+b+c+d) kit	KPS26C504	KPS26C160	KPS26C504	KPS26C160		KPS26C280			KPS26C504			
	a. Air outlet	KPS26C504T (left side)	KPS26C160T	KPS26C504T	KPS26C160T		KPS26C280T			KPS26C504T			
	b. Air inlet (left)	KPS26C504B	-	KPS26C504L	KPS26C504L								
	c. Air inlet (right)	KPS26C504L	KPS26C160L	KPS26C504R	KPS26C504R								
	d. Air inlet (rear)	KPS26C504R	KPS26C160R	KPS26C504B	KPS26C160B		KPS26C280B			KPS26C504B			
	Air outlet	KPS26C160T (right side)	-										
	Air inlet (rear)	KPS26C160B (right side)	-										
Central drain pan kit		-		KWC26C450**	KWC26C160		KPS26C280			KPS26C450		KPS26C450*** x2	
SEE NEXT PAGE Modbus communication kit		BRR9B1V1		BRR9A1V1								BRR9A1V1****	
Booster unit		-		LCBKQ3AV19								-	
Suction branch pipe for multi		-										EKHRQZM*****	
Refnet header		-		KHRQM22M29H8									
		-		KHRQ22M64H8									
		-		KHRQM22M75H8									
Refnet joint		-		KHRQ22M20TA8									
		-		KHRQ22M29T9									
		-		KHRQ22M64T8									
		-		KHRQ22M75T8									
intelligent Touch Controller		DSC601C51		-									
intelligent Touch Manager		DCM601A51		-									

* Snowbreak hoods are field-supplied. For technical drawings and more information, contact your dealer. It is recommended to install a snowbreak hood when regular snowfall occurs.
** In cold areas, provide a drain pan heater (field supply) to prevent drained water from freezing up in the drain pan *** required for each module
**** software update required (to be executed during commissioning) ***** mandatory

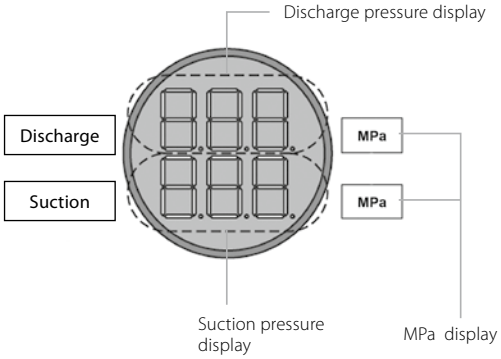
BHGP26A1

Digital pressure gauge kit

The digital measurement display allows you to diagnose a unit at a glance and it can be used with all ZEAS and R-410A Conveni-Pack systems.

- Digital measurement display for fixed installation or service applications.
- Displays high and low pressure.
- Displays error codes in the event of a fault.
- Displays up to 32 operating parameters.
- Displays error code history (last three).
- Scrolls and stores output values.
- Automatically returns to normal operating display mode.

BHGP26A1



BRR9A1V1

Modbus communication kit

The Daikin Modbus Communication Interface lets you fully integrate Daikin ZEAS and Daikin
R-410A Conveni-Pack systems with building control automation networks and other monitoring systems.

The interface allows you to read all the operational parameters and control important values using the Modbus protocol. This unifying component transforms ZEAS and Conveni-Pack into a transparent, customisable refrigeration unit and means that you can create object-specific and energy-optimised shop concepts, including remote monitoring application.

Pro interfaces can be used to connect up to 32 ZEAS units, and are also suitable for use with R-410A Conveni-Pack systems and the Booster.

BRR9AV1

Control values

- Target evaporation temperature
- Low pressure level for on and off points
- Forced stop
- Error messages can be cancelled remotely

Display values

- Model information and operating status
- Refrigerant operating pressure and temperatures
- Electrical operating data and temperatures for components
- Target values
- Fan stage and compressor frequency, operating hours
- Warning and error messages as well as system safety functions

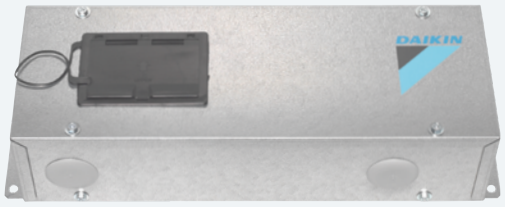
Modbus communication kit

The Daikin Modbus Communication Interface lets you fully integrate Daikin ZEAS and Daikin CO_2 Conveni-Pack systems with building control automation networks and other monitoring systems.

The interface allows you to read all the operational parameters and control important values using the Modbus protocol on refrigeration and comfort side. This unifying component transforms CO_2 Conveni-Pack into a transparent, customisable refrigeration unit and means that you can create object-specific and energy-optimised shop concepts, including remote monitoring application.

Pro interfaces can be used to connect up to 7 CO_2 Conveni-Pack units.

BRR9B1V1



BRR9B1V1

DAIKIN

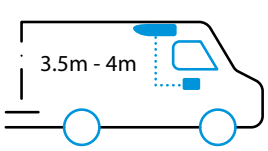
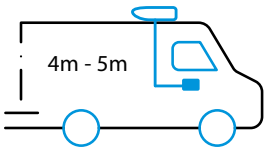
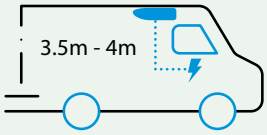
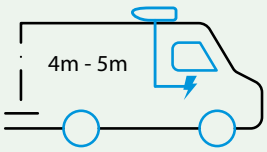
Transport Refrigeration

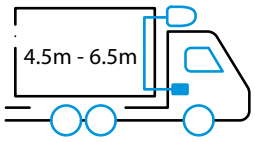
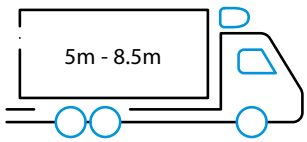
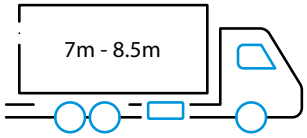
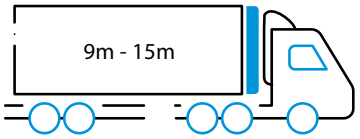
Transport Refrigeration


DAIKIN
E1500
EXIGO

Product Portfolio

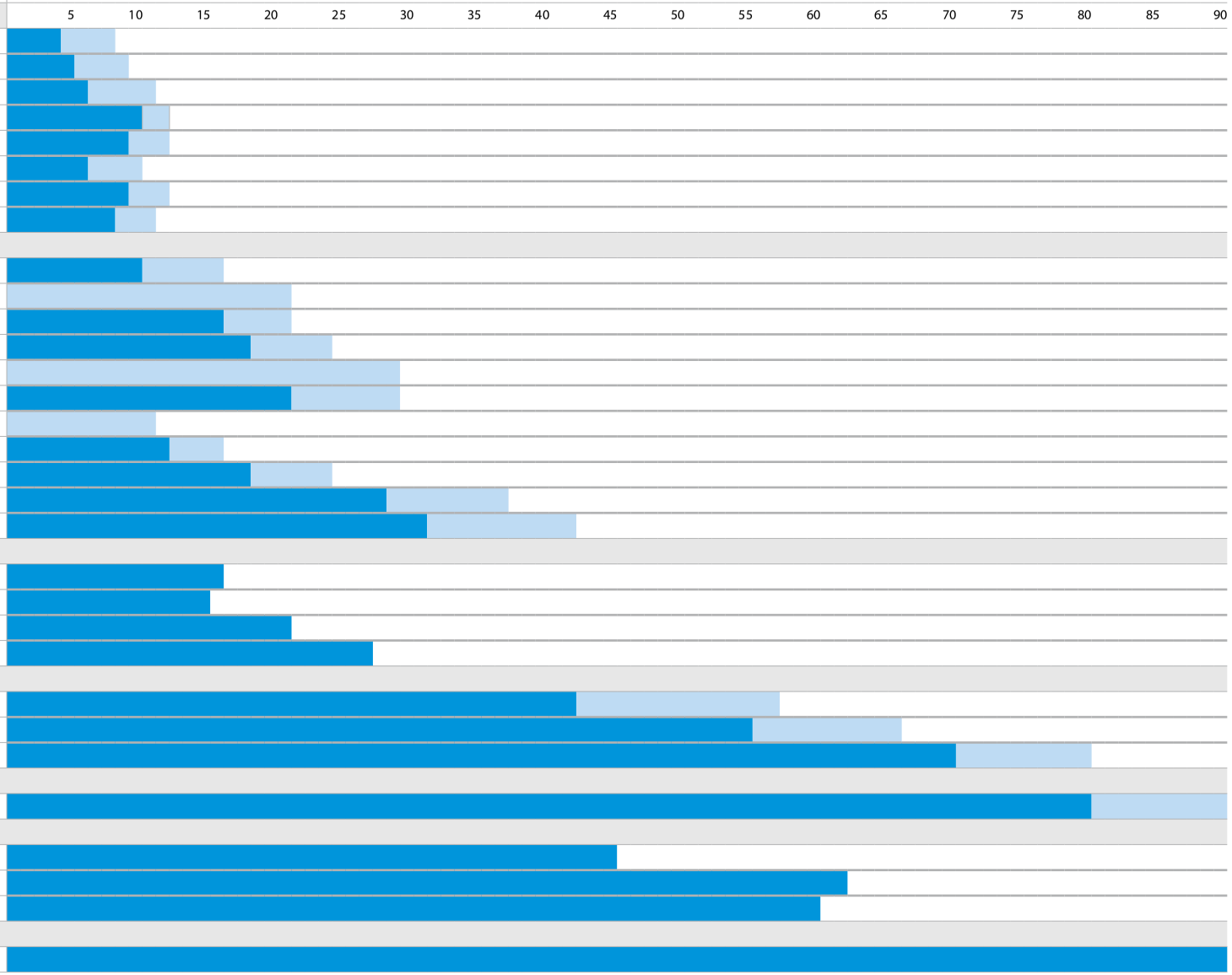
Our transport refrigeration unit range offers reliable and efficient solutions for a wide range of applications and vehicle types. Each unit is designed to minimize your total cost of ownership, configured to your exact needs, manufactured to Daikin's rigorous quality standards, and supported with a service network available 24/7.

