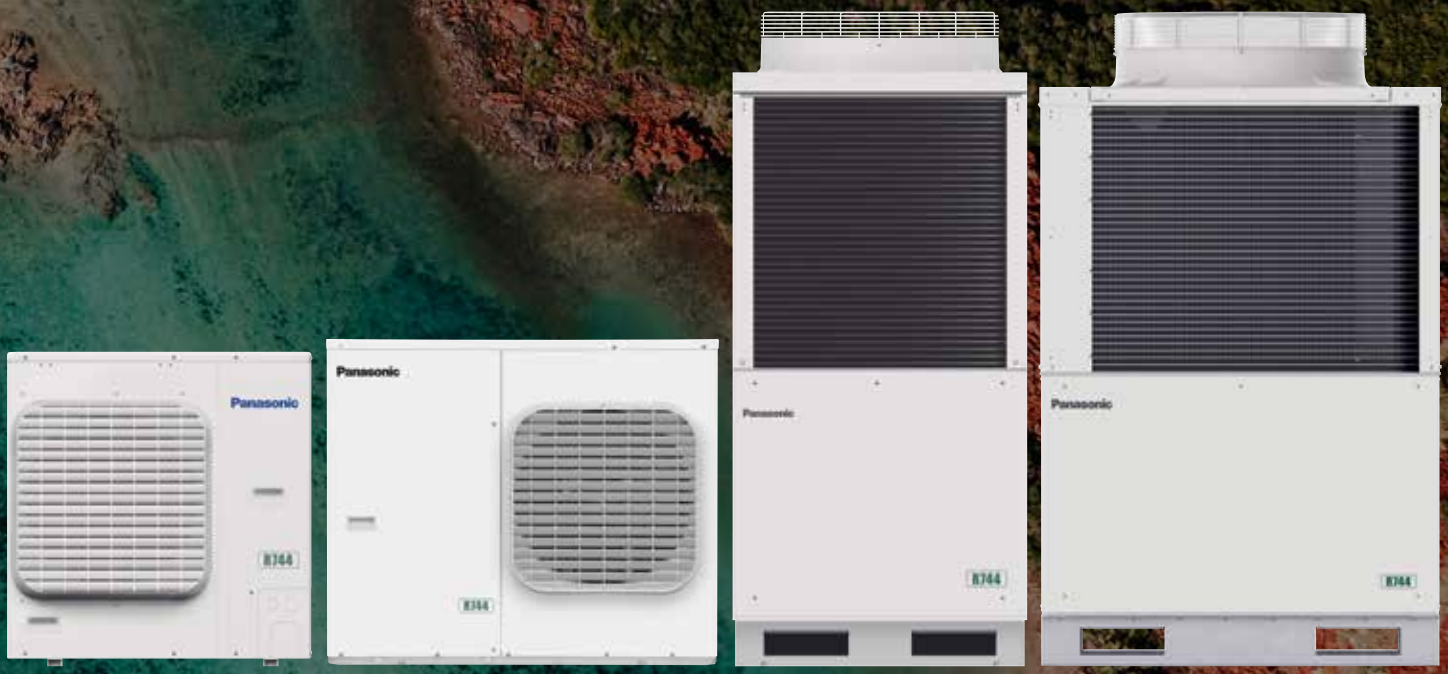
HUSSMANN®

PANASONIC TRANSCRITICAL CO2 OUTDOOR CONDENSING UNIT

WITH NATURAL REFRIGERANT



CO_2 REFRIGERATION

Innovating Climate Solutions for A Better Future


Panasonic
R744

OUR COMMITMENT

At Hussmann, we are committed to sustainability and supporting the adoption of natural refrigerants in our industry. Our Panasonic CO_2 condensing units reflect our commitment to natural refrigerants.

The Panasonic Transcritical CO_2 technology reduces CO_2 emissions by up to 67%#, ensuring optimal temperature control, preventing costly breakdowns and product wastage, while keeping food fresh for supermarkets, convenience stores, and petrol stations.

Reference Comparison of CO2 emissions. See page 17.

P Series + Transcritical CO_2 *

BUNDLE OFFER

Price Match and Save

We will price match Panasonic TCO_2 to conventional HFC system

Accelerate Formats to Transcritical Systems

- Panasonic Transcritical CO2 condensing unit at the same price of HFC unit
- Available in 2HP, 4HP, 10HP and 20HP

Further Savings through Rebates

- Rebates of up to $7.5k in VIC & NSW
- Rebates for condensing units available when a cool room is involved in VIC (between $1.5k to $2.5k).
- Rebates for the PMM23 Liquor case (taller case height allowing Riesling bottles)

Training & Development

- Hussmann will support and train your team on the safe application of CO2
- Seamless transition to natural refrigerants made easier to adopt by store teams

*Exclusive for sales in Australia only in conjunction with the PMM Multideck with doors.

Quality that lasts in All Sectors

Optimise your Total Cost in Ownership (TCO) and Total Value of Ownership (TVO) for the whole life of your equipment - and that's not a short time!

Panasonic Saves Your Money

- High energy efficiency
- Small floor space
- Low total operating costs
- Long service life with components designed for 10+ years of operation

Panasonic Gives You Time

- Low effort with easy-to-clean design and materials
- Maximum ergonomic efficiency for effortless work processes
- Almost maintenance-free

Panasonic Ensures Your Goods Are Operationally Efficient

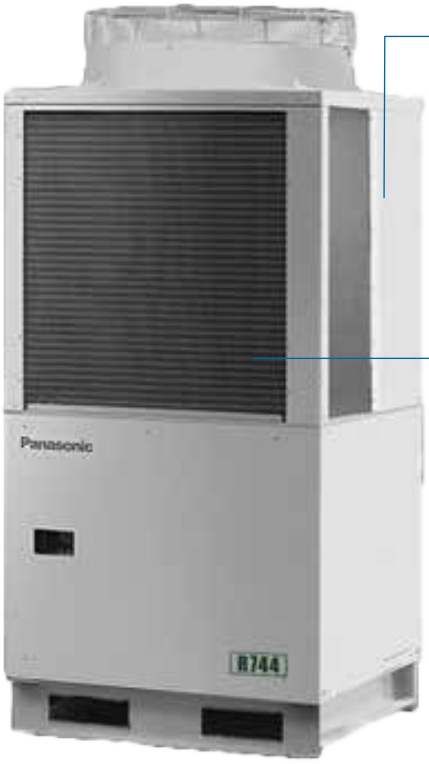
- High efficiency compressors are guaranteed to deliver high performance all year around
- Designed with low sound decibels for smaller spaces
- Optional anti corrosion coating for outdoor and high humidity applications

Panasonic Focuses On Sustainability

- Equipments with very low energy consumption
- Natural refrigerant

Features

Evaporating temperature ranges
-45C to -20C for LT
-20C to -5C for MT
Collectively -45C to -5C



The cooling capacity ranges
3.7 kW (2HP) to 28.7 kW (20HP) with evaporating temperature at -10C

1.9 kW (2HP) to 14.7 kW (20HP) with evaporating temp at -35C

2 stage Rotary CO_2 compressor

Benefits

Energy saving

Natural CO_2 / R744.
R744 refrigerant provides higher energy saving and lower CO_2 emission compared to R404A. Zero ODP and GWP=1 means natural substance.

High efficiency compressor.
Powerful 2-stage CO_2 rotary compressor by Panasonic. It delivers high performance all year around.

High performance and indoor air quality

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

Automatic fan operation.
Microprocessor control automatically adjusts the outdoor fan speed in CO_2 systems for efficient operation.

Super quiet.
Systems operate extremely quiet and lower than regulatory standards. Minimum 33dB(A) @10m with OCU-CR400VF8(SL).

