

# HUSSmann®

## PANASONIC TRANSCRITICAL CO<sub>2</sub> OUTDOOR CONDENSING UNIT WITH NATURAL REFRIGERANT



Innovating Climate Solutions for A Better Future



## OUR COMMITMENT

At Hussmann, we are committed to sustainability and supporting the adoption of natural refrigerants in our industry. Our Panasonic CO<sub>2</sub> condensing units reflect our commitment to natural refrigerants.

The Panasonic Transcritical CO<sub>2</sub> technology reduces CO<sub>2</sub> emissions by up to 67%<sup>#</sup>, ensuring optimal temperature control, preventing costly breakdowns and product wastage, while keeping food fresh for supermarkets, convenience stores, and petrol stations.



P Series + Transcritical CO<sub>2</sub> \*

# BUNDLE OFFER

Price Match and Save

We will price match Panasonic TCO<sub>2</sub> to conventional HFC system



### Accelerate Formats to Transcritical Systems

- ✓ Panasonic Transcritical CO<sub>2</sub> 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 CO<sub>2</sub>
- ✓ Seamless transition to natural refrigerants made easier to adopt by store teams



# 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<sub>2</sub> compressor

# Benefits

## Energy saving



**Natural CO<sub>2</sub> / R744.**  
 R744 refrigerant provides higher energy saving and lower CO<sub>2</sub> emission compared to R404A. Zero ODP and GWP=1 means natural substance.



**High efficiency compressor.**  
 Powerful 2-stage CO<sub>2</sub> 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<sub>2</sub> 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.



**Operating range up to 43 °C.**  
 The system envelopes 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.

**Available on models:**  
 OCU-CR400VF8A 4 HP MT/LT  
 OCU-CR1000VF8A 10 HP MT/LT  
 OCU-CR2000VF8A 20 HP MT/LT

## High connectivity



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

# CO<sub>2</sub> 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

# CO<sub>2</sub> 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

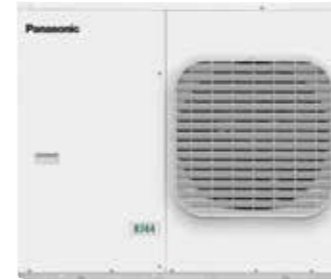
Medium Temperature (MT) based on 4 door cabinet PMM20F3T-4M1-1  
Low Temperature (LT) based on 3 door cabinet PGL20F3R-3Z1-1



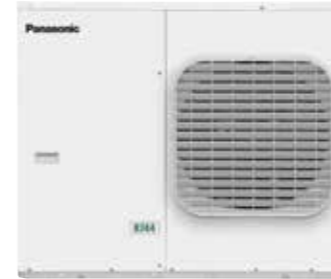
Transcritical Co2 Condensing Unit 2HP DUAL TEMP MT/LT		
Model	OCU-CR200VF5A	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	1.85 ~ 3.70
Cooling capacity at ET -35°C AT 32°C	kW	0.96 ~ 1.92
Dimensions (H x W x D)	mm	930 x 900 x 437
Weight	kg	70
Power Supply	Voltage	220/230/240
	Phase	Single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



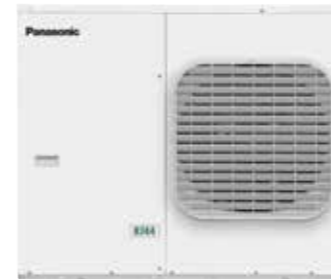
Transcritical Co2 Condensing Unit 2HP DUAL TEMP MT/LT		
Model	OCU-CR200VF5ASL	
	Salt proof coating	
Cooling capacity at ET -10°C AT 32°C:	kW	1.85 ~ 3.70
Cooling capacity at ET -35°C AT 32°C	kW	0.96 ~ 1.92
Dimensions (H x W x D)	mm	930 x 900 x 437
Weight	kg	170
Power Supply	Voltage	220/230/240
	Phase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



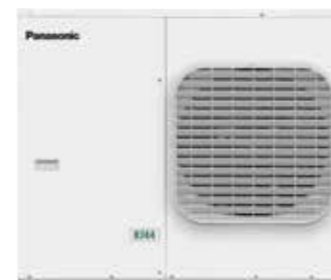
Transcritical Co2 Condensing Unit 4HP MT		
Model	OCU-CR400VF8	
	Normal coating	
Cooling capacity at ET -10°C AT 32°C:	kW	3.45 ~ 6.90
Cooling capacity at ET -35°C AT 32°C	kW	-
Dimensions (H x W x D)	mm	948 x 1143 x 609
Weight	kg	136
Power Supply	Voltage	380/400/415
	Phase	Three phase
	Frequency	50



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<sub>2</sub> 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

# Introducing the new 20HP Transcritical CO<sub>2</sub> Condensing 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

**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<sub>2</sub> Outdoor Condensing Unit (OCU) Adiabatic Cooling Solution, specifically designed for the 2HP, 4HP and 10HP TCO<sub>2</sub> OCU.