VAN			
Direct-Drive		Electric	
Invisible Direct-Drive	**Zero Direct-Drive**	**Invisible Electric**	**Zero Electric**
			
			
SFZ007 SFZ008 SFZ009	Z200 Z250 Z350 Z380	SFZ008e SFZ009e	Z120b Z200e Z250e Z350e
			
SFZ009 Multi	Z380 Multi	SFZ009e Multi	Z350e Multi

LIGHT TRUCK	TRUCK		TRAILER
SFZ	**Uno**	**Uno Undermount**	**Exigo**
			
			
SFZ238 SFZ248	U600 U800 U1000	UN120	E1500
			
SFZ238 Multi SFZ248 Multi	U800 Multi U1000 Multi	UN120 Multi	

Selection tool for box size

Daikin Product Line	Model name	Refrigerant	Recommended Box size for 0°C [m³]	Recommended Van size for -20°C [m³]
Van Electric range				
Zero Electric	Z120b	R452A	8	4
	Z200e	R452A	9	6
	Z250e	R452A	11	7
	Z350e	R452A	12	10
	Z350e MT	R452A	12	9
Invisible Electric	SFZ008e	R452A	10	6
	SFZ009e	R452A	12	9
	SFZ009e MT	R452A	11	8
Van & Light Truck Direct Drive range				
Zero	Z200	R452A	16	10
	Z250	R134A	21	N/A
	Z250	R452A	21	16
	Z350	R452A	24	18
	Z380	R134A	28	N/A
	Z380	R452A	28	21
Invisible	SFZ007	R134A	11	N/A
	SFZ008	R452A	16	10
	SFZ009	R452A	24	18
SFZ	SFZ238	R452A	36	28
	SFZ248	R452A	42	31
Van & L. Truck Direct Drive Multi Temperature				
Zero	Z380 MT	R452A	N/A	16
Invisible	SFZ009 MT	R452A	N/A	15
SFZ	SFZ238 MT	R452A	N/A	21
	SFZ248 MT	R452A	N/A	27
Truck range				
Uno	U600	R452A	57	42
	U800	R452A	66	55
	U1000	R452A	80	70
Undermount truck range				
Uno Under	Un120	R452A	90	80
Truck Multi Temperature				
Uno	U800 MT	R452A	N/A	45
	U1000 MT	R452A	N/A	62
Uno Under	Un120 MT	R452A	N/A	60
Trailer				
Exigo	E1500	R452A	N/A	95



Note:This selection table is intended as a guide. It has been compiled using experience acquired in normal utilization of our equipment in transport and distribution.
Conformity to these recommendations should guarantee your total satisfaction.

Frozen applications

Chilled applications

Van
Direct-Drive

Invisible Direct-Drive

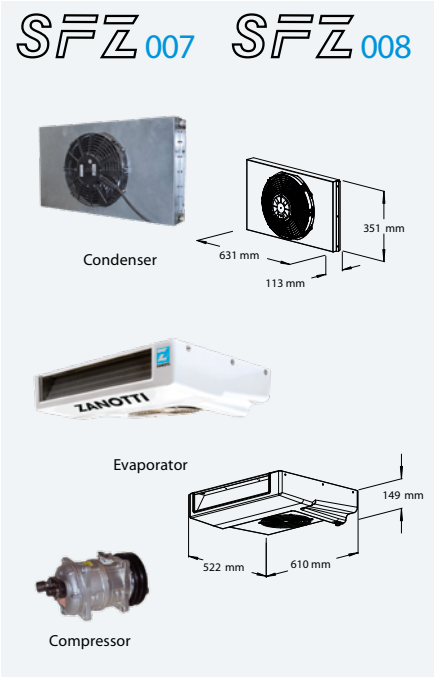
SFZ007 | SFZ008 | SFZ009 | SFZ009 Multi

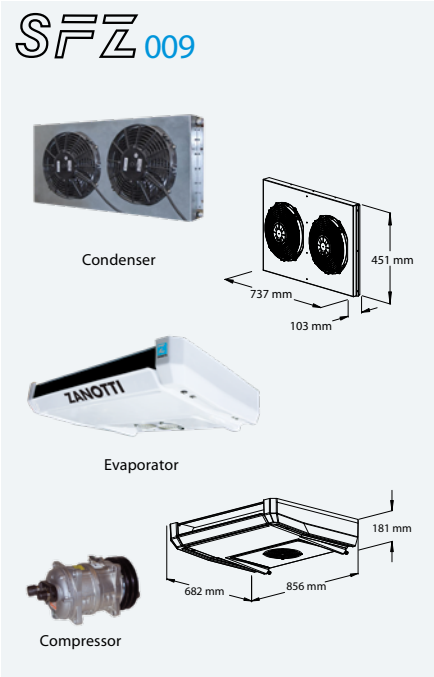
Our Invisible range is designed for discreet and efficient transportation of refrigerated products in vans. These units are installed underneath the vehicle chassis, completely invisible from the outside, preserving the aesthetics, original height and aerodynamics of the vehicle, while reducing bodywork. SFZ007, SFZ008 and SFZ009 offer varying refrigeration capacities and volume ratings tuned for different applications. SFZ009 Multi features dual evaporators to enable products with different temperature requirements to be transported in two separate zones.

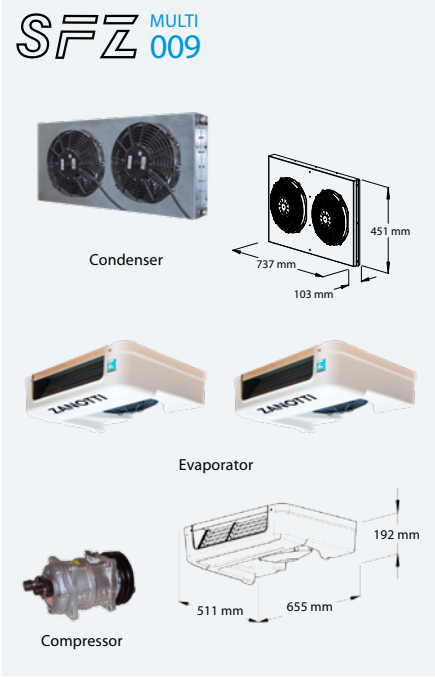
The Invisible range, with its ultra-thin dimensions make it the ideal choice for customers who need a space-saving solution. A driver-friendly interface in the cabin allows real-time monitoring and control of the unit performance to ensure the cargo is maintained at precisely the right temperature throughout the trip.