Heat recovery port.
The heat recovery port is available to cut running costs as optional. By utilising exhausted heat generated by refrigeration to the energy source for heating.
Available on models:
OCU-CR400VF8A 4 HP MT/LT
OCU-CR1000VF8A 10 HP MT/LT
OCU-CR2000VF8A 20 HP MT/LT

Operating range up to 43 °C.
The system envelops for ambient temperature tolerance extends to 43 °C, allowing for installation in hot climates. We also offer an adiabatic solution for even hotter temperatures if required.

High connectivity

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

CO_2 condensing units
CR Series — 2HP

TYPICAL USAGE EXAMPLE *	MT OCU	LT OCU
	2HP (4kW)	2HP (4kW)
OCU Capacity in (kW)	3.70	1.92
OCU Capacity 70% (kW)	2.59	1.34
No. of cabinets can be connected	4	1

Medium Temperature (MT) based on 4 door cabinet PMM20F3T-4M1-1
Low Temperature (LT) based on 3 door cabinet PGL20F3R-3Z1-1

Transcritical Co2 Condensing Unit 2HP DUAL TEMP MT/LT		
Model	OCU-CR200VF5A	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	1.85 ~ 3.70
Cooling capacity at ET -35°C AT 32°C	kW	0.96 ~ 1.92
Dimensions (H x W x D)	mm	930 x 900 x 437
Weight	kg	70
Power Supply	Voltage	220/230/240
	Phase	Single phase
	Frequency	50

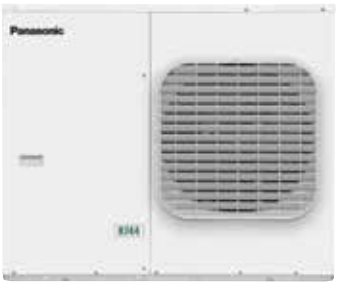
Transcritical Co2 Condensing Unit 2HP DUAL TEMP MT/LT		
Model	OCU-CR200VF5ASL	
	Salt proof coating	
Cooling capacity at ET -10°C AT 32°C:	kW	1.85 ~ 3.70
Cooling capacity at ET -35°C AT 32°C	kW	0.96 ~ 1.92
Dimensions (H x W x D)	mm	930 x 900 x 437
Weight	kg	170
Power Supply	Voltage	220/230/240
	Phase	Single phase
	Frequency	50

*Estimate Only. Simulated capacities & no of cabinets that can be connected will vary based on actual evaporator temperature of the cabinet.
Additional precautions needed for connecting multi-evaporator on 2HP unit.

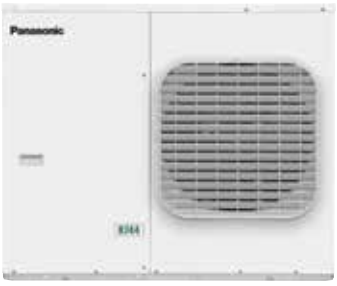
CO_2 condensing units
CR Series — 4HP

TYPICAL USAGE EXAMPLE *	MT OCU	LT OCU
	4HP (7.5 kW)	4HP (4kW)
OCU Capacity in (kW)	7.64	3.80
OCU Capacity 70% (kW)	5.35	2.66
No. of cabinets can be connected	7	2

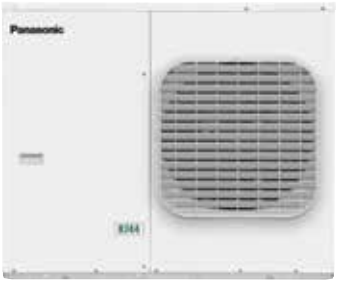
Medium Temperature (MT) based on 4 door cabinet PMM20F3T-4M1-1
Low Temperature (LT) based on 3 door cabinet PGL20F3R-3Z1-1



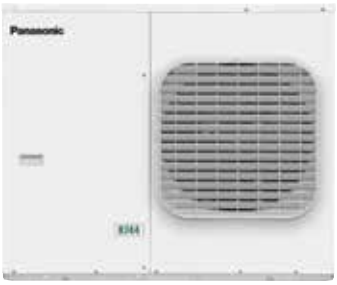
Transcritical Co2 Condensing Unit 4HP MT		
Model	OCU-CR400VF8	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	3.45 ~ 6.90
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	948 x 1143 x 609
Weight	kg	136
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50



Transcritical Co2 Condensing Unit 4HP MT		
Model	OCU-CR400VF8SL	
	Salt proof coating	
Cooling capacity at ET -10°C AT 32°C:	kW	3.45 ~ 6.90
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	948 x 1143 x 609
Weight	kg	136
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50



Transcritical Co2 Condensing Unit 4HP MT/LT		
Model	OCU-CR400VF8A	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	3.82 ~ 7.64
Cooling capacity at ET -35°C AT 32°C	kW	3.80
Dimensions (H x W x D)	mm	948 x 1143 x 609
Weight	kg	149
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50



Transcritical Co2 Condensing Unit 4HP DUAL TEMP MT/LT		
Model	OCU-CR400VF8ASL	
	Salt proof coating	
Cooling capacity at ET -10°C AT 32°C:	kW	3.82 ~ 7.64
Cooling capacity at ET -35°C AT 32°C	kW	3.80
Dimensions (H x W x D)	mm	948 x 1143 x 609
Weight	kg	149
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

CO_2 condensing units
CR Series — 10HP

TYPICAL USAGE EXAMPLE *	MT OCU	LT OCU
	10HP (15kW)	10HP (8kW)
OCU Capacity in (kW)	14.98	7.61
OCU Capacity 70% (kW)	10.49	5.33
No. of cabinets can be connected	14	5

Medium Temperature (MT) based on 4 door cabinet PMM20F3T-4M1-1
Low Temperature (LT) based on 3 door cabinet PGL20F3R-3Z1-1

Transcritical Co2 Condensing Unit 10HP MT		
Model	OCU-CR1000VF8	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	6.96 ~ 13.92
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	1941 x 890 x 890
Weight	kg	293
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Transcritical Co2 Condensing Unit 10HP MT		
Model	OCU-CR1000VF8SL	
	Salt proof coating	
Cooling capacity at ET -10°C AT 32°C:	kW	6.96 ~ 13.92
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	1941 x 890 x 890
Weight	kg	293
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Transcritical Co2 Condensing Unit 10HP DUAL TEMP MT/LT		
Model	OCU-CR1000VF8A	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	7.49 ~ 14.98
Cooling capacity at ET -35°C AT 32°C	kW	3.81 ~ 7.61
Dimensions (H x W x D)	mm	1941 x 890 x 890
Weight	kg	320
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Transcritical Co2 Condensing Unit 10HP MT/LT		
Model	OCU-CR1000VF8ASL	
	Salt proof coating	
Cooling capacity at ET -10°C AT 32°C:	kW	7.49 ~ 14.98
Cooling capacity at ET -35°C AT 32°C	kW	3.81 ~ 7.61
Dimensions (H x W x D)	mm	1941 x 890 x 890
Weight	kg	320
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

*Estimate Only. Simulated capacities & no of cabinets that can be connected will vary based on actual evaporator temperature of the cabinet.
Additional precautions needed for connecting multi-evaporator on 2HP unit.

TYPICAL USAGE EXAMPLE *	MT OCU	LT OCU
	20HP (30kW)	20HP (16kW)
OCU Capacity in (kW)	28.76	14.61
OCU Capacity 70% (kW)	20.13	10.23
No. of cabinets can be connected	27	10

Medium Temperature (MT) based on 4 door cabinet PMM20F3T-4M1-1
Low Temperature (LT) based on 3 door cabinet PGL20F3R-3Z1-1

Introducing the new **20HP** Transcritical CO_2 Condensing Unit

AVAILABLE NOW

Transcritical Co2 Condensing Unit 20HP DUAL TEMP MT/LT		
Model	OCU-CR2000VF8A	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	7.19 ~ 28.76
Cooling capacity at ET -35°C AT 32°C	kW	3.65 ~ 14.61
Dimensions (H x W x D)	mm	1941 x 1190 x 890
Weight	kg	494
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Scan for more on 20HP.

