Panasonic

New generation of 2-Pipe ECOi EX MZ1 Series R32
Extreme efficiency, quality, compact

ECOi EX

Panasonic

Extreme efficiency, quality, compact.

Discover the cutting-edge ECOi EX MZ1 Series – the next generation in energy efficiency and versatility for commercial applications. With advanced R32 refrigerant technology and optimised system design, this series offers a more sustainable solution compared to R410A. Benefit from a substantial 68% [1] reduction in Global Warming Potential (GWP) and up to 82% [2] total CO_2 Eq reduction thanks to decreased refrigerant volume, all while boosting overall efficiency.

1) GWP of R32 refrigerant is 675, while the GWP of R410A is 2088.
2) Total CO_2 Eq= GWP x Charge. Panasonic's internal research conducted under consistent system conditions.

R32
REFRIGERANT

Reliable quality - R32 standard-compliant [1].

$\eta_{s,c}$ 310,1% [2]
$\eta_{s,h}$ 172,4% [2]

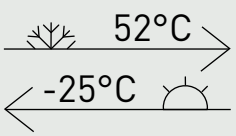
High seasonal efficiency.

R32

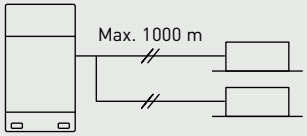
More sustainable solution [3].

Saving installation space.

Silent mode with high capacity maintained.



Extended operation range.



Flexible piping installation.

Maximum indoor / outdoor capacity ratio 200%.

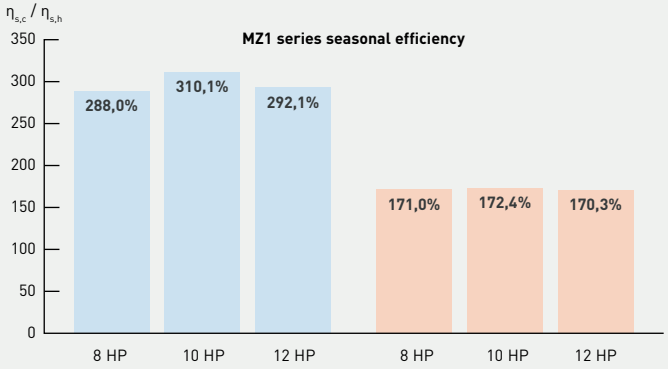
Saving installation cost.

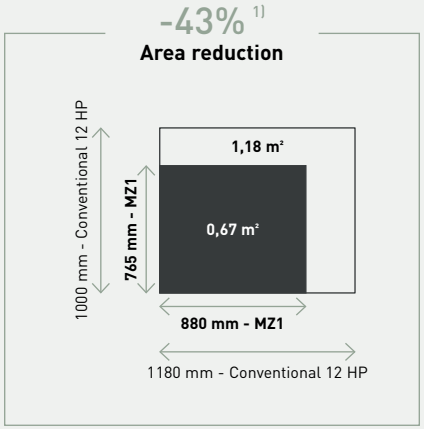
1) Panasonic's R32 safety measures comply with IEC 60335-2-40 (ed. 7.0) and EN 378 (ISO 5149). 2) U-10MZ1E8. 3) Compared to R410A systems.

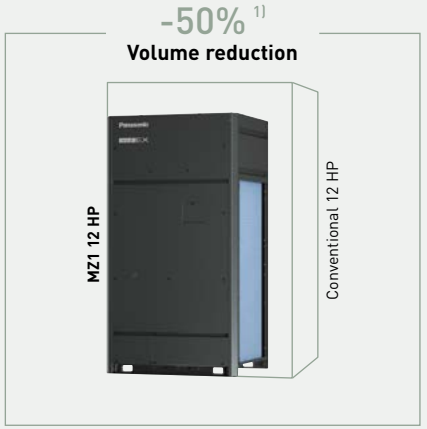
The next generation in energy efficiency and versatility for commercial applications.

High efficiency in a compact outdoor unit.

Significantly reduced volume and a lightweight chassis help reduce design and installation work.





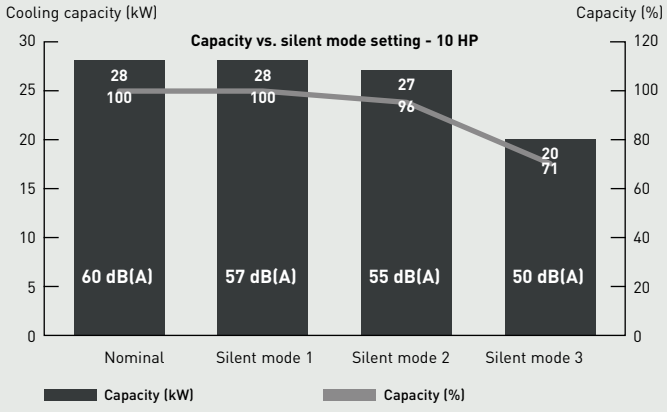


1) 12 HP model compared to the equivalent conventional R410A ECOi EX ME2. 2) 8 and 10 HP models.