This innovative system leverages the natural refrigerant CO<sub>2</sub>, 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<sub>2</sub> Refrigerant

Utilises CO<sub>2</sub>, 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<sub>2</sub> condensing units - CR Series and medium temperature solutions.



## CO<sub>2</sub> 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 (m <sup>3</sup> )*					
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<sub>2</sub>? 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<sub>2</sub>.

CO<sub>2</sub> 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<sub>2</sub> refrigeration systems to prevent global warming and to support environment-friendly retail operations.

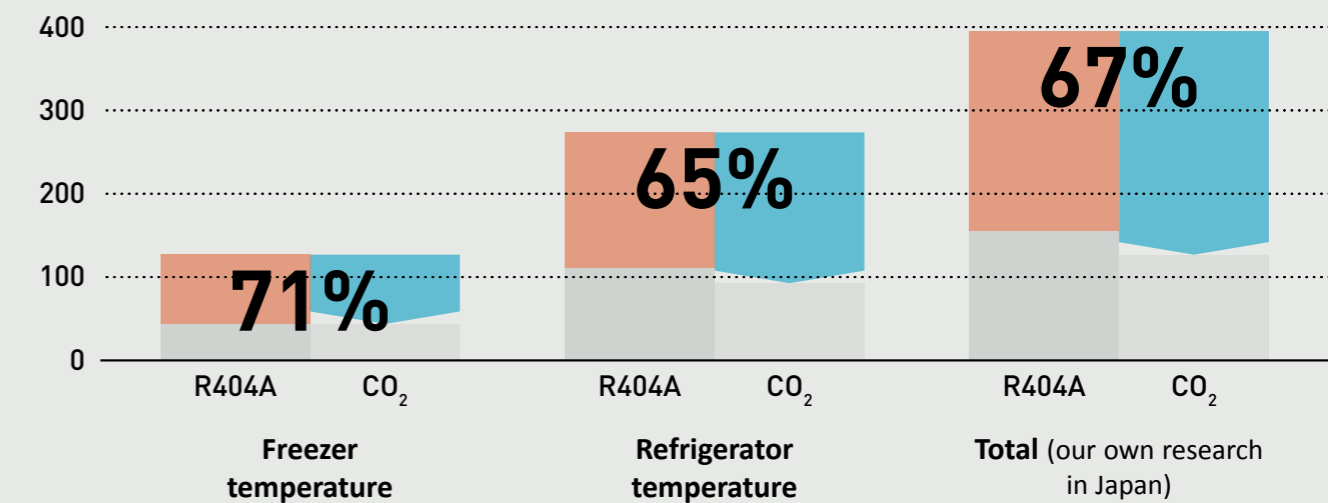
The following table shows how well R744 (CO<sub>2</sub>) performs regarding environmental impact and safety.

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

	Next generation refrigerant			Current refrigerant	
	CO <sub>2</sub>	Ammonia	Isobutane	R410A	R404A
ODP	0	0	0	0	0
GWP	1	0	4	2 090	3 920
Flammability	Non flammable	Light flammable	Flammable	Non flammable	Non flammable
Toxicity	No	Yes	No	No	No

## Comparison of CO<sub>2</sub> emissions

Unit: t/year



1) Direct influence presents the effect of refrigerant leakage comparing R744 (CO<sub>2</sub>) with R404A.  
 2) Indirect influence presents CO<sub>2</sub> emissions linked to power consumption of CO<sub>2</sub> 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<sub>2</sub> emission  
67% reduction

# Natural solutions with high energy savings

Panasonic's range of CO<sub>2</sub> 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



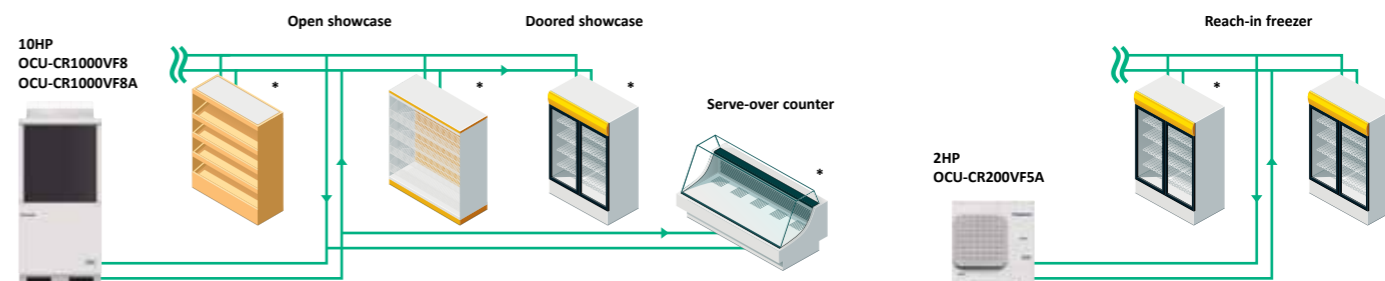
Aged Care



Agriculture / Floral / Greenhouses

## Showcases

Convenience stores, supermarkets, gas-stations.