Adiabatic Cooling Solution
Outdoor refrigerant Unit

Introducing the Panasonic Transcritical CO_2 Outdoor Condensing Unit (OCU) Adiabatic Cooling Solution, specifically designed for the 2HP, 4HP and 10HP TCO2 OCU.

This innovative system leverages the natural refrigerant CO_2, offering an environmentally friendly and efficient solution for commercial refrigeration needs. The adiabatic cooling technology enhances performance, especially in high ambient temperature conditions, making it an ideal choice for supermarkets, convenience stores, and other commercial applications.

Features

Transcritical CO_2 Refrigerant

Utilises CO2, a natural refrigerant with low global warming potential (GWP), aligning with global sustainability goals and regulatory requirements.

Adiabatic Cooling Technology

Equipped with adiabatic cooling capabilities, the units optimise cooling efficiency by reducing the temperature of the refrigerant in high ambient conditions, ensuring reliable performance and energy savings.

High Efficiency Performance

Designed for optimal energy efficiency, reducing operational costs while maintaining effective cooling.

Robust Build Quality

Engineered to withstand outdoor conditions, the unit features durable construction and weather-resistant materials, ensuring longevity and reliable operation.

Smart Control System

Integrated smart controls provide real-time monitoring and management, enhancing system performance and simplifying maintenance.

Versatile Application

Ideal for a range of applications, including commercial refrigeration systems in supermarkets, restaurants, and food storage facilities.

Compact Design

The unit's compact footprint allows for easy installation in various settings without compromising space, making it suitable for urban environments.

Adiabatic Cooling Solution **2HP**		
Model	96E14-005	
Cooling capacity at ET -10°C AT 32°C:	kW	1.85 ~ 3.70
Cooling capacity at ET -35°C AT 32°C	kW	0.96 ~ 1.92
Dimensions (H x W x D)	mm	TBA
Weight	kg	TBA
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Adiabatic Cooling Solution **4HP**		
Model	96E14-009	
Cooling capacity at ET -10°C AT 32°C:	kW	3.45 ~ 6.90
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	TBA
Weight	kg	TBA
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Adiabatic Cooling Solution **10HP**		
Model	96E14-002	
Cooling capacity at ET -10°C AT 32°C:	kW	6.96 ~ 13.92
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	TBA
Weight	kg	TBA
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Adiabatic Cooling Solution **20HP**		
Model	TBC	
Cooling capacity at ET -10°C AT 32°C:	kW	7.19 ~ 28.76
Cooling capacity at ET -35°C AT 32°C	kW	3.65 ~ 14.61
Dimensions (H x W x D)	mm	TBA
Weight	kg	TBA
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50

Benefits

Save energy and costs

The energy-efficient design and adiabatic cooling technology lead to lower energy bills and reduced operational costs over time.

Improved Performance in High Temps

The adiabatic function ensures that the unit maintains optimal performance even in extreme weather conditions, providing consistent cooling.

Easy Integration

The compact design and smart control capabilities facilitate seamless integration into existing refrigeration systems, reducing installation time and costs.

Case studies from across the globe

INSTALLATION
Ambey's Big Apple (Fruit & Vegetables)
Sydney, Australia

UNITS AND SIZES	QUANTITY
Panasonic TCO2 10 HP Units	**2**
OCU-CR-1000VF8A	**2**


10HP Units with Adiabatic

INSTALLATION
Supermarket (Coop) Distribution Centre
Japan

UNITS AND SIZES	QUANTITY
OCU-CR1501MVF	**1**
OCU-CR2001MVF	**3**
Cooling Coil	**6**
Freezer 30Kw	
Chiller 20Kw	


Freezer Room


Condensing Unit

INSTALLATION
Supermarket
Japan

UNITS AND SIZES	QUANTITY
OCU-CR2001MVF	**1**
OCU-CR3000MVF	**2**
OCU-CR4000MVF	**2**

Condensing Unit

INSTALLATION
Supermarket
Japan

UNITS AND SIZES	QUANTITY
OCU-CR1001VF	**5**
OCU-CR1501MVF	**2**
OCU-CR2001MVF	**8**

Condensing Unit

Choose the sustainable green solution by Panasonic

Environmentally friendly CO_2 condensing units - CR Series and medium temperature solutions.

CO_2 condensing units - CR Series

2HP MT/LT Type	4HP MT Type	4HP MT/LT Type	10HP MT Type	10 HP MT/LT Type	NEW 20HP MT/LT Type
					
Capacity range (kW)					
4 (MT) / 2 (LT)	7.5	8 (MT) / 4 (LT)	15	16 (MT) / 8 (LT)	29 (MT) / 15 (LT)
Low temperature					
✔	–	✔	–	✔	✔
Medium temperature					
✔	✔	✔	✔	✔	✔
High Temperature					
–	–	–	–	–	–
Heat recovery port					
–		✔	–	✔	✔
ET (evaporation temperature) set points range					
-45 ~ -5 °C	-20 ~ -5 °C	-45 ~ -5 °C	-20 ~ -5 °C	-45 ~ -5 °C	-45 ~ -5 °C
Room size example (m³)*					
40 (MT) / 10 (LT)	80	80 (MT) / 20 (LT)	200	200 (MT) / 50 (LT)	300 (MT) / 75 (LT)

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

Why CO_2?: **Natural refrigerant**

The Ozone protection and synthetic greenhouse Gas Management Act 1989 (OPSGG), along with the Kigali Amendments, supports the international climate commitments on greenhouse gases leads the 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 CO_2.

CO_2 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. In Australia, step by step HFC reductions have been implemented since the Kigali Amendments were enacted in 2017.

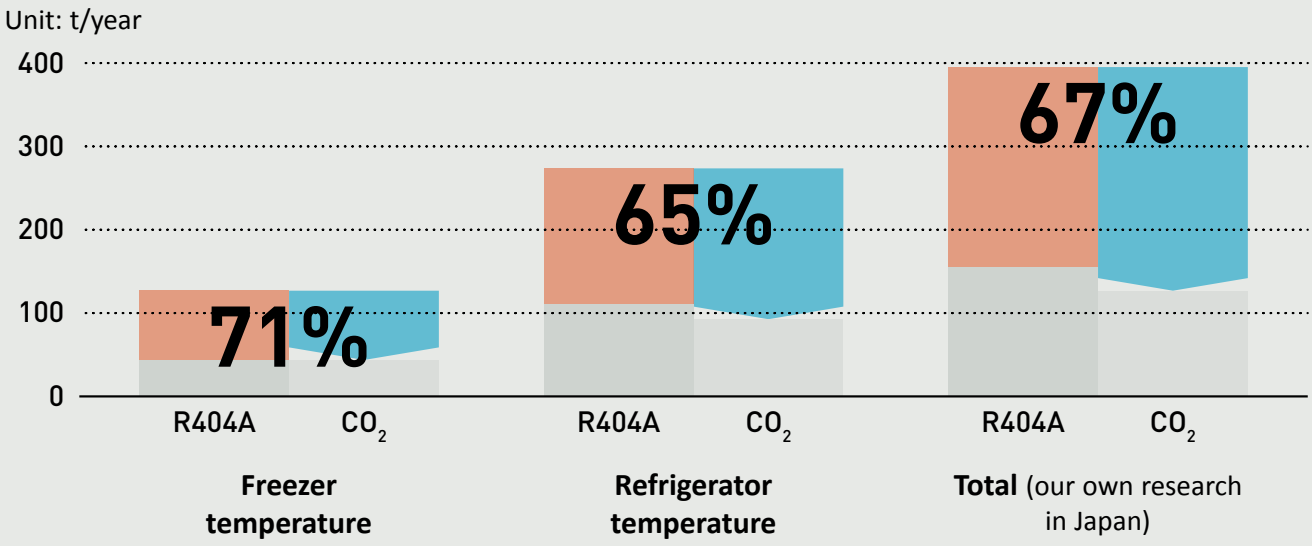
Panasonic is now able to provide a solution globally with CO_2 refrigeration systems to prevent global warming and to support environment-friendly retail operations.

