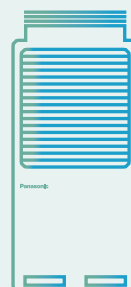
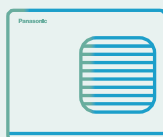


Condensing units with natural refrigerant 2022 / 2023



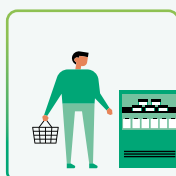


Panasonic condensing units with natural refrigerant

Panasonic's CR Series of CO₂ condensing units provide the ideal solution for supermarkets, convenience stores and gas stations.

Keeping food always fresh at right temperature in showcases or cold rooms is a very critical point. And one of the biggest challenges for those retailers has been the expensive effects of refrigeration breakdowns which can result in costly product wastage.


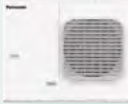
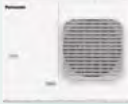




Choose the sustainable green solution by Panasonic	→ 4
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The safe refrigeration systems for your healthcare business	→ 9
CO ₂ transcritical condensing units - CR Series	→ 10
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CO ₂ Condensing units - CR Series	→ 15



Choose the sustainable green solution by Panasonic

Environmentally friendly CO₂ condensing units.



CO ₂ condensing units - CR Series					Medium temperature solutions with PACi NX
MT/LT Type	MT Type	MT/LT Type	MT Type	MT/LT Type	
					 
Capacity range (kW)					Capacity range (kW)
4 (MT) / 2 (LT)	7,5	8 (MT) / 4 (LT)	15	16 (MT) / 8 (LT)	2,1 to 23,2
Low temperature					Low temperature
✓	—	✓	—	✓	—
Medium temperature					Medium temperature
—	✓	✓	—	✓	✓
High Temperature					High Temperature
—	—	—	—	—	✓
Heat recovery port					Heat recovery port
—	✓	✓	—	✓	—
ET (Evaporation Temperature) set points range					Room temp. set point
-45 ~ -5 °C	-20 ~ -5 °C	-45 ~ -5 °C	-20 ~ -5 °C	-45 ~ -5 °C	+8 ~ +24 °C WB
Room size example (m³)*					Room size example (m²)*
40 (MT) / 10 (LT)	80	80 (MT) / 20 (LT)	200	200 (MT) / 50 (LT)	From 6

* Room size is reference. Please contact to authorized Panasonic dealer for calculation.

Energy saving



Natural CO₂ / R744.
R744 refrigerant provides higher energy saving and lower CO₂ emission compared to R404A. Zero ODP and GWP=1 means natural substance.



Inverter+.
Inverter Plus System classification highlights Panasonic's highest performing systems.



High efficiency compressor.
Powerful 2-stage CO₂ rotary compressor by Panasonic. It delivers high performance all year around.

High connectivity

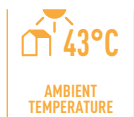


BMS connectivity.
The system can be supervised with major monitoring system.

High performance and comfortability



Super quiet.
Systems operate extremely quiet. Minimum 33 dB(A) @10 m with 4 HP model.



Operating range up to 43 °C.
The system operates up to 43 °C, allowing for installation in various locations.



Anti corrosion coating.
Selectable fin type with or without an anti corrosion coating. The anti corrosion coating prevents salt damage for a longer lifespan.



Heat recovery port.
The heat recovery port is available to cut running costs as optional. By utilizing exhausted heat generated by refrigeration to the energy source for heating.



Automatic fan.
Microprocessor control automatically adjusts the outdoor fan speed in CO₂ systems for efficient operation.



5 Years compressor warranty.
We guarantee the outdoor unit compressors in the entire range for five years.

Why CO₂? Natural refrigerant

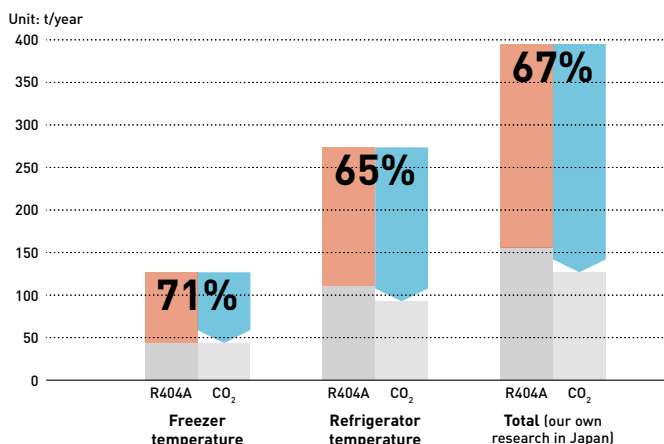
EU F-Gas regulation is a key priority for European countries. It ensures compliance with the Kigali Amendment supporting international climate commitments on greenhouse gases and leading the global transition to climate-friendly HFC-free technologies. Carbon dioxide (R744) is regaining its place in the refrigeration world. Driven by environmental concerns, legislation now requires increased adoption of 'alternative' refrigerants, such as CO₂. CO₂ is an environmentally-friendly solution, with zero ODP and "GWP" (Global Warming Potential)=1 means natural substance in the atmosphere.

In Europe a step-by-step HFC reduction has been in place since the F-Gas regulation was introduced in 2015. Countries all over the world have actively been preparing to enact the necessary domestic legislation to implement the agreement to reduce the use of HFCs. Panasonic is now able to provide a solution in Europe with CO₂ refrigeration systems to prevent global warming and to support environment-friendly retail operations. The following table shows how well R744 (CO₂) performs regarding environmental impact and safety.