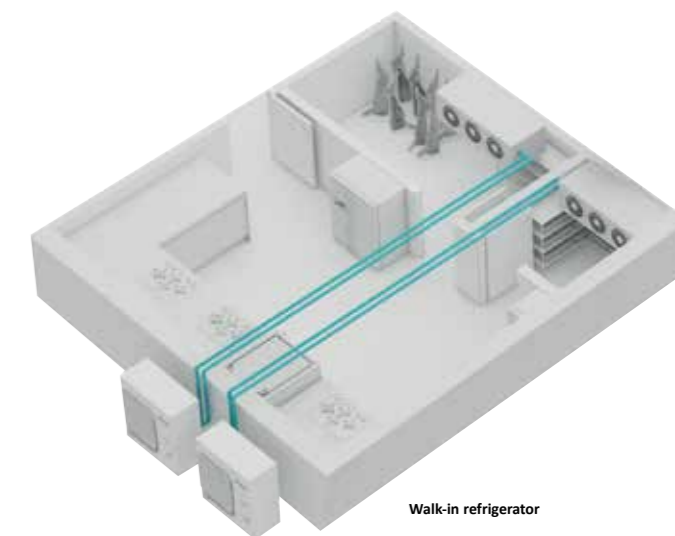
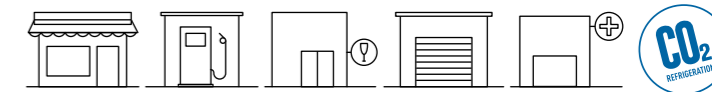


\* Controllers: PAW-CO2-PANEL-C or local supply.