The following table shows how well R744 (CO_2) 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 CO_2 emissions



Direct influence [1)] Indirect influence [2)]

1) Direct influence presents the effect of refrigerant leakage comparing R744 (CO_2) with R404A.
2) Indirect influence presents CO_2 emissions linked to power consumption of CO_2 unit and conventional units.
By Panasonic research in Japan. Comparing 6 shops average for R404A Inverter multi condensing unit.

Energy saving
25,4% freezer
16,2% refrigeration

CO_2 emission
67% reduction

Natural solutions with high energy savings

Panasonic's range of CO_2 condensing units - CR Series with natural refrigerant, offer a reliable solution for a wide range of applications, including convenience stores, supermarket, petrol stations and cool rooms.

Supermarkets and food retail

Convenience stores

Liquor stores

Petrol station

Cool room and preparation rooms

Distribution centres

Restaurant cold rooms

Industrial storage (refrigerated warehouses and producing areas)

Food processing plants

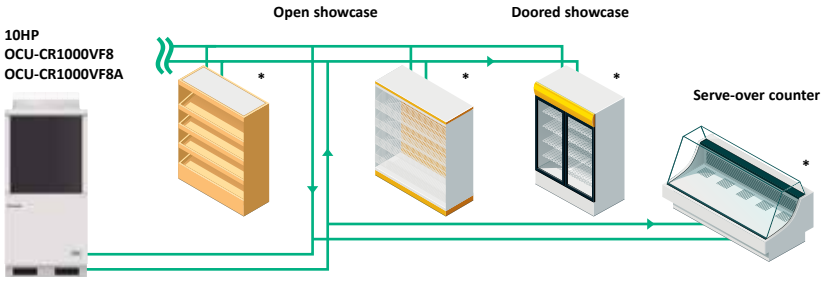
Healthcare

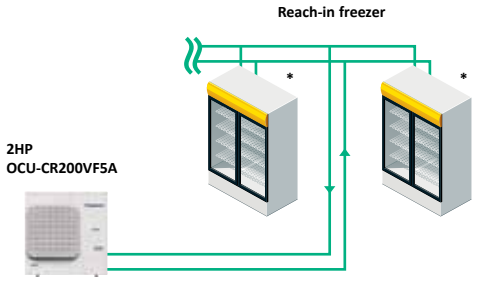
Aged Care

Agriculture / Floral / Greenhouses

Showcases

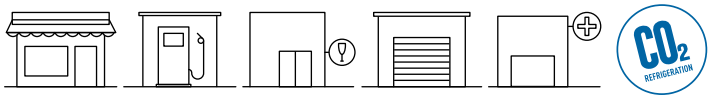
Convenience stores, supermarkets, gas-stations.





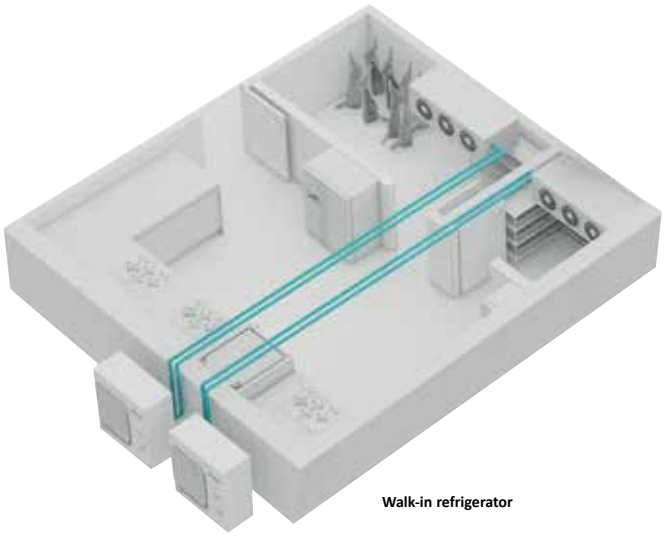
* Controllers: PAW-CO2-PANEL-C or local supply.

Cool room application to keep food fresh



Multiple installation capabilities. Unparalleled flexibility:

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

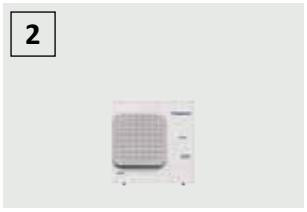


Walk-in refrigerator

Sustainable refrigeration systems for your **food retail**

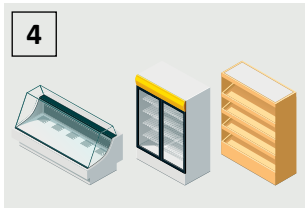
CO_2 refrigerant is the choice to curb carbon footprint of any business organization, especially to food retailers, to whom it brings key advantages.