Key Features:

- ☑ Multiple temperature zones in the same vehicle (Multi model only)
- ☑ Powered by direct-drive on engine, electric stand-by
- ☑ Vehicle access to tight underground areas
- ☑ Under-chassis mounting preserves vehicle aesthetics and aerodynamics
- ☑ Invisible from the outside
- ☑ Low noise
- ☑ User-friendly cabin driver interface
- ☑ Telematics-compatible
- ☑ 2-year standard warranty







		SFZ007		SFZ008		SFZ009		SFZ009 Multi	
General									
Refrigerant	[-]	R134a		R452A					
System net cooling capacity under ATP conditions (30°C ambient temperature)									
	[°C]	0°C	-20°C	0°C	-20°C	0°C	-20°C	0°C	-20°C
Road mode	[W]	1,790	N/A	2,000	1,000	3,160	1,828	2,990	1,580
Stand-by mode	[W]	1,130	N/A	1,200	700	2,030	1,124	1,760	970
Heating capacity									
Road mode	[W]	N/A		1,890		2,790		2,640	
Stand-by mode	[W]	N/A		1,380		1,630		1,580	
Airflow rate									
Airflow rate at 100kPa static pressure	[m^3/h]	786		786		1,062		2x 620	
Weight									
Condenser without electric stand-by	[kg]	25		38		45		45	
Condenser with electric stand-by	[kg]	50		65		75		75	
Evaporator	[kg]	10		14		20.5		2x 10.2	
Road compressor									
Displacement	[cc]	146		146		163		163	

These products contain fluorinated greenhouse gases (R134a GWP=1,430 / R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC or 24VDC

Zero Direct-Drive

Z200 | Z250 | Z350 | Z380

The Zero range meets the needs of the distribution industry by offering the utmost flexibility in the temperature management of refrigerated products. The extensive direct-drive Zero line-up including Z200, Z250, Z350, and Z380 is designed to meet a wide range of applications in light commercial vehicles.

All Zero models provide easy installation and serviceability. The condensing unit can be mounted on the roof or the front wall of the box, and the ultra-thin evaporator installed in the cargo compartment maximizes cargo volume. A driver-friendly interface in the cabin allows real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip. Our Zero units are setting new standards with their attractive design.

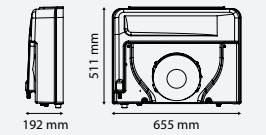
Key Features:

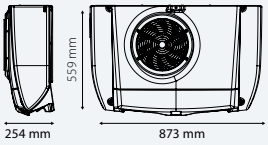
- ☑ Proven reliability and performance
- ☑ Powered by direct-drive on engine, electric stand-by
- ☑ Easy to install and service with removable side panels
- ☑ Configurable for a wide range of refrigerated applications in light commercial vehicles
- ☑ Low noise
- ☑ User-friendly cabin driver interface
- ☑ Reduced refrigerant charge and maintenance costs
- ☑ Telematics-compatible
- ☑ 2-year standard warranty

Z 200

Condenser

Evaporator

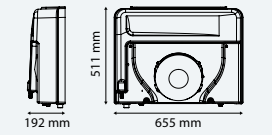


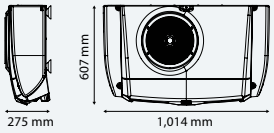


Z 250

Condenser

Evaporator

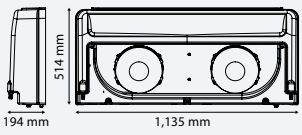


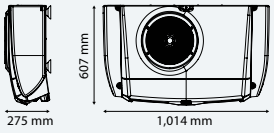


Z 350

Condenser

Evaporator

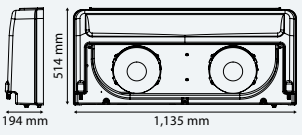


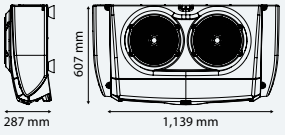


Z 380

Condenser

Evaporator





		Z250	Z380	Z200	Z250	Z350	Z380
General							
Refrigerant	[-]	R134a		R452A			
System net cooling capacity under ATP conditions (30°C ambient temperature)							
	[°C]	0°C / -20°C	0°C / -20°C	0°C / -20°C	0°C / -20°C	0°C / -20°C	0°C / -20°C
Road mode	[W]	2,140 / N/A	2,920 / N/A	2,220 / 1,170	2,680 / 1,470	3,350 / 1,840	3,800 / 2,020
Stand-by mode	[W]	1,130 / N/A	1,900 / N/A	1,500 / 700	2,120 / 820	2,240 / 890	2,450 / 970
Heating capacity							
Road mode	[W]	1,930	2,620	2,100	2,500	3,100	3,300
Stand-by mode	[W]	1,020	1,710	1,300	1,900	2,000	2,200
Airflow rate							
Airflow rate at 100kPa static pressure	[m^3/h]	650	1,300	622	650	1,300	1,300
Weight							
Condenser without electric stand-by	[kg]	34	40	30	36	36	42
Condenser with electric stand-by	[kg]	70	78	56	72	72	80
Evaporator	[kg]	9	18	10.2	10.5	19.6	19.6
Road compressor							
Displacement	[cc]	146	163	131	131	146	146

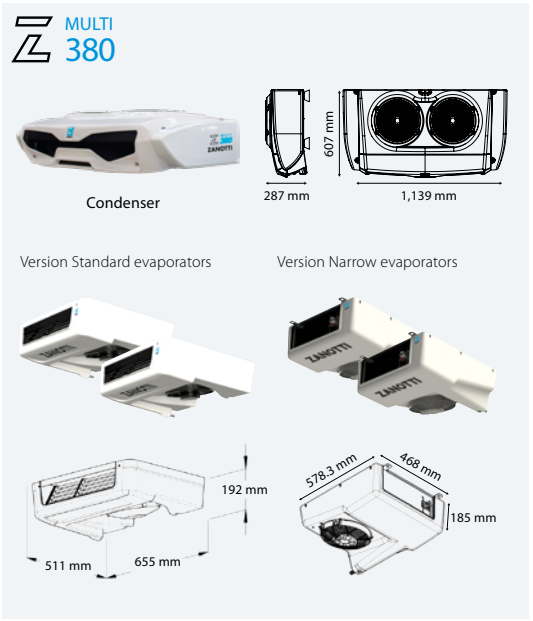
These products contain fluorinated greenhouse gases (R134a GWP=1,430 / R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC

Zero Direct-Drive Multi-Temp

Z380 Multi

Z380 Multi and Z380 Multi (Narrow Evap) models are designed to meet the modern needs of low environmental impact refrigeration for light commercial vehicles. These units feature additional evaporators to enable transport of products with different temperature requirements in separate zones, available in multiple configurations to adapt to a wide range of applications.

All Zero models provide easy installation and serviceability. The condensing unit can be mounted on the roof or the front wall of the box, and the ultra-thin evaporator installed in the cargo compartment maximizes cargo volume. A driver-friendly interface in the cabin allows real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip. Our Zero units are setting new standards with their attractive design.



Key Features:

- ☑ Multiple temperature zones in the same vehicle
- ☑ Proven reliability and performance
- ☑ Powered by direct-drive on engine, electric stand-by
- ☑ Easy to install and service with removable side panels
- ☑ Configurable for a wide range of refrigerated applications in light commercial vehicles
- ☑ Low noise
- ☑ User-friendly cabin driver interface
- ☑ Reduced refrigerant charge and maintenance costs
- ☑ Telematics-compatible
- ☑ 2-year standard warranty

		Z380 Multi		Z380 Multi (Narrow Evap)	
General					
Refrigerant	[-]	R452A			
System net cooling capacity under ATP conditions (30°C ambient temperature)					
	[°C]	0°C	-20°C	0°C	-20°C
Road mode	[W]	3,265	1,655	3,250	1,310
Stand-by mode	[W]	2,030	640	2,420	1,030
Heating capacity					
Road mode	[W]	3,010		2,630	
Stand-by mode	[W]	1,770		1,520	
Airflow rate					
Airflow rate at 100kPa static pressure	[m^3/h]	2x 620		2x 830	
Weight					
Condenser without electric stand-by	[kg]	42		42	
Condenser with electric stand-by	[kg]	80		80	
Evaporator	[kg]	2x 10.2		2x 16	
Road compressor					
Displacement	[cc]	146		146	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC

Van Electric

Invisible Electric

SFZ008e | SFZ009e | SFZ009e Multi

The Invisible Electric range is designed for discreet and efficient transportation of refrigerated products in vans on electric power, both on road and during stand-by. A highly reliable battery-inverter package supplies the power, making the Invisible Electric an ideal choice for full-electric, hybrid, or conventional vehicles.