Maximum comfort with silent operation mode.

Thanks to the optimised bell mouth design, sound pressure can be reduced to as low as 54 dB(A)* in silent mode while maintaining high cooling capacity.

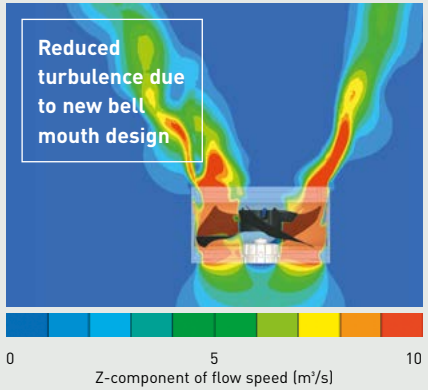
* For model U-8MZ1E8.



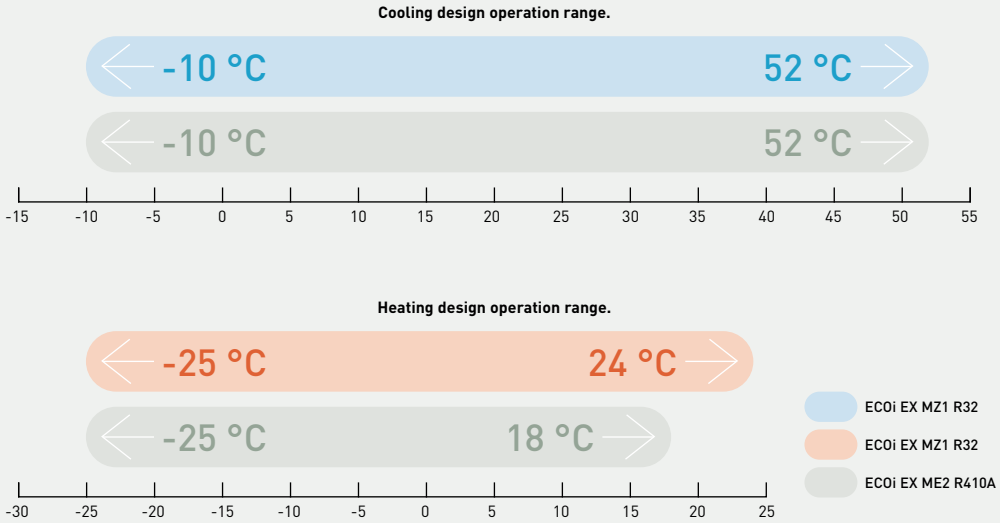
· Silent operation mode reduces outdoor unit noise down to 50 dB(A)
· 3-step set point available
· Silent mode 1 maintains rated 100% cooling capacity

Noise reference (SPL):	U-8MZ1E8	U-10MZ1E8	U-12MZ1E8
Nominal	57 dB(A)	60 dB(A)	64 dB(A)
Silent mode 1	54 dB(A)	57 dB(A)	61 dB(A)
Silent mode 2	52 dB(A)	55 dB(A)	59 dB(A)
Silent mode 3	50 dB(A)	50 dB(A)	50 dB(A)

Improved bell mouth design.

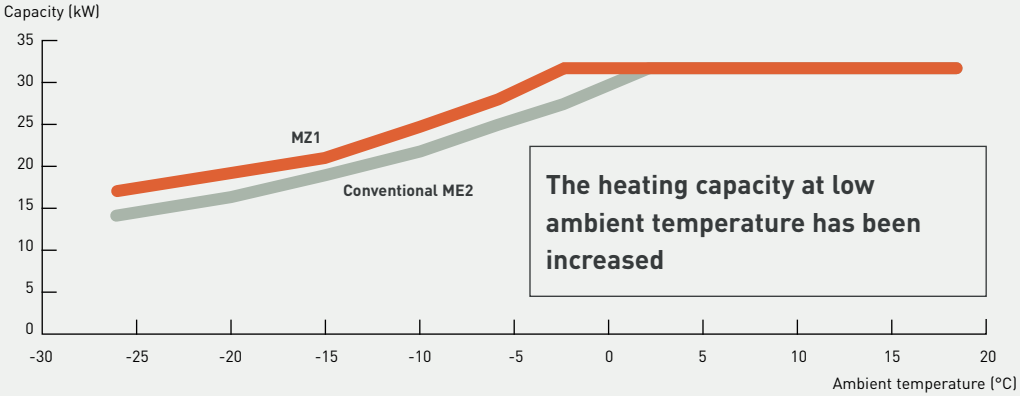


Wide operating limits.