10 HP MT TYPE (OCU-CR1000VF8).

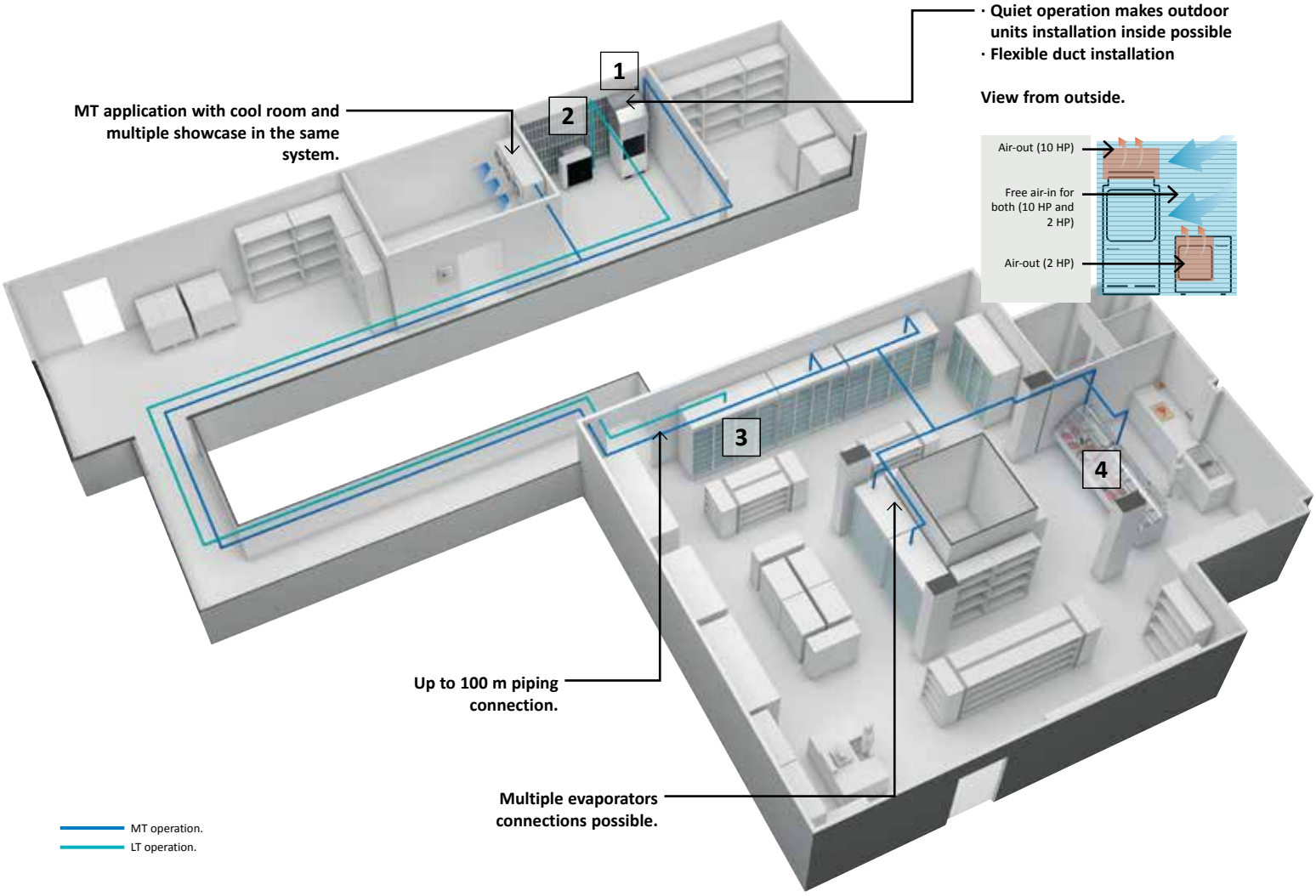


2 HP MT/LT TYPE (OCU-CR200VF5A).

Reach-in freezer (field supplied).



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



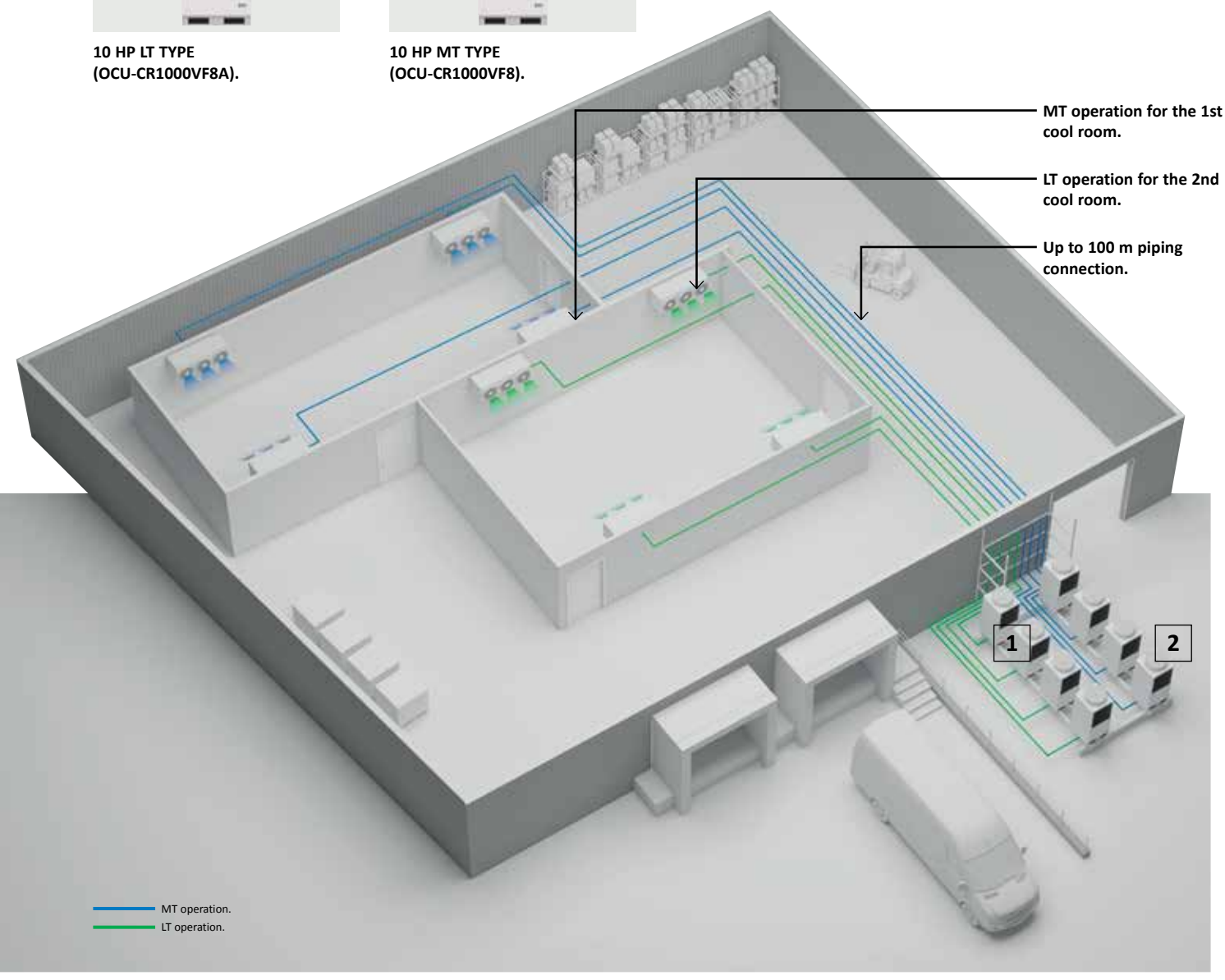
Nolan's Supermarket.
Nolan's Supermarket celebrated its 60th year in business with an extension and full refurbishment which completely overhauled the existing store.
A particular focus of the project was to create a state-of-the-art refrigeration system operating on the 'Zero Ozone Depletion' plus ultralow GWP of 1 natural refrigerant CO_2 and as part of the scheme. Panasonic CO_2 condensing units - CR Series have been chosen because of the high performance and reliable quality.

The safe refrigeration systems for your **healthcare business**

CO_2 is the right refrigerant to curb carbon footprint of any business organization. In addition, there are advantages specially for healthcare business. This project example shows one of the warehouse in the healthcare laboratory which requires several cool rooms there to keep bio-products safely.

10 HP LT TYPE (OCU-CR1000VF8A).

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 CO_2 condensing units - CR Series 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.

The Panasonic CR Series offer a wide range of refrigeration systems, meeting the specific needs of small retail stores.

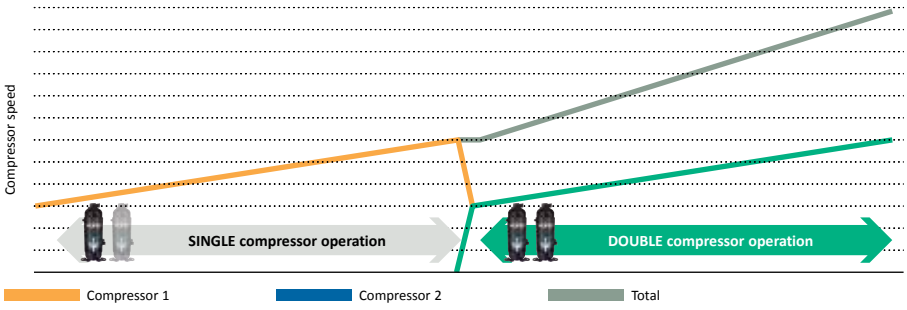
New CR Series 20 HP MT/LT model.

The CR Series now includes 20 HP MT/LT model, a highly efficient multi compressor solution.