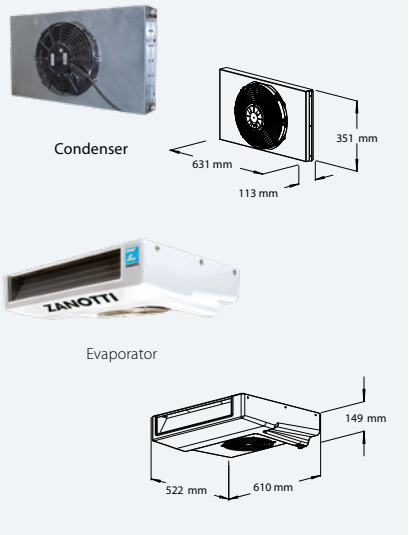
These units are installed underneath the vehicle chassis, completely invisible from the outside, preserving the aesthetics, original height and aerodynamics of the vehicle, while reducing bodywork. SFZ009e offers varying refrigeration capacities and volume ratings tuned for different applications. SFZ009e Multi features dual evaporators to enable products with different temperature requirements to be transported in two separate zones.

The Invisible range, with its ultra-thin dimensions make it the ideal choice for customers who need a space-saving solution. A driver-friendly interface in the cabin allows real-time monitoring and control of the unit performance to ensure the cargo is maintained at precisely the right temperature throughout the trip.

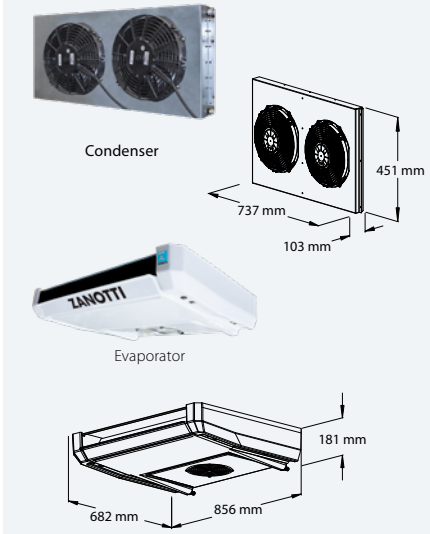
Key Features:

- ☑ Zero emissions
- ☑ Powered by reliable battery-inverter pack on road, chargeable on electric grid
- ☑ Compatible with full-electric, hybrid or conventional vehicles
- ☑ Multiple temperature zones in the same vehicle (Multi model only)
- ☑ Vehicle access to tight underground areas
- ☑ Under-chassis mounting preserves vehicle aesthetics and aerodynamics
- ☑ Invisible from the outside
- ☑ Low noise
- ☑ User-friendly cabin driver interface
- ☑ Telematics-compatible
- ☑ 2-year standard warranty

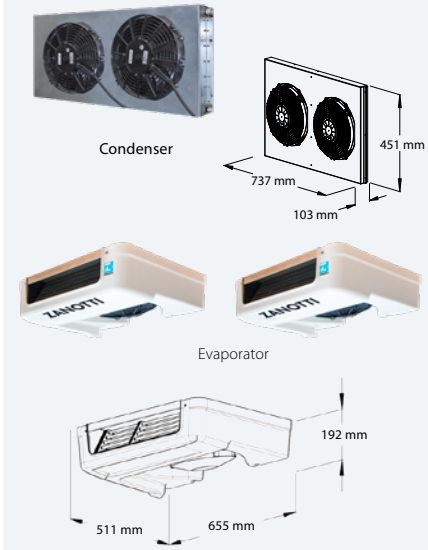
SFZ 008e



SFZ 009e



SFZ MULTI 009e



		SFZ008e		SFZ009e		SFZ009e Multi	
General							
Refrigerant	[-]	R452A					
System net cooling capacity under ATP conditions (30°C ambient temperature)							
	[°C]	0°C	-20°C	0°C	-20°C	0°C	-20°C
Battery mode	[W]	1,300	700	2,200	1,124	1,760	970
Heating capacity							
Battery mode	[W]	1,380		1,650		1,580	
Airflow rate							
Airflow rate at 100kPa static pressure	[m^3/h]	786		1,062		2x 620	
Weight							
Condenser with electric stand-by	[kg]	65		75		75	
Evaporator	[kg]	14		20.5		2x 10.2	
Max current							
	[A]	119		165		170	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC or 24VDC

Provisional engineering data

Zero Electric

Z120b

Z120b is powered by the vehicle battery, with minimal environmental impact and maximum cooling effectiveness ideal for refrigerated transport in vans. The unit can be installed quickly without any mechanical couplings with the vehicle engine, which also minimises power draw and thus emissions.

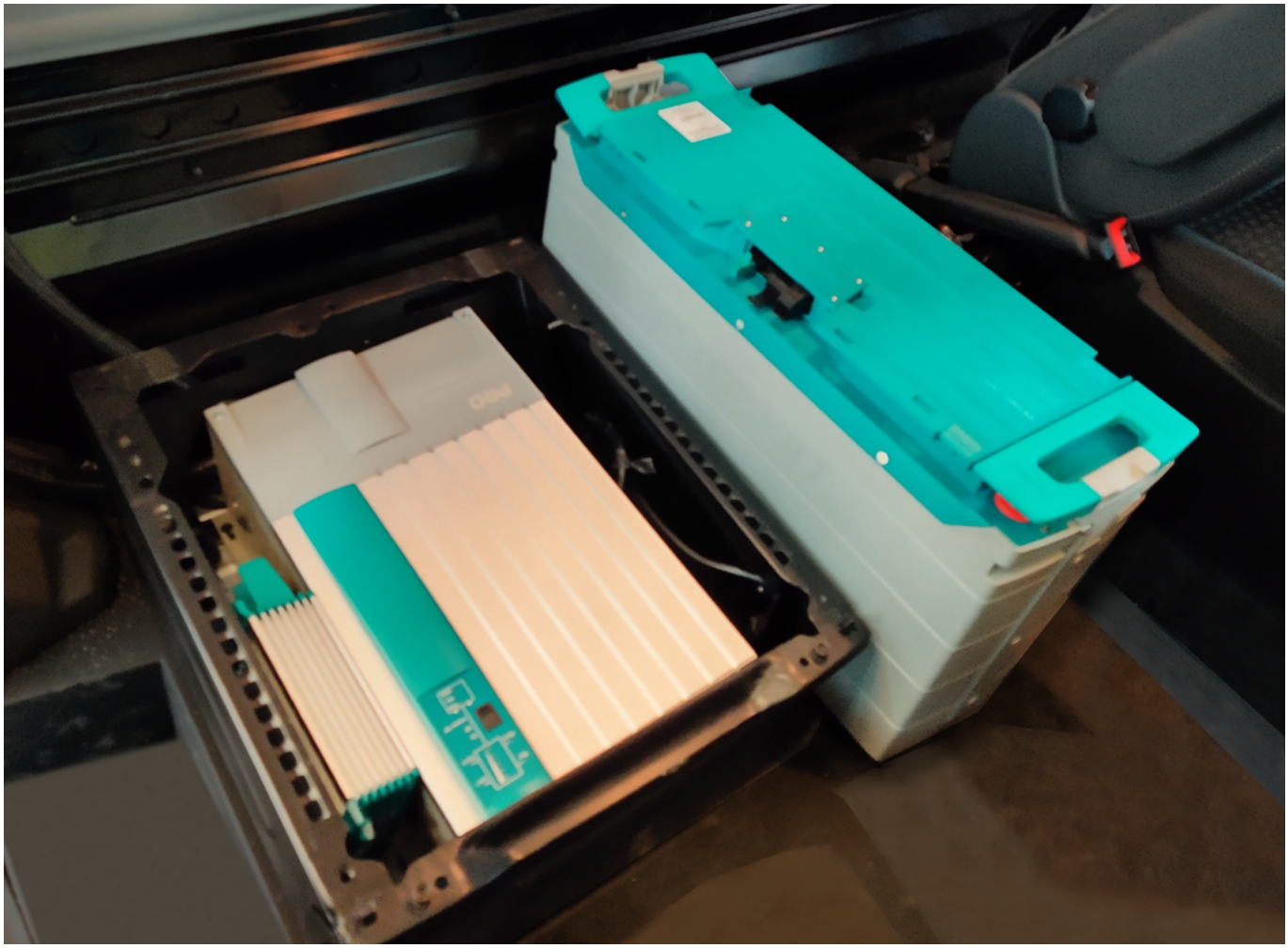
All Zero models provide easy installation and serviceability. The condensing unit can be mounted on the roof or the front wall of the box, and the ultra-thin evaporator installed in the cargo compartment maximizes cargo volume. A driver-friendly interface in the cabin allows real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip.