## 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)

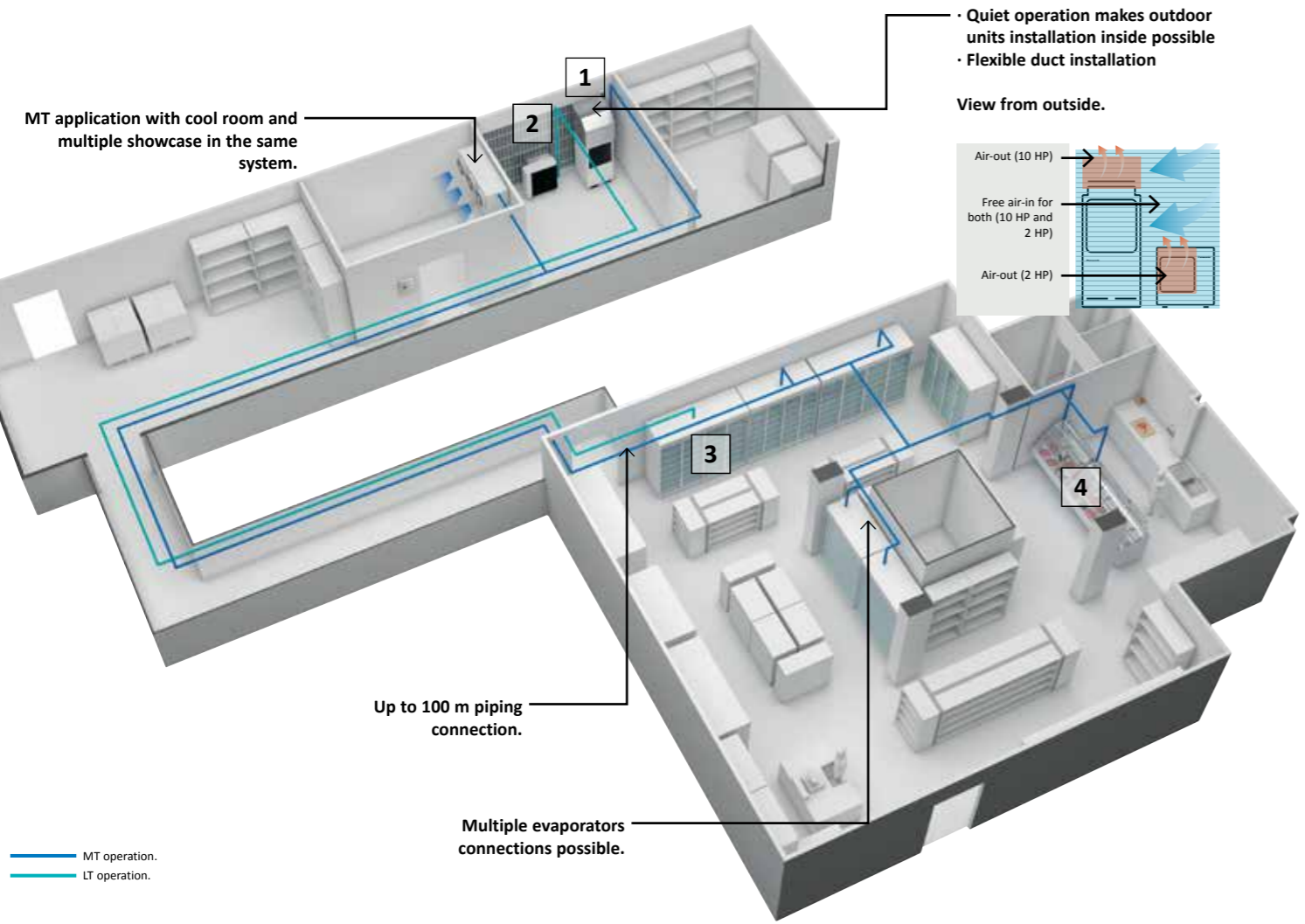


Walk-in refrigerator



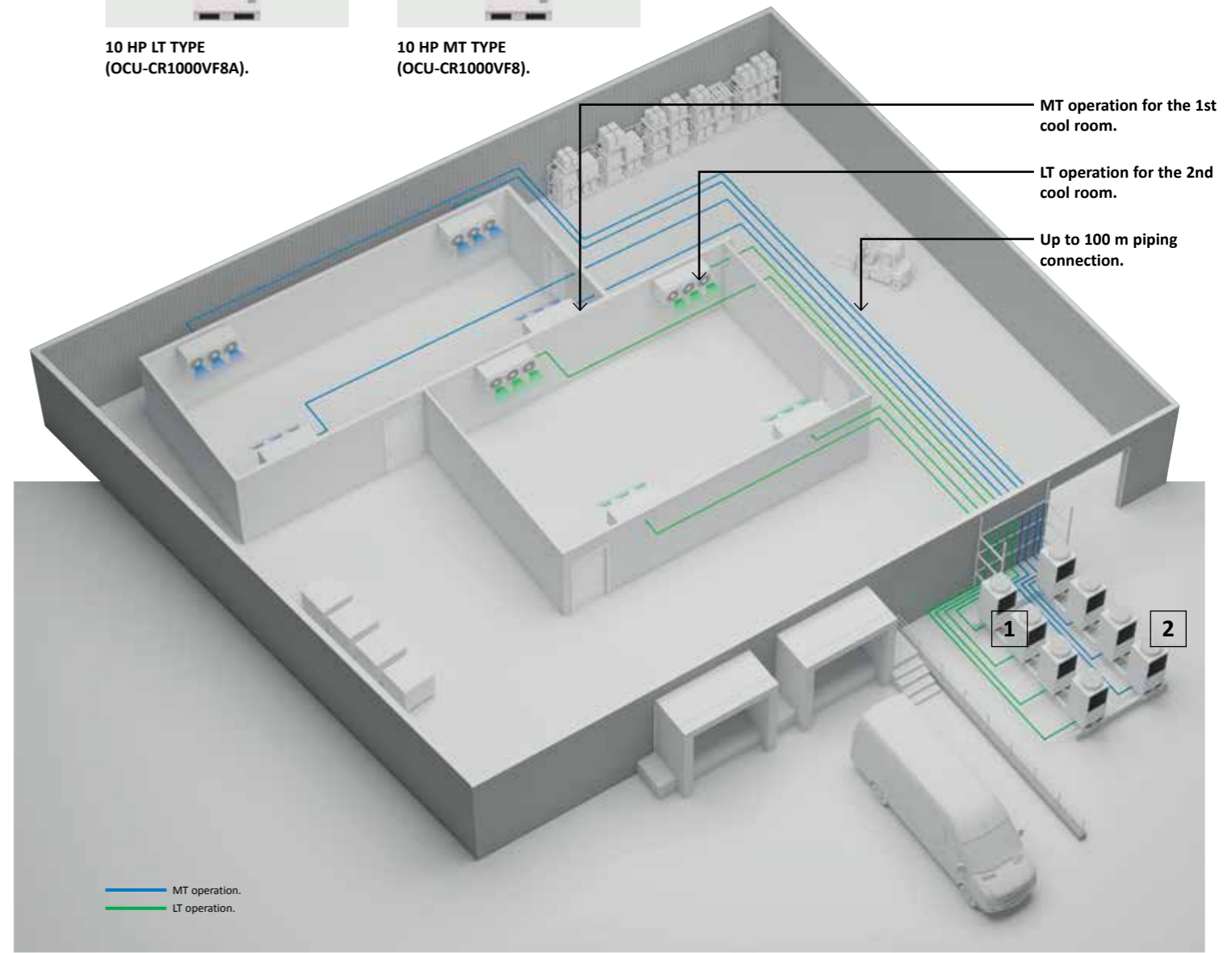
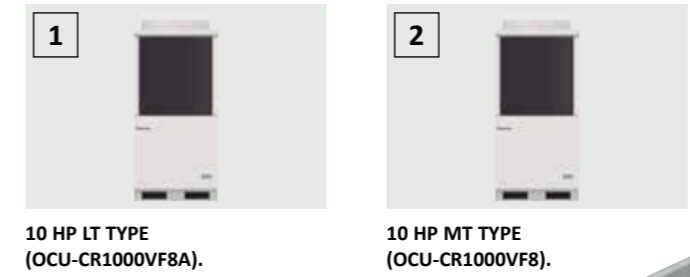
# Sustainable refrigeration systems for your food retail

