



## Panasonic®

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<p><b>Quality Management System Certificate</b></p>  <p>Certified to ISO 9001:2008                  Cert. No.: MF-AR 1010</p>	<p><b>Certified to ISO 9001:2008</b></p> <p>Panasonic HA Air-Conditioning (M) Sdn.Bhd.                  Cert. No.: MF-AR 1010</p>	
<p><b>Environmental Management System Certificate</b></p>  <p>Certified to ISO 14001:2004                  Cert. No.: MF-ER 0112</p>	<p><b>Certified to ISO 14001:2004</b></p> <p>Panasonic HA Air-Conditioning (M) Sdn.Bhd.                  Cert. No.: MF-ER 0112</p>	



## 2016 Full Line Catalog



Variable Refrigerant Flow (VRF), Multi-Zone,  
 Heat Pump & Heat Recovery Systems



Because its products are subject to continuous improvements, Panasonic reserves the right to modify product design and specifications without notice and without incurring any obligations.  
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**Caution Related to Safety** Do not add or replace refrigerant other than the specified type. Manufacturer is not responsible for the damage and deterioration in safety due to usage of other refrigerant.



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## A Better Life, A Better World

Since the founding of Panasonic Corporation in 1918, the management philosophy behind all of our activities has driven us to contribute, through our business operations, to the improvement of people’s lives and the progress of society. We will always maintain this focus.

In 2018, Panasonic will celebrate its 100th anniversary. As we prepare to greet a new century in business, the world is witnessing a major turning point in society and in the way we live. It is no longer practical to pursue extravagant lifestyles that consume large amount of resources and energy.

We need to create new value for a new way of living that minimizes the burden we place on the environment, while raising everyone’s standard of living. This is our mission: to create new lifestyle values.

Panasonic complete air conditioning solutions—including hardware, software, and service—enhance the spaces where people live and work. Through this offering, we are committed to delivering *A Better Life, A Better World* to every customer.



We are committed to becoming a partner in the lives of people all over the world.

## For the Living Inside & Out.

### Contractors

#### Building support

At Panasonic, we realize contractors are looking for turnkey installation and support. ECOi™ VRF is simply the perfect building solution. With its modular design and ease of installation, it’s a solution that can grow with any building project. In fact, ECOi™ may just make you remember why you got into the HVAC business in the first place.

### Engineers

#### ECOi™ Designing with confidence

Its flexibility allows multiple applications and installation configurations. With a maximum pipe length of up to 1,640 Heat Recovery /3,280 feet Heat Pump with up to 52/64 (Heat Recovery / Heat Pump) indoor units connected to one outdoor system, you can engineer a perfect solution for all your project needs. ECOi™ is a superior modular option that allows floor-by-floor commissioning.

### Architects

#### Design Freedom, now there’s an idea.

Of course, nobody understands this more than the architects who design them. That’s why the ECOi™ HVAC system provides more freedom to meet any design need. With space saving and environmentally friendly designs, and ultimate efficiency, you can design your vision first then marry our system fluidly within your plans.

### Owners & Tenants

#### All-day comfort

With immediate response to changing room capacity heat loads and varying sun exposures throughout the day, everybody stays cool and comfortable. ECOi™ ensures individual zone temperature control so each office or room can be adjusted for personalized comfort.

ECOi™ can grow with you, too. As remodeling occurs and building extensions are planned, ECOi™’s modularity lets you easily add on to the system. With intelligent controllers, VRF technology and R410A refrigerant, ECOi™ guarantees continued energy savings and eco-responsibility for years to come.

## ECOi™ – Your Building Life Tool.

ECOi™ has a number of diverse features to meet all your conditioning needs, including flexible combinations: ECOi™ allows multiple indoor unit combinations that provide the utmost in versatility. The system allows up to 150% connectable capacity between indoor and outdoor units of heat pump and heat recovery.

Inverter Control Compressor: All ECOi™ systems utilize highly advanced inverter controlled compressor technology. By varying the rotational speed of the compressor, the inverter control can precisely match the amount of refrigerant being delivered to each zone.

This intelligent approach helps realize excellent efficiencies during partial-load conditions. This allows occupants to enjoy consistent room temperature, regardless of any increases or decreases in the heat or cooling load during the day. With energy efficiency in mind, ECOi™ quite simply knows what you need, when you need it throughout the day. In conjunction with ECONAVI™, it dynamically adjusts air conditioning occupied or unoccupied zones, maximizing energy savings.

Lower running and life cycle costs: ECOi™ VRF are among the most efficient HVAC systems on the market, offering COPs up to 4.0 at full load conditions.

All VRF systems are designed to maximize the reduction of running cost by using our unique intelligent control sequence. This is done by the most efficient combination of compressor, fan, and refrigeration management criteria.

Improved defrost sequencing reduces running cost and defrost cycle.



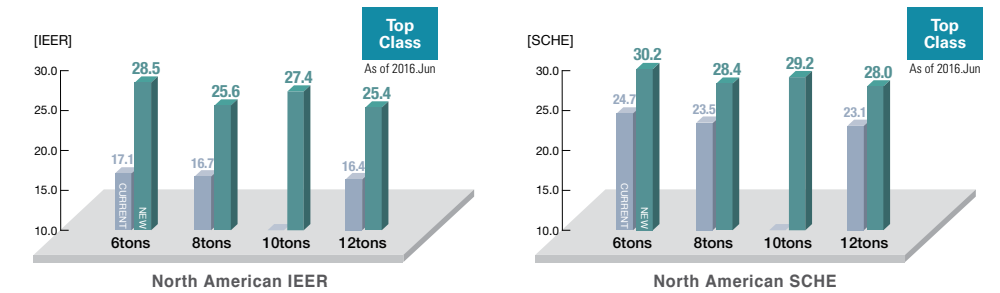
# Product Advantages



## Outstanding Energy-Saving Performance

IEER up to 28.5 / SCHE up to 30.2 (6, 8, 10, 12 tons) top level in the industry

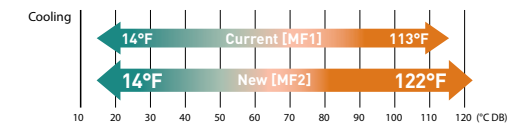
Thanks to the all-inverter compressors combinations with improved combined triple-surface heat exchanger and medium cooling capacity, the new MF2 3-way series with new 10 and 12 ton capacity units achieve the industry's top level energy saving performance.



## Extended Operating Range

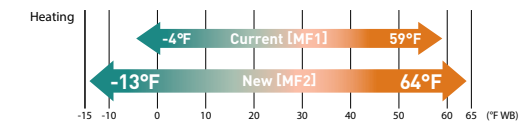
Cooling operation range: 14°F (WB) to 122°F (DB)

The cooling operation range has been extended up to 122°F(DB) (Up to 113°F with current models). Cooling is also possible when outdoor temperature is 14°F (WB). Suitable for use in cold regions where year-round cooling is required, as well as in hot regions where cooling is needed the most.



Heating operation range: -13°F to 64°F

The heating operation range has been extended to -13°F to 64°F by use of a compressor with a high-pressure vessel. Provides powerful heating even in the extremely cold regions.



## Exceptional Design Flexibility

Up to 30 tons large-capacity single refrigerant system

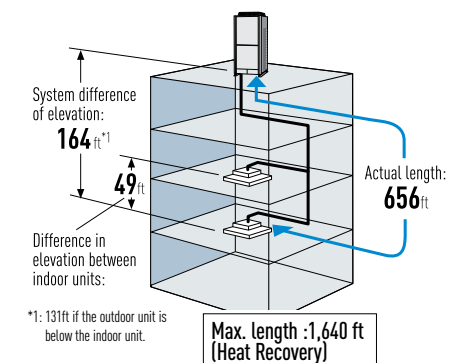
Combined outdoor units delivering a maximum of up to 30 tons. (Ducted combination)



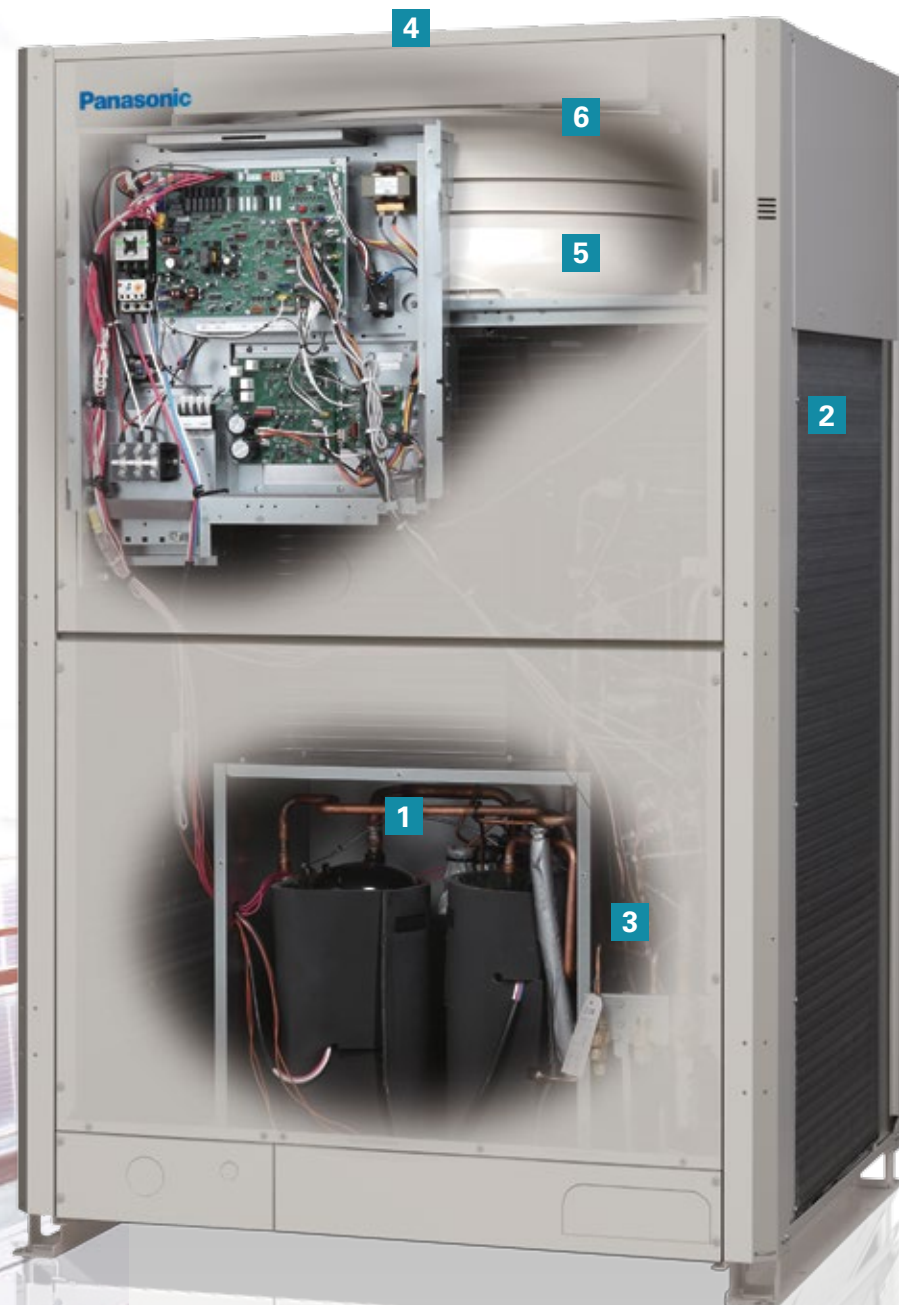
Long actual piping length of max. 656ft

The accumulator, compressor and oil separator are combined in a single unit to enable long 656ft piping (equivalent to 689ft) 164ft after first branch. This extends the piping distance between indoor units and outdoor units.

(Current models: 492/574ft, 131ft after branching)



# Core Technologies



## Outstanding Energy-saving Technology

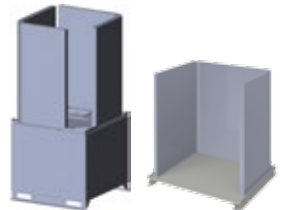
### 1 Dual large-capacity inverter compressors

Two independently controlled inverter compressors achieve high efficiency (for models U-120MF2U9/U-120ME2U9 and above).



### 2 Enlarged heat-exchanger surface area with triple surface

- The new large size heat exchanger features a 3-sided construction. Compared to the conventional 2 (upper/lower) compartment outdoor unit structure, the new model offers more efficient heat exchanging performance.



Current model [MF1/ME1] 6, 8 tons      New model [MF2/ME2] 6, 8, 10, 12 tons

### 3 Gas-liquid separation + oil separation for increased efficiency

- Accumulator : Increases gas-liquid separation efficiency to reduce compressor pressure loss.
- Oil separator : Efficiently separates and absorbs refrigeration oil to prevent it flowing into the heat exchanger.

## Redesigned for Smooth and Better Air Discharge

### 4 Large air discharge area with new flush surface top panel.

To reduce air resistance, instead of a tubular fan design, a new large flat fan guard design, flush with the top panel, is employed.

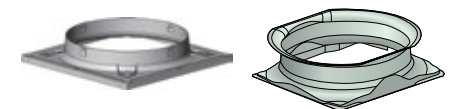
This design lead to the improvements in air resistance, but also contributed to improved air resistance in a more attractive appearance.



Current model [MF1/ME1]      New model [MF2/ME2]

### 5 Newly designed curved air discharge bell mouth for better aerodynamics

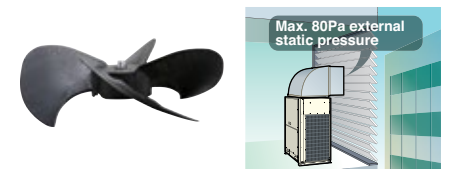
The new curved shape with integrated top and bottom assure smooth air discharge flow. Minimal swirling means an increased flow rate.



Current model [MF1/ME1]      New model [MF2/ME2]

### 6 High 0.32 inch W.C. external static pressure – large diameter fan (27-1/2")

A large, newly-designed 27-1/2" diameter fan. High 0.32 inch W.C. external static pressure maintains performance in winds around large buildings. Ideal for high-rise buildings.