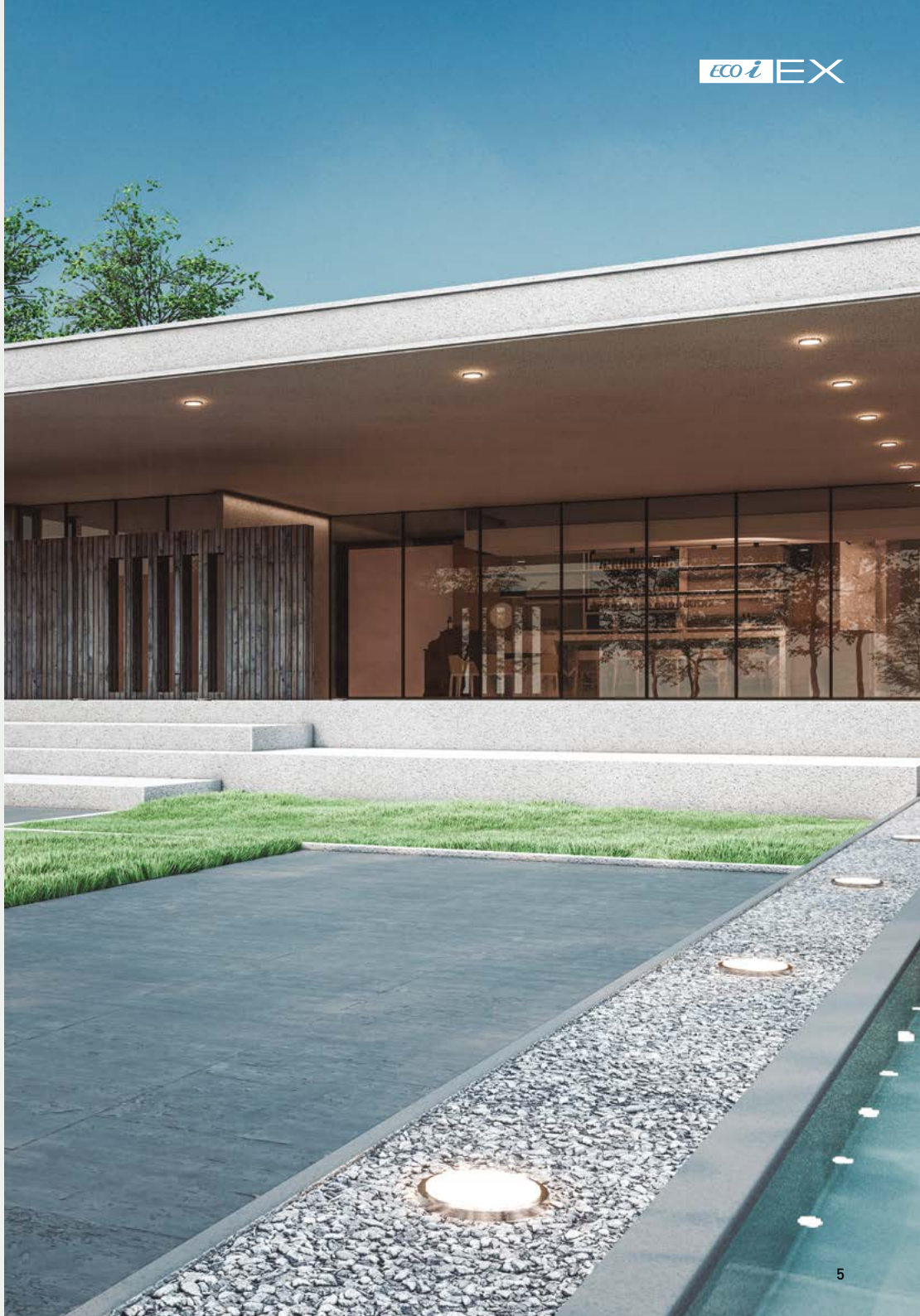


Cooling: Outside air temperature °C (DB). Heating: Outside air temperature °C (WB).

MZ1 Series maintains high performance even at extremely low winter temperatures.