Key Features:

- ☑ Low emissions
- ☑ Proven reliability and performance
- ☑ Powered by vehicle battery on engine, electric stand-by
- ☑ Compatible with full-electric, hybrid or conventional vehicles
- ☑ Easy to install and service with removable side panels
- ☑ Low noise
- ☑ User-friendly cabin driver interface
- ☑ Reduced refrigerant charge and maintenance costs
- ☑ Telematics-compatible
- ☑ 2-year standard warranty, extendable up to 5 years

		Z120b			
General					
Refrigerant	[-]	R452A		R134A	
System net cooling capacity under ATP conditions (30°C ambient temperature)					
	[°C]	0°C	-20°C	0°C	-20°C
Battery mode	[W]	1,200	560	780	N/A
Standby mode	[W]	1,300	570	750	N/A
Heating capacity					
Battery mode	[W]	1,100		N/A	
Airflow rate					
Airflow rate at 100kPa static pressure	[m^3/h]	560		560	
Weight					
Condenser with electric stand-by	[kg]	47		47	
Evaporator	[kg]	10.2		10.2	
Max current					
	[A]	75		55	

This product contains fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC



Electric Power Supply

Our power supply packages are designed to match our Invisible Electric and Zero Electric ranges, providing a high level of reliability and customization for the specific vehicle and application needs.

The power supply can be configured as one or two DC lithium-ion batteries, each providing 1.25 to 6kW up to 12kW total; and comes with a robust inverter battery charger.

Key Features:

- ☑ Zero emissions
- ☑ Zero maintenance
- ☑ Automotive-grade design with high reliability
- ☑ Long life with 3,500 cycles
- ☑ Fast charging
- ☑ 230VAC power for charging and stand-by operation
- ☑ Bluetooth connection with smartphone app
- ☑ Compatible with telematics, for remote battery monitoring
- ☑ Optional connection to vehicle DC battery for supplementary power supply
- ☑ Optional auxiliary input for external power supply

Battery Charger
Z120b only

Inverter Battery Charger
SFZ009e / Z200e / Z250e / Z350e / Z350e Multi

Zero Electric

Z200e | Z250e | Z350e | Z350e Multi

The Zero range meets the needs of the distribution industry by offering the utmost flexibility in the temperature management of refrigerated products. Zero Electric is designed to meet a wide range of applications in light commercial vehicles on electric power, both on road and during stand-by. A highly reliable battery-inverter package supplies the power, making Zero Electric an ideal choice for full-electric, hybrid, or conventional vehicles.

Z200e, Z250e and Z350e offer varying refrigeration capacities and volume ratings tuned for different applications. Z350e Multi features additional evaporators to enable transport of products with different temperature requirements in separate zones.

All Zero models provide easy installation and serviceability. The condensing unit can be installed as top-mount on the roof of the box or nose-mount on the front wall of the box, and the ultra-thin evaporator installed in the cargo compartment maximizes cargo volume. A driver-friendly interface in the cabin allows real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip. Our Zero units are setting new standards with their attractive design.

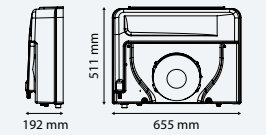
Key Features:

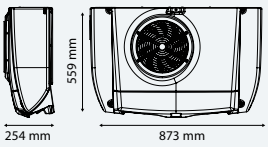
- ☑ Zero emissions
- ☑ Powered by reliable battery-inverter pack on road, chargeable on electric grid
- ☑ Compatible with full-electric, hybrid or conventional vehicles
- ☑ Multiple temperature zones in the same vehicle (Multi model only)
- ☑ Proven reliability and performance
- ☑ Easy to install and service with removable side panels
- ☑ Low noise
- ☑ Configurable for a wide range of refrigerated applications in light commercial vehicles
- ☑ User-friendly cabin driver interface
- ☑ Reduced refrigerant charge and maintenance costs
- ☑ Telematics-compatible
- ☑ 2-year standard warranty

Z 200e

Condenser

Evaporator

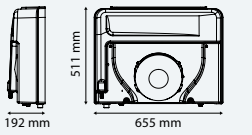


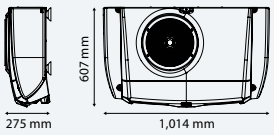


Z 250e

Condenser

Evaporator

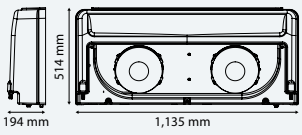


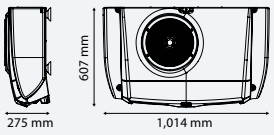


Z 350e

Condenser

Evaporator

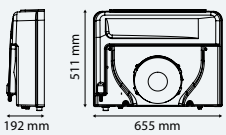


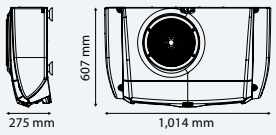


MULTI Z 380e

Condenser

Evaporator





		Z200e		Z250e		Z350e		Z350e Multi	
General									
Refrigerant	[-]	R452A							
System net cooling capacity under ATP conditions (30°C ambient temperature)									
	[°C]	0°C	-20°C	0°C	-20°C	0°C	-20°C	0°C	-20°C
Battery mode	[W]	1,495	695	1,735	955	1,880	1,045	1,940	830
Heating capacity									
Battery mode	[W]	1,200		1,500		1,650		1,600	
Airflow rate									
Airflow rate at 100kPa static pressure	[m^3/h]	620		650		1,300		2x 620	
Weight									
Condenser with electric stand-by	[kg]	54		70		70		70	
Evaporator	[kg]	10.2		10.5		19.6		2x 10.2	
Max current									
	[A]	100		159		166		171	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC or 24VDC

Light Truck

SFZ

SFZ238 | SFZ248

SFZ is a robust direct-drive solution for refrigerated transport on light to medium trucks. It is a proven design optimized for energy-efficiency, low noise, and easy-to-service transport of temperature-controlled goods in medium sized boxes.

SFZ238 and SFZ248 are designed as nose-mount, installed on the front wall of the box, with multiple configurations of evaporators and fans to meet the requirements of a wide range of vehicle types and applications. A driver-friendly interface in the cabin allows real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip.

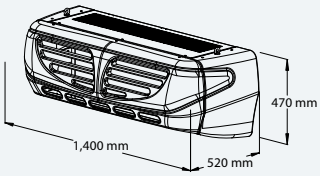
Key Features:

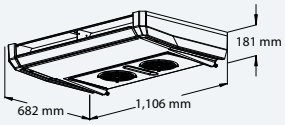
- ☑ Proven reliability and performance
- ☑ Powered by direct-drive on engine, electric stand-by
- ☑ Easy to install and service, light weight
- ☑ Low noise
- ☑ Configurable for a wide range of refrigerated applications in light to medium trucks
- ☑ User-friendly cabin driver interface
- ☑ Telematics-compatible
- ☑ 2-year standard warranty

SFZ 238

Condenser

Evaporator

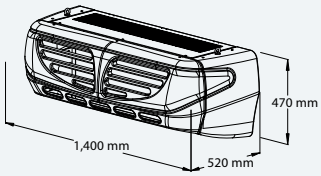


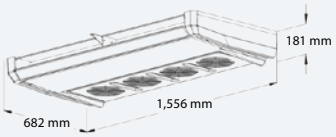


SFZ 248

Condenser

Evaporator





		SFZ238		SFZ248	
General					
Refrigerant	[-]	R452A			
System net cooling capacity under ATP conditions (30°C ambient temperature)					
	[°C]	0°C	-20°C	0°C	-20°C
Road mode	[W]	4,700	2,470	5,100	2,570
Stand-by mode	[W]	3,830	2,010	4,405	2,005
Heating capacity					
Road mode	[W]	3,990		4,540	
Stand-by mode	[W]	3,310		2,800	
Airflow rate					
Airflow rate at 100kPa static pressure	[m^3/h]	1,670		3,340	
Weight					
Condenser without electric stand-by	[kg]	70		77	
Condenser with electric stand-by	[kg]	128		143	
Evaporator	[kg]	26.5		42.5	
Road compressor					
Displacement	[cc]	163		215	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC or 24VDC

SFZ Multi-Temp

SFZ238 Multi | SFZ248 Multi

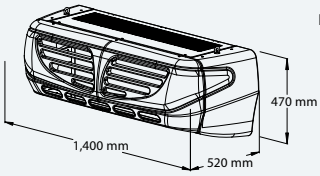
Our SFZ Multi-Temp range is designed to meet the modern needs of refrigeration for light to medium trucks. These units feature additional evaporators to enable transport of products with different temperature requirements in separate zones, available in multiple configurations to adapt to a wide range of applications. It is a proven design optimized for energy-efficiency, low noise, and easy-to-service transport of temperature-controlled goods in medium-sized boxes.