- Multi-compressor systems
- Smaller footprint
- Maximum piping length of 100 m
- Cooling capacity can be controlled from 25% to 100% under partial load
- Flexible and precise control capabilities with digital input/output

Energy efficient multi compressors operation.
By distributing the workload between two compressors, the system operate efficiently, adjusting capacity to match the varying cooling demands.
Compressors 1 and 2 alternate every 10 days to ensure even load distribution.

Example of compressor operation.



OCU-CR2000VF8A/SL

Superior cooling capacity at each evaporating temperature.

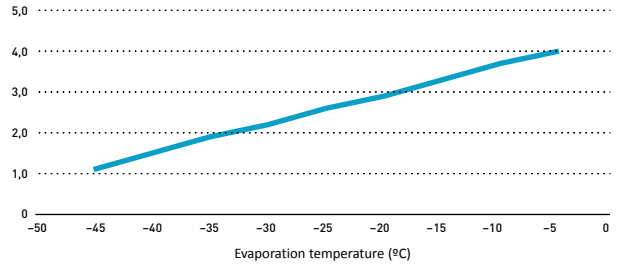
CO_2 transcritical condensing units - CR Series have a high cooling capacity at each set point. The CO_2 2-stage compressor developed by Panasonic is designed to compress CO_2 refrigerant twice; it reduces the load in operation by half (compared to 1-stage refrigerant compression) and delivers increased 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 / 2 kW.

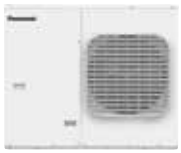
3.83 SEPR cooling.
1.92 SEPR freezing.

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

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



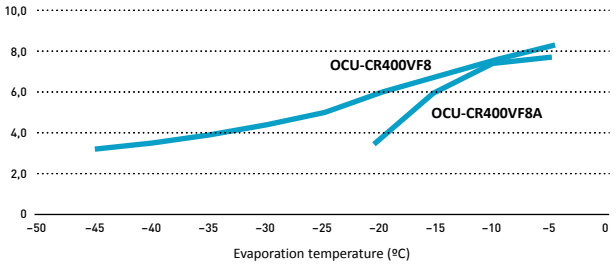
MT Type: 400VF8 - 7,5 kW. MT/LT Type: 400VF8A - 8 / 4 kW.



2.45 SEPR cooling.
1.56 SEPR freezing.

* Model 400VF8A.

OCU-CR400VF8(SL) / OCU-CR400VF8A(SL) [2].
Cooling capacity (kW)

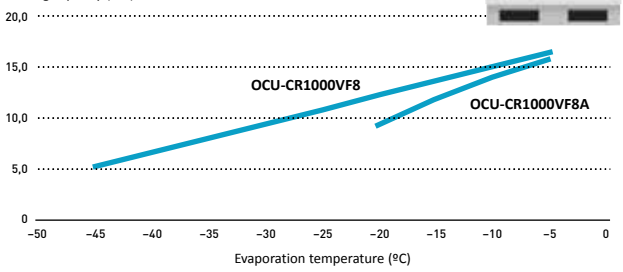


MT Type: 1000VF8 - 15 kW. MT/LT Type: 1000VF8A - 16 / 8 kW.

2.86 SEPR cooling.
1.49 SEPR freezing.

* Model 1000VF8A.

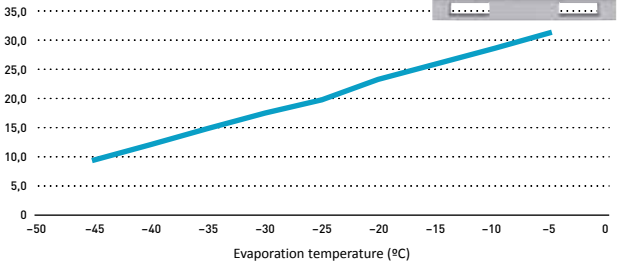
OCU-CR1000VF8(SL) / OCU-CR1000VF8A(SL) [2].
Cooling capacity (kW)



NEW MT/LT Type: 2000VF8A - 29 / 15 kW.

3.10 SEPR cooling.
1.64 SEPR freezing.

OCU-CR2000VF8A(SL) [1].
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.

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 Heat recovery port [1] as renewable energy

- Maximum 16,7 kW [2] of heating for free
- Optional possibility to get subsidy (depending on location)
- Easy connection process

1) For models 1000VF8A and 2000VF8A. 2) For model 1000VF8A.

3 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
- Transfer pressure control for stable electric expansion valve control in showcases [2]

2) For models 1000VF8A and 2000VF8A.

Technology by Panasonic

Excellent quality control established by skilled factory team.
Reliability is our main target and therefore offer warranties for 1 year for parts.

Reliable CO_2 technology by Panasonic

- Reliable quality: Made in Japan
- 19,500 units sold and installed in more than 25,000 retail operations such as convenience stores and supermarkets in Japan*
- Excellent quality control established by skilled factory team

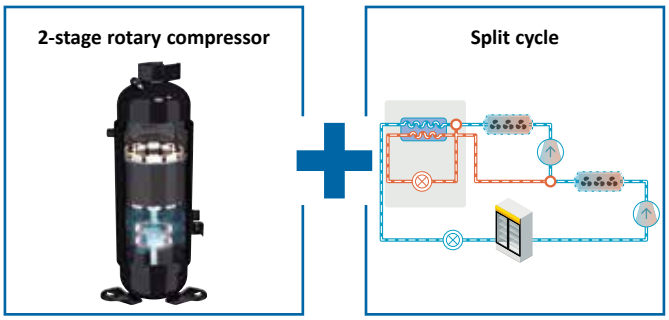
* As of the end of December 23.

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

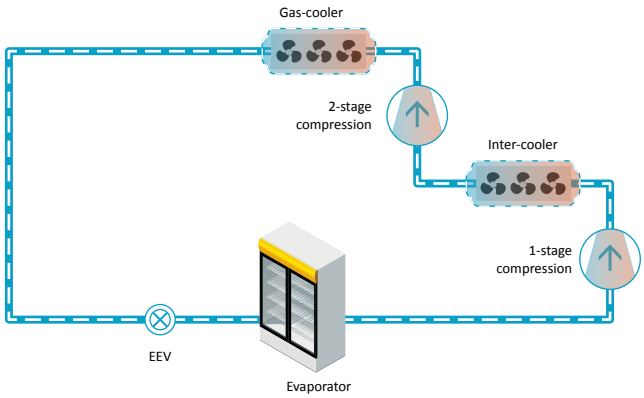
- Panasonic 2-stage rotary compressor delivering powerful performance for more than 20 years
- Split cycle* enhances cooling effect

* Available for 200VF5A, 400VF8A, 1000VF8A and 2000VF8A models.
** In the case that the standard cycle with 1-stage rotary compressor was compared.

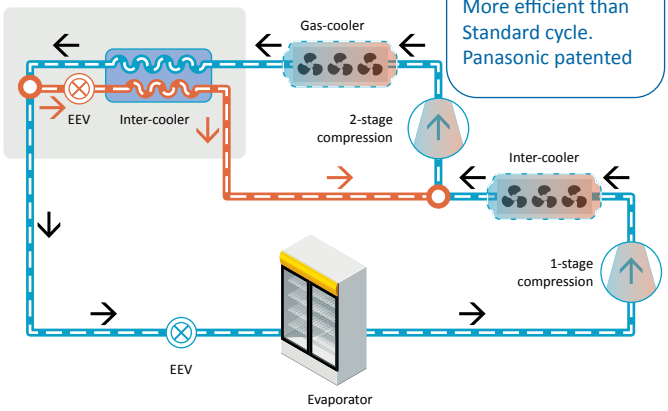
Watch the highlighted technology video.



Standard cycle.



Split cycle.