CO<sub>2</sub> refrigerant is the choice to curb carbon footprint of any business organization, especially to food retailers, to whom it brings key advantages.



# The safe refrigeration systems for your healthcare business

CO<sub>2</sub> 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.



**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<sub>2</sub> and as part of the scheme. Panasonic CO<sub>2</sub> condensing units - CR Series have been chosen because of the high performance and reliable quality.



**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<sub>2</sub> 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.

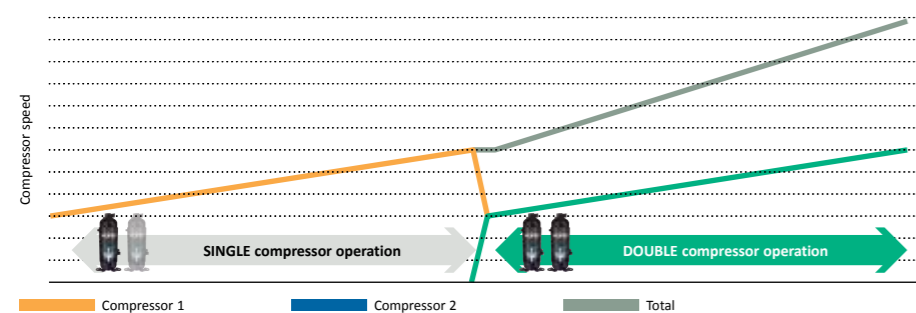
The CR Series now includes 20 HP MT/LT model, a highly efficient multi compressor solution.

- 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.



## Superior cooling capacity at each evaporating temperature.

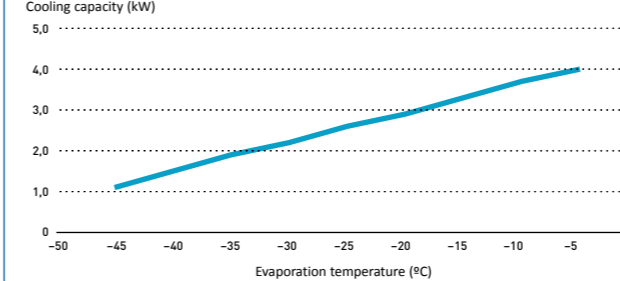
CO<sub>2</sub> transcritical condensing units - CR Series have a high cooling capacity at each set point. The CO<sub>2</sub> 2-stage compressor developed by Panasonic is designed to compress CO<sub>2</sub> refrigerant twice; it reduces the load in operation by half (compared to 1-stage refrigerant compression)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

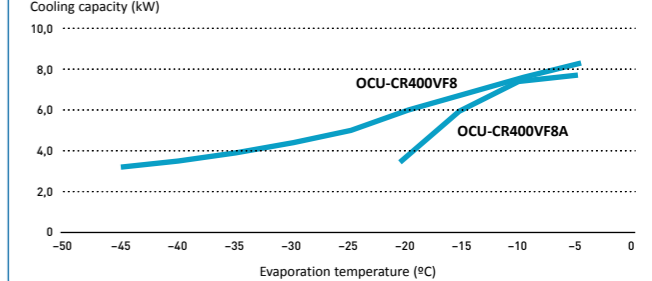


MT Type: 400VF8 - 7,5 kW.  
MT/LT Type: 400VF8A - 8 / 4 kW.

2.45 SEPR cooling.  
1.56 SEPR freezing.

\* Model 400VF8A.

OCU-CR400VF8(SL) / OCU-CR400VF8A(SL) <sup>2)</sup>.

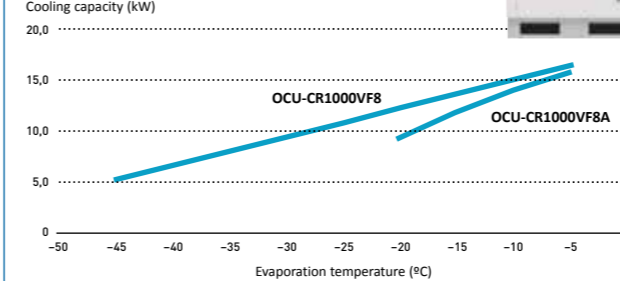


MT Type: 1000VF8 - 15 kW.  
MT/LT Type: 1000VF8A - 16 / 8 kW.