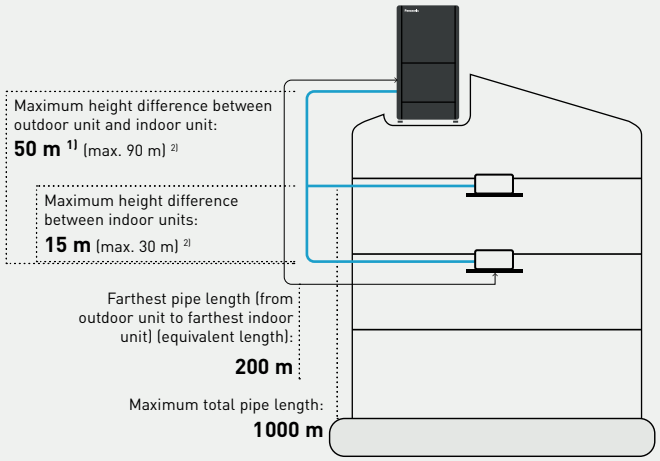


The heating capacity at low ambient temperature has been increased



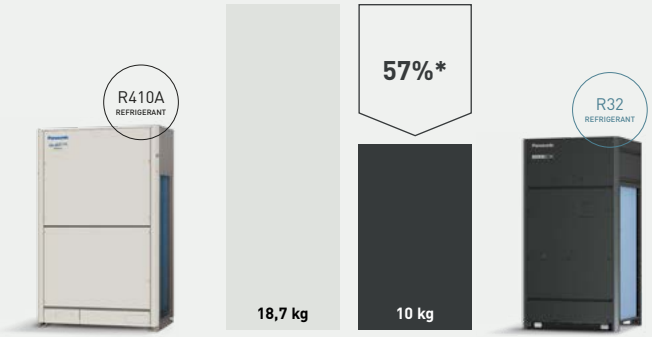
Enjoy greater installation flexibility and cost savings.

Piping design.
Maximum piping allowance of up to 1000 m.



1) 40 m if the outdoor unit is below the indoor unit. 2) Outdoor unit installed above indoor units and 60 m maximum when installed below the indoor units. Additional special requirements apply, please contact an authorised Panasonic dealer.

Refrigerant amount reduction and piping material choice.
The new MZ1 Series uses 57%* less R32 refrigerant compared to the R410A equivalent system and supports imperial or metric piping installation.



* Panasonic's internal research. 12 HP model with 30 m piping installation.

Extensive R32 range to meet any project requirements.

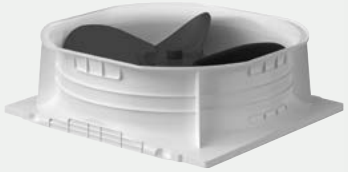
- All air to air indoor units are equipped with nanoe™ X for improved indoor air quality
- Hydronic modules options enable the production of heating / hot water
- A range of ventilations including ERVs and AHU connection kits
- A wide variety of single stand-alone, central, and BMS connectivity options for seamless integration

Invest in quality. Prioritise safety. Choose Panasonic.

Panasonic does not compromise on product quality, safety, durability in order to provide the ultimate comfort when you need it most.
These HVAC systems with R32 refrigerant have safety measures complying with EN 378 (ISO 5149) and IEC 60335-2-40 (ed. 7.0).

100%
QUALITY
QUALITY CERTIFIED BY PANASONIC

Smooth exhaust flow by bell-mouth.
Specially designed curved air discharge bell-mouth for better aerodynamics.

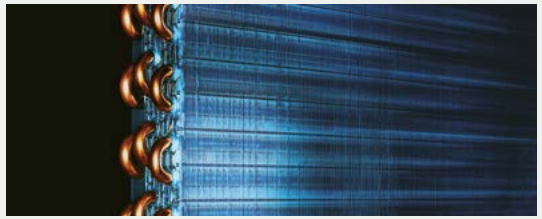


Grey panel colour.
The grey panel colour of the outdoor unit allows it to blend in and be installed discreetly on a wide variety of installations.

Inverter-driven scroll compressor.
Inverter-driven scroll compressor equipped, to optimise high-efficiency operation year-round.

7-segment display.
7-segment display for ease of user installation, commissioning, service and maintenance.

Enlarged heat exchanger surface area with triple rows.
The unit has become more compact while maintaining high equivalent efficiency, thanks to the enlarged heat exchanger surface area with triple rows.



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R32 safety measures by Panasonic.

Panasonic provides safety measure compliant with the latest standards, as required based on R32 refrigerant density under specific project conditions. Everything necessary for R32 refrigerant safety is prepared by Panasonic.