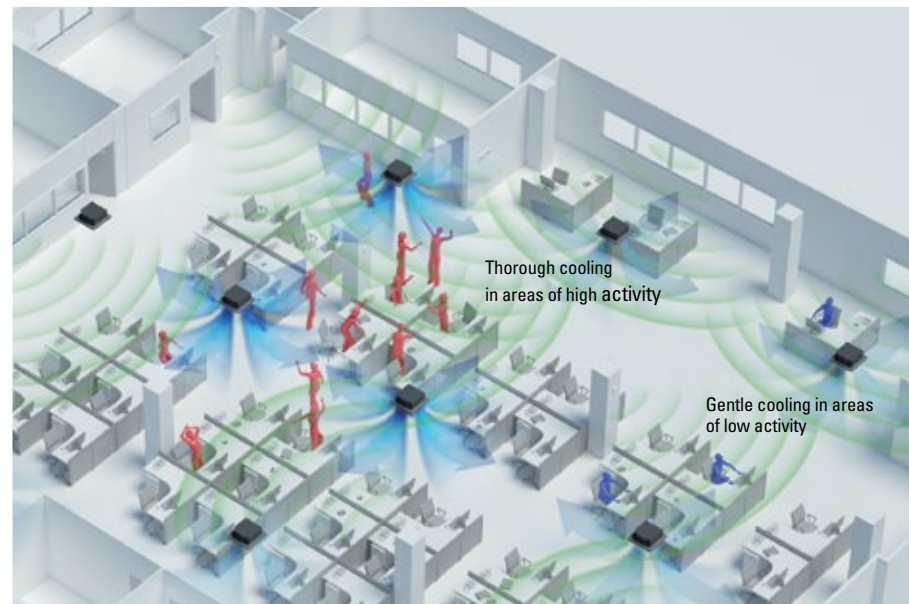


# New ECOi EX™ Series

# ECONAVI

## ECONAVI Detects Inefficiencies and Saves Energy

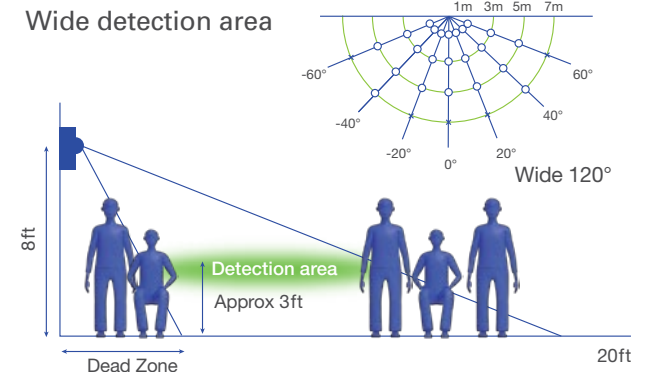
Providing outstanding energy-saving performance, Panasonic inverter VRF System can be connected to ECONAVI to detect energy waste. ECONAVI senses the presence or absence of people and the level of activity in each area of an office. When unnecessary heating or cooling is detected, indoor units are individually controlled to match office conditions for energy-saving operation.



Compatible with various types of indoor units



Remote ECONAVI sensor allows optimum energy operation



A sensor is remotely set to maximise the detection area.  
Installation flexibility ready for indoor unit replacement and layout changes.



Detection of activity levels enables precise power saving.

Presence or absence of people at their desks and the level of activity in the office are detected in real time. Set temperature is automatically adjusted to optimize the lower power consumption.



**In the morning**  
Thorough cooling during high levels of activity



**In the afternoon**  
Reduced cooling fewer people are present



**At night**  
Automatic Thermo Off depending on conditions at end of day\*

### Human activity and presence detection

Activity detection		Absence detection	
HIGHER ACTIVITY	LOWER ACTIVITY	After 20 mins absence	After 3 hours absence
Cooling Set Temp. +/-0.0°F	Cooling Set Temp. +1.8°F	Cooling Set Temp. +3.6°F	Cooling Thermo OFF*
Heating Set Temp. -1.8°F	Heating Set Temp. +/-0 °F	Heating Set Temp. -3.6°F	Heating Thermo OFF*
Every 2 min	Every 2 min	After 3 hours the setting can change to Stop or Temperature Shift	



\*Depending on conditions, the setting can change to Switch Off After 3 Hours, Thermo Off or Temperature Shift.

# New Solenoid Valve Kit

## Multiple Connection Port Type

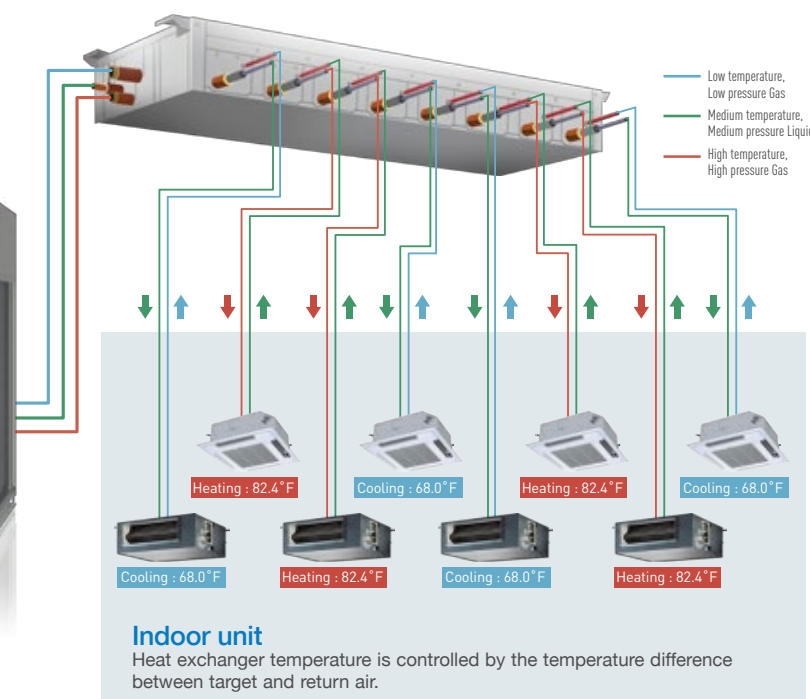
Our new Solenoid Valve Kit makes field installation easier. Multiple port solenoid valve kits reduces the amount of tubing and branch distribution kits required for installation. Main refrigerant tubing inlet and outlet included to aid in system design, piping layout and cost of installation.

## System Structure

To control output modulation, the system sets the appropriate frequency of the compressor to insure it meets the output required to satisfy each zone.

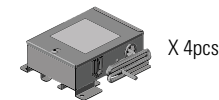


## Solenoid Valve Kit

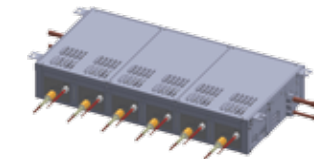
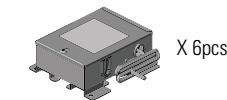


## New Model

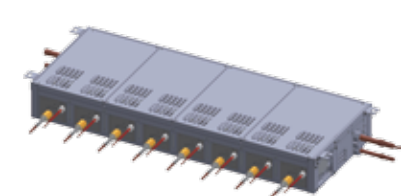
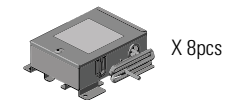
CZ-P456HR2U  
CZ-P4160HR2U



CZ-P656HR2U



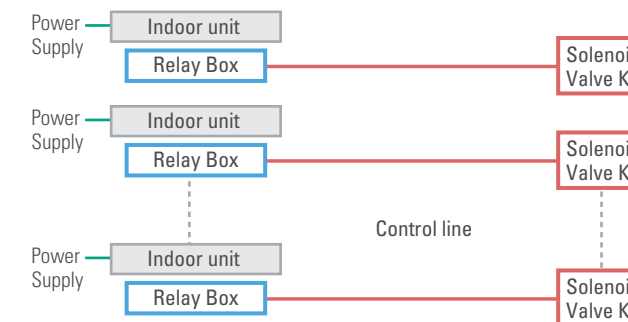
CZ-P856HR2U



	1 port	4 port	6 port	8 port
56 type	CZ-P56HR2U	CZ-P456HR2U	CZ-P656HR2U	CZ-P856HR2U
160 type	CZ-P160HR2U	CZ-P4160HR2U	--	--

## Solenoid Valve Kit / Wiring Work

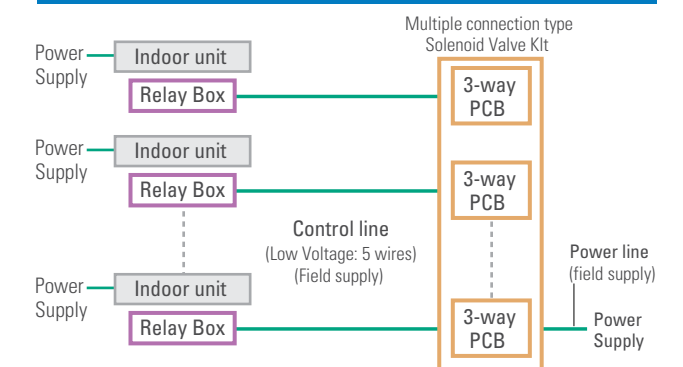
### Current Model / Single Connection Type



Parts included in HR2 Ukit



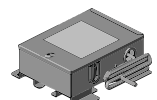
### New Model / Multiple Connection Type



Parts included in HR2 Ukit

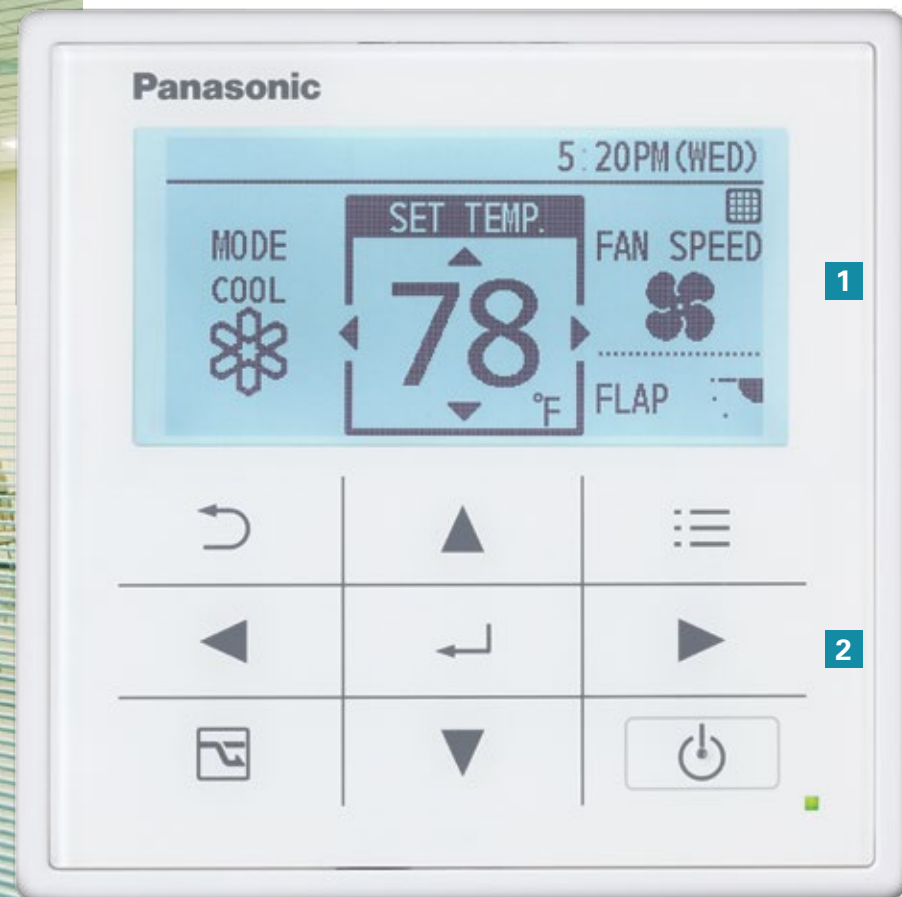


Signal Relay Box (accessory included)





# High-spec Wired Remote Controller



(CZ-RTC5) **NEW**

## 1 Large 3.5" Full-dot LCD with White LED Backlight

Characters and icons are clearly displayed for improved visibility. The display is also large enough to provide a wide range of information for easy confirmation of operation conditions.

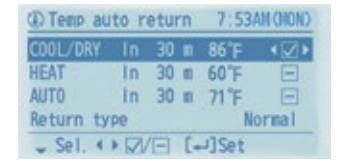
## 2 Stylish, Easy-to-use Touch Key Design

The elegant, flat design features large touch keys in a simple layout enabling easy, intuitive operation.

## Multiple Control Setting Functions for More Energy Saving

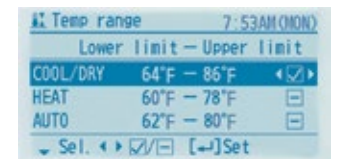
### Temperature Auto Return

Even if you change the temperature setting, it automatically returns to the original setting after a set time. You can set temperature auto return time in 10-minute intervals within a 4-hour period.



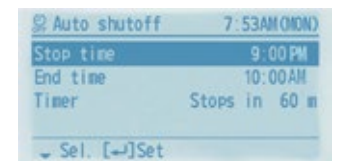
### Temperature Setting Range

Both maximum and minimum temperature settings can be limited. Doing this helps reduce power consumption due to over cooling or heating. Setting is possible in the Cooling, Heating and Dry modes.



### Auto Shutoff

Air conditioning operation can be programmed to stop its operation automatically after a set time, so you don't have to worry about forgetting to switch the unit off. Even if you manually switch the unit back on after it has stopped, the program will continue to activate and continue to switch off the operation after a set time.

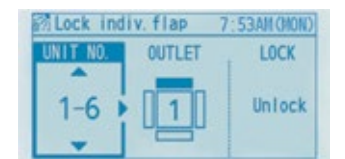


## Other Convenient Controls

### Individual Louver Control

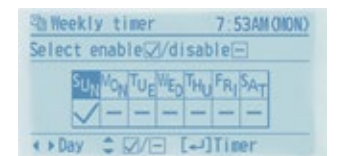
(Lock individual flap only for 4-way cassette MU type)

Each of the 4-directional outlets can be selected and locked to provide efficient air distribution that matches the indoor unit layout. Indoor units can be set individually.



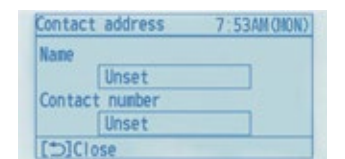
### Weekly Timer

This lets you select 8 Start/Stop times and temperature presets for each day of the week.



### Service Contact Address

Once you register your service contact details, they are automatically displayed if a problem with the air conditioner occurs. This helps you deal with the situation quickly.



#### Menu items

- Basic instructions
- FLAP
- Individual louver control (Lock individual flap only for 4-way cassette MU type)
- ON/ OFF timer
- Weekly timer
- Filter information
- Outing function
- Quiet operation mode
- Energy saving
- Initial settings
- Ventilation

#### Energy Saving

- Temperature auto return
- Temperature setting range
- Auto shutoff
- Schedule peak cut
- Repeat off timer
- ECONAVI on/ off

#### Maintenance Function

- Outdoor unit error data
- Service Contact address
- RC setting mode
- Test Run
- Sensor Information
- Service check
- Simple/ Detailed Settings
- Auto address

# MF 2 SERIES

## ECOi EX™ 3-WAY VRF

### HEAT RECOVERY

Panasonic ECOi Heat Recovery series offers the ability to heat and cool different zones simultaneously. Offering all the features of our standard heat pump series, the 3-Way solution can offer even higher energy savings for the building owner.



#### KEY FEATURES:

Commercial office buildings are subject to fluctuating heat levels generated from electronic office equipment, lighting and varying occupant levels. Hotels, nursing homes and other commercial living spaces often have times when occupants will want either heating or cooling at the same time. The heat recovery system offers the perfect solution for stabilizing the air temperature by providing all the features of a heat pump system - and the added flexibility of simultaneous cooling and heating from one refrigerant pipe network.