2.86 SEPR cooling.  
1.49 SEPR freezing.

\* Model 1000VF8A.

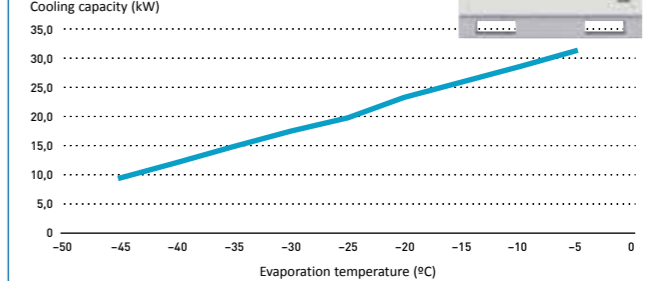
OCU-CR1000VF8(SL) / OCU-CR1000VF8A(SL) <sup>2)</sup>.



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

3.10 SEPR cooling.  
1.64 SEPR freezing.

OCU-CR2000VF8A(SL) <sup>1)</sup>.



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 <sup>1)</sup>
- High COP at high ambient temperature

1) 200VF5A.

## 3 Flexible installation

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

2) For models 1000VF8A and 2000VF8A.

## 2 Heat recovery port <sup>1)</sup> as renewable energy

- Maximum 16,7 kW <sup>2)</sup> 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.

# 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<sub>2</sub> 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

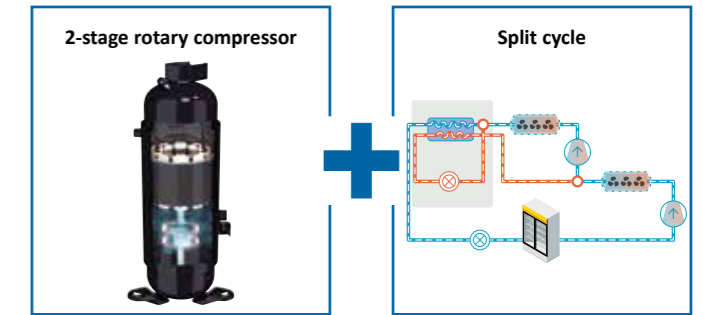
\* As of the end of December 23.

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

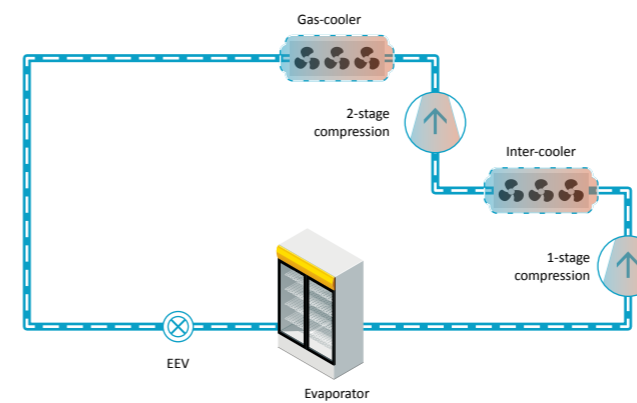
- Panasonic 2-stage rotary compressor delivering powerful performance for more than 20 years
- Split cycle\* enhances cooling effect

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

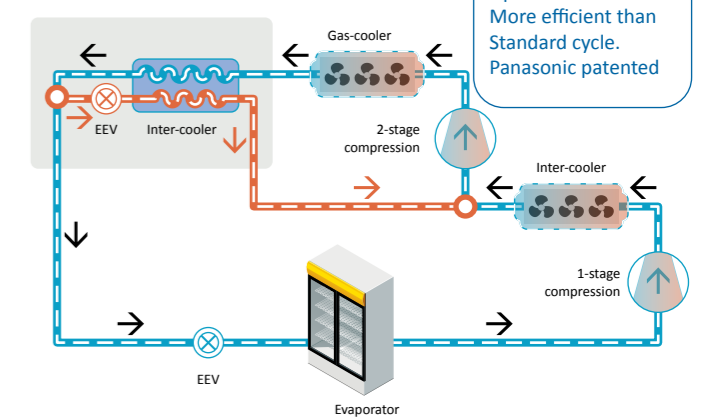
Watch the highlighted technology video.



Standard cycle.



Split cycle.