Leak detector - CZ-CGLSC2.
Leak detector designed for 4 way 90x90 cassettes, 4 way 60x60 cassettes, and wall-mounted units.

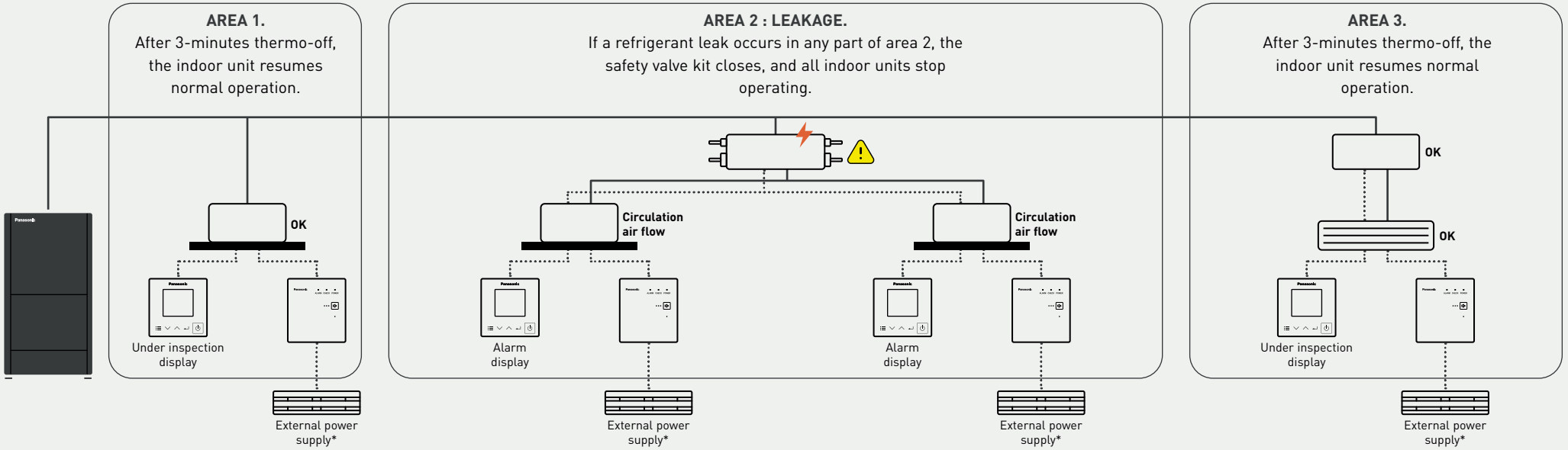
Leak alarm - CZ-CGLALC1.
R32 refrigerant leak alarm designed for adaptive duct and slim duct units.

2-pipe safety valve kit - CZ-P1160SVK.
A 2-pipe safety valve manages the shutdown of only the system experiencing a refrigerant leak, instead of shutting down the whole system.

External power supply - PAW-16DC-ALC1.
External 16 V power supply, including a leak alarm for remote locations. The leak alarm can be deactivated.

The safety measures which comply with EN 378 (ISO 5149) and IEC 60335-2-40 (ed. 7.0).

Example of how R32 safety measures work in an HVAC system.



* In accordance with EN378-3, alarm systems such as external leak detectors and safety alarms require a power source independent of the air conditioning system they are protecting. In addition, they must have a backup power source and be able to alert a monitored location. For further information, please contact an authorised Panasonic dealer.

Everything necessary for R32 refrigerant safety is prepared by Panasonic.