- \* Excellent performance: efficient individual air conditioning is possible in buildings having diverse room temperatures for simultaneous heating/cooling and individual operation of each indoor unit
- \* Effective heat recovery system enables higher energy savings
- \* Improves discharge air temperature of indoor units during heating and simultaneous mode operation

MODEL NAME	U-72MF2U9	U-96MF2U9	U-120MF2U9	U-144MF2U9	WU-168MF2U9	WU-192MF2U9	WU-216MF2U9	WU-240MF2U9	WU-264MF2U9	WU-288MF2U9	WU-312MF2U9	WU-336MF2U9	WU-360MF2U9				
Consisted of	U-72MF2U9	U-96MF2U9	U-120MF2U9	U-144MF2U9	U-72MF2U9 +U-96MF2U9	U-72MF2U9 +U-120MF2U9	U-96MF2U9 +U-120MF2U9	U-120MF2U9 +U-120MF2U9	U-120MF2U9 +U-144MF2U9	U-144MF2U9 +U-144MF2U9	U-72MF2U9 +U-120MF2U9 +U-120MF2U9	U-96MF2U9 +U-120MF2U9 +U-120MF2U9	U-120MF2U9 +U-120MF2U9				
Appearance																	
Nominal Tons	6	8	10	12	14	16	18	20	22	24	26	28	30				
Performance test condition	AHRI Standard 1230																
Power supply	3φ 208/230V 60Hz																
Cooling capacity	Btu/h kW	72,000 21.1	96,000 28.1	120,000 35.2	144,000 42.2	168,000 49.2	192,000 56.3	216,000 63.3	240,000 70.3	264,000 77.4	288,000 84.4	312,000 91.4	336,000 98.4	360,000 105.5			
Heating capacity	Btu/h kW	81,000 23.7	108,000 31.6	135,000 39.6	162,000 47.5	189,000 55.4	216,000 63.3	243,000 71.2	270,000 79.1	297,000 87.0	324,000 94.9	351,000 102.8	378,000 110.8	405,000 118.7			
Rating Standard AHRI 1230	Indoor unit	Ducted   Non-ducted															
		Capacity	Btu/h	69,000   69,000	92,000   90,000	114,000   114,000	138,000   138,000	160,000   160,000	184,000   184,000	184,000   202,000	210,000   224,000	250,000   250,000	262,000   264,000	298,000   -	320,000   -	342,000   -	
	EER		12.7   13.3	11.1   10.8	11.7   11.7	11.7   10.4	10.8   10.6	10.8   10.7	10.4   10.4	10.5   10.4	9.5   9.5	9.3   9.5	9.9   -	9.3   -	9.4   -		
	IEER		22.3   28.5	23.2   25.6	22.4   27.4	22.0   25.4	19.7   24.9	20.0   24.9	19.7   25.2	19.1   24.4	18.8   23.6	18.9   22.8	18.8   -	18.9   -	18.6   -		
	High heating 47°F	Capacity	Btu/h	77,000   77,000	103,000   103,000	129,000   129,000	154,000   154,000	180,000   176,000	206,000   202,000	232,000   216,000	258,000   232,000	274,000   250,000	278,000   266,000	334,000   -	360,000   -	386,000   -	
		COP		3.70   3.90	3.32   3.39	3.69   3.66	3.26   3.32	3.29   3.22	3.42   3.21	3.28   3.21	3.30   3.25	3.20   3.22	3.21   3.21	3.35   -	3.26   -	3.32   -	
Low heating 17°F	Capacity	Btu/h	56,000   56,000	70,000   62,000	93,000   90,000	100,000   96,000	126,000   118,000	148,000   146,000	162,000   164,000	184,000   176,000	192,000   186,000	200,000   192,000	242,000   -	256,000   -	270,000   -		
	COP		2.66   2.56	2.44   2.38	2.51   2.46	2.42   2.53	2.47   2.70	2.49   2.62	2.45   2.33	2.43   2.35	2.39   2.31	2.34   2.27	2.45   -	2.42   -	2.40   -		
SCHE		27.6   30.2	29.8   28.4	29.1   29.2	28.0   28.0	26.4   27.2	25.8   24.9	23.7   23.8	24.2   23.4	22.4   23.2	19.2   21.6	24.1	23.3	22.8			
Electrical ratings Outdoor unit only	Voltage	V	208 / 230														
		Running current	A	14.4 / 13.2	22.0 / 20.1	25.8 / 23.6	30.7 / 28.0	39.9 / 36.5	46.2 / 42.2	47.6 / 43.5	53.7 / 49.1	71.0 / 64.9	76.1 / 69.6	82.0 / 75.0	94.6 / 86.5	99.7 / 91.1	
	Ducted cooling	Power input	kW	4.89 / 4.89	7.46 / 7.46	8.73 / 8.73	10.5 / 10.5	13.5 / 13.5	16.1 / 15.6	16.1 / 16.1	18.2 / 18.2	24.3 / 24.3	26.1 / 26.1	27.8 / 27.8	32.0 / 32.0	33.8 / 33.8	
		Power factor	%	94 / 93	94 / 93	94 / 93	95 / 94	94 / 93	94 / 93	94 / 93	94 / 93	95 / 94	95 / 94	94 / 93	94 / 93	94 / 93	
	Ducted heating	Running current	A	16.4 / 15.0	24.7 / 22.5	27.3 / 24.9	37.1 / 33.9	43.9 / 40.1	47.9 / 43.8	56.4 / 51.5	62.1 / 56.7	67.9 / 62.0	68.4 / 62.5	79.0 / 72.2	88.1 / 80.5	92.4 / 84.4	
		Power input	kW	5.62 / 5.62	8.35 / 8.35	9.34 / 9.34	12.7 / 12.7	14.9 / 14.9	16.4 / 16.4	19.3 / 19.3	21.3 / 21.3	23.2 / 23.2	23.4 / 23.4	27.1 / 27.1	30.1 / 30.1	31.6 / 31.6	
	Non-ducted cooling	Power factor	%	95 / 94	94 / 93	95 / 94	95 / 94	94 / 93	95 / 94	95 / 94	95 / 94	95 / 94	95 / 94	95 / 94	95 / 94	95 / 94	
		Running current	A	14.0 / 12.8	23.0 / 21.0	26.8 / 24.5	36.8 / 33.6	42.6 / 39.0	48.2 / 44.1	54.6 / 49.9	60.5 / 55.3	74.3 / 67.9	78.3 / 71.6	-	-	-	
	Non-ducted heating	Power input	kW	4.74 / 4.74	7.78 / 7.78	9.16 / 9.16	12.6 / 12.6	14.4 / 14.4	16.5 / 16.5	18.7 / 18.7	20.7 / 20.7	25.4 / 25.4	26.8 / 26.8	-	-	-	
		Power factor	%	94 / 93	94 / 93	95 / 94	95 / 94	94 / 93	95 / 94	95 / 94	95 / 94	95 / 94	95 / 94	-	-	-	
	Starting current	Running current	A	15.9 / 14.5	25.0 / 22.9	28.8 / 26.4	38.3 / 35.0	45.7 / 41.8	52.2 / 47.7	55.9 / 51.1	59.1 / 54.0	64.3 / 58.8	68.6 / 62.7	-	-	-	
		Power factor	%	95 / 94	94 / 93	95 / 94	95 / 94	94 / 93	95 / 94	95 / 94	95 / 94	95 / 94	95 / 94	-	-	-	
	Compressor type/quantity		Inverter driven Rotary x1		Inverter driven Rotary x2		Inverter driven Rotary 1+1	Inverter driven Rotary 1+2	Inverter driven Rotary 1+2	Inverter driven Rotary 2+2	Inverter driven Rotary 2+2	Inverter driven Rotary 2+2	Inverter driven Rotary 1+2+2	Inverter driven Rotary 1+2+2	Inverter driven Rotary 2+2+2		
	Air flow rate	CFM	7,000	8,100	9,000	9,000	7,000+8,100	7,000+9,000	8,100+9,000	9,000+9,000	9,000+9,000	9,000+9,000	7,000+9,000+9,000	8,100+9,000+9,000	9,000+9,000+9,000		
External static pressure	Pa [in. WC]	80															
Refrigerant amount at shipment*2	lbs	R410A / 18.3	R410A / 18.3	R410A / 22.0	R410A / 26.0	R410A / 18.3+18.3	R410A / 18.3+22.0	R410A / 18.3+22.0	R410A / 22.0+22.0	R410A / 22.0+26.0	R410A / 26.0+26.0	R410A / 18.3+22.0+22.0	R410A / 18.3+22.0+22.0	R410A / 22.0+22.0+22.0			
Dimensions H x W x D	inch	72-33/64" x 46-29/64" x 39-3/8"				72-33/64" x 95-9/32" x 39-3/8"				72-33/64" x 95-9/32" x 39-3/8"				72-33/64" x 144-3/32" x 39-3/8"			
Net weight	lbs	595	597	752	756	595 + 597	595 + 752	597 + 752	752 + 752	752 + 756	756 + 756	595 + 752 + 752	597 + 752 + 752	752 + 752 + 752			
Ambient temperature operating range		Cooling: 14-122°FDB, Heating: -13-64°FWB															
Piping	Diameter	Gas	inch	3/4"	7/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"	1-3/8"	1-3/8"	1-5/8"		
		Liquid	inch	3/8"	3/8"	1/2"	1/2"	5/8"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"		
		Balance	inch	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"		
		Discharge	inch	5/8"	3/4"	7/8"	7/8"	7/8"	7/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"		
	Connecting method		(Liquid,Balance)Flared,(Gas)Brazeing						(Liquid,Balance)Flared,(Gas)Brazeing								
	Max total pipe length	Ft	~1,640														
Elevation difference [OD upper/ OD lower]	Ft	164 / 131															
Operation sound [Normal/Quiet mode]	dB	53.0 / 50.0	56.0 / 53.0	57.5 / 54.5	58.0 / 55.0	58.0 / 55.0	59.0 / 56.0	60.0 / 57.0	60.5 / 57.5	61.0 / 58.0	61.0 / 58.0	61.5 / 58.5	62.0 / 59.0	62.5 / 59.5			
Maximum allowable indoor unit connection		14	19	24	28	33	38	43	48	52	52	52	52				

\* NOTE: \*1 If the longest tubing equivalent length exceeds 295 ft. (90m), increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes.  
\*2 It's necessary to charge additional refrigerant of 70.5 oz (2.0 kg) per one outdoor unit.

\* NOTE: \*1 If the longest tubing equivalent length exceeds 295 ft. (90m), increase the sizes of the main tubes by 1 size for both gas tubes and liquid tubes.  
\*2 It's necessary to charge additional refrigerant of 70.5 oz (2.0 kg) per one outdoor unit.



# ME 2 SERIES ECOi EX™ 2-WAY VRF HEAT PUMP

The new ECOi EX VRF system, redesigned with new DC inverter compressor combination operations and perfected original active oil control system brings the efficiency and reliability you can count on.



### KEY FEATURES:

Panasonic's Combined ECOi EX 2-Way conditioning solution offers superior heating and cooling coupled with cost effective installation. A smart solution for large capacity jobs.

- \* Dual large-capacity inverter compressors (models above U-120MEU9)
- \* Outstanding energy saving performance: IEER : 19.1 / EER : 12.3 (in the case of 6 tons)
- \* Exceptional flexible piping design:  
Maximum total piping length - 3,280 Feet  
Maximum outdoor to most distant indoor unit - 164 Feet
- \* Extended operating range (Outdoor Temperature)  
- Cooling 14 °FDB to 122 °FDB  
- Heating -4 °FWB to 64 °FWB
- \* Maximum outdoor unit connects as many as 64 indoor units (50%-200% ratio of indoor to outdoor capacity)
- \* Expanded system capacity range (up to 30tons)