Up to 50%** More efficient than Standard cycle. Panasonic patented

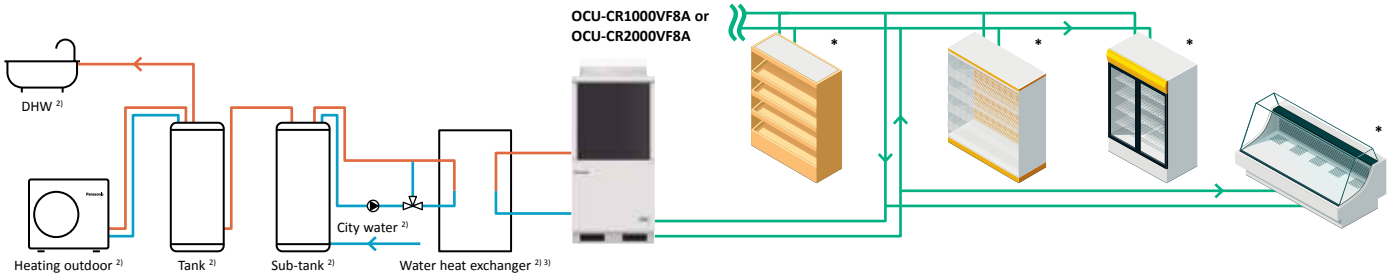
Heat recovery function for heating

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

16.7 kW [1] Of hot water for free

What is heat recovery function?

Solution example.
Heat recovery system can produce both heating and refrigeration.



1) Example for 10 HP MT/LT. Tested with OCU-CR1000VF8A. Under the condition: ambient temperature 32 °C, evaporation temperature -10 °C. 100% Partial load.
2) Local supply.
3) Heat Recovery requires an external heat exchanger to be selected and delivered by the installer to the end user.
* Controllers: PAW-CO2-PANEL-C or local supply.

Control and connectivity

Panasonic CO_2 condensing units - CR Series is optimized with Panel-C intelligent controller and a service checker for professionals. It can be easily integrated with major monitoring systems.

Recommended Expansion Valves

Manufacture of showcase control's	Saginomiya	Carel	Danfoss	Eliwell	Dixell/Emerson
Valve available for R744	Yes	Yes	Yes	No	No
Design pressure of valve	120bar	Up to 140bar	90bar	-	-
Controls available	Yes by others, no showcase controls	Yes	Yes	Yes	Yes
Supervision speak with Panasonic condensing unit	Have no supervision system available in Australia	Yes	Yes	No, can be developed	Yes
Superheat control for driving valves.	Yes	Yes	Yes	Yes	Yes
Superheat control for driving competitor valves	No	Yes, most available valves	Yes, can drive Saginomiya valve	No information	Yes
Complete system available for all 4/10/20HP MT OCUs	No, showcase control missing	Yes, E2V-Z*, E2V-CW, E2V-CS series	Yes, AKVP* series with minimum 4 evaporators per OCU	No	Yes
Complete system available for 2HP/4HP/10Hp/20HP LT OCUs	No, showcase control missing	Yes, E2V-CW, E2V-CS series	No, valve missing for 120 bar design pressure and / or high MOPD applications	No	Yes

*Applicable if the evaporator and liquid line pressure difference does not exceed the valve's MOPD of 35 bar.

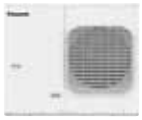
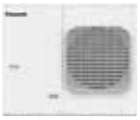
Modbus compatibility with monitoring system

Panasonic CO_2 condensing units - CR Series can be supervised by major monitoring system such as CAREL, Eliwell, COPELAND, Danfoss, RDM and Pego. Monitoring system ensures the recording, monitoring and reporting of temperature conditions etc… of entire CO_2 condensing units - CR Series system at shops.

Monitoring system					
CAREL	Danfoss	eliwell by Schneider Electric	Resource Data Management	Pego	COPELAND
Standard boss & boss-mini	AK-SM Series*	TelevisGo	DMTOUCH	TeleNET	Site Supervisor

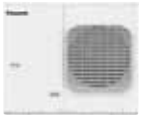
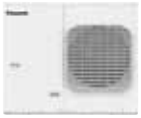
* M2M1-10 gateway (Model code: FDS021) is required in addition to the monitoring system. M2M1-10 gateway is a local supply.

CR Series guide

Outdoor units							
	MT	4.0 kW	7.0 kW	8.0 kW	15.0 kW	16.0 kW	29.0 kW
	LT	2.0 kW		4.0 kW		8.0 kW	15.0 kW
2 HP MT / LT (200VF5A)		 OCU-CR200VF5A OCU-CR200VF5ASL					
4 HP MT (400VF8)			 OCU-CR400VF8 OCU-CR400VF8SL				
4 HP MT / LT (400VF8A)				 OCU-CR400VF8A OCU-CR400VF8ASL			
10 HP MT (1000VF8)					 OCU-CR1000VF8 OCU-CR1000VF8SL		
10 HP MT / LT (1000VF8A)						 OCU-CR1000VF8A OCU-CR1000VF8ASL	
NEW 20 HP MT / LT (2000VF8A)							 OCU-CR2000VF8A OCU-CR2000VF8ASL

Scan to access selection guide

Condensing units index

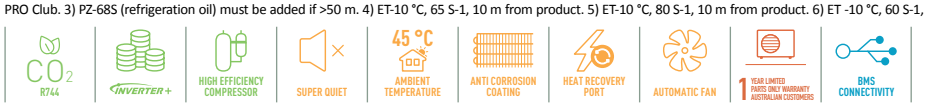
Standard outdoor unit			OCU-CR200VF5A		OCU-CR400VF8		OCU-CR400VF8A	
Anti corrosion coating outdoor unit			**OCU-CR200VF5ASL**		**OCU-CR400VF8SL**		**OCU-CR400VF8ASL**	
Type (MT: medium temperature, LT: low temperature)			**MT (4 kW) / LT (2 kW)**		**MT (7,5 kW)**		**MT (8 kW) / LT (4 kW)**	
Power supply	Voltage	V	220 / 230 / 240		380 / 400 / 415		380 / 400 / 415	
	Phase		Single phase		Three phase		Three phase	
	Frequency	Hz	50		50		50	
Cooling capacity at ET -10 °C AT 32 °C		kW	3.70		6.90		7.64	
Cooling capacity at ET -35 °C AT 32 °C		kW	1.92		—		3.80	
SEPR cooling at ET -10 °C AT 32 °C			**3.83**		**3.17**		**3.20**	
SEPR freezing at ET -35 °C AT 32 °C			**1.92**		**—**		**1.73**	
Annual electricity consumption at ET -10 °C AT 32 °C		kWh/a	6 797		13 384		14 488	
Annual electricity consumption at ET -35 °C AT 32 °C		kWh/a	8 021		—		16 255	
Evaporator connection			Multiple		Multiple		Multiple	
Evaporation temperature	Min ~ Max	°C	-45 ~ -5		-20 ~ -5		-45 ~ -5	
Ambient temperature	Min ~ Max	°C	-20 ~ +43		-20 ~ +45		-20 ~ +45	
Without Adiabatic Solution								
Cooling Capacity at -5°C AT 43°C (kW) – MT			3.46		5.83		4.11	
Cooling Capacity at -29.5°C AT 43°C (kW) – LT			1.98		N/A		3.63	
Without Adiabatic Solution								
Cooling Capacity at -5°C AT 32°C (kW) – MT			4.04		7.42		7.27	
Cooling Capacity at -29.5°C AT 32°C (kW) – LT			2.32		N/A		4.45	
Refrigerant			R744		R744		R744	
Design pressure liquid line		MPA	12		8		8	
Design pressure suction line		MPA	8		8		8	
User system external alarm. Digital input. Non-voltage contact			Yes		Yes		Yes	
Liquid tube electromagnetic valve		Vac	220 / 230 / 240		220 / 230 / 240		220 / 230 / 240	
Showcase operation ON / OFF signal. Digital input. Non-voltage contact			Yes		Yes		Yes	
Modbus communication line (RS485)		Ports	Yes		Yes		Yes	
Compressor type			2- stage rotary		2- stage rotary		2- stage rotary	
Dimension	H x W x D	mm	930 x 900 x 437		948 x 1 143 x 609		948 x 1 143 x 609	
Net weight		Kg	70		136		149	
Piping diameter [1]	Suction pipe	Inch (mm)	⅜ (9.52)		½ (12.70)		½ (12.70)	
	Liquid pipe	Inch (mm)	¼ (6.35)		⅜ (9.52)		⅜ (9.52)	
Length of connection piping		m	25		50 [2]		50 [2]	
PED		CAT	I		II		II	
Air flow		m³/min	54		59		59	
External static pressure		Pa	17		50		50	
Heat recovery port			—		—		Yes	
Standard performance	Ambient temperature	°C	32		32		32	
	Evaporating temperature	°C	-10	-35	-10		-10	-35
	Cooling capacity	kW	3.70	1.92	6.90		7.64	3.80
	Power consumption	kW	1.79	1.65	4.00		4.51	3.69
	Nominal load ampere	A	7.94	7.26	6.14		7.20	6.20
	Sound pressure	dB(A)	35.5 [4]	35.5 [4]	33.0 [5]		36.1 [5]	36.1 [5]
Necessary accessories								
Drier filter liquid line, Ø6,35 mm		**D-152T / DCY-P12**	Yes (included)		Yes (included)		Yes (included)	
Drier filter liquid line, Ø15,88 mm		**D-155T / DCY-P8**	—		—		—	
Suction filter, Ø19,05 mm (outer Ø welding)		**S-008T / S-008T1**	—		Yes (included)		Yes (included)	
Charging pipe		SPK-TU125	Yes (included)		Yes (included)		Yes (included)	