ODP (Ozone Depletion Potential) = 0 - GWP (Global Warming Potential) = 1.

	Next generation refrigerant			Current refrigerant	
	CO ₂	Ammonia	Isobutane	R410A	R404A
ODP	0	0	0	0	0
GWP	1	0	4	2090	3920
Flammability	Non flammable	Light flammable	Flammable	Non flammable	Non flammable
Toxicity	No	Yes	No	No	No

Comparison of CO₂ emissions



ENERGY SAVING
25,4 % Freezer
16,2 % Refrigeration

CO₂ EMISSION
67 % Reduction

Direct influence ¹⁾ Indirect influence ²⁾

1) Direct influence presents the effect of refrigerant leakage comparing R744 (CO₂) with R404A.
2) Indirect influence presents CO₂ emissions linked to power consumption of CO₂ unit and conventional units.

By Panasonic research in Japan. Comparing 6 shops average for R404A inverter multi condensing unit.

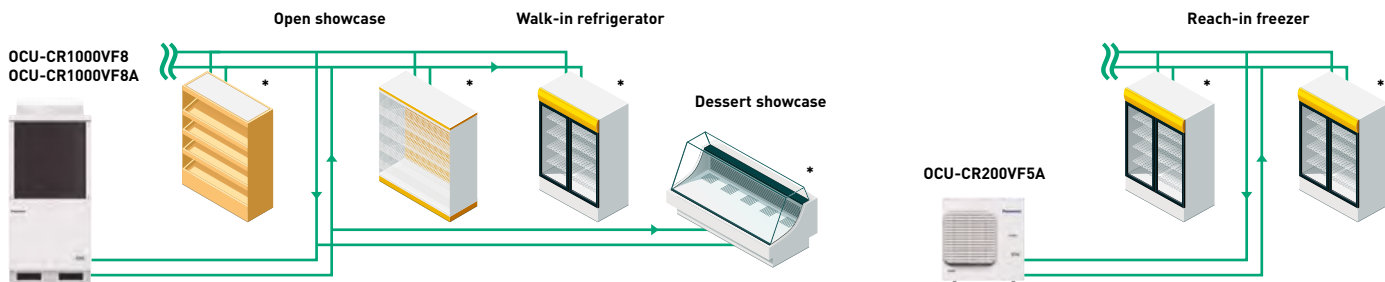
Natural solution with high energy saving

Panasonic CO₂ condensing units with natural refrigerant: The environmentally friendly and reliable solution for convenience stores, supermarket, gas stations and cold rooms.



Showcases

Convenience stores, supermarkets, service stations.

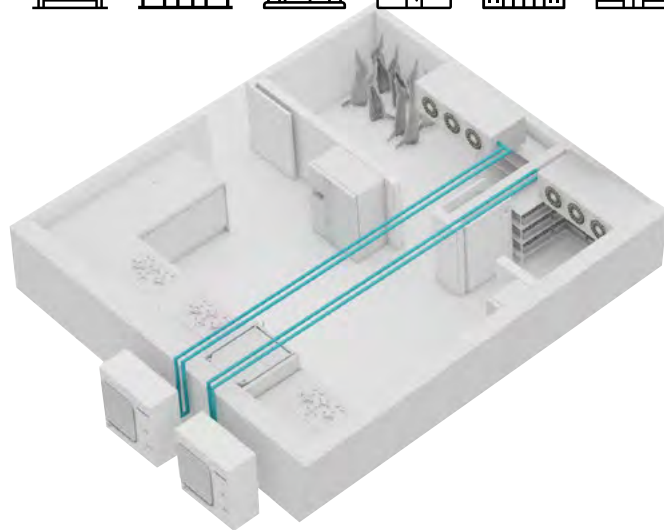


* Controllers: PAW-CO2-PANEL-C or local supply.

Cold room application to keep food fresh

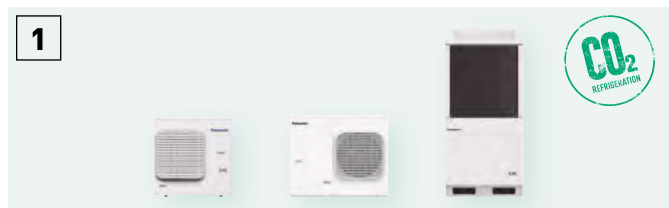
Multiple installation capabilities. Unparalleled flexibility:

- Food retail applications (c-store, supermarkets, gas-stations)
- Food service applications (restaurants, canteens, schools)
- Non-food applications (warehousing, industrial storage, healthcare)