MODEL NAME	U-72ME2U9	U-96ME2U9	U-120ME2U9	U-144ME2U9	WU-168ME2U9	WU-192ME2U9	WU-216ME2U9	WU-240ME2U9	WU-264ME2U9	WU-288ME2U9	WU-312ME2U9	WU-336ME2U9	WU-360ME2U9			
Consisted of	U-72ME2U9	U-96ME2U9	U-120ME2U9	U-144ME2U9	U-72ME2U9 +U-96ME2U9	U-96ME2U9 +U-96ME2U9	U-96ME2U9 +U-120ME2U9	U-72ME2U9 +U-72ME2U9 +U-96ME2U9	U-72ME2U9 +U-96ME2U9 +U-96ME2U9	U-96ME2U9 +U-96ME2U9 +U-96ME2U9	U-72ME2U9 +U-120ME2U9 +U-120ME2U9	U-96ME2U9 +U-120ME2U9 +U-120ME2U9	U-120ME2U9 +U-120ME2U9 +U-120ME2U9			
Appearance																
Nominal Tons	6	8	10	12	14	16	18	20	22	24	26	28	30			
Performance test condition	AHRI Standard 1230						AHRI Standard 1230									
Power supply	3φ 208/230V 60Hz															
Cooling capacity	Btu/h	72,000	96,000	120,000	144,000	168,000	192,000	216,000	240,000	264,000	288,000	312,000	336,000			
	kW	21.1	28.1	35.2	42.2	49.2	56.3	63.3	70.3	77.4	84.4	91.4	98.4			
Heating capacity	Btu/h	81,000	108,000	135,000	162,000	189,000	216,000	243,000	270,000	297,000	324,000	351,000	378,000			
	kW	23.7	31.6	39.6	47.5	55.4	63.3	71.2	79.1	87.0	94.9	102.8	110.8			
Rating Standard AHRI 1230	Indoor unit	Ducted   Non-ducted														
		Capacity	Btu/h	69,000   69,000	92,000   92,000	114,000   114,000	138,000   138,000	160,000   160,000	184,000   184,000	206,000   206,000	228,000   228,000	252,000   252,000	274,000   274,000	298,000   -	320,000   -	342,000   -
	Cooling	EER	12.3   12.6	11.9   11.9	11.5   11.8	10.9   10.7	11.7   11.6	11.2   11.1	11.0   10.9	10.7   10.8	10.2   10.1	9.8   9.6	10.4   -	10.3   -	10.1   -	
		IEER	19.1   22.1	19.3   23.1	19.3   24.8	18.7   22.6	19.0   23.2	18.4   22.6	18.0   22.3	17.7   22.8	17.3   20.8	16.9   19.5	17.7   -	17.2   -	16.6   -	
	High heating 47°F	Capacity	Btu/h	77,000   77,000	103,000   103,000	129,000   129,000	154,000   154,000	180,000   180,000	206,000   206,000	232,000   232,000	258,000   258,000	284,000   284,000	308,000   308,000	334,000   -	360,000   -	386,000   -
		COP	3.56   3.86	3.54   3.75	3.40   3.60	3.27   3.35	3.45   3.50	3.40   3.39	3.38   3.35	3.29   3.25	3.35   3.22	3.28   3.20	3.27   -	3.23   -	3.20   -	
	Low heating 17°F	Capacity	Btu/h	52,000   52,000	67,000   67,000	75,000   75,000	100,000   100,000	119,000   119,000	134,000   134,000	142,000   142,000	150,000   150,000	176,000   176,000	200,000   200,000	202,000   -	218,000   -	226,000   -
		COP	2.56   2.63	2.42   2.59	2.30   2.40	2.18   2.41	2.30   2.38	2.25   2.26	2.23   2.34	2.18   2.22	2.16   2.12	2.14   2.06	2.16   -	2.13   -	2.10   -	
	Electrical ratings Outdoor unit only	Voltage	V	208 / 230												
			Running current	A	14.3 / 13.1	19.0 / 17.4	24.4 / 22.3	31.9 / 28.8	35.8 / 32.7	42.1 / 38.5	47.5 / 43.5	55.2 / 50.5	65.3 / 59.0	74.7 / 67.6	77.5 / 70.9	82.7 / 75.6
Ducted cooling		Power input	kW	4.49 / 4.49	6.36 / 6.36	8.25 / 8.25	10.8 / 10.8	11.6 / 11.6	14.1 / 14.1	16.1 / 16.1	18.7 / 18.7	22.1 / 22.1	25.3 / 25.3	25.7 / 25.7	28.0 / 28.0	30.7 / 30.7
		Power factor	%	87 / 86	93 / 92	94 / 93	94 / 94	90 / 89	93 / 92	94 / 93	94 / 93	94 / 94	94 / 94	92 / 91	94 / 93	94 / 93
Ducted heating		Running current	A	16.7 / 15.2	21.6 / 19.8	27.9 / 25.5	35.1 / 31.8	40.7 / 37.2	46.5 / 42.5	52.2 / 47.8	58.8 / 53.7	65.6 / 59.3	73.5 / 66.5	81.5 / 74.5	88.3 / 80.8	95.1 / 86.9
		Power input	kW	5.22 / 5.22	7.16 / 7.16	9.45 / 9.45	11.9 / 11.9	13.2 / 13.2	15.4 / 15.4	17.5 / 17.5	19.9 / 19.9	22.2 / 22.2	24.9 / 24.9	27.0 / 27.0	29.6 / 29.6	32.2 / 32.2
Non-ducted cooling		Power factor	%	87 / 86	92 / 91	94 / 93	94 / 94	90 / 89	92 / 91	93 / 92	94 / 93	94 / 94	94 / 94	92 / 91	94 / 93	
		Running current	A	15.7 / 14.4	21.0 / 19.2	26.4 / 24.1	35.7 / 32.3	40.1 / 36.7	47.2 / 43.1	53.2 / 48.6	59.7 / 54.5	70.9 / 64.1	81.2 / 73.4	-	-	-
Non-ducted heating		Power input	kW	4.92 / 4.92	7.04 / 7.04	8.94 / 8.94	12.1 / 12.1	13.0 / 13.0	15.8 / 15.8	18.0 / 18.0	20.2 / 20.2	24.0 / 24.0	27.5 / 27.5	-	-	
		Power factor	%	87 / 86	93 / 92	94 / 93	94 / 94	90 / 89	93 / 92	94 / 93	94 / 94	94 / 94	94 / 94	-	-	
Starting current	A	1 / 1														
Compressor type/quantity	Inverter driven Rotary×1			Inverter driven Rotary×2		Inverter driven Rotary 1+1	Inverter driven Rotary 1+1	Inverter driven Rotary 1+2	Inverter driven Rotary 2	Inverter driven Rotary 2	Inverter driven Rotary 2	Inverter driven Rotary 1+2+2	Inverter driven Rotary 1+2+2			
Air flow rate	CFM	6,000	6,200	7,900	7,900	6,000+6,200	6,200+6,200	6,200+7,900	7,900+7,900	7,900+7,900	7,900+7,900	6,000+7,900+7,900	6,200+7,900+7,900			
External static pressure	Pa (in. WC)	80														
Refrigerant amount at shipment*2	lbs	R410A / 20.1	R410A / 22.7	R410A / 18.7	R410A / 26.0	R410A / 20.1+22.7	R410A / 22.7+22.7	R410A / 22.7+18.7	R410A / 18.7+18.7	R410A / 18.7+26.0	R410A / 26.0+26.0	R410A / 20.1+18.7+18.7	R410A / 22.7+18.7			
Dimensions H x W x D	inch	72-33/64" x 30-5/16" x 39-3/8"		72-33/64" x 46-29/64" x 39-3/8"		72-33/64" x 62-63/64" x 39-3/8"	72-33/64" x 62-63/64" x 39-3/8"	72-33/64" x 79-9/64" x 39-3/8"	72-33/64" x 95-9/32" x 39-3/8"			72-33/64" x 127-61/64" x 39-3/8"		72-33/64" x 144-3/32" x 39-3/8"		
Net weight	lbs	503	560	664	721	503 + 560	560 + 560	560 + 664	664 + 664	664 + 721	721 + 721	503 + 664 + 664	560 + 664 + 664	664 + 664 + 664		
Ambient temperature operating range	Cooling: 14~122°FDB, Heating: -4~64°FWB															
Piping	Diameter	Gas	inch	3/4"	7/8"	1-1/8"	1-1/8"	1-1/8"	1-1/8"	1-3/8"	1-3/8"	1-3/8"	1-3/8"	1-5/8"		
		Liquid	inch	3/8"	3/8"	1/2"	1/2"	5/8"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"		
		Balance	inch	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"		
	Connecting method	(Liquid,Balance)Flared,(Gas)Brazing														
Max total pipe length	Ft	~1,640														
	Elevation difference (OD upper/ OD lower)	Ft	164 / 131													
Operation sound (Normal/Quiet mode)	dB	54.5 / 51.5	58.0 / 55.0	59.5 / 56.5	61.0 / 58.0	60.0 / 57.0	61.0 / 58.0	62.0 / 59.0	62.5 / 59.5	63.5 / 60.5	64.0 / 61.0	63.5 / 60.5	64.0 / 61.0	64.5 / 61.5		
Maximum allowable indoor unit connection		20	25	32	39	45	50	55	64	64	64	64	64			

\* NOTE: \*1 If the longest tubing equivalent length exceeds 295 ft. (90m), increase the sizes of the main tubes by 1 rank for gas tubes and liquid tubes.  
\*2 It's necessary to charge additional refrigerant of 70.5 oz (2.0 kg) per one outdoor unit.

\* NOTE: \*1 If the longest tubing equivalent length exceeds 295 ft. (90m), increase the sizes of the main tubes by 1 size for both gas tubes and liquid tubes.  
\*2 It's necessary to charge additional refrigerant of 70.5 oz (2.0 kg) per one outdoor unit.

# LE MINI ECOi™ MULTI SPLIT VRF HEAT PUMP SERIES



Panasonic Mini ECOi is suited for numerous commercial and premium residential applications.

## U-36LE1U6 / U-52LE1U6

### KEY FEATURES:

- \* Single Phase 208/230 volts
- \* One Outdoor Unit Connects As Many As 9 Indoor Units (50%-130% ratio of indoor to outdoor capacity)
- \* Inverter Driven Twin Rotary Compressor
- \* Nominal Operating Range (Outdoor Ambient)
  - Cooling 14 °FDB to 113 °FDB
  - Heating -4 °FWB to 59 °FWB
- \* Ultra Quiet Operation As Low As 48dB(a)
- \* Variable Speed DC Fan Motor
- \* Piping:
  - 656 Feet - Maximum Total Liquid Line
  - 164 Feet - Maximum Vertical Between Indoor and Outdoor (Outdoor Above Indoor)
  - 131 Feet - Maximum Vertical Between Indoor and Outdoor (Outdoor Below Indoor)
- \* Defrost control, Reverse cycle, microprocessor control
- \* External finish: Galvanized steel plate with powder paint
- \* Refrigerant control: Electronic expansion valve
- \* Control Range 10 - 100%

DESCRIPTION	U-36LE1U6			U-52LE1U6		
<b>POWER SOURCE</b>	208-230V/1PH/60Hz			208-230V/1PH/60Hz		
<b>PERFORMANCE</b>	Ducted	Non-Ducted	Mix	Ducted	Non-Ducted	Mix
COOLING CAPACITY	37,000	39,000	38,000	51,500	52,000	51,750
SEER	13.10	17.00	15.00	14.6	17.4	16.0
HEATING CAPACITY	38,500	43,000	40,750	57,500	58,500	58,000
HSPF	7.80	9.80	8.80	7.7	9.6	8.6
AIR CIRCULATION (HI)	3,530 CFM			3,530 CFM		
<b>ELECTRICAL RATINGS</b>	COOLING		HEATING	COOLING		HEATING
VOLTAGE RATING	208 / 230 V		208 / 230 V	208 / 230 V		208 / 230 V
AVAILABLE VOLTAGE RANGE	187—253 V		187—253 V	187—253 V		187—253 V
RUNNING AMPERES	14.6 / 13.6 A		14.6 / 13.6 A	23.5 / 21.9 A		23.5 / 21.9 A
MAX. RUNNING AMPERES	23.6 / 23.6 A		23.6 / 23.6 A	28 / 28 A		28 / 28 A
POWER INPUT	2.76 / 2.76 kW		2.88 / 2.88 kW	4.57 / 4.57 kW		4.58 / 4.58 kW
MAX. POWER INPUT	4.85 / 4.85 kW		4.85 / 4.85 kW	5.72 / 5.72 kW		5.72 / 5.72 kW
MIN. CIRCUIT AMPACITY	18 A		18 A	29 A		29 A
MAX. OVERCURRENT PROTECTION (MOCP)	30 A		30 A	50 A		50 A
<b>REFRIGERANT TUBING</b>	656 ft			656 ft		
LIMIT OF TUBING LENGTH	Outdoor unit is higher than indoor unit: 164			Outdoor unit is higher than indoor unit: 164		
LIMIT OF ELEVATION DIFFERENCE BETWEEN THE 2 UNITS	Outdoor unit is lower than indoor unit: 131			Outdoor unit is lower than indoor unit: 131		
<b>REFRIGERANT TUBE DIAMETER</b>	3/8"			3/8"		
LIQUID TUBE IN.	3/8"			3/8"		
GAS TUBE IN.	5/8"			3/4"		
<b>UNIT DIMENSIONS</b>	Height/ Width/ Depth/ Net Weight			Height/ Width/ Depth/ Net Weight		
INCHES (") / LBS.	49" / 37" / 14" / 229 lbs.			49" / 37" / 14" / 229 lbs.		
SHIPPING WEIGH / VOLUME	247 lbs. / 19.8 ft. <sup>3</sup>			247 lbs. / 19.8 ft. <sup>3</sup>		
EXTERNAL AIR TEMP. OPERATION RANGE	Cooling:14 to 113 (DB)/Heating: -4 to 59 (WB)			Cooling:14 to 113 (DB)/Heating: -4 to 59 (WB)		
<b>CONNECTABLE INDOOR UNITS (MAX)</b>	6			9		
<b>CERTIFICATION STANDARD</b>	AHRI 210 / 240					





# INDOOR UNITS LINE-UP

Panasonic introduced its first VRF to the US market in 2001 with 16 different indoor units. Since then, it has continued to refine and expand VRF indoor offerings, and the lineup totals 49 models today. In 2016, Panasonic is replacing some indoor units with more sophisticated designs and better efficiencies. These new indoor models are also connectable to Panasonic original "ECONAVI" sensor (optional). Whether an office, hotel, or other properties, Panasonic offers a wide selections to meet your your air conditioning requirements.

For ECONAVI option, order sensor & controller separately



Nominal Cooling Capacity Btu/h class	7,500	9,000	12,000	15,000	18,000	24,000	36,000 MVA: 30,000 / 36,000	48,000 MVA: 42,000 / 48,000	54,000 MVA: 60,000
<b>MK TYPE</b> Wall Mounted <b>NEW</b> ECONAVI (Optional Accessory)									
<b>MY TYPE</b> 4-way Cassette 24" x 24" <b>NEW</b> ECONAVI (Optional Accessory)									
<b>MU TYPE</b> 4-way Cassette 36" x 36" <b>NEW</b> ECONAVI (Optional Accessory)									
<b>MD TYPE</b> 1 Way Cassette									
<b>MM TYPE</b> Concealed Duct – Low Static <b>NEW</b> ECONAVI (Optional Accessory)									
<b>MF TYPE</b> Concealed Duct – Medium Static <b>NEW</b> ECONAVI (Optional Accessory)									
<b>ME TYPE</b> Concealed Duct –High Static									
<b>MT TYPE</b> Ceiling <b>NEW</b> ECONAVI (Optional Accessory)									
<b>MP TYPE</b> Floor Standing									
<b>MR TYPE</b> Floor Standing									
<b>MVA TYPE</b> Vertical Air Handler									

## Actual Installation Examples



INDOOR OPERATING TEMPERATURE		
Cooling	Minimum	57° F (WB)
	Maximum	77° F (WB)
INDOOR OPERATING TEMPERATURE		
Heating	Minimum	61° F (DB)
	Maximum	86° F (DB)

## MK WALL MOUNTED UNIT

NEW



ECONAVI  
(Optional Accessory)

Panasonic wall-mounted units work well with any interior design. Flexible and compact, offering individualized zoned comfort for complete temperature control throughout the day. Over five different air flow directions and wireless remotes provide control in the palm of your hand.