## Heat recovery function for heating

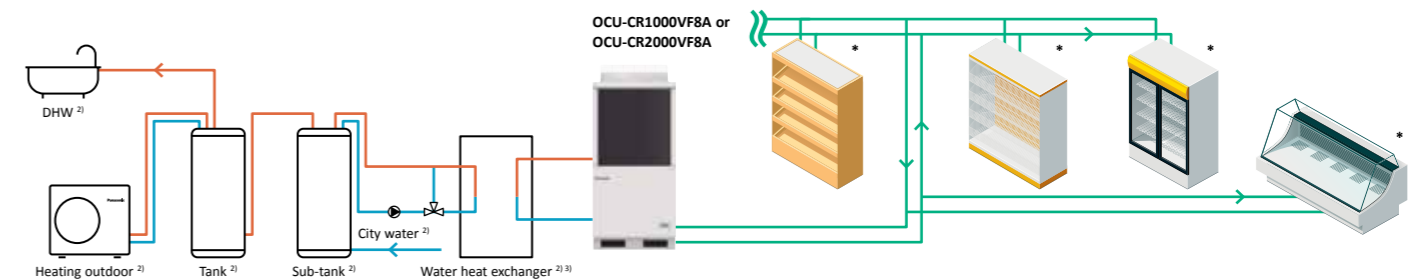
This function offers refrigeration combined with heating all in one system. The ground-breaking solution allows for increased opportunity to cut running costs by utilising exhausted heat from refrigeration and transferring to the energy source for heating.

16.7 kW<sup>1)</sup>  
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<sub>2</sub> 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

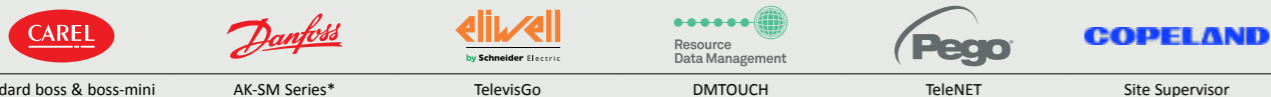
Manufacture of showcase control's	Saginomiya	Carel	Danfoss	Eliwell	Dixell/Emerson
Valve available for R744	Yes	Yes	Yes	No	No
Design pressure of valve	120bar	Up to 140bar	90bar	-	-
Controls available	Yes by others, no showcase controls	Yes	Yes	Yes	Yes
Supervision speak with Panasonic condensing unit	Have 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 OCU's	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 OCU's	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<sub>2</sub> 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<sub>2</sub> condensing units - CR Series system at shops.

### Monitoring system



\* 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)



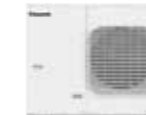
OCU-CR200VF5A  
OCU-CR200VF5ASL

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



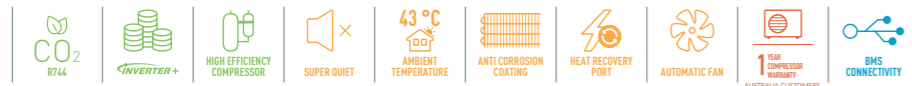


# Condensing units index



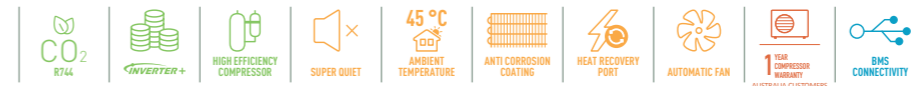
Standard outdoor unit		OCU-CR200VF5A	OCU-CR400VF8	OCU-CR400VF8A
Anti corrosion coating outdoor unit		OCU-CR200VF5ASL	OCU-CR400VF8SL	OCU-CR400VF8ASL
Type (MT: medium temperature, LT: low temperature)		MT (4 kW) / LT (2 kW)	MT (7,5 kW)	MT (8 kW) / LT (4 kW)
Power supply	Voltage	V	220 / 230 / 240	380 / 400 / 415
	Phase		Single phase	Three phase
	Frequency	Hz	50	50
Cooling capacity at ET -10 °C AT 32 °C		kW	3.70	6.90
Cooling capacity at ET -35 °C AT 32 °C		kW	1.92	—
<b>SEPR cooling at ET -10 °C AT 32 °C</b>			<b>3.83</b>	<b>3.17</b>
<b>SEPR freezing at ET -35 °C AT 32 °C</b>			<b>1.92</b>	<b>1.73</b>
Annual electricity consumption at ET -10 °C AT 32 °C		kWh/a	6797	13384
Annual electricity consumption at ET -35 °C AT 32 °C		kWh/a	8021	—
Evaporator connection			Multiple	Multiple
Evaporation temperature		Min ~ Max	°C	-45 ~ -5
Ambient temperature		Min ~ Max	°C	-20 ~ +43
<b>Without Adiabatic Solution</b>				
Cooling Capacity at -5°C AT 43°C (kW) – MT			3.46	5.83
Cooling Capacity at -29.5°C AT 43°C (kW) – LT			1.98	N/A
<b>Without Adiabatic Solution</b>				
Cooling Capacity at -5°C AT 32°C (kW) – MT			4.04	7.42
Cooling Capacity at -29.5°C AT 32°C (kW) – LT			2.32	N/A
Refrigerant			R744	R744
Design pressure liquid line		MPA	12	8
Design pressure suction line		MPA	8	8
User system external alarm. Digital input. Non-voltage contact			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
Modbus communication line (RS485)		Ports	Yes	Yes
Compressor type			2- stage rotary	2- stage rotary
Dimension		H x W x D	mm	930 x 900 x 437
Net weight		Kg	70	136
Piping diameter <sup>1)</sup>	Suction pipe	Inch (mm)	¼ (9.52)	½ (12.70)
	Liquid pipe	Inch (mm)	¼ (6.35)	¼ (9.52)
Length of connection piping		m	25	50 <sup>2)</sup>
PED		CAT	I	II
Air flow		m³/min	54	59
External static pressure		Pa	17	50
Heat recovery port			—	Yes
Standard performance	Ambient temperature	°C	32	32
	Evaporating temperature	°C	-10	-35
	Cooling capacity	kW	3.70	1.92
	Power consumption	kW	1.79	1.65
	Nominal load ampere	A	7.94	7.26
	Sound pressure	dB(A)	35.5 <sup>4)</sup>	35.5 <sup>4)</sup>
<b>Necessary accessories</b>				
Drier filter liquid line, Ø6,35 mm		D-152T / DCY-P12	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)
Charging pipe		SPK-TU125	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-685 (refrigeration oil) must be added according to Refrigeration designer available on PRO Club. 3) PZ-685 (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.