2-PIPE ECOi EX MZ1 SERIES · R32

HP			8 HP		10 HP		12 HP	
Outdoor unit			**U-8MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**	
Power supply	Voltage / Phase / Frequency		380 - 400 - 415 V / Three phase / 50 Hz		380 - 400 - 415 V / Three phase / 50 Hz		380 - 400 - 415 V / Three phase / 50 Hz	
			Cooling	**Heating**	**Cooling**	**Heating**	**Cooling**	**Heating**
Capacity		kW	22,4	25,0	28,0	31,5	33,5	37,5
EER [1] — COP [1]		W/W	3,30	4,50	3,50	4,30	3,00	4,00
SEER [2] / $\eta_{s,c}$ — SCOP [2] / $\eta_{s,h}$			**7,27 / 288,0%**	**4,35 / 171,0%**	**7,82 / 310,1%**	**4,38 / 172,4%**	**7,37 / 292,1%**	**4,33 / 170,3%**
Current		A	11,7 - 11,1 - 10,7	9,81 - 9,32 - 8,98	13,5 - 12,8 - 12,4	12,5 - 11,9 - 11,5	18,3 - 17,4 - 16,8	15,7 - 14,9 - 14,4
Input power		kW	6,78	5,55	8,00	7,32	11,1	9,37
Starting current		A	1,00		1,00		1,00	
External static pressure (Max)		Pa	80		80		80	
Air flow		m³/min	209		209		209	
Sound pressure	Normal mode (Cool / Heat)	dB(A)	57 / 57		60 / 60		64 / 67	
	Silent mode 1 / 2 / 3 (Cool)	dB(A)	54 / 52 / 50		57 / 55 / 50		61 / 59 / 50	
Sound power	Normal mode (Cool / Heat)	dB(A)	75 / 75		77 / 77		81 / 84	
Dimension / Net weigh	H x W x D	mm / kg	1660 x 880 x 765 / 203		1660 x 880 x 765 / 203		1660 x 880 x 765 / 206	
Piping diameter [3]	Liquid	Inch (mm)	3/8 (9,52) / 1/2 (12,70)		3/8 (9,52) / 1/2 (12,70)		3/8 (9,52) / 1/2 (12,70)	
	Gas	Inch (mm)	3/4 (19,05) / 7/8 (22,22)		3/4 (19,05) / 7/8 (22,22)		7/8 (22,22) / 1-1/8 (28,58)	
	Balance	Inch (mm)	1/4 (6,35)		1/4 (6,35)		1/4 (6,35)	
Refrigerant (R32) / CO_2 Eq		kg / T	6,30 / 4,25		6,40 / 4,32		8,50 / 5,74	
Maximum allowable indoor / outdoor capacity ratio [4]		%	50 ~ 200 (130)		50 ~ 200 (130)		50 ~ 200 (130)	
Operating range	Cool / Heat Min ~ Max	°C	-10 ~ +52 / -25 ~ +24		-10 ~ +52 / -25 ~ +24		-10 ~ +52 / -25 ~ +24	

2-PIPE ECOi EX MZ1 SERIES COMBINATION FROM 16 TO 48 HP · R32

HP		16 HP		18 HP		20 HP		20 HP		22 HP		24 HP		24 HP		26 HP		28 HP		28 HP		30 HP		30 HP		32 HP		32 HP		32 HP	
Outdoor unit		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**	
		U-8MZ1E8		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**	
														U-8MZ1E8		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-8MZ1E8**	
																														U-8MZ1E8	
Capacity	kW	44,8	50,0	50,4	56,5	55,9	62,5	56,0	63,0	61,5	69,0	67,0	75,0	67,2	75,0	72,8	81,5	78,3	87,5	78,4	88,0	83,9	94,0	84,0	94,5	89,4	100,0	89,5	100,0	89,6	100,0
EER [1] — COP [1]	W/W	3,20	4,50	3,40	4,30	3,10	4,10	3,50	4,20	3,20	4,10	3,00	3,90	3,20	4,40	3,30	4,40	3,10	4,20	3,40	4,30	3,20	4,20	3,50	4,20	3,00	4,10	3,30	4,10	3,20	4,50
SEER [2] / $\eta_{s,c}$		**7,24 / 286,8%**		**7,56 / 299,6%**		**7,29 / 288,9%**		**7,82 / 310,1%**		**7,55 / 299,1%**		**7,33 / 290,2%**		**7,24 / 286,8%**		**7,46 / 295,6%**		**7,23 / 286,3%**		**7,61 / 301,5%**		**7,45 / 295,1%**		**7,82 / 310,1%**		**7,26 / 287,4%**		**7,63 / 302,4%**		**7,24 / 286,8%**	
SCOP [2] / $\eta_{s,h}$		**4,32 / 169,8%**		**4,33 / 170,3%**		**4,29 / 168,8%**		**4,38 / 172,2%**		**4,34 / 170,7%**		**4,33 / 170,2%**		**4,32 / 169,8%**		**4,31 / 169,5%**		**4,34 / 170,9%**		**4,35 / 171,2%**		**4,33 / 170,4%**		**4,38 / 172,4%**		**4,31 / 169,6%**		**4,38 / 172,2%**		**4,32 / 169,8%**	