S-07MK2U6 / S-09MK2U6 / S-12MK2U6 /  
S-18MK2U6 / S-24MK2U6

### KEY FEATURES:

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Easy Wall Mount for Any Application
- \* Washable Long Life Filter
- \* Washable Front Panel
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* ECONAVI Connection Possible
- \* New Flash Panel design
- \* Wired or Wireless Remote Control (Optional)
- \* Automatic or Fixed Fan Speed Control
- \* Easy Service
- \* DC Motor

MODELS	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-07MK2U6	7,500 BTU	208-230V/60 HZ	1
S-09MK2U6	9,600 BTU	208-230V/60 HZ	1
S-12MK2U6	12,000 BTU	208-230V/60 HZ	1
S-18MK2U6	18,000 BTU	208-230V/60 HZ	1
S-24MK2U6	25,000 BTU	208-230V/60 HZ	1

DESCRIPTION	S-07MK2U6	S-09MK2U6	S-12MK2U6	S-18MK2U6	S-24MK2U6
<b>PERFORMANCE</b> COOLING CAPACITY HEATING CAPACITY	7,500 BTU/H 8,500 BTU/H	9,600 BTU/H 11,000 BTU/H	12,000 BTU/H 14,000 BTU/H	18,000 BTU/H 20,000 BTU/H	25,000 BTU/H 27,000 BTU/H
<b>CURRENT</b> COOLING HEATING	0.23/0.21 A 0.23/0.21 A	0.25/0.23 A 0.25/0.23 A	0.27/0.25 A 0.27/0.25 A	0.41/0.39 A 0.41/0.39 A	0.61/0.58 A 0.61/0.58 A
<b>POWER INPUT</b> COOLING HEATING	25/25 W 25/25 W	25/25 W 25/25 W	30/30 W 30/30 W	40/40 W 40/40 W	57/57 W 57/57 W
<b>HEAT EXCHANGER</b> FAN TYPE X QUANTITY	CROSS FLOW X1	CROSS FLOW X1	CROSS FLOW X1	CROSS FLOW X1	CROSS FLOW X1
<b>FAN AIRFLOW RATE CFM-(H/M/L)</b> COOLING HEATING FAN MOTOR TYPE FAN MOTOR OUTPUT	320/265/230 325/290/240 DC 30 W	335/295/230 345/300/240 DC 30 W	385/320/230 395/335/240 DC 30 W	565/441/335 565/441/335 DC 47 W	635/512/406 635/512/406 DC 47 W
<b>REFRIGERANT PIPE DIMENSIONS</b> LOW PRESSURE (FLARE) HIGH PRESSURE (FLARE)	1/4" 1/2"	1/4" 1/2"	1/4" 1/2"	1/4" 1/2"	3/8" 5/8"
<b>UNIT DIMENSIONS</b> Inches (") / lbs.	11.5" / 34.5" / 8.5" / 20 LBS. HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT			12" / 42" / 9" / 29 LBS. HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT	12" / 42" / 9" / 32 LBS. HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT
<b>DRAINPIPE DIMENSION</b> (1" adaptor included)	3/4" OD				
<b>SOUND LEVELS</b> (LOW-MED-HIGH) DB(A) @ 230V	29/33/36	29/34/37	29/36/40	37/40/44	38/42/47

## MY SERIES 4-WAY CASSETTE 24" X 24" WITH CONDENSATE PUMP

NEW



ECONAVI  
(Optional Accessory)

Panasonic's 4-Way cassette units are flexible, efficient and space-saving. Now available to fit within standard 24"x24" ceiling grids.

S-12MY2U6 / S-18MY2U6

### KEY FEATURES:

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Four Way Air Throw
- \* Washable Long Life Air Filter
- \* Built-In Drain Pump – 33 Inch Lift
- \* Electronic Expansion Valve (EEV) for Precise Refrigerant Control
- \* Individual Flap Control Possible for Better Air Distribution.
- \* ECONAVI Attachment Possible
- \* Automatic or Fixed Fan Speed Control
- \* Easy Installation
- \* DC Motor

SYSTEM/MODEL	Components	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-12MY2U6	System	12,000 BTU 4-Way Ceiling cassette 24" x 24" (includes grille)	208-230V/1ø/60 HZ	1
	S-12MY2U6	cassette	208-230V/1ø/60 HZ	1
	CZ-18KPY2U	grille		
S-18MY2U6	System	18,000 BTU 4-way Ceiling cassette 24" x 24" (includes grille)	208-230V/1ø/60 HZ	1
	S-18MY2U6	cassette	208-230V/1ø/60 HZ	1
	CZ-18KPY2U	grille		

DESCRIPTION	S-12MY2U6	S-18MY2U6
<b>PERFORMANCE</b> COOLING CAPACITY HEATING CAPACITY	12,000 BTU/H 14,000 BTU/H	19,000 BTU/H 21,000 BTU/H
<b>CURRENT</b> COOLING HEATING	0.32/0.30 A 0.32/0.30 A	0.37/0.35 A 0.37/0.35 A
<b>POWER INPUT</b> COOLING HEATING	40/40 W 35/35 W	45/45 W 40/40 W
<b>HEAT EXCHANGER</b> FAN TYPE X QUANTITY	TURBO X1	TURBO X1
<b>FAN AIRFLOW RATE CFM-(H/M/L)</b> COOLING HEATING FAN MOTOR TYPE FAN MOTOR OUTPUT	345/305/275 350/320/270 DC 40 W	365/345/300 390/345/305 DC 40 W
<b>REFRIGERANT PIPE DIMENSIONS</b> LOW PRESSURE (FLARE) HIGH PRESSURE (FLARE)	1/4" 1/2"	1/4" 1/2"
<b>UNIT DIMENSIONS</b> Inches (") / lbs.	10-1/4" / 22-3/4" / 22-3/4" / 40 LBS. HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT	
<b>DRAINPIPE DIMENSION</b> (1" adaptor included)	1 1/4" OD	
<b>SOUND LEVELS</b> (LOW-MED-HIGH) DB(A) @ 230V	32/34/36	34/37/40



## MU SERIES 4-WAY CASSETTE 36" X 36" WITH CONDENSATE PUMP



Panasonic 4-Way cassette units are flexible, efficient and space-saving. Two sides can be adjusted simply to accommodate corner airflow.

### S-24MU2U6 / S-36MU2U6

#### KEY FEATURES:

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Four Way Air Throw
- \* Washable Long Life Air Filter
- \* Built-In Drain Pump – 25" Lift
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Wired or Wireless Remote Control
- \* Automatic or 3 Fan Speed Control
- \* Easy Service
- \* DC Motor

SYSTEM/MODEL	Components	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-24MU2U6	System	25,000 BTU 4-Way Ceiling cassette 36" x 36" (includes grille)	208-230V/60 HZ	1
	S-24MU2U6	cassette	208-230V/60 HZ	1
	CZ-36KPU3U	grille		
S-36MU2U6	System	36,000 BTU 4-Way Ceiling cassette 36" x 36" (includes grille)	208-230V/60 HZ	1
	S-36MU2U6	cassette	208-230V/60 HZ	1
	CZ-36KPU3U	grille		

DESCRIPTION	S-24MU2U6	S-36MU2U6
<b>PERFORMANCE</b>		
COOLING CAPACITY	25,000 BTU/H	36,000 BTU/H
HEATING CAPACITY	27,000 BTU/H	39,000 BTU/H
<b>CURRENT</b>		
COOLING	0.36/0.33 A	0.75/0.71 A
HEATING	0.35/0.32 A	0.68/0.65 A
<b>POWER INPUT</b>		
COOLING	40/40 W	95/95 W
HEATING	40/40 W	85/85 W
<b>HEAT EXCHANGER</b>		
FAN TYPE X QUANTITY	TURBO X1	TURBO X1
<b>FAN AIRFLOW RATE CFM-(H/M/L)</b>		
COOLING	777/600/494	1,165/953/742
HEATING	777/600/494	1,165/953/742
FAN MOTOR TYPE	DC	DC
FAN MOTOR OUTPUT	60 W	90 W
<b>REFRIGERANT PIPE DIMENSIONS</b>		
LOW PRESSURE (FLARE)	3/8"	3/8"
HIGH PRESSURE (FLARE)	5/8"	5/8"
<b>UNIT DIMENSIONS</b>		
Inches (") / lbs.	10-1/4" / 33-1/4" / 33-1/4" / 53 LBS. HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT	10-1/4" / 33-1/4" / 33-1/4" / 60 LBS. HEIGHT/WIDTH/DEPTH/NET WEIGHT
<b>DRAINPIPE DIMENSION</b>	11/4 "OD / 1 "ID	
(1" adaptor included)		
<b>SOUND LEVELS</b>		
(LOW-MED-HIGH) DB(A) @ 230V	29/32/37	34/38/44

## MD SERIES 1-WAY CASSETTE WITH CONDENSATE PUMP



Panasonic's 1-Way cassette units are flexible and space-saving. A perfect conditioning solution for small spaces. Barely visible, the unit blends with any interior design. Powerful enough to cool and comfort those inside.

### S-07MD1U6 / S-09MD1U6 / S-12MD1U6

#### KEY FEATURES:

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* One-Way Air Throw – Perfect for Small Spaces
- \* Washable Long Life Air Filter
- \* Built-In Drain Pump – 24" Lift
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Only 13" Tall (Not Including Decorative Panel), 30" wide X 25" deep
- \* Wired or Wireless Remote Control
- \* Automatic or Fixed Fan Speed control
- \* Optional Outside Air Intake
- \* Easy Service

SYSTEM/MODEL	Components	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-07MD1U6	System	7,500 BTU 1-Way Ceiling cassette (includes grille)	208-230V/60 HZ	1
	S-07MD1U6	cassette	208-230V/60 HZ	1
	CZ-12KPD1U	grille		
S-09MD1U6	System	9,000 BTU 1-Way Ceiling cassette (includes grille)	208-230V/60 HZ	1
	S-09MD1U6	cassette	208-230V/60 HZ	1
	CZ-12KPD1U	grille		
S-12MD1U6	System	12,000 BTU 1-Way Ceiling cassette (includes grille)	208-230V/60 HZ	1
	S-12MD1U6	cassette	208-230V/60 HZ	1
	CZ-12KPD1U	grille		

DESCRIPTION	S-07MD1U6	S-09MD1U6	S-12MD1U6
<b>PERFORMANCE</b>			
COOLING CAPACITY	7,500 BTU/H	9,600 BTU/H	12,000 BTU/H
HEATING CAPACITY	8,500 BTU/H	11,000 BTU/H	14,000 BTU/H
<b>CURRENT</b>			
COOLING	0.29/0.28 A	0.29/0.28 A	0.32/0.31 A
HEATING	0.28/0.26 A	0.28/0.26 A	0.34/0.32 A
<b>POWER INPUT</b>			
COOLING	48/50 W	48/50 W	52/55 W
HEATING	44/46 W	44/46 W	50/52 W
<b>HEAT EXCHANGER</b>			
FAN TYPE X QUANTITY	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1
<b>FAN AIRFLOW RATE CFM-(H/M/L)</b>			
FAN EXT. STATIC PRESS (230V)	0 IN. WC	0 IN. WC	0 IN. WC
FAN MOTOR TYPE	DC	DC	DC
FAN MOTOR OUTPUT	60 W	60 W	60 W
<b>REFRIGERANT PIPE DIMENSIONS</b>			
LOW PRESSURE (FLARE)	1/4"	1/4"	1/4"
HIGH PRESSURE (FLARE)	1/2"	1/2"	1/2"
<b>UNIT DIMENSIONS</b>	13" / 30" / 24.5" / 43 LBS. Inches (") / lbs. HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT		
<b>DRAINPIPE DIMENSION</b>	11/4 "OD / 1 "ID		
(1" adaptor included)			
<b>SOUND LEVELS</b>			
(LOW-MED-HIGH) DB(A) @ 230V	29/31/33		

## MT SERIES CEILING UNIT

**NEW**



**ECONAVI**  
(Optional Accessory)

Panasonic ceiling units are an ideal solution to any medium to light commercial application. Well suited for retail stores, schools, and restaurant applications. These units utilize large supply air openings to provide comfortable airflow and ultra quiet operation.

S-12MT2U6 / S-18MT2U6 / S-24MT2U6

**KEY FEATURES:**

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* New Round Design Fits into Numerous Ceiling Locations
- \* Long Distance Air Throw with Newly Designed Fan and DC Motor
- \* Washable Long Life Air Filter
- \* Electronic Expansion Valve (EEV) for Precise Refrigerant Control
- \* Wired or Wireless Remote Control
- \* ECONAVI Attachment Possible
- \* Automatic or Fixed Fan Speed Control
- \* Easy Service

MODELS	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-12MT2U6	12,000 BTU	208-230V/60 HZ	1
S-18MT2U6	19,000 BTU	208-230V/60 HZ	1
S-24MT2U6	25,000 BTU	208-230V/60 HZ	1

DESCRIPTION	S-12MT2U6	S-18MT2U6	S-24MT2U6
<b>CAPACITY</b> COOLING HEATING	12,000 BTU 14,000 BTU	19,000 BTU 21,000 BTU	25,000 BTU 27,000 BTU
<b>CURRENT</b> COOLING HEATING	0.38/0.36 A 0.38/0.36 A	0.40/0.38 A 0.40/0.38 A	0.46/0.44 A 0.46/0.44 A
<b>POWER INPUT</b> COOLING HEATING	35/35 W 35/35 W	40/40 W 40/40 W	55/55 W 55/55 W
<b>UNIT DIMENSIONS</b> Inches (") / lbs.	9" / 37" / 27" / 60 lbs. Height/ Width/ Depth/ Net Weight		9" / 50" / 27" / 73 lbs. Height/ Width/ Depth/ Net Weight
<b>HEAT EXCHANGER</b> FAN TYPE X QUANTITY FAN AIRFLOW RATE CFM-(H/M/L) FAN MOTOR TYPE FAN MOTOR OUTPUT	CENTRIFUGAL X2 494/424/371 DC 74 W	CENTRIFUGAL X2 530/441/371 DC 74 W	CENTRIFUGAL X3 742/636/547 DC 74 W
<b>REFRIGERANT PIPE DIMENSIONS</b> LOW PRESSURE (FLARE) HIGH PRESSURE (FLARE)	1/4" 1/2"	1/4" 1/2"	3/8" 5/8"
<b>DRAINPIPE DIMENSION</b>	1" OD 3/4" ID	1" OD 3/4" ID	1" OD 3/4" ID
<b>SOUND LEVELS</b> (LOW-MED-HIGH) DB(A) @ 230V	30/32/36	30/33/37	33/35/39

## MP/MR FLOOR STANDING SERIES



FLOOR STANDING  
WITH DECORATIVE PANEL

S-07MP1U6 / S-09MP1U6 / S-12MP1U6  
S-15MP1U6 / S-18MP1U6 / S-24MP1U6

**KEY FEATURES:**

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Wired or Wireless Remote Control
- \* Automatic or Fixed Fan Speed Control
- \* Easy Service
- \* Washable Long Life filter



FLOOR STANDING  
WITHOUT DECORATIVE PANEL

S-07MR1U6 / S-09MR1U6 / S-12MR1U6  
S-15MR1U6 / S-18MR1U6 / S-24MR1U6

**KEY FEATURES:**

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Wired or Wireless Remote Control
- \* Automatic or Fixed Fan Speed Control
- \* Easy Service
- \* Washable Long Life filter

DESCRIPTION	S-07MP1U6 / S-07MR1U6	S-09MP1U6 / S-09MR1U6	S-12MP1U6 / S-12MR1U6	S-15MP1U6 / S-15MR1U6	S-18MP1U6 / S-18MR1U6	S-24MP1U6 / S-24MR1U6
<b>CAPACITY</b> COOLING HEATING	7,500 BTU 8,500 BTU	9,600 BTU 11,000 BTU	12,000 BTU 14,000 BTU	15,000 BTU 17,000 BTU	19,000 BTU 21,000 BTU	24,000 BTU 27,000 BTU
<b>CURRENT</b> COOLING HEATING	.22/.24 A .22/.23 A	.22/.24 A .22/.23 A	.42/.44 .40/.42	.58/.60 .53/.55	.58/.60 .53/.55	.61/.63 .56/.58
<b>POWER INPUT</b> COOLING HEATING	45/54 W 43-50 W	45/54 W 43-50 W	86/101 83/96	116/134 106/122	116/134 106/122	119/138 109/125
<b>FHX UNIT DIMENSIONS</b> Inches (") / lbs.	24.25"/42"/9"/64 lbs. HT / W / D / NT WT	24.2"/42"/9"/64 lbs. HT / W / D / NT WT	24.2"/42"/9"/64 lbs. HT / W / D / NT WT	24.0"/54.5"/9"/86 lbs. HT / W / D / NT WT	24.0"/54.5"/9"/86 lbs. HT / W / D / NT WT	24.0"/54.5"/9"/86 lbs. HT / W / D / NT WT
<b>FMHX UNIT DIMENSIONS</b> Inches (") / lbs.	24.25"/35.5"/9"/46 lbs. HT / W / D / NT WT	24.25"/35.5"/9"/46 lbs. HT / W / D / NT WT	24.25"/35.5"/9"/46 lbs. HT / W / D / NT WT	24.25"/48"/9"/62 lbs. HT / W / D / NT WT	24.25"/48"/9"/62 lbs. HT / W / D / NT WT	24.25"/48"/9"/62 lbs. HT / W / D / NT WT
<b>HEAT EXCHANGER</b> FAN TYPE X QUANTITY FAN AIRFLOW RATE CFM-(H/M/L) FAN MOTOR OUTPUT	Centrifugal 247/212/177 10 W	Centrifugal 247/212/177 10 W	Centrifugal 318/247/212 20 W	Centrifugal 424/318/283 20 W	Centrifugal 530/459/389 30 W	Centrifugal 601/495/424 60 W
<b>REFRIGERANT PIPE DIMENSIONS</b> LOW PRESSURE (FLARE) HIGH PRESSURE (FLARE)	1/4" 1/2"	1/4" 1/2"	1/4" 1/2"	1/4" 1/2"	1/4" 1/2"	3/8" 5/8"
<b>DRAINPIPE DIMENSION</b>	1" OD	1" OD	1" OD	1" OD	1" OD	1" OD
<b>SOUND LEVELS</b> (LOW-MED-HIGH)	28/30/33	28/30/33	29/35/39	31/35/38	31/36/39	35/38/41



# MM CONCEALED DUCT – LOW STATIC SERIES

**NEW**



**ECONAVI**  
(Optional Accessory)

8" high - Low Static fits into tight ceiling spaces. Panasonic MM units are ideal for drop ceiling applications including apartments, condominiums, and hotel rooms. Compact design permits installation within conditioned space.