Cold room application integrated with PACi NX Series

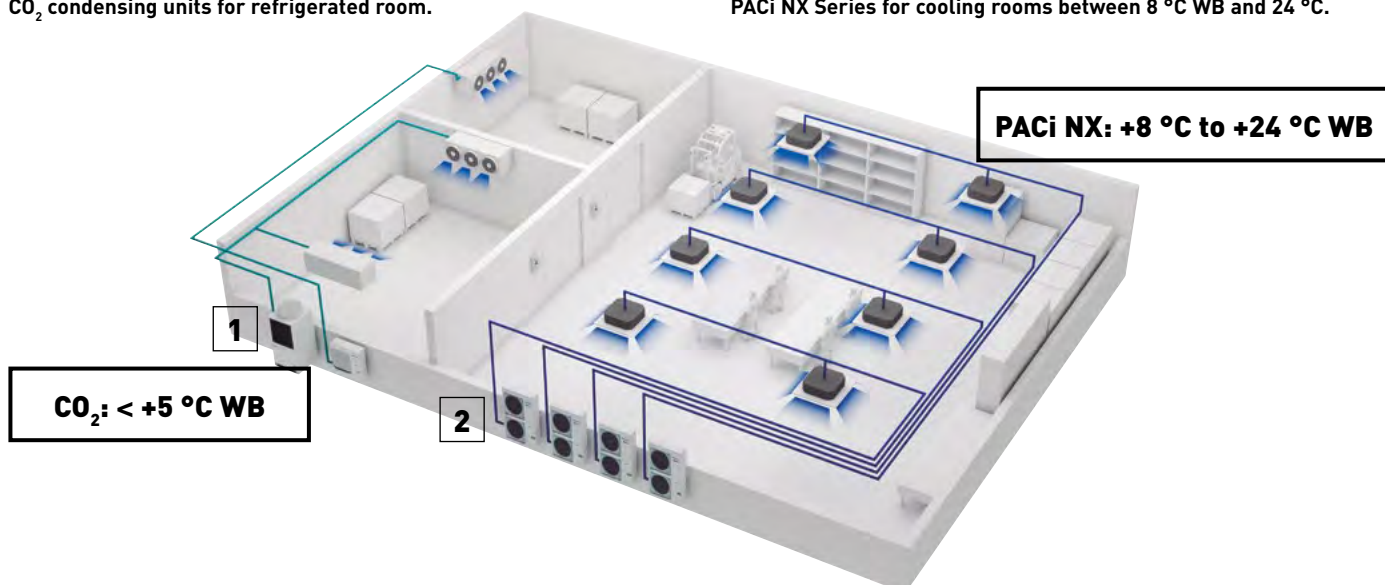
Panasonic offers various solutions for cold rooms by combining a wide range of products. Integrated with PACi NX Series, it allows for flexible design and installation.



CO₂ condensing units for refrigerated room.



PACi NX Series for cooling rooms between 8 °C WB and 24 °C.

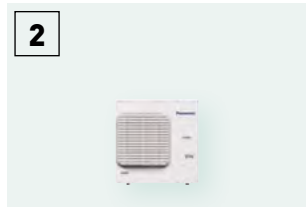


A sustainable refrigeration systems in your food retail

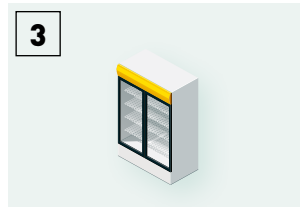
CO₂ refrigerant is the choice to curb carbon footprint of any business organization, especially to food retailers, to whom it brings key advantages. Panasonic professional strongly supports your projects to meet customer's request!



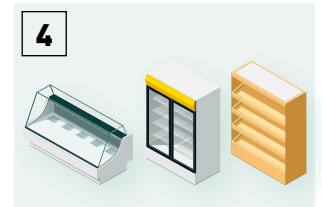
1
10 HP MT TYPE
(OCU-CR1000VF8).



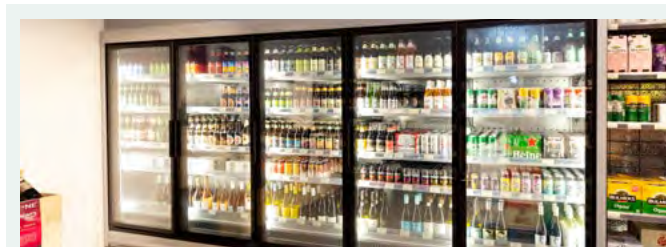
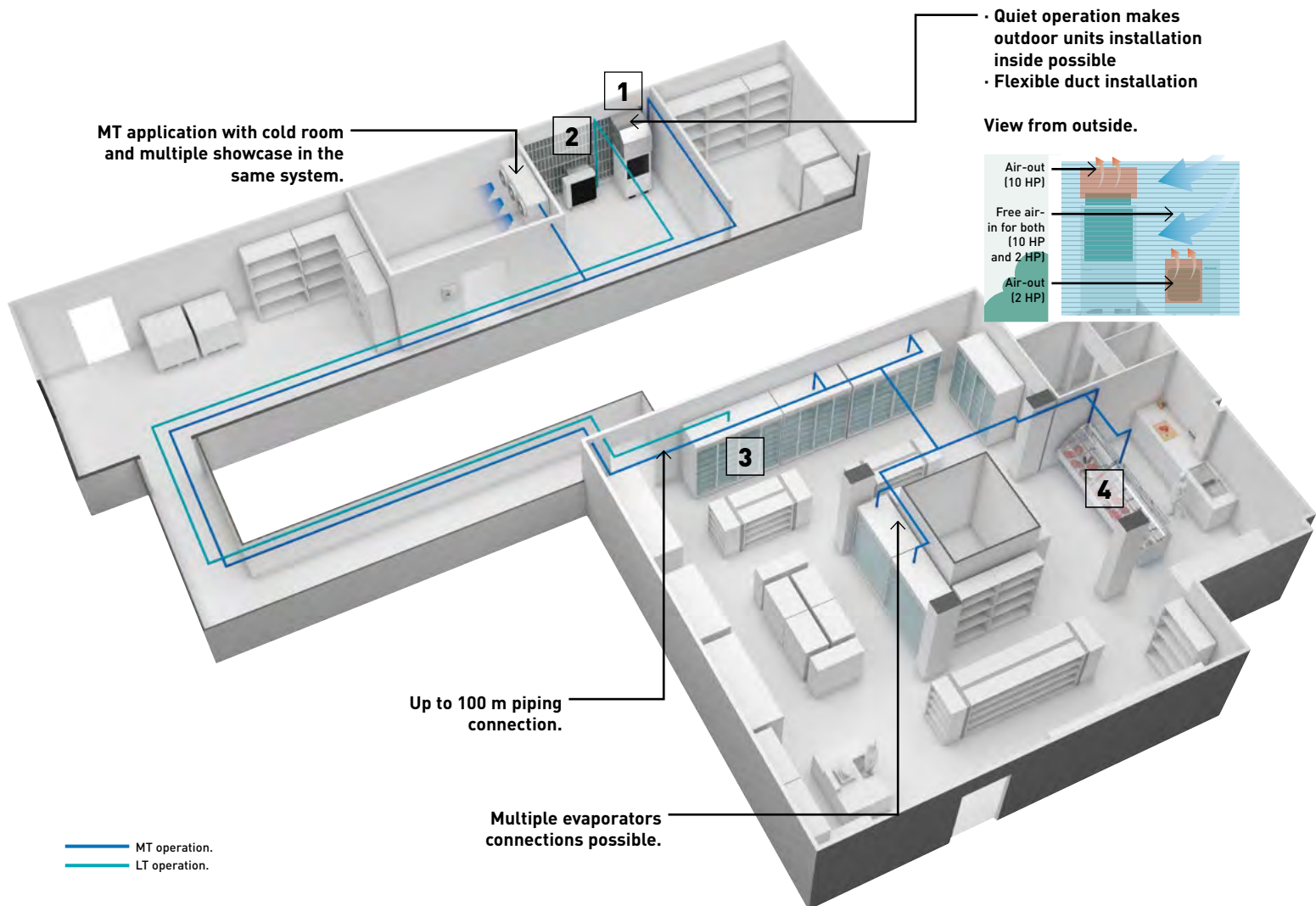
2
2 HP MT/LT TYPE
(OCU-CR200VF5A).