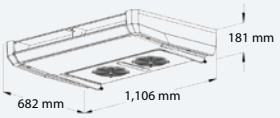
SFZ238 Multi and SFZ248 Multi are designed as nose-mount, installed on the front wall of the box. A driver-friendly interface in the cabin allows real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip.

SFZ MULTI 238 SFZ MULTI 248

Condenser

Evaporator





Key Features:

- ☑ Multiple temperature zones in the same vehicle
- ☑ Proven reliability and performance
- ☑ Powered by direct-drive on engine, electric stand-by
- ☑ Easy to install and service, lightweight
- ☑ Low noise
- ☑ Configurable for a wide range of refrigerated applications in light to medium trucks
- ☑ User-friendly cabin driver interface
- ☑ Telematics-compatible
- ☑ 2-year standard warranty

		SFZ238 Multi		SFZ248 Multi	
General					
Refrigerant	[-]	R452A			
System net cooling capacity under ATP conditions (30°C ambient temperature)					
	[°C]	0°C	-20°C	0°C	-20°C
Road mode	[W]	4,240	2,135	5,080	2,560
Stand-by mode	[W]	3,570	1,635	4,130	2,020
Heating capacity					
Road mode	[W]	3,850		4,430	
Stand-by mode	[W]	3,230		3,610	
Airflow rate					
Airflow rate at 100kPa static pressure	[m^3/h]	2x 835		2x 1,670	
Weight					
Condenser without electric stand-by	[kg]	70		77	
Condenser with electric stand-by	[kg]	128		143	
Evaporator	[kg]	2x		2x	
Road compressor					
Displacement	[cc]	163		215	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 230/1/50 or 400/3/50
Vehicle voltages available: 12VDC or 24VDC

Truck

Uno

U600 | U800 | U1000

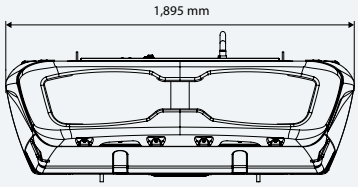
The redesigned Uno range of units are independently powered with a diesel engine, and available in various capacities to efficiently transport temperature-controlled products in medium to heavy trucks. The Uno features Zanotti's innovative direct coupling design between the engine and the compressor, and utilize Daikin's expertise in design for reliability and performance. Their high cooling performance, energy efficiency and extended maintenance intervals minimise the total cost of ownership, while meeting the most stringent emission, material waste, and noise pollution regulations.

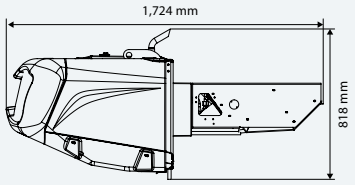
U600, U800, and U1000 are designed as nose-mount, installed on the front wall of the box. The electronics enabled advanced diagnostics. A robust interface in the cabin can be installed in the vehicle DIN slot or mounted on the dash, allowing real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip.

Key Features:

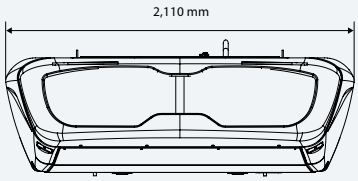
- ☑ Designed for high reliability with a custom Yanmar engine
- ☑ Innovative powertrain design enabling high performance and energy efficiency
- ☑ Reduced fuel consumption and noise
- ☑ Extended maintenance intervals
- ☑ 2-year standard warranty

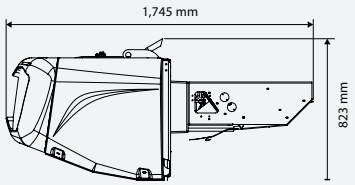
U600



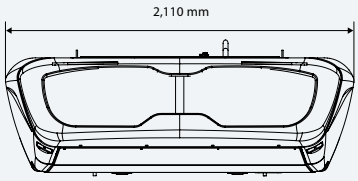


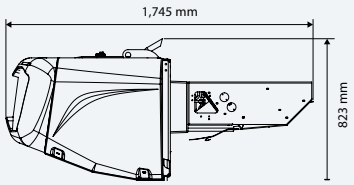
U800





U1000





		U600		U800		U1000	
General							
Refrigerant	[-]	R452A					
Defrost	[-]	Hot gas defrost					
System net cooling capacity under ATP conditions (30°C ambient temperature)							
	[°C]	0°C	-20°C	0°C	-20°C	0°C	-20°C
Road mode	[W]	6,200	3,200	8,600	4,700	10,000	5,700
Stand-by mode	[W]	3,700	1,700	6,500	3,500	8,300	4,500
Heating capacity							
Road mode	[W]	5,400		7,500		8,700	
Stand-by mode	[W]	3,200		5,700		7,200	
Airflow rate							
Airflow rate at 100kPa static pressure	[m^3/h]	1,500		2,200		2,500	
Air Throw	[m]	6.5		7.5		8.5	
Weight							
Monoblock road and stand-by	[kg]	485		500		549	
Monoblock road-only	[kg]	435		455		504	
Diesel engine							
Displacement	[cc]	854		1,116		1,116	
Rated power output	[kW]	11.5		15.1		15.1	
Maintenance interval	[hrs]	2,000		2,000		2,000	
Road compressor							
Displacement	[cc]	235		325		390	
Stand-by compressor							
Displacement	[m^3/h]	11.3		14.4		21.4	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 400/3/50

Uno

U800 Multi | U1000 Multi

The redesigned Uno range of units are independently powered with a diesel engine, and available in various capacities to efficiently transport temperature-controlled products in medium to heavy trucks. The Uno features Zanotti's innovative direct coupling design between the engine and the compressor, and utilise Daikin's expertise in design for reliability and performance. Their high cooling performance, energy efficiency and extended maintenance intervals minimise the total cost of ownership, while meeting the most stringent emission, material waste, and noise pollution regulations.

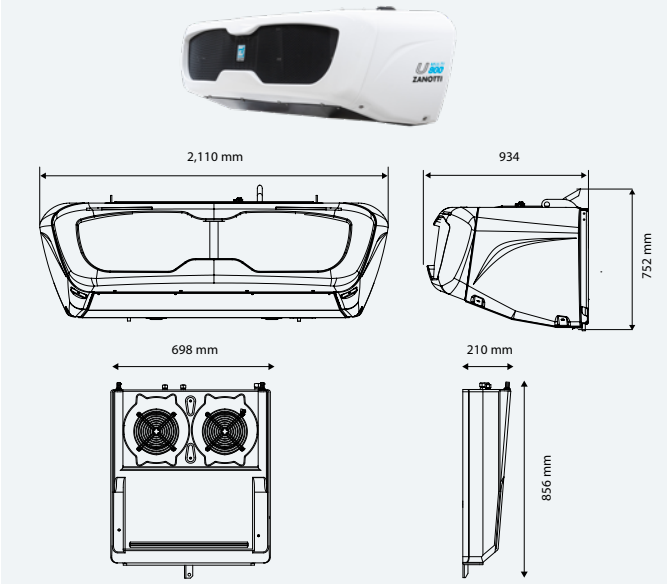
U800 Multi and U1000 Multi are designed as nose-mount, installed on the front wall of the box, with multiple configurations of evaporators and fans to meet the requirements of a wide range of vehicle types and applications. The electronics enabled advanced diagnostics. A robust interface in the cabin can be installed in the vehicle DIN slot or mounted on the dash, allowing real-time monitoring and control of unit performance to ensure goods are maintained at precisely the right temperature throughout the trip.