S-07MM2U6 / S-09MM2U6 / S-12MM2U6 / S-15MM2U6 / S-18MM2U6

**KEY FEATURES:**

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Adjustable External Static Pressure
- \* Built-In Drain Pump – 20" Lift
- \* Wired or Wireless Remote Control
- \* ECONAVI Connection Possible.
- \* Automatic or 3 Fan Speed Control
- \* Easy Service
- \* Low Profile Fits into Tight Ceiling Spaces
- \* 4 Temperature Sensors(Air Intake/ Discharge) for Optimum Operations.
- \* Washable Long Life Filter
- \* DC Motor

MODELS	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-07MM2U6	7,500 BTU ESP = 0.04 / 0.12	208-230V/60 HZ	1
S-09MM2U6	9,600 BTU ESP = 0.06 / 0.12	208-230V/60 HZ	1
S-12MM2U6	12,000 BTU ESP = 0.06 / 0.16	208-230V/60 HZ	1
S-15MM2U6	15,000 BTU ESP = 0.06 / 0.16	208-230V/60 HZ	1
S-18MM2U6	19,000 BTU ESP = 0.06 / 0.16	208-230V/60 HZ	1

DESCRIPTION	S-07MM2U6	S-09MM2U6	S-12MM2U6	S-15MM2U6	S-18MM2U6
<b>PERFORMANCE</b>					
COOLING CAPACITY	7,500 BTU/H	9,600 BTU/H	12,000 BTU/H	15,000 BTU/H	19,000 BTU/H
HEATING CAPACITY	8,500 BTU/H	11,000 BTU/H	14,000 BTU/H	17,000 BTU/H	21,000 BTU/H
<b>CURRENT</b>					
COOLING	0.26/0.26 A	0.30/0.30 A	0.32/0.31 A	0.40/0.37 A	0.50/0.48 A
HEATING	0.23/0.23 A	0.27/0.27 A	0.29/0.28 A	0.36/0.34 A	0.48/0.45 A
<b>POWER INPUT</b>					
COOLING	36/36 W	40/40 W	42/42 W	49/49 W	64/64 W
HEATING	26/26 W	30/30 W	32/32 W	39/39 W	54/54 W
<b>HEAT EXCHANGER</b>					
FAN TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
<b>FAN AIRFLOW RATE CFM-(H/M/L)</b>					
COOLING	283/247/212	300/265/230	318/283/247	371/336/283	442/406/353
HEATING	283/247/212	300/265/230	318/283/247	371/336/283	442/406/353
FAN EXT. STATIC PRESS (230V)	0.04 / 0.12 IN. WC	0.06 / 0.12 IN. WC	0.06 / 0.16 IN. WC	0.06 / 0.16 IN. WC	0.06 / 0.16 IN. WC
FAN MOTOR TYPE	DC	DC	DC	DC	DC
FAN MOTOR OUTPUT	60 W	60 W	60 W	60 W	60 W
<b>REFRIGERANT PIPE DIMENSIONS</b>					
LOW PRESSURE (FLARE)	1/4"	1/4"	1/4"	1/4"	1/4"
HIGH PRESSURE (FLARE)	1/2"	1/2"	1/2"	1/2"	1/2"
<b>UNIT DIMENSIONS</b>	7 7/8", 29 17/32", 25 13/64", 42 LBS				
Inches (") / lbs.	HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT				
<b>DRAINPIPE DIMENSION</b>	1" OD				
(1" adaptor included)					
<b>SOUND LEVELS</b>					
(LOW-MED-HIGH) DB(A) @ 230V	25/27/28	27/29/30	28/30/32	30/32/34	32/35/37

# MF CONCEALED DUCT – MEDIUM STATIC SERIES

**NEW**



**ECONAVI**  
(Optional Accessory)

Panasonic concealed duct units are compact and space saving with advanced zoning capabilities and efficient design. A perfect conditioning solution for shorter duct runs.

S-07MF2U6 / S-09MF2U6 / S-12MF2U6 / S-15MF2U6 / S-18MF2U6 / S-24MF2U6 / S-36MF2U6 / S-48MF2U6 / S-54MF2U6

**KEY FEATURES:**

- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Adjustable External Static Pressure
- \* Built-In Drain Pump – 20 Inch Lift
- \* Wired or Wireless Remote Control
- \* Eco-friendly R410A Refrigerant
- \* ECONAVI Connection Possible.
- \* Automatic or Fixed Fan Speed Control
- \* Easy Service
- \* Optional Outside Air Intake
- \* DC Motor

MODELS	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-07MF2U6	7,500 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-09MF2U6	9,600 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-12MF2U6	12,000 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-15MF2U6	15,000 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-18MF2U6	19,000 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-24MF2U6	25,000 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-36MF2U6	36,000 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-48MF2U6	48,000 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1
S-54MF2U6	54,600 BTU 0.28/0.60" WG (ESP)	208-230V/60 HZ	1

DESCRIPTION	S-07MF2U6	S-09MF2U6	S-12MF2U6	S-15MF2U6	S-18MF2U6	S-24MF2U6	S-36MF2U6	S-48MF2U6	S-54MF2U6
<b>PERFORMANCE</b>									
COOLING CAPACITY	7,500 BTU/H	9,600 BTU/H	12,000 BTU/H	15,000 BTU/H	19,000 BTU/H	25,000 BTU/H	36,000 BTU/H	47,800 BTU/H	54,600 BTU/H
HEATING CAPACITY	8,500 BTU/H	11,000 BTU/H	14,000 BTU/H	17,000 BTU/H	21,000 BTU/H	27,000 BTU/H	39,000 BTU/H	54,600 BTU/H	61,400 BTU/H
<b>CURRENT</b>									
COOLING	0.63/0.57 A	0.63/0.57 A	0.63/0.57 A	0.63/0.57 A	0.81/0.74 A	0.95/0.89 A	1.53/1.42 A	1.64/1.52 A	1.76/1.63 A
HEATING	0.63/0.56 A	0.63/0.56 A	0.63/0.56 A	0.63/0.56 A	0.81/0.74 A	0.95/0.89 A	1.53/1.42 A	1.64/1.52 A	1.76/1.63 A
<b>POWER INPUT</b>									
COOLING	70/70 W	70/70 W	70/70 W	70/70 W	100/100 W	120/120 W	220/220 W	235/235 W	250/250 W
HEATING	70/70 W	70/70 W	70/70 W	70/70 W	100/100 W	120/120 W	220/220 W	235/235 W	250/250 W
<b>HEAT EXCHANGER</b>									
FAN TYPE	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1	CENTRIFUGAL X1
<b>FAN AIRFLOW RATE CFM-(H/M/L)</b>									
COOLING	494/459/353	494/459/353	494/459/353	494/459/353	565/530/424	742/671/530	1204/989/812	1271/1095/848	1342/1165/883
HEATING	494/459/353	494/459/353	494/459/353	494/459/353	565/530/424	742/671/530	1204/989/812	1271/1095/848	1342/1165/883
FAN EXT. STATIC PRESS (230V)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)	0.28/0.60" WG (ESP)
FAN MOTOR TYPE	DC	DC	DC	DC	DC	DC	DC	DC	DC
FAN MOTOR OUTPUT	119 W	119 W	119 W	119 W	119 W	124 W	235 W	235 W	235 W
<b>REFRIGERANT PIPE DIMENSIONS</b>									
LOW PRESSURE (FLARE)	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"
HIGH PRESSURE (FLARE)	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"
<b>UNIT DIMENSIONS</b>	11-7/16"/ 31-1/2"/ 27-9/16"/ 64 LBS.				11-7/16"/ 39-3/8"/ 27-9/16"/ 64 LBS.	11-7/16"/ 39-3/8"/ 27-9/16"/ 75 LBS.	11-7/16"/ 55-1/8"/ 27-9/16"/ 99 LBS.		
Inches (") / lbs.	HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT				HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT	HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT	HEIGHT/ WIDTH/ DEPTH/ NET WEIGHT		
<b>DRAINPIPE DIMENSION</b>	1" OD								
(1" adaptor included)									
<b>SOUND LEVELS</b>									
(LOW-MED-HIGH) DB(A) @ 230V	25/29/33	25/29/33	25/29/33	28/32/34	28/32/34	26/32/35	32/35/39	32/36/40	33/37/41

Panasonic INDOOR

## ME CONCEALED DUCT – HIGH STATIC SERIES



Panasonic concealed ceiling units are flexible and space saving, helping maximize floor and wall space. Advanced zoning capabilities condition large areas simply and efficiently. Completely concealed, they offer simple installation.

### S-36ME1U6 / S-48ME1U9

#### KEY FEATURES:

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 Phase, 60Hz
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Perfect for Long Duct Runs
- \* Wired or Wireless Remote Control
- \* Automatic or Fixed Fan Speed Control
- \* Easy Service
- \* Built-in float safety

A PERFECT APPLICATION FOR LONGER DUCT RUN INSTALLATIONS

MODELS	(Type: Nominal Cooling Capacity, etc)	Volt	PH
S-36ME1U6	36,000 BTU ESP = 0.70"	208-230V/60 HZ	1
S-48ME1U6	48,000 BTU ESP = 0.67"	208-230V/60 HZ	1

DESCRIPTION	S-36ME1U6	S-48ME1U6
<b>CAPACITY</b>		
COOLING	36,000 BTU	47,800 BTU
HEATING	39,000 BTU	54,600 BTU
<b>CURRENT</b>		
COOLING	2.84/2.89 A	3.24/3.19 A
HEATING	2.74/2.80 A	3.17/3.42 A
<b>POWER INPUT</b>		
COOLING	548/620 W	644/695 W
HEATING	528/602 W	627/756 W
<b>UNIT DIMENSIONS</b>	16.5" / 42" / 24.5" / 110 lbs. Inches (") / lbs. Height/ Width/ Depth/ Net Weight	18" / 42" / 24.5" / 119 lbs. Height/ Width/ Depth/ Net Weight
<b>HEAT EXCHANGER</b>		
FAN TYPE X QUANTITY	CENTRIFUGAL X1	CENTRIFUGAL X1
FAN AIRFLOW RATE CFM-(H/M/L)	1,060/988/883	1,272/1,237/1,160
FAN EXT. STATIC PRESS (230V)	0.70 - In. WC	0.67 - In. WC
FAN MOTOR TYPE	AC	AC
FAN MOTOR OUTPUT	200 - W	400 - W
<b>REFRIGERANT PIPE DIMENSIONS</b>		
LOW PRESSURE (FLARE)	3/8"	3/8"
HIGH PRESSURE (FLARE)	5/8"	5/8"
<b>DRAINPIPE DIMENSION</b>	1" OD	1" OD
(1" adaptor included)		
<b>SOUND LEVELS</b>		
(LOW-MED-HIGH)	42/44/45 - DB(A) @ 230V	44/46/47 - DB(A) @ 230V

## MVA CONCEALED DUCT – VERTICAL MULTI POISE SERIES



MVA Vertical Air Handlers are compact and efficient. With 4 thermistors (Air intake/outlet, 2 HEX sensors) more precise control is possible. Optional electric heater is available to accommodate comfortable heating even in the harshest winter.

### MVA18FBAS6HBCP/ MVA24FBAS6HBCP MVA30FBAS6HBCP/ MVA36FBAS6HBCP MVA42FBAS6HBCP/ MVA48FBAS6HBCP MVA60FBAS6HBCP

#### KEY FEATURES:

- \* Eco-friendly R410A Refrigerant
- \* 208/230V, 1 phase , 60Hz
- \* Electronic Expansion Valve (EEV) for Accurate Refrigerant Control
- \* Multi-position (Horizontal/Vertical) possible
- \* High efficient ECM(DC) fan motor
- \* Optional Electric Heater available (Field installed)
- \* 19 gauge galvanized external panel with baked on polyester powder coating
- \* Adjustable External Static
- \* With 1-inch filter rack
- \* Optional filter available. (2" or 4" Fiter RACK)

MODELS	Nominal Cooling Capacity	Static std / Max	Volt	PH
MVA18FBAS6HBCP	19,800 BTU/h	0.3 / 0.5	208/230V 60Hz	1
MVA24FBAS6HBCP	24,700 BTU/h	0.3 / 0.5	208/230V 60Hz	1
MVA30FBAS6HBCP	32,000 BTU/h	0.3 / 0.5	208/230V 60Hz	1
MVA36FBAS6HBCP	36,000 BTU/h	0.3 / 0.5	208/230V 60Hz	1
MVA42FBAS6HBCP	42,000 BTU/h	0.3 / 0.5	208/230V 60Hz	1
MVA48FBAS6HBCP	48,000 BTU/h	0.3 / 0.5	208/230V 60Hz	1
MVA60FBAS6HBCP	60,000 BTU/h	0.3 / 0.5	208/230V 60Hz	1

NOTE: When connecting MVA model(s) in the system(mix or all), the maximum connectable indoor/outdoor capacity ratio will be limited to 130%.