3
Reach-in freezer (field supplied).



4
Serve-over counters, showcase and walk-in refrigerator (field supplied).



Nolan's Supermarket.

A particular focus of the project was to create a state-of-the-art refrigeration system operating on the 'Zero Ozone Depletion' plus ultra-low GWP of 1 natural refrigerant CO₂ and as part of the scheme. Panasonic units also has several unique thermo-physical properties. The high performance, reliable and ultimately very efficient.

The safe refrigeration systems for your healthcare business

CO₂ is the right refrigerant to curb carbon footprint of any business organization. In addition, there are advantages specially for healthcare business.

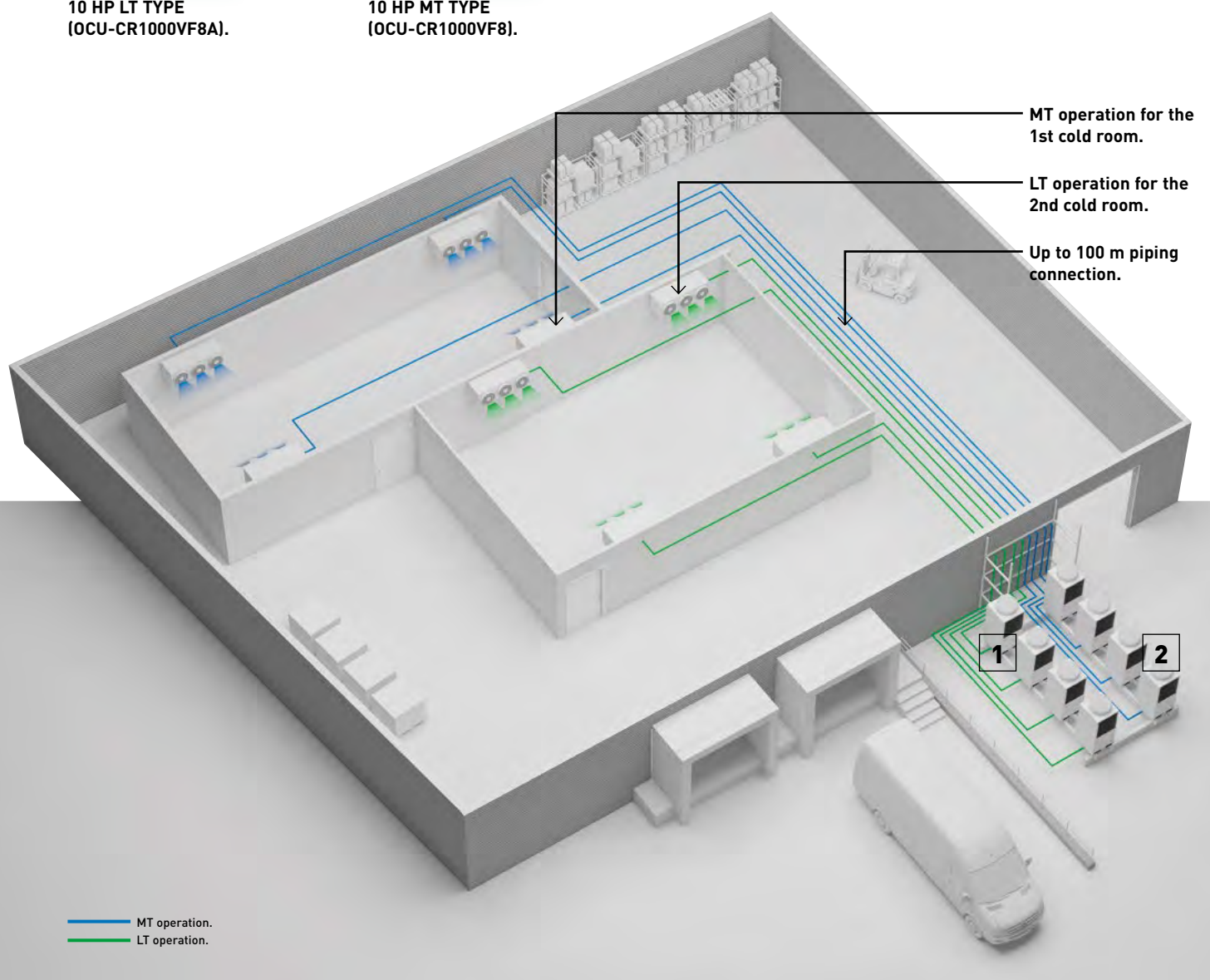
The project example shows one of the warehouse in the healthcare laboratory which requires several cold rooms there to keep bio-products safely.