Key Features:

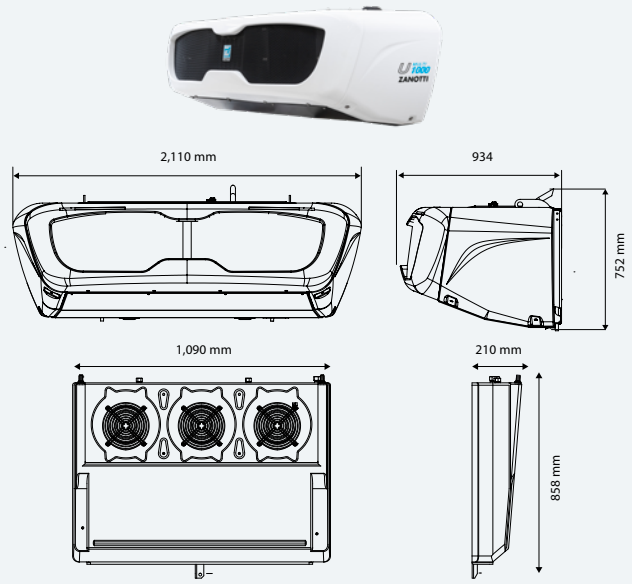
- ☑ Multiple temperature zones in the same vehicle
- ☑ Designed for high reliability with a custom Yanmar engine
- ☑ Innovative powertrain design enabling high performance and energy efficiency
- ☑ Reduced fuel consumption and noise
- ☑ Extended maintenance intervals
- ☑ 2-year standard warranty, extendable up to 5 years

The all-new Uno cabin controller is modern technology in a robust build.

U MULTI 800



U MULTI 1000



		U800 Multi		U1000 Multi	
General					
Refrigerant	[-]	R452A			
Defrost	[-]	Hot gas defrost			
System net cooling capacity under ATP conditions (30°C ambient temperature)					
	[°C]	0°C	-20°C	0°C	-20°C
Road mode	[W]	7,970	4,140	9,800	5,400
Stand-by mode	[W]	6,050	3,075	8,700	4,500
Heating capacity					
Road mode	[W]	7,300		8,500	
Stand-by mode	[W]	4,900		7,600	
Airflow rate					
Airflow rate at 100kPa static pressure	[m^3/h]	2x 1,680		2x 2,520	
Air Throw	[m]	7.5		8.5	
Weight					
Split road and stand-by	[kg]	500		505	
Monoblock road-only	[kg]	460		465	
Evaporator	[kg]	35x2		40x2	
Diesel engine					
Displacement	[cc]	1,116		1,116	
Rated power output	[kW]	13.2		13.2	
Maintenance interval	[hrs]	2,000		2,000	
Road compressor					
Displacement	[cc]	325		390	
Stand-by compressor					
Displacement	[m^3/h]	14.4		21.4	

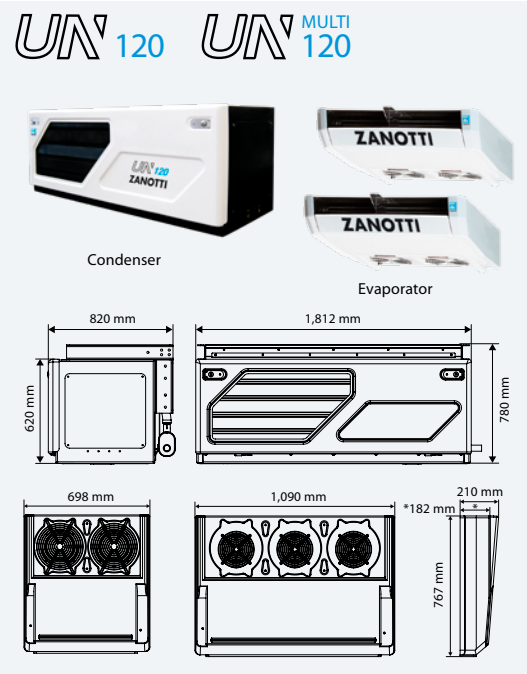
These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-by voltages available: 400/3/50

Uno Undermount

UN120 | UN120 Multi

Uno Undermount models are independently powered with a diesel engine, and available in various capacities to efficiently transport temperature-controlled products in heavy trucks. The units feature Zanotti's innovative direct coupling design between the engine and the compressor.

UN120 and UN120 Multi are undermount units designed to be installed under the box. UN120 Multi features additional evaporators to enable transport of products with different temperature requirements in separate zones. A driver-friendly interface in the cabin enables them to monitor and modify performance to ensure it is kept at precisely the right temperature throughout the trip.



Key Features:

- ☑ Multiple temperature zones in the same vehicle (Multi model only)
- ☑ Designed for high reliability with a custom Yanmar engine
- ☑ Innovative powertrain design enabling high performance and energy efficiency
- ☑ Reduced fuel consumption and noise
- ☑ 2-year standard warranty

		UN120		UN120 Multi	
General					
Refrigerant	[-]	R452A			
Defrost	[-]	Hot gas defrost			
System net cooling capacity under ATP conditions (30°C ambient temperature)					
	[°C]	0°C	-20°C	0°C	-20°C
Road mode	[W]	11,500	6,200	10,600	5,700
Stand-by mode	[W]	8,200	4,200	7,500	3,900
Heating capacity					
Road mode	[W]	10,000		9,500	
Stand-by mode	[W]	7,100		6,700	
Airflow rate					
Airflow rate at 100kPa static pressure	[m^3/h]	4,500		2x 2,520	
Air Throw	[m]	> 8.5		> 8.5	
Weight					
Condensing unit road and stand-by	[kg]	510		510	
Condensing unit road-only	[kg]	475		475	
Evaporators	[kg]	40		40x2	
Diesel engine					
Displacement	[cc]	1,116		1,116	
Rated power output	[kW]	13.2		13.2	
Maintenance interval	[hrs]	2,000		2,000	
Road compressor					
Displacement	[cc]	390		390	
Stand-by compressor					
Displacement	[m^3/h]	21.4		21.4	

These products contain fluorinated greenhouse gases (R452A GWP=2,140.5).
Stand-By voltages available: 400/3/50

Provisional engineering data

Trailer

Exigo

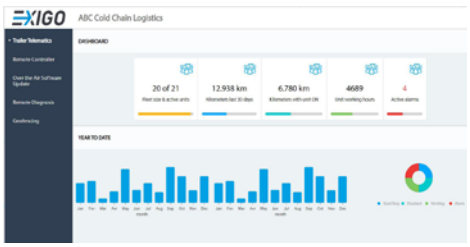
E1500

Daikin Exigo is the new benchmark in trailer refrigeration – built for the needs of today, and the challenges of tomorrow.
Every aspect of Exigo has been designed to provide high performance, energy-efficient and reliable transport of refrigerated cargo. It is the next generation in trailer refrigeration, being engine-powered, and compatible with battery technologies.

Key Features:

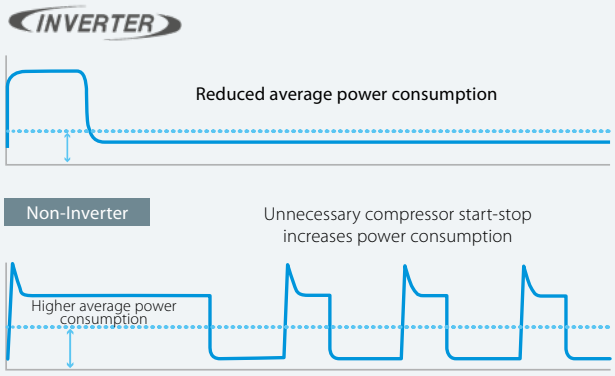
- ☑ Unique electric architecture with Daikin inverter technology providing 15kW true capacity both on engine and electric power
- ☑ Variable-speed compressor and fans for maximum pull-down performance and energy efficiency
- ☑ Reduced maintenance downtime with industry leading service intervals (3,000 hours as standard)
- ☑ Low noise as standard
- ☑ Ease of unit operation with high resolution graphical user interface
- ☑ Daikin components with proven reliability and a lightweight design
- ☑ GDP-compliant, supporting cold chain integrity of pharmaceuticals and medicinal products
- ☑ Telematics with 2-year subscription included as standard
- ☑ EMEA sales and service network backed by Daikin