DESCRIPTION	MVA18 FBAS6HBCP	MVA24 FBAS6HBCP	MVA30 FBAS6HBCP	MVA36 FBAS6HBCP	MVA42 FBAS6HBCP	MVA48 FBAS6HBCP	MVA60 FBAS6HBCP
<b>PERFORMANCE</b>							
COOLING CAPACITY	19,800 BTU/H	24,700 BTU/H	32,000 BTU/H	36,000 BTU/H	42,000 BTU/H	48,000 BTU/H	60,000 BTU/H
HEATING CAPACITY	23,900 BTU/H	28,000 BTU/H	37,000 BTU/H	40,000 BTU/H	49,000 BTU/H	54,000 BTU/H	68,000 BTU/H
FULL LOAD AMP.	3.0 A	3.0 A	3.6 A	3.6 A	4.9 A	6.0 A	7.6 A
FAN MOTOR OUTPUT	224 W	396 W	309 W	440 W	567 W	1040 W	1110 W
FAN TYPE	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL	CENTRIFUGAL
FAN MOTOR TYPE	DC	DC	DC	DC	DC	DC	DC
AIRFLOW CFM (H/M/L)	690/675/621	882/769/718	1037/952/837	1229/1067/978	1335/1213/1133	1597/1378/1238	1932/1658/1500
EXT. STATIC PRESS. STD/MAX	0.3/0.5 IN. W. G.	0.3/0.5 IN. W. G.	0.3/0.5 IN. W. G.	0.3/0.5 IN. W. G.	0.3/0.5 IN. W. G.	0.3/0.5 IN. W. G.	0.3/0.5 IN. W. G.
<b>REFRIGERANT PIPE SIZE</b>							
GAS PIPE SIZE	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
LIQUID PIPE SIZE	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
<b>PIPE CONNECTION SIZE</b>							
LOW PRESSURE(BRAZING)	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1-1/8"
HIGH PRESSURE(BRAZING)	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
DIMENSIONS (HxWxD) INCH	46.9x17.7x22.2	46.9x17.7x22.2	51.9x20.2x25.2	51.9x20.2x25.2	55.9x22.2x27.2	55.9x22.2x27.2	57.9x24.2x31.2
WEIGHT	135 LBS	135 LBS	145 LBS	145 LBS	158 LBS	158 LBS	190 LBS
DRAIN PIPE CONNECTION	3/4"						
AVAILABLE OPTIONAL HEATER SIZE	3, 5, 6, 8, 10 kW					8KW, 10 kW	
METERING DEVICE	ELECTRONIC EXPVALVE						

PART NO.	ACCESSORY HEATER								
	Heater Capacity (kW)		Applications on MVA models						
	240V	208V	MVA18 FBAS6HB CP	MVA24 FBAS6HB CP	MVA30 FBAS6HB CP	MVA36 FBAS6HB CP	MVA42 FBAS6HB CP	MVA48 FBAS6HB CP	MVA60 FBAS6HB CP
MVA03HT	3	2.3	x	x	x	x			
MVA05HT	5	3.8	x	x	x	x			
MVA06HT	6	4.5	x	x	x	x			
MVA08HT	8	6	x	x	x	x	x	x	x
MVA10HT	9.5	7.5	x	x	x	x	x	x	x

Only qualified personnel must install the electrical service. Refer to manuals for more

(Single stage electric heater)



## CONTROL SYSTEMS SIMPLE SYSTEM CONTROL NETWORK

Panasonic system control network is the heart and soul of the ECOi™ unit, enabling it to live with the living inside. With a simple two-wire loop installation, we put control in your hands, literally. No outside specialists required, it's an all-in-one solution for you, and a way to further build profits by keeping installation in-house. The logic resides in the ECOi system and the control is the gateway.

CZ-RTC5 / CZ-RTC4 / CZ-RWSC3 / CZ-RWSU3U  
 CZ-RWST2U / CZ-RWSD2U  
 CZ-RWSK1U / CZ-RE2C2 / CZ-CAPC2U / CZ-64ESMC1U  
 CZ-ESWC2 / CZ-256ESMC1U / CZ-CFUNC1U  
 CZ-CSRC2 / CZ-CLNC1U / BMS-CTRL1  
 CZ-CSWKC1U / CZ-CSWAC1U / CZ-CSWGC1U  
 CZ-CSWBC1U / CZ-CSWWC1U

AN ALL-IN-ONE SOLUTION FOR YOU, NO OUTSIDE SPECIALISTS REQUIRED.

PART NUMBER	DESCRIPTION
CZ-RTC5	HIGH-SPEC WIRED REMOTE CONTROLLER Touch key operation, weekly timer, energy saving functions etc. (Ref.P10-11)
CZ-RTC2	WIRED REMOTE CONTROLLER — 7-day setback, mode, temp, service, etc.
CZ-RTC4	WIRED REMOTE CONTROLLER — 7- day setback, mode, temp, service, etc.
CZ-RWSC3	REMOTE CONTROLLER RECEIVER — To be used with CZ-RWSK1U
CZ-RWSU3U	WIRELESS REMOTE CONTROLLER — For use with MU models
CZ-RWST2U	WIRELESS REMOTE CONTROLLER — For use with MT models
CZ-RWSD2U	WIRELESS REMOTE CONTROLLER — For use with MD models
CZ-RWSK1U	WIRELESS REMOTE CONTROLLER — For use with MK and MY models & for use with CZ-RWSC3
CZ-RE2C2	SIMPLE REMOTE CONTROLLER — on/off, Mode, Temp, Fan Speed, Flap, Service Function
CZ-CAPC2U	INTERFACE ADAPTOR — For On/Off Control, External Device
CZ-64ESMC1U	SYSTEM CONTROLLER — Set individual indoor unit temps for up to 4 zones, 16 indoor units max per zone
CZ-ESWC2	SCHEDULE TIMER — Thermal On/Off at program times only, no set back temperature
CZ-256ESMC1U	INTELLIGENT CONTROLLER ( Web Enabled ) — Controls Max of 256 indoor units with CZ-CFUNC1U
CZ-CFUNC1U	COMMUNICATIONS ADAPTOR — Used with INTELLIGENT CONTROLLER and BMS interface
CZ-CSRC2	REMOTE SENSOR
CZ-CLNC1U	LONWORKS INTERFACE — Maximum of 16 indoor units
BMS-CTRL1	BMS INTERFACE — BACnet, LONworks, N2 or MODBUS (also requires CZ-CFUNC1U)
CZ-CSWKC1U	P-AIMS — Base Software Package
CZ-CSWAC1U	P-AIMS — Electrical Power Distribution Proportioning Software (also requires CZ-CFUNC1U)
CZ-CSWGC1U	P-AIMS — Layout Graphic Display Software (also requires CZ-CFUNC1U)
CZ-CSWBC1U	P-AIMS — BACnet Interface Software (also requires CZ-CFUNC1U)
CZ-CSWWC1U	P-AIMS — Web Enabling Software (also requires CZ-CFUNC1U)
USPA-RC2-BAC-1	BACNET IP or MSTP DEVICE
USPA-AC-BAC-128	BACNET OVER IP SERVER DEVICE
USPA-RA2-WIFI-1	ECOi™ INDOOR UNITS WIFI INTERFACE

## CONTROL SYSTEMS SIMPLE SYSTEM CONTROL NETWORK

**CZ-RWSU3U**  
For Use With MU Indoor Units

**CZ-RWSD2U**  
For Use With MD Series

**CZ-RWST2U**  
For Use With MK and MY Models

**CZ-RWSK1U**  
For Use With MK and MY Indoor Units for CZ-RWSC3

**CZ-RWSC3**  
Remote Controller Receiver to be used with CZ-RWSK1U MM, MF, ME, MP and MR Indoor Units

Panasonic's wireless remote controls more than comfort.

### WIRELESS REMOTES CONTROL IN THE PALM OF YOUR HAND

Take control of the entire system, from mode, temperature, airflow, and system diagnosis, all through an easy-to-read liquid crystal display. Total control at your fingertips.

#### KEY FEATURES:

- \* Thin and Easy To Read
- \* Simple To Install and Use
- \* Can Be Adapted for Use On All ECOi Indoor Units
- \* Fan Speed Control
- \* Timer Mode Start/Stop
- \* Timer Mode On/Off
- \* Operating Mode
- \* Inspection/Test Indication
- \* Remote Can Be Configured To Sense Temperature

**CZ-RTC5**  
High-spec Wired Remote Controller (ECONAVI Compatible)

**CZ-RE2C2**  
Simple Remote Controller

**CZ-RTC4**  
Standard Remote/7-Day Timer For Use With All Indoor Units (ECONAVI Compatible)

Simple remotes offer control where minimal functionality is best suited for those inside. Panasonic Standard Remote with 7-Day Timer is perfectly suited for those requiring more programmed management over multiple zones. By offering immediate diagnostics and up to six-daily set temperature schedules, it's a perfectly controlled solution offering intuitive simplicity.

Panasonic wired remote controls offer multiple conditioning solutions to meet the needs of any project.

### WIRED REMOTES SIMPLE TO INSTALL

#### KEY FEATURES (STANDARD REMOTE/7 DAY TIMER):

- \* Thin and Easy To Read
- \* Simple To Install and Use
- \* Can Be Adapted for Use On All ECOi Indoor Units
- \* Fan Speed Control: Including Automatic or Fixed
- \* Airflow Direction
- \* Operating Mode (Heating/Cooling/Auto/Dry/Fan)
- \* Vacation Mode for Continued Energy Efficiencies
- \* Full 7-Day Set-Back Functionality, With Up To 6 Time Periods/Day
- \* Full System Diagnostic Capability (Diagnostic History Provides Immediate View of System Past and Present.)

#### KEY FEATURES (SIMPLE REMOTE):

- \* Thin and Easy To Read
- \* Simple To Install and Use
- \* Can Be Adapted for Use On All ECOi Indoor Units
- \* Operating Mode (Heating/Cooling/Auto/Dry/Fan)
- \* Vacation Mode for Continued Energy Efficiencies
- \* Fan Speed Control: Including Automatic or Fixed
- \* Set Temperature
- \* On/Off
- \* Airflow Direction
- \* Perfectly Suited for Applications Where Simpler Functionality is Required (ie: Hotel Rooms, Nursing Homes, Offices)

## CONTROL SYSTEMS SIMPLE SYSTEM CONTROL NETWORK



**CZ-64ESMC1U**  
System Controller

Controls Up To 64 Units Into 4 Individualized Zones

### MULTIPLE ZONE CONTROLLERS THE HEART AND SOUL OF CONDITIONING.

#### KEY FEATURES (SYSTEM CONTROL):

- \* Controls Up To 64 Units Into 4 Individualized Zones
- \* Alarm and Operational Signal Output
- \* Single Access Points for All Connected Wired Remotes
- \* System Control Timer Available

Panasonic system and intelligent controls are the central nervous system to the conditioning system. The gateway to all data, temperature and system diagnostics.

### CONTROLS UP TO 256 INDOOR UNITS

#### KEY FEATURES (INTELLIGENT CONTROL):

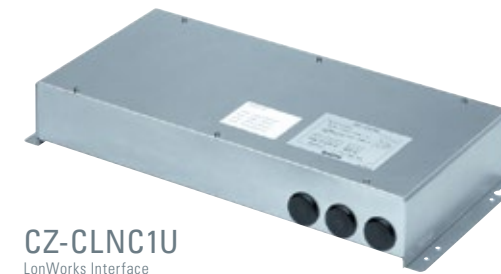
- \* 6.5 Inch Touch Screen Panel
- \* Controls up to 256 Indoor units with added Communication Adapter (128 indoors without)
- \* New Control Wiring System (S Net) Connects Up To 64 Units To a Single Control Line
- \* Offers a Maximum Installation of Two System Controls (One Main, One Sub)
- \* Provides Individual Tenant Billing data for 3 systems addition systems are done by adding Communication Adapters. Requires watt hour meters
- \* Provides Individual Tenant Billing Data Through Calculations Based on a Per-Tenant Basis
- \* Individual Zone Override Feature (High/Low Setting)
- \* Web Accessible/Real Time Diagnostics Through Individual IP Address
- \* Diagnostic History of System Past and Present



**CZ-256ESMC1U**  
Intelligent Controller

Web Accessible/Real Time Diagnostics Through Individual IP Address

## CONTROL SYSTEMS BUILDING MANAGEMENT INTEGRATION



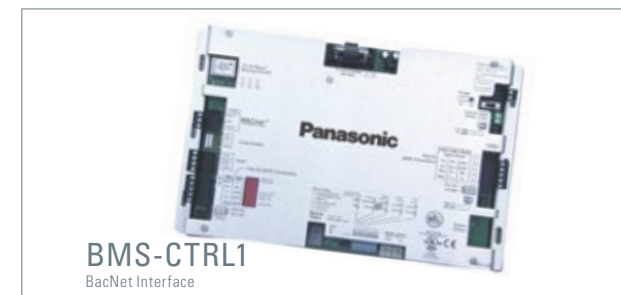
**CZ-CLNC1U**  
LonWorks Interface

Panasonic LonWorks interface integrates into many compatible building management systems. Single point of control. Access to all of the ECOi™ conditioning mechanics.

### LONWORKS INTERFACE SINGLE POINT OF CONTROL

#### KEY FEATURES:

- \* Communicate with LonWorks compatible systems
- \* Start/Stop
- \* Controls up to 16 groups (Maximum 64 Indoor Units)
- \* For 17 or more groups of indoor units connect additional interface units.
- \* Temperature setting, fan speed, etc.
- \* Schedule time setting
- \* Alarm notification



**BMS-CTRL1**  
BacNet Interface

Panasonic BMS Controller sets a new standard for multiple equipment protocol conversion.

### BMS CONTROLLER BMS-CTRL1

#### KEY FEATURES:

- \* Able to provide BMS integration to a variety of BMS protocols including BACnet, Modbus, LonWorks and N2
- \* Communicates with up to 90 indoor units and 10 Refrigerent Circuits (note; N2 can communicate with 40 indoor and 10 outdoor units)
- \* Provides control of operating mode, fan, set temperature
- \* Provides status of operating modes and alarm status



**CZ-CAPC2U**  
(Interface Adapter)

Panasonic interface adapter will be installed with intelligent controller to operate fresh-air supply unit as one of our indoor unit.

### INTERFACE ADAPTOR FOR ON/OFF CONTROL EXTERNAL DEVICE

#### KEY FEATURES:

- \* Control and status monitoring is possible for individual indoor unit (or any external electrical device up to 24V AC, 1A) by contact signal.



## CONTROL SYSTEMS

### USPA-RC2-BAC-1

The **USPA-RC2-BAC-1** is a BACnet IP or MSTP device capable of monitoring and controlling all generations of ECOi, ECOi EX and PACi units. Simply configured via external switches. Graphical User Interface is easily accessed through the Ethernet port.

BACnet IP Controller, requires (1) Communication Adaptor(CZ-CFUNC1U)



### USPA-AC-BAC-128

The **USPA-AC BAC-128** is a BACnet over IP server device capable of monitoring and controlling ECOi, ECOi EX and PACi systems.

Up to 128 indoor units and 10 refrigerant circuits can be integrated (up to 30 PACi systems). Auto-Discover feature detects connected Panasonic equipment for easy setup and integration. Setup and control via Ethernet port to access GUI.