1
10 HP LT TYPE
(OCU-CR1000VF8A).



2
10 HP MT TYPE
(OCU-CR1000VF8).



STEMCELL Technologies.

STEMCELL Technologies is a global biotechnology company that develops, manufactures and sells products and provides services that support academic and industrial scientists. Panasonic CO₂ condensing units have been chosen to fulfill the expectation of environmental-friendly and safety requirements. The products with reliable quality and high performance was also an essential point.

CO₂ transcritical condensing units - CR Series

4 HP MT/LT Type, a new line-up in CR Series, offers a wide range of refrigeration systems, meeting the specific needs of small retail stores.



1 Superior efficiency with reliable quality

- Panasonic has combined the 2-stage compressor with the split cycle for increased efficiency
- High seasonal performance. SEPR: Maximum 3,83 in cooling, 1,92 in freezing ¹⁾
- High COP at high ambient temperature

1) 200VF5A.

2 Flexible installation

- Set-points at medium or low temperature available depending on applications
- Compact unit
- Silent operation
- Long piping length: Maximum 100 m ²⁾
- High external static pressure ²⁾
- Transfer pressure control for stable electric expansion valve control in showcases ²⁾

2) 1000VF8/8A.

3 Heat recovery port as renewable energy

- Maximum 16,7 kW of heating for free
- Optional possibility to get subsidy (depending on location)
- Easy connection process

Superior cooling capacity at each evaporating temperature

CO₂ transcritical condensing units have a high cooling capacity at each set point. The CO₂ 2-stage compressor developed by Panasonic is designed to compress CO₂ refrigerant twice; it reduces the load in operation by half (compared to 1-stage refrigerant compression) and delivers increased durability and reliability.

Units can be programmed to run at low and medium temperatures at initial set-up. These settings can then be modified by turning a simple and user friendly rotary switch to further enhance energy savings.

MT/LT TYPE
200VF5A - 4 kW / 2 kW

MT TYPE
400VF8 - 7,5 kW

NEW MT/LT TYPE
400VF8A - 8 kW / 4 kW

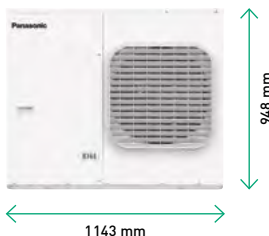
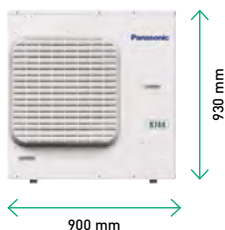
MT TYPE
1000VF8 - 15 kW

MT/LT TYPE
1000VF8A - 16 kW / 8 kW

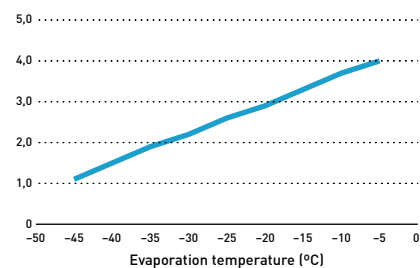
3,83
SEPR
COOLING*

1,92
SEPR
FREEZING*

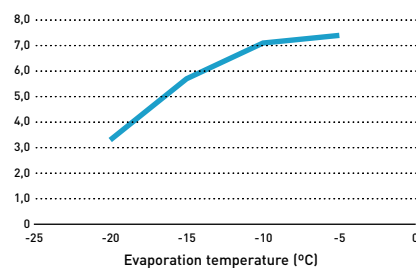
* SEPR values has been tested at 3-part laboratory.



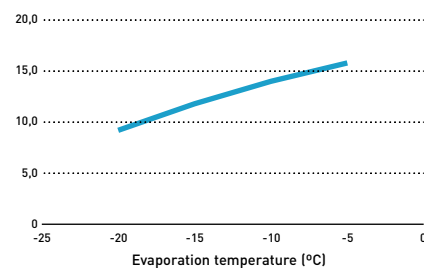
OCU-CR200VF5A(SL) ¹⁾.
Cooling capacity (kW)



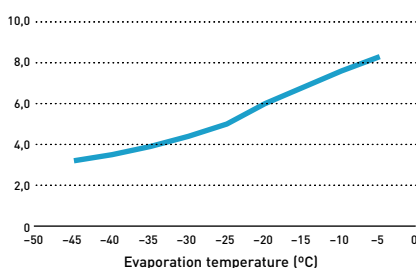
OCU-CR400VF8(SL) ²⁾.
Cooling capacity (kW)



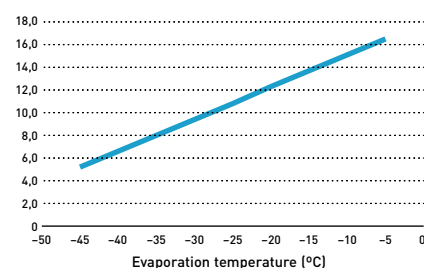
OCU-CR1000VF8(SL) ²⁾.
Cooling capacity (kW)



OCU-CR400VF8A(SL) ²⁾.
Cooling capacity (kW)



OCU-CR1000VF8A(SL) ²⁾.
Cooling capacity (kW)



1) Ambient temperature: 32 °C, 230 V, refrigerant: R744, suction gas temperature: 18 °C.