HP		34 HP		34 HP		36 HP		36 HP		36 HP		38 HP		38 HP		40 HP		40 HP		40 HP		42 HP		42 HP		44 HP		44 HP		46 HP		48 HP	
Outdoor unit		**U-10MZ1E8**		**U-8MZ1E8**		**U-12MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**	
		U-12MZ1E8		**U-8MZ1E8**		**U-12MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**	
		U-12MZ1E8		**U-8MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-8MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**	
				U-10MZ1E8				**U-10MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-10MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**		**U-12MZ1E8**	
Capacity	kW	95,0	106,0	95,2	106,0	100,0	112,0	100,0	113,0	100,0	112,0	106,0	119,0	106,0	119,0	111,0	125,0	112,0	126,0	111,0	125,0	117,0	131,0	117,0	132,0	122,0	137,0	123,0	138,0	128,0	144,0	134,0	150,0
EER [1] — COP [1]	W/W	3,10	4,00	3,30	4,40	3,00	3,90	3,30	4,30	3,10	4,20	3,20	4,20	3,40	4,30	3,10	4,10	3,50	4,30	3,20	4,20	3,10	4,10	3,30	4,20	3,00	4,00	3,20	4,10	3,00	4,00	3,00	4,00
SEER [2] / $\eta_{s,c}$		**7,47 / 295,9%**		**7,37 / 291,8%**		**7,37 / 292,0%**		**7,53 / 298,2%**		**7,25 / 287,0%**		**7,36 / 291,7%**		**7,66 / 303,4%**		**7,30 / 289,0%**		**7,82 / 310,1%**		**7,53 / 298,2%**		**7,43 / 294,4%**		**7,65 / 303,2%**		**7,28 / 288,5%**		**7,56 / 299,4%**		**7,41 / 293,7%**		**7,37 / 292,1%**	
SCOP [2] / $\eta_{s,h}$		**4,35 / 171,3%**		**4,29 / 168,7%**		**4,33 / 170,3%**		**4,33 / 170,3%**		**4,32 / 170,1%**		**4,31 / 169,6%**		**4,36 / 171,4%**		**4,29 / 168,8%**		**4,38 / 172,2%**		**4,34 / 170,6%**		**4,35 / 171,0%**		**4,36 / 171,6%**		**4,33 / 170,3%**		**4,34 / 170,7%**		**4,35 / 171,2%**		**4,33 / 170,3%**	

1) EER and COP calculation is based in accordance to EN 14511. 2) SEER / SCOP is calculated based on the seasonal space cooling / heating efficiency "η" values of the COMMISSION REGULATION (EU) 2016/2281. SEER, SCOP = (η + Correction) × PEF. SEER / SCOP and $\eta_{s,c}$ / $\eta_{s,h}$ are in accordance with ErP test data for U2 type 4 way 90x90 cassette indoor units. 3) Piping diameter under 90 m for ultimate indoor unit / over 90 m for ultimate indoor unit (if the longest piping equivalent length exceeds 90 m, increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes). 4) If the following conditions are satisfied, the effective range is above 130% and below 200%: A. Obey the limited number of connectable indoor units. B. The lower limit of operating range for heating outdoor temperature is limited to -10 °C WB (standard -25 °C WB). C. Simultaneous operation is limited to less than 130% of connectable indoor units.

2-PIPE ECOi EX MZ1 SERIES R32 INDOOR UNITS RANGE

Indoor units		Model reference	1,0 kW 10	1,5 kW 15	2,2 kW 22	2,8 kW 28	3,6 kW 36	4,5 kW 45	5,6 kW 56	6,0 kW 60	7,3 kW 73	9,0 kW 90	10,6 kW 106	11,2 kW 112	14,0 kW 140	16,0 kW 160
U2 type 4 way 90x90 cassette		**S-***MU2E5C			•	•	•	•	•	•	•	•		•	•	•
Y3 type 4 way 60x60 cassette		**S-***MY3EB		•	•	•	•	•	•							
F3 type variable static pressure adaptive duct		**S-***MF3E5D		•	•	•	•	•	•	•	•	•		•	•	•
NEW M2 type slim variable static pressure hide-away		**S-***MM2EB	•	•	•	•	•	•	•							
NEW K3 type wall-mounted		**S-***MK3E		•	•	•	•	•	•		•		•			
NEW hydronic modules																
NEW energy recovery ventilation with DX coil - HRPT Series		Tentative														
NEW AHU connection kits																

2-PIPE ECOi EX MZ1 SERIES R32 CONTROL RANGE

R32 safety measures

CZ-CGLSC2
Leak detector for indoor units type MU2, MY3 and MK3.

CZ-CGLALC1
R32 refrigerant leak alarm for indoor units type MF3 and MM2.

CZ-P1160SVK
2-pipe safety valve.

PAW-16DC-ALC1
External 16 V power supply.

Centralised controls

CZ-64ESMC3
System controller for 64 indoor units with weekly timer.