High resolution graphical user interface



Advanced telematics included as standard

EXIGO



GDP Compliant

Specifications		E1500
Cooling capacity 30/0°C - Engine & Electric	[W]	14,900
Cooling capacity 30/-20°C - Engine & Electric	[W]	9,200
Heating capacity -20/+2°C - Engine & Electric	[W]	10,500
Air Flow rate evaporator at max pulldown	[m^3/h]	5,500
Air throw	[m]	15
Engine		Kubota Custom Diesel Engine 1,500 cc / 4 Cylinders NRMM Stage V Compliant
Generator		15kW / 400V 3P 50Hz / Direct Drive
Compressor		Custom scroll compressor | economizer | inverter
		Variable speed
Variable speed components		Compressor | Evaporator fans | Condenser Fans
Controller		Daikin PCB
User interface		7" High Resolution LCD
Temperature zones		Single
Refrigerant		R-452A
Total net weight	[kg]	730
Unit Dimensions WxHxD	[mm]	2,072x2,227x440
Connectivity		Telematics as Standard with 2-Year Subscription Included
Pharma		Certicold GDP certification

Power supply		
Voltage	[V]	400
Phase		3P+N
Frequency	[Hz]	50

Exigo Accessories

Solar Panel

Key Features:

- ☑ Extends Exigo 12V battery life and efficiency
- ☑ Improves fuel efficiency by charging the 12V battery
- ☑ Keeps telematics active during long standby

Specifications		Solar Panel
Power	[W]	138
Weight	[Kg]	1.8
Length	[mm]	1,363
Width	[mm]	546
Thickness	[mm]	2

Datalogger

Key Features:

- ☑ Enables independent cold chain monitoring
- ☑ Includes 2 temperature sensors extendable to 6
- ☑ Includes integrated printer

Exigo Service Offerings

Telematics

Real time management of your fleet is part of Exigo's standard offering, as the unit comes with 2-year telematics included as standard. Our platform provides a comprehensive set of features developed together with fleet managers, and ensures continuous improvement of your Exigo units with the over the air updates.

Features
- Real-time GPS tracking
- Intuitive geolocator interface based on Google Maps
- Real-time monitoring of setpoint, cargo area and outside temperature
- Temperature setpoint management with two-way communication
- Unit status monitoring including engine information
- Operational and location alarms, with push notifications
- Reports of events, alarms, and usage statistics
- Virtual HMI with full control
- Over-the-air software update
- Accessible via computer, tablet or smartphone
- 4G LTE connectivity, all Europe roaming
- Integration with your existing fleet management software
- Usage data provided to Daikin for product improvement purposes

24/7 Breakdown Support

Daikin provides peace of mind across Europe by a 24/7 support line, in order to resolve emergency breakdowns with minimum hassle. Our support specialists will arrange everything from locating the nearest service location to handling payments on behalf of the customer.

Features
- One phone number across Europe: 24/7 +3259552477
- Available in 9 languages, for the convenience of fleet managers and drivers: English (default), Dutch, French, German, Italian, Polish, Romanian, Spanish and Turkish
- Support specialists will arrange locating the nearest available service workshop
- Unit service history available to support specialists
- Support specialists will arrange communication of the technical issue with the service workshop, breaking the language barrier
- No payment or paperwork for issues covered under warranty or extended warranty

Exigo Service Contracts	0- 2 Years	3+ Years
Warranty	Included	Optional Extended Warranty (Requires Telematics and Maintenance Plan)
Telematics	Included	Optional
Planned Maintenance	Optional	Optional
24/7 Breakdown Support	Optional	Optional

Planned Maintenance

Daikin planned maintenance contract makes sure your unit is always in top operational condition through our authorized service network, maximizin g the value of your investment.

Features
- Execution of planned maintenance per Exigo user manual
- No additional charge, including parts and labor
- No payments or paperwork needed for the intervention
- Unit service history digitally available to all authorized service partners across Europe
- By appointment, can be performed by any authorized service partner across Europe

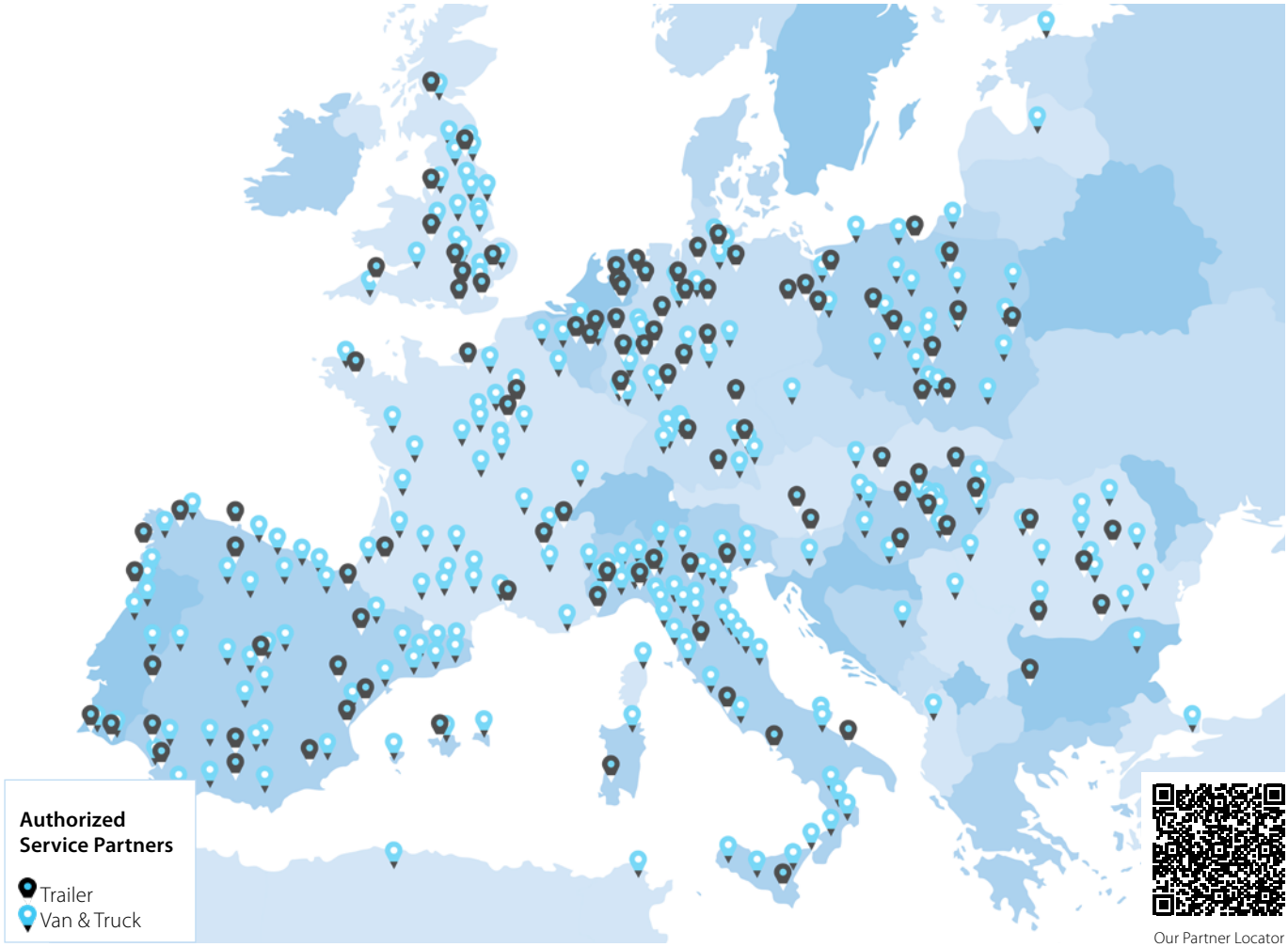
Extended Warranty

Protect your asset beyond the standard 2-year warranty, with Daikin's extended warranty contract.

Features
- Every Exigo is already covered under 2-year warranty including parts and labor
- Extended warranty extend the parts and labor coverage to 3 years and beyond
- No payments or paperwork needed for the intervention
- Unit service history digitally available to all authorized service partners across Europe
- Can be performed by any authorized service partner across Europe

Service Network

Our continuously growing European service network, extending to over 300 authorized service partners, enabled by Daikin to provide repair and maintenance services for our van, truck, and trailer units. Our service partners always apply our genuine spare parts, engineered to ensure maximum performance and reliability. Utilising the authorized service partners and genuine parts is the only way to protect your investment under Daikin warranty and minimise total cost of ownership.



Our Partner Locator