2) Ambient temperature: 32 °C, 400 V, refrigerant: R744, suction gas temperature: 18 °C.

Technology by Panasonic

Excellent quality control established by skilled factory team.
Reliability is our main target and therefore we offer compressor warranties of 5 years, and 2 year warranties on other components!



Reliable CO₂ technology by Panasonic

- Reliable quality: Made in Japan
- 10000 units sold and installed in 3700 retail operations such as convenience stores and supermarkets in Japan*
- Excellent quality control established by skilled factory team
- Panasonic offers 5 year warranties on compressors and 2 years on components
- The 5 year compressor warranty matches the products long lifespan

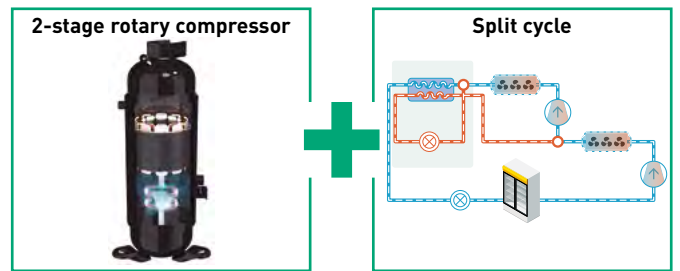
* As of the end of November 18.

Panasonic's combined technology of the 2-stage compressor with the split cycle

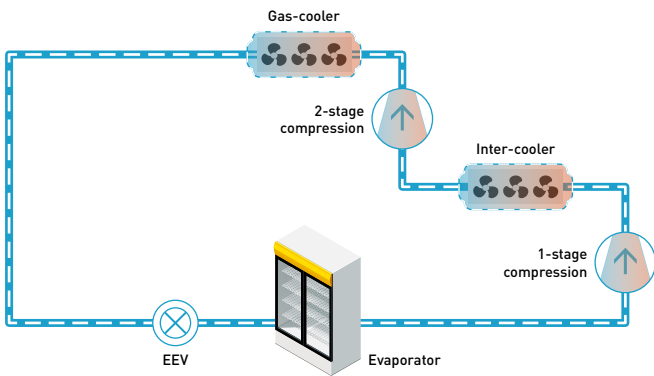
- Panasonic 2-stage rotary compressor delivering powerful performance for more than 20 years
- Split cycle* enhances cooling effect

The video for detailed information is ready!

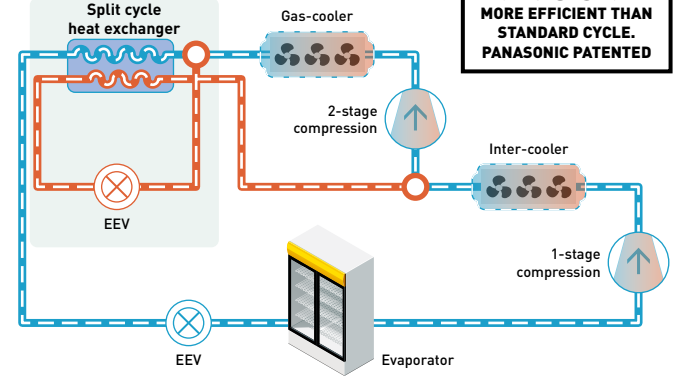
* Available for 200VF5A and 1000VF8A models.
** In the case that the standard cycle with 1-stage rotary compressor was compared.



Standard cycle.



Split cycle.



UP TO 50%
MORE EFFICIENT THAN
STANDARD CYCLE.
PANASONIC PATENTED**

Heat recovery function for heating

This function offers refrigeration combined with heating all in one system. The ground-breaking solution allows for increased opportunity to cut running costs by utilizing exhausted heat from refrigeration and transferring to the energy source for heating.

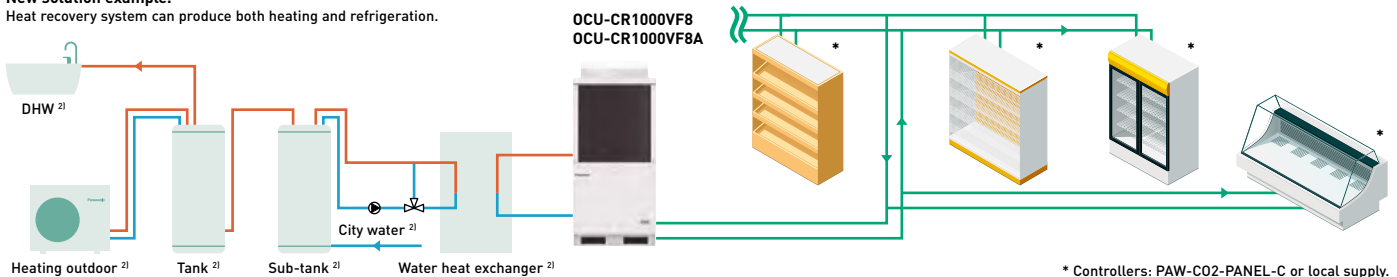
1) Under the condition: ambient temperature 32 °C, evaporation temperature -10 °C. 100 % Partial load.2) Local supply.

**16,7 kW¹⁾
OF HOT
WATER FOR
FREE**

What is heat recovery function?

New solution example.

Heat recovery system can produce both heating and refrigeration.