1) These diameters correspond to the output of the unit. The required diameter must be calculated with Refrigeration designer available on PRO Club. 2) PZ-68S (refrigeration oil) must be added according to Refrigeration designer available on PRO Club. 3) PZ-68S (refrigeration oil) must be added if >50 m. 4) ET-10 °C, 65 S-1, 10 m from product. 5) ET-10 °C, 80 S-1, 10 m from product. 6) ET -10 °C, 60 S-1, 10 m from product.

CO2 R744 · INVERTER+ · HIGH EFFICIENCY COMPRESSOR · SUPER QUIET · 43 °C AMBIENT TEMPERATURE · ANTI CORROSION COATING · HEAT RECOVERY PORT · AUTOMATIC FAN · 1 YEAR LIMITED PARTS ONLY WARRANTY AUSTRALIAN CUSTOMERS · BMS CONNECTIVITY

Standard outdoor unit			**OCU-CR1000VF8**	**OCU-CR1000VF8A**	**OCU-CR2000VF8A***		
Anti corrosion coating outdoor unit			**OCU-CR1000VF8SL**	**OCU-CR1000VF8ASL**	**OCU-CR2000VF8ASL***		
Type (MT: medium temperature, LT: low temperature)			**MT (15 kW)**	**MT (16 kW) / LT (8 kW)**	**MT (29 kW) / LT (15 kW)**		
Power supply	Voltage	V	380 / 400 / 415	380 / 400 / 415	380 / 400 / 415		
	Phase		Three phase	Three phase	Three phase		
	Frequency	Hz	50	50	50		
Cooling capacity at ET -10 °C AT 32 °C		kW	13.92	14.98	28.76		
Cooling capacity at ET -35 °C AT 32 °C		kW	—	7.61	14.61		
SEPR cooling at ET -10 °C AT 32 °C			**2.62**	**2.86**	**3.10**		
SEPR freezing at ET -35 °C AT 32 °C			**—**	**1.49**	**1.64**		
Annual electricity consumption at ET -10 °C AT 32 °C		kWh/a	32 815	32 409	57 076		
Annual electricity consumption at ET -35 °C AT 32 °C		kWh/a	—	39 985	66 760		
Evaporator connection			Multiple	Multiple	Multiple		
Evaporation temperature	Min ~ Max	°C	-20 ~ -5	-45 ~ -5	-45 ~ -5		
Ambient temperature	Min ~ Max	°C	-20 ~ +43	-20 ~ +43	-20 ~ +45		
Without Adiabatic Solution							
Cooling Capacity at -5°C AT 43°C (kW) – MT			9.41	13.73	27.89		
Cooling Capacity at -29.5°C AT 43°C (kW) – LT			N/A	7.72	15.69		
Without Adiabatic Solution							
Cooling Capacity at -5°C AT 32°C (kW) – MT			15.33	16.34	31.37		
Cooling Capacity at -29.5°C AT 32°C (kW) – LT			N/A	9.19	17.65		
Refrigerant			R744	R744	R744		
Design pressure liquid line		MPA	8	8	8		
Design pressure suction line		MPA	8	8	8		
User system external alarm. Digital input. Non-voltage contact			Yes	Yes	Yes		
Liquid tube electromagnetic valve		Vac	220 / 230 / 240	220 / 230 / 240	—		
Showcase operation ON / OFF signal. Digital input. Non-voltage contact			Yes	Yes	Yes		
Modbus communication line (RS485)		Ports	Yes	Yes	Yes		
Compressor type			2- stage rotary	2- stage rotary	2- stage rotary		
Dimension	H x W x D	mm	1 941 x 890 x 890	1 941 x 890 x 890	1 941 x 1 190 x 890		
Net weight		Kg	293	320	494		
Piping diameter [1]	Suction pipe	Inch (mm)	⅜ (19.05)	⅜ (19.05)	1 (25.40)		
	Liquid pipe	Inch (mm)	⅝ (15.88)	⅝ (15.88)	⅜ (19.05)		
Length of connection piping		m	100 [3]	100 [3]	100 [3]		
PED		CAT	II	II	II		
Air flow		m³/min	220	220	220		
External static pressure		Pa	58	58	58		
Heat recovery port			—	Yes	Yes		
Standard performance	Ambient temperature	°C	32	32	32		
	Evaporating temperature	°C	-10	-10	-35	-10	-35
	Cooling capacity	kW	14.00	15.10	8.00	28.74	14.73
	Power consumption	kW	8.20	8.20	7.57	15.67	13.45
	Nominal load ampere	A	12.60	12.60	11.60	24.31	20.49
	Sound pressure	dB(A)	36.0 [6]	36.0 [6]	36.0 [6]	38.9 [6]	38.9 [6]
Necessary accessories							
Drier filter liquid line, Ø6,35 mm		**D-152T / DCY-P12**	—	—	—		
Drier filter liquid line, Ø15,88 mm		**D-155T / DCY-P8**	Yes (included)	Yes (included)	Yes (included)		
Suction filter, Ø19,05 mm (outer Ø welding)		**S-008T / S-008T1**	Yes (included)	Yes (included)	Yes (included)		
Charging pipe		SPK-TU125	Yes (included)	Yes (included)	Yes (included)		

1) These diameters correspond to the output of the unit. The required diameter must be calculated with Refrigeration designer available on PRO Club. 2) PZ-68S (refrigeration oil) must be added according to Refrigeration designer available on PRO Club. 3) PZ-68S (refrigeration oil) must be added if >50 m. 4) ET-10 °C, 65 S-1, 10 m from product. 5) ET-10 °C, 80 S-1, 10 m from product. 6) ET -10 °C, 60 S-1, 10 m from product. * Available in Summer 2024. Tentative data.



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