CZ-ANC3
Central ON / OFF controller, up to 16 groups, 64 indoor units.

CZ-256ESMC3
Intelligent controller (touch screen/web server) to control up to 256 indoors.

CZ-CSWKC2
P-AIMS core software: Centralised software to control up to 1024 indoor units.

Single controls

CZ-RTC6W / CZ-RTC6WBL / CZ-RTC6WBLW2*
CONEX wired remote controller:
· Non-wireless, white.
· With Bluetooth®, white.
· With Wi-Fi and Bluetooth®, white.

CZ-RTC6 / CZ-RTC6BL / CZ-RTC6BLW2*
CONEX wired remote controller:
· Non-wireless, black.
· With Bluetooth®, black.
· With Wi-Fi and Bluetooth®, black.

CZ-RTC5B
Design wired remote controller with Econavi function.

CZ-RWS3 + CZ-RWRY3
Infrared remote controller and receiver for indoor unit type MY3 with panel.

CZ-RWS3 + CZ-RWRU3W
Infrared remote controller and receiver for indoor unit type MU2.

CZ-RWS3
Infrared remote controller for indoor unit type MK3.

CZ-RWS3 + CZ-RWRC3
Infrared remote controller and receiver for all indoor units.

SER8150R0B1194
SER8150R5B1194
Remote controller:
· Panasonic Net Con, RH, No PIR, R1/R2
· Panasonic Net Con, RH, PIR, R1/R2

Accessories and interfaces

CZ-CENSC1	Econavi energy saving sensor.
CZ-CSRC3	Remote temperature sensor.
CZ-CAPWFC2	Commercial Wi-Fi Adaptor.
PAW-RC2-MBS-1	Modbus RTU interface.
PAW-AZRC-MBS-1	Modbus RTU interface (Airzone).
PAW-RC2-BAC-1	BACnet IP and MSTP.
PAW-AZRC-BAC-1	BACnet IP and MSTP interface (Airzone).
PAW-RC2-KNX-1i	KNX interface.

PAW-AZRC-KNX-1	KNX interface (Airzone).
PAW-RC2-MBS-4	Modbus RTU interface to control 4 indoor/groups.
PAW-AC2-BMS-16/64/128	A unified interface supporting Modbus, BACnet, and KNX protocols for up to 16/64/128 indoor units.
CZ-CLNC2	LonWorks® Interface controls up to 16 groups and 64 indoor units.
CZ-CAPC3	Adaptor for ON / OFF control of external devices.

CZ-CAPBC2	Mini series parallel device controlling indoor units, maximum 1 group and 8 indoor unit.
CZ-CFUNC2	Communication adaptor. Up to 128 groups. Controls 128 units.
CZ-T10	Cable for all the T10 functions.
PAW-FDC	Cable to operate external EC fan.
PAW-OCT	Cable for all option monitoring signals.
PAW-EXCT	Cable with force thermo OFF/leakage detection.

* BLW2 are models available except for the indoor unit type MU2.

nanoe™ X

Bringing nature's balance indoors.

All air to air indoor units are equipped with nanoe™ X for improved indoor air quality.

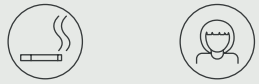
nanoe™ X, technology with the benefits of hydroxyl radicals.
Abundant in nature, hydroxyl radicals have the capacity to inhibit pollutants. nanoe™ X, technology can bring these incredible benefits indoors so that hard surfaces, soft furnishings, and the indoor environment can be a cleaner and pleasant place to be.

7 effects of nanoe™ X – Panasonic unique technology.

Capacity to inhibit 5 types of pollutants

Bacteria and viruses | Mould | Allergens | Pollen | Hazardous substances

Deodorises | **Moisturises**



Odours | Skin and hair

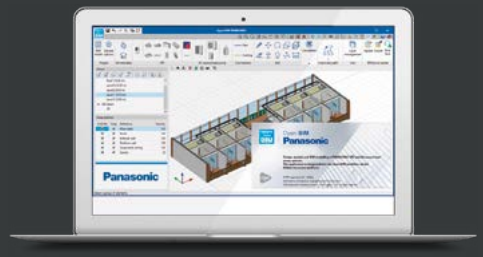
Find out more

Panasonic provides bespoke software and tools to help system designers, installers, and dealers design and size HVAC systems.

Panasonic DX PRO Designer.

Panasonic DX PRO DESIGNER

Open BIM.



Panasonic OPEN BIM

AutoCAD.

PRO Club

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EU-LFTECOIEXMZ10924/01