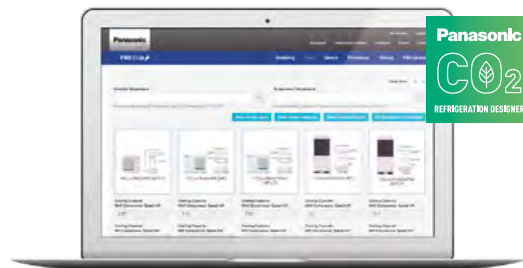


* Controllers: PAW-CO2-PANEL-C or local supply.

Design support tool available in Panasonic PRO Club.

Panasonic has launched a new online calculator to support engineers, installers, and technicians to quickly make calculations when specifying solutions for commercial refrigeration systems. The calculator can be found on Panasonic's PRO Club.

- Evaporation temperature selection
- Cooling capacity calculator
- Refrigerant pipe calculation
- Electric expansion valves calculation
- Refrigerant amount calculation



PRO Club 

www.panasonicproclub.com
or connect simply with your
smartphone to the PRO Club
using this QR

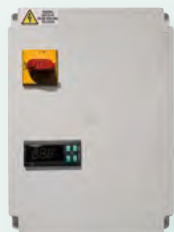


Ready to works on all devices, computers, tablets and smartphones!!

New control panel and electric expansion valves.

An intelligent controller has been redesigned with a compact chassis. This controller has the smart program especially for showcases and cold rooms.

Electric expansion valves (EEVs) are ready with 7 different sizes to meet precisely the field demand.



Intelligent controller with compact chassis.

- MPXPRO control fully pre-programmed for MT and LT on the same panel
- Compact structure size: 300 x 220 x 120 mm
- Necessary cables, EEV stator, temperature and pressure probes as standard equipment
- Ultracap technology as standard equipment for emergency EEV's closing in the event of mains power failure
- Smart defrost functions, advanced superheat control, light and showcase curtain management, etc
- Own display user terminal plus keypad for programming, built-in switching power supply, Modbus, etc
- Management of HACCP alarms

Model reference

PAW-CO2-PANEL-C



Electric expansion valves (EEVs) line-up.

- EEV's E2V-CW with 3/8" ODF copper fittings for high pressure applications (CO₂)
- Operation refrigerant temperature: -40 T 70 °C
- Maximum operating pressure for all the models 03, 05, 09, 11, 14, 18, 24 (MOP) 140 barg
- Maximum operating pressure difference for 03, 05, 09, 11, 14, 18, (MOPD) 120 bar and 24 (MOPD) 85 bar
- Bipolar stator hermetic IP69K as standard equipment (supplied on panel)
- Mechanical strainer as standard equipment (500 mm mesh)
- Equipercentile control particularly effective at partial load with reliable operation even after 1,2 billion steps

Model reference

PAW-E2V03CWACO	PAW-E2V11CWACO	PAW-E2V24CWACO
PAW-E2V05CWACO	PAW-E2V14CWACO	
PAW-E2V09CWACO	PAW-E2V18CWACO	

Modbus compatibility with monitoring system

Panasonic CO₂ condensing units - CR Series can be supervised by major monitoring system such as CAREL, Eliwell, Danfoss and RDM. Monitoring system ensures the recording, monitoring and reporting of temperature conditions etc... of entire CO₂ condensing units system at shops.

Monitoring system



Standard boss
& boss-mini

AK-SM Series*

TelevisGo

DMTOUCH

* M2M1-10 gateway (Model code: FDS021) is required in addition to the monitoring system. M2M1-10 gateway is a local supply.

New CO₂ service checker

The service checker is a useful tool which supports your technical tasks on the field such as commissioning, maintenance and troubleshooting for Panasonic CO₂ condensing units - CR Series. Panasonic will supply the DRX file where the Panasonic unit's library is included with the acquisition of the CO₂ service checker.

To use it, is necessary to download
free Device Manager software from
the Eliwell website:

Visit: <https://www.eliwell.com/en/Family/DeviceManager.html>
using this QR.



Eliwell product name: Device Manager 100.
Eliwell part number: DMP1000002000.

Main features:

- Reading and recording variable technical parameters
- Main technical parameters available*: pressures, temperatures, opening of expansion valves, states of solenoid valves, rotational speeds of the gas-cooler fan motor, frequency and compressor's current, etc.
- Setting change of operating values possible
- 2D graph visualization for the detailed analysis
- Monitoring an alarm status, for example the status of the compressor oil level, etc.

* Please check all the parameters available in the manual.



Model reference

PAW-CO2-CHECKER

Range of CO₂ condensing units - CR Series

Outdoor units	MT	4,0 kW	7,0 kW	8,0 kW	15,0 kW	16,0 kW
	LT		2,0 kW		4,0 kW	

4 kW MT / LT
(200VF5A)



OCU-CR200VF5A
OCU-CR200VF5ASL

7,5 kW MT
(400VF8)



OCU-CR400VF8
OCU-CR400VF8SL

7,5 kW MT / LT
(400VF8A)



OCU-CR400VF8A
OCU-CR400VF8ASL

15 kW MT
(1000VF8)



OCU-CR1000VF8
OCU-CR1000VF8SL

16 kW MT / LT
(1000VF8A)