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
	Phase		Three phase	Three phase
	Frequency	Hz	50	50
Cooling capacity at ET -10 °C AT 32 °C		kW	13.92	14.98
Cooling capacity at ET -35 °C AT 32 °C		kW	—	7.61
<b>SEPR cooling at ET -10 °C AT 32 °C</b>			<b>2.62</b>	<b>2.86</b>
<b>SEPR freezing at ET -35 °C AT 32 °C</b>			<b>—</b>	<b>1.49</b>
Annual electricity consumption at ET -10 °C AT 32 °C		kWh/a	32815	32409
Annual electricity consumption at ET -35 °C AT 32 °C		kWh/a	—	39985
Evaporator connection			Multiple	Multiple
Evaporation temperature		Min ~ Max	°C	-20 ~ -5
Ambient temperature		Min ~ Max	°C	-20 ~ +43
<b>Without Adiabatic Solution</b>				
Cooling Capacity at -5°C AT 43°C (kW) – MT			9.41	13.73
Cooling Capacity at -29.5°C AT 43°C (kW) – LT			N/A	7.72
<b>Without Adiabatic Solution</b>				
Cooling Capacity at -5°C AT 32°C (kW) – MT			15.33	16.34
Cooling Capacity at -29.5°C AT 32°C (kW) – LT			N/A	9.19
Refrigerant			R744	R744
Design pressure liquid line		MPA	8	8
Design pressure suction line		MPA	8	8
User system external alarm. Digital input. Non-voltage contact			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
Modbus communication line (RS485)		Ports	Yes	Yes
Compressor type			2- stage rotary	2- stage rotary
Dimension		H x W x D	mm	1941 x 890 x 890
Net weight		Kg	293	320
Piping diameter <sup>1)</sup>	Suction pipe	Inch (mm)	¼ (19.05)	¼ (19.05)
	Liquid pipe	Inch (mm)	¼ (15.88)	¼ (15.88)
Length of connection piping		m	100 <sup>3)</sup>	100 <sup>3)</sup>
PED		CAT	II	II
Air flow		m³/min	220	220
External static pressure		Pa	58	58
Heat recovery port			—	Yes
Standard performance	Ambient temperature	°C	32	32
	Evaporating temperature	°C	-10	-10
	Cooling capacity	kW	14.00	15.10
	Power consumption	kW	8.20	8.20
	Nominal load ampere	A	12.60	11.60
	Sound pressure	dB(A)	36.0 <sup>6)</sup>	36.0 <sup>6)</sup>
<b>Necessary accessories</b>				
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)
Suction filter, Ø19,05 mm (outer Ø welding)		S-008T / S-008T1	Yes (included)	Yes (included)
Charging pipe		SPK-TU125	Yes (included)	Yes (included)

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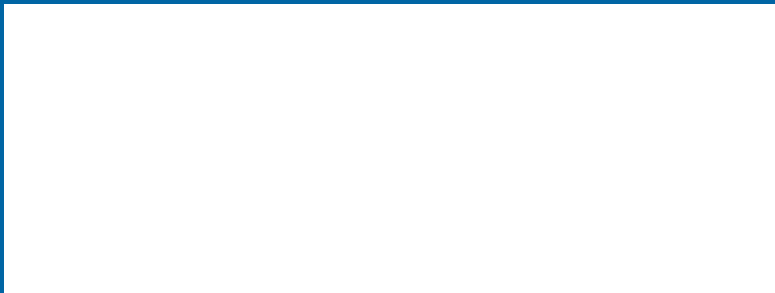
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