OCU-CR1000VF8A
OCU-CR1000VF8ASL

CO₂ Condensing units - CR Series

Standard outdoor unit		OCU-CR200VF5A	OCU-CR400VF8	OCU-CR400VF8A	OCU-CR1000VF8	OCU-CR1000VF8A			
Anti corrosion coating outdoor unit		OCU-CR200VF5ASL	OCU-CR400VF8SL	OCU-CR400VF8ASL	OCU-CR1000VF8SL	OCU-CR1000VF8ASL			
Type (MT: medium temp. LT: low temp.)		MT (4 kW) / LT (2 kW)	MT (7,5 kW)	MT (8 kW) / LT (4 kW)	MT (15 kW)	MT (16 kW) / LT (8 kW)			
Power supply	Voltage	V	220/230/240	380/400/415	380/400/415	380/400/415	380/400/415		
	Phase		Single phase	Three phase	Three phase	Three phase	Three phase		
	Frequency	Hz	50	50	50	50	50		
Cooling capacity at ET -10 °C AT 32 °C	kW	3,70	7,10	7,7	14,00	15,10			
Cooling capacity at ET -35 °C AT 32 °C	kW	1,80	—	3,8	—	8,00			
Evaporator connection		Multiple	Multiple	Multiple	Multiple	Multiple			
Evaporation temperature	Min ~ Max °C	-45 ~ -5	-20 ~ -5	-45 ~ -5	-20 ~ -5	-45 ~ -5			
Ambient temperature	Min ~ Max °C	-20 ~ +43	-15 ~ +43	-20 ~ +45	-15 ~ +43	-15 ~ +43			
Refrigerant		R744	R744	R744	R744	R744			
Design pressure liquid line	Mpa	12	8	8	8	8			
Design pressure suction line	Mpa	8	8	8	8	8			
User system external alarm. Digital input. Non-voltage contact		Yes	Yes	Yes	Yes	Yes			
Liquid tube electromagnetic valve	Vac	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240			
Showcase operation ON / OFF signal. Digital input. Non-voltage contact		Yes	Yes	Yes	Yes	Yes			
Modbus communication line (RS485)	Ports	2	2	2	2	2			
Compressor type		2- stage rotary	2- stage rotary	2- stage rotary	2- stage rotary	2- stage rotary			
Dimension	H x W x D mm	930 x 900 x 437	948 x 1143 x 609	948 x 1143 x 609	1941 x 890 x 890	1941 x 890 x 890			
Net weight	Kg	70	136	136	293	320			
Piping diameter	Suction pipe	Inch (mm)	3/8(9,52)	1/2(12,70)	1/2(12,70)	3/4(19,05)	3/4(19,05)		
	Liquid pipe	Inch (mm)	1/4(6,35)	3/8(9,52)	3/8(9,52)	5/8(15,88)	5/8(15,88)		
Length of connection piping	m	25	50	50	100 ¹⁾	100 ¹⁾			
PED	CAT	I	II	II	II	II			
Air flow	m ³ /min	54	59	59	220	220			
External static pressure	Pa	17	50	50	58	58			
Heat recovery port		—	—	Yes	—	Yes			
Standard performance									
Ambient temperature	°C	32	32	32	32	32			
Evaporating temperature	°C	-10	-35	-10	-10	-35			
Cooling capacity	kW	3,70	1,80	7,10	7,7	3,8	14,00	15,10	8,00
Power consumption	kW	1,79	1,65	4,00	4,5	3,8	8,20	8,20	7,57
Nominal load ampere	A	7,94	7,26	6,14	7,2	6,2	12,60	12,60	11,60
Sound pressure	dB(A)	35,5 ²⁾	35,5 ²⁾	33 ³⁾	33 ³⁾	33 ³⁾	36,0 ⁴⁾	36,0 ⁴⁾	36,0 ⁴⁾
Necessary accessories									
Drier filter liquid line, diameter 6,35 mm	D-152T	Yes (included: delivered with the unit)	Yes (included: delivered with the unit)	Yes (included: delivered with the unit)	—	—			
Drier filter liquid line, diameter 15,88 mm	D-155T	—	—	—	Yes (included: delivered with the unit)	Yes (included: delivered with the unit)			
Suction filter, diameter 19,05 mm (outer diameter welding)	S-008T	—	Yes (included: delivered with the unit)	Yes (included: delivered with the unit)	Yes (included: delivered with the unit)	Yes (included: delivered with the unit)			

1) PZ-68S (refrigeration oil) must be added if >50 m. 2) ET-10 °C, 65 S-1, 10 m from product. 3) ET-10 °C, 80 S-1, 10 m from product. 4) ET -10 °C, 60 S-1, 10 m from product.

Accessories	
PAW-CO2-PANEL-C	Panel with MPXPRO control, stator, probes, etc.
SPK-TU125	Tube connector adaptor for vacuum and service
CZ-CO2LBR0L500	Lubrication oil PZ-68S (0,5 L)
PAW-E2V03CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 3
PAW-E2V05CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 5
PAW-E2V09CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 9
PAW-E2V11CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 11
PAW-E2V14CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 14
PAW-E2V18CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 18
PAW-E2V24CWACO	Electric expansion valve 3,8" ODF high pressure without stator, size 24
PAW-CO2-CHECKER	CO ₂ service checker

Spare parts for service and maintenance	
80203513179000	Suction filter, diameter 19,05 mm (outer diameter welding)
80203517115003	Lubrication oil PZ-68S (4,0 L)*
80203517117000	Lubrication oil PZ-68S (0,5 L)*
80203513180000	Filter dryer D-152T (type CO-082-S)
80203513179000	Filter dryer D-155T (type CO-085-S)

* You can find the PZ-68S oil "Safety Sheet" in the SAFETY section of our pipe selection software, available on our PRO Club platform.



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Do not add or replace refrigerant other than the specified type. Manufacturer is not responsible for the damage and deterioration in safety due to usage of the other refrigerant.
The outdoor units in this catalogue contains fluorinated greenhouse gases with a GWP higher than 150.