BACnet IP Controller, requires (1) Communication Adaptor(CZ-CFUNC1U)



### USPA-RC2-WIFI-1

**ECOi, ECOi EX and PACi Model Number: USPA-RC2-WIFI-1**

The Wireless Home device controls the indoor unit by connecting to the wired remote terminals. It can be combined with wired remotes.



## APPLICATION EXAMPLE



Typical layout of an office suite using Panasonic's VRF Heat Recovery Systems which provides comfort, individual zones and mode control.

## ACCESSORIES ECOi™ SYSTEM

PART NUMBER	DESCRIPTION	Duct Collar
CZ-56DAF2	DUCT FLANGE	For Use With 7,9,12,15,18 MF
CZ-90DAF2	DUCT FLANGE	For Use With 24 MF
CZ-160DAF2	DUCT FLANGE	For Use With 36,48,54 MF
2-Way Distribution Kits		
CZ-P160BK1U	DISTRIBUTION JOINT KIT	Used with 2 Pipe indoor Unit Piping - Up to 76,400 BTUs
CZ-P680BK1U	DISTRIBUTION JOINT KIT	Used with 2 Pipe indoor Unit Piping - 76,500 to 232,000 BTUs
CZ-P1350BK1U	DISTRIBUTION JOINT KIT	Used with 2 Pipe indoor Unit Piping - 232,200 to 460,700 BTUs
CZ-P680PJ1U	DISTRIBUTION JOINT KIT	Used to Connect Multiple 2 Pipe Outdoor Units - Up to 232,000 BTUs
CZ-P1350PJ1U	DISTRIBUTION JOINT KIT	Used to Connect Multiple 2 Pipe Outdoor Units - 232,200 to 460,700 BTUs
3-Way Distribution Kits		
CZ-P224BH1U	DISTRIBUTION JOINT KIT CUT TO FIT	Used with 3 Pipe Indoor Unit Piping - Up to 76,400 BTUs
CZ-P680BH1U	DISTRIBUTION JOINT KIT CUT TO FIT	Used with 3 Pipe Indoor Unit Piping - 76,500 to 232,000 BTUs
CZ-P1350BH1U	DISTRIBUTION JOINT KIT CUT TO FIT	Used with 3 Pipe Indoor Unit Piping - 232,200 to 460,700 BTUs
CZ-P900PH1U	DISTRIBUTION JOINT KIT CUT TO FIT	Used to Connect Multiple 3 Pipe Outdoor Units - Up to 307,100 BTUs
3-Way Solenoid Valve Kits		
CZ-P56HR2U	SOLENOID VALVE KIT	Total Indoor Capacity of Less than 19,000 BTUs (for 3 Pipe System)
CZ-P456HR2U	SOLENOID VALVE KIT	4 port; Total allowable indoor capacity <85,300 BTUs for 3 Pipe System
CZ-P656HR2U	SOLENOID VALVE KIT	6 port; Total allowable indoor capacity <124,200 BTUs for 3 Pipe System
CZ-P856HR2U	SOLENOID VALVE KIT	8 port; Total allowable indoor capacity <162,400 BTUs for 3 Pipe System
CZ-P160HR2U	SOLENOID VALVE KIT	Total Indoor Capacity of 19,100 to 54,600 BTUs (for 3 Pipe System)
CZ-P4160HR2U	SOLENOID VALVE KIT	4 port ;Total allowable indoor capacity <238,800 BTUs for 3 Pipe System
Ball Valves		
BVT 14	1/4" Ball Valve	With Access Port Fitting
BVT 38	3/8" Ball Valve	With Access Port Fitting
BVT 12	1/2" Ball Valve	With Access Port Fitting
BVT 58	5/8" Ball Valve	With Access Port Fitting
BVT 34	3/4" Ball Valve	With Access Port Fitting
BVT 78	7/8" Ball Valve	With Access Port Fitting
BVT 118	1-1/8" Ball Valve	With Access Port Fitting
BVT 138	1-3/8" Ball Valve	With Access Port Fitting
BVT 158	1-5/8" Ball Valve	With Access Port Fitting
Univolt Mini Condensate Pumps		
ASP-MAUNI	100 - 250 VOLT MINI AQUA ASPEN CONDENSATE PUMP	Max 26' Lift, 3.7 GPH @ 0 Lift, 0.8 GPH @ 26'
ASP-MOUNI	100 - 250 VOLT MINI ORANGE ASPEN CONDENSATE PUMP	Max 26' Lift, 3.7 GPH @ 0 Lift, 0.8 GPH @ 26'
ASP-MLUNI	100 - 250 VOLT MINI LIME ASPEN CONDENSATE PUMP	Max 26' Lift, 3.7 GPH @ 0 Lift, 0.8 GPH @ 26'
ASP-MWUNI	100 - 250 VOLT MINI WHITE ASPEN CONDENSATE PUMP	Max 26' Lift, 3.7 GPH @ 0 Lift, 0.8 GPH @ 26'
460 Transformers		
ACC-195674	460V TO 230V, 11 KVA TRANSFORMER	For Use With 72,000 (6 Ton) BTU/HR Outdoor Unit
ACC-195679	460V TO 230V, 14 KVA TRANSFORMER	For Use With 95,000 (8 Ton) BTU/HR Outdoor Unit
ACC-195684	460V TO 230V, 20 KVA TRANSFORMER	For Use With 120,000 Or 144,000 (10 or 12 Tons) BTU/HR Outdoor Units
Electric Heater		
MVA**HT	MVA**HT ELECTRIC HEATER FOR MVA SERIES (REFER TO PAGE 31 FOR DETAILS)	

## SERVICES ECOi™ SYSTEM

<b>623 303 9831</b>	Pac Checker Service & diagnostics tool for all ECOi and Panasonic Splits greater than 26,000 BTUs
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PART NUMBER	DESCRIPTION
<b>ECO-SC-4</b>	ECOi COMMISSIONING (Per normal business day, up to 24 tons)
<b>IC-SC-1</b>	COMMISSIONING OF INTELLIGENT CONTROLLER (Base fee for each Intelligent Controller)
<b>IC-SC-INDOOR</b>	COMMISSIONING OF INTELLIGENT CONTROLLER (Indoor Units)
<b>LW-SC-1</b>	COMMISSIONING OF LONWORKS INTERFACE MODULE (Base fee)
<b>LW-SC-INDOOR</b>	COMMISSIONING OF LONWORKS INTERFACE (Indoor Units fee)
<b>PP-SC-1</b>	COMMISSIONING OF INTELLIGENT BACnet INTERFACE (Base fee for each BMS-CTRL 1)
<b>PP-SC-INDOOR</b>	COMMISSIONING OF INTELLIGENT BACnet (Indoor Units fee)
<b>CA-SC-1</b>	COMMISSIONING OF COMMUNICATIONS ADAPTER (Base fee for each Comm. Adapter)
<b>CA-SC-INDOOR</b>	COMMISSIONING OF COMMUNICATIONS ADAPTER (Indoor Units fee)
<b>P-AIMS-SC-1</b>	COMMISSIONING OF P-AIMS MANAGEMENT SYSTEM (Base fee for each overall system)
<b>P-AIMS-SC-INDOOR</b>	COMMISSIONING OF P-AIMS MANAGEMENT SYSTEM (Indoor Units fee)
<b>AC-SC-1</b>	PROGRAM 2-WAY SYSTEM TO ENABLE AUTO CHANGEOVER OF MODE (Base fee /Indoor Units fee)
<b>AC-SC-INDOOR</b>	PROGRAM 2-WAY SYSTEM TO ENABLE AUTO CHANGEOVER OF MODE (Indoor Units fee)
<b>IPO-SC-1</b>	PROGRAM "IGNORE INDOOR POWER OFF FAILURE" FOR 2-WAY SYSTEM (Base fee /Indoor Units fee)
<b>IPO-SC-INDOOR</b>	PROGRAM "IGNORE INDOOR POWER OFF FAILURE" FOR 2-WAY SYSTEM (Indoor Units fee)
<b>CNBH</b>	COMMISSIONING COMPLETED DURING NON-BUSINESS HOURS OR NON-BUSINESS DAYS
<b>COUS</b>	ALL COMMISSIONING OF SYSTEMS OR COMPONENTS OUTSIDE CONTINENTAL U.S.
<b>RP-SIT-1</b>	TRAINING - MINI SPLIT SYSTEMS (1 class per day at Customer Location)
<b>RP-SIT-2</b>	TRAINING - MINI SPLIT SYSTEMS (2 classes / same location / same day)
<b>ECOi-IST</b>	TRAINING - ECOi INSTALLATION AND COMMISSIONING TRAINING (at customer location)
<b>ECOi-SERT</b>	TRAINING - ECOi SERVICE TRAINING (at customer location)
<b>TOUS</b>	TRAINING (Conducted outside of the Continental U.S.)
<b>ECO-SIT-4</b>	TRAINING (On-Site Supervised ECOi installation training)
<b>ECO-SIT-NR</b>	TRAINING (Supervised installation On-Site training where attendee's did not show up agreed upon)
<b>ECO-SIT-OS</b>	TRAINING (Supervised installation Training Outside Continental U.S.)

<b>WARRANTY</b>	6 Year Compressor 1 Year Parts
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# IEER INTEGRATED ENERGY EFFICIENCY RATIO

Part load performance of commercial HVAC systems was represented as Integrated Part Load Performance (IPLV) which was used until January 1, 2010. Then a new methodology was adopted and defined as Integrated Energy Efficiency Ratio (IEER).

IEER is intended to be used as a representation of part load performance for energy comparisons of similar systems. For Variable Refrigerant Flow (VRF) Multi Split systems AHRI Standard 1230 defines the process to calculate IEER. In its most simplistic form IEER is calculated by operating the system at 4 different capacities and applying a formula. The basic calculation is as follows:

$$IEER = (0.02 * A) + (0.617 * B) + (0.238 * C) + (0.125 * D)$$

### Where as:

- A = EER at 100% net capacity at AHRI standard condition (95°F)
- B = EER at 75% net capacity and reduced ambient (81.5°F)
- C = EER at 50% net capacity and reduced ambient (68°F)
- D = EER at 25% net capacity and reduced ambient (65°F)

### Example:

A = 11.0 EER B = 16.0 EER C = 19.0 EER D = 23.0 EER  
 IEER = (0.02 \* 11) + (0.617 \* 16) + (0.238 \* 19) + (0.125 \* 23)  
 IEER = 0.2 + 9.8 + 4.5 + 2.9 = 17.4 IEER

### Some points to recognize from this calculation:

1. Full load EER (100% capacity) represents only 2% of the overall IEER rating because the system would rarely operate at this condition.
2. As overall capacity is reduced the system EER increases significantly.
3. An ECOi system operating at 50% part load could result in an efficiency increase of more than 70% over the rated full load EER value.
4. Your actual efficiency could exceed the IEER rating depending upon equipment sizing, environment and use of the system.

## ECOi™ System Certified Efficiency Ratings

ME2 SERIES 2-WAY ECOi HEATPUMP

Rating Standard: AHRI 1230			COOLING PERFORMANCE			HEATING PERFORMANCE			
Type	System Model Number	Indoor Unit Rating Type	Capacity Btu/h	EER 95F	IEER	High Heating 47°F		Low Heating 17°F	
						Capacity (Btu/h)	COP	Capacity (Btu/h)	COP
Heat Recovery	U-72ME2U9	Ducted	69,000	12.3	19.1	77,000	3.56	52,000	2.56
Heat Recovery	U-72ME2U9	Mixed Ducted	69,000	12.5	20.6	77,000	3.71	52,000	2.60
Heat Recovery	U-72ME2U9	Non Ducted	69,000	12.6	22.1	77,000	3.86	52,000	2.63
Heat Recovery	U-96ME2U9	Ducted	92,000	11.9	19.3	103,000	3.54	67,000	2.42
Heat Recovery	U-96ME2U9	Mixed Ducted	92,000	11.9	21.2	103,000	3.65	67,000	2.51
Heat Recovery	U-96ME2U9	Non Ducted	92,000	11.9	23.1	103,000	3.75	67,000	2.59
Heat Recovery	U-120ME2U9	Ducted	114,000	11.5	19.3	129,000	3.40	75,000	2.30
Heat Recovery	U-120ME2U9	Mixed Ducted	114,000	11.7	22.1	129,000	3.50	75,000	2.35
Heat Recovery	U-120ME2U9	Non Ducted	114,000	11.8	24.8	129,000	3.60	75,000	2.40
Heat Recovery	U-144ME2U9	Ducted	138,000	10.9	18.7	154,000	3.27	100,000	2.18
Heat Recovery	U-144ME2U9	Mixed Ducted	138,000	10.8	20.7	154,000	3.31	100,000	2.30
Heat Recovery	U-144ME2U9	Non Ducted	138,000	10.7	22.6	154,000	3.35	100,000	2.41
Heat Recovery	WU-168ME2U9	Ducted	160,000	11.7	19.0	180,000	3.45	119,000	2.30
Heat Recovery	WU-168ME2U9	Mixed Ducted	160,000	11.7	21.1	180,000	3.48	119,000	2.34
Heat Recovery	WU-168ME2U9	Non Ducted	160,000	11.6	23.2	180,000	3.50	119,000	2.38
Heat Recovery	WU-192ME2U9	Ducted	184,000	11.2	18.4	206,000	3.40	134,000	2.25
Heat Recovery	WU-192ME2U9	Mixed Ducted	184,000	11.2	20.5	206,000	3.40	134,000	2.26
Heat Recovery	WU-192ME2U9	Non Ducted	184,000	11.1	22.6	206,000	3.39	134,000	2.26
Heat Recovery	WU-216ME2U9	Ducted	206,000	11.0	18.0	232,000	3.38	142,000	2.23
Heat Recovery	WU-216ME2U9	Mixed Ducted	206,000	11.0	20.2	232,000	3.37	142,000	2.29
Heat Recovery	WU-216ME2U9	Non Ducted	206,000	10.9	22.3	232,000	3.35	142,000	2.34
Heat Recovery	WU-240ME2U9	Ducted	228,000	10.7	17.7	258,000	3.36	150,000	2.18
Heat Recovery	WU-240ME2U9	Mixed Ducted	228,000	10.8	20.3	258,000	3.31	150,000	2.20
Heat Recovery	WU-240ME2U9	Non Ducted	228,000	10.8	22.8	258,000	3.25	150,000	2.22
Heat Recovery	WU-264ME2U9	Ducted	252,000	10.2	17.3	284,000	3.35	176,000	2.16
Heat Recovery	WU-264ME2U9	Mixed Ducted	252,000	10.2	19.1	284,000	3.29	176,000	2.14
Heat Recovery	WU-264ME2U9	Non Ducted	252,000	10.1	20.8	284,000	3.22	176,000	2.12
Heat Recovery	WU-288ME2U9	Ducted	274,000	9.8	16.9	308,000	3.28	200,000	2.14
Heat Recovery	WU-288ME2U9	Mixed Ducted	274,000	9.7	18.2	308,000	3.24	200,000	2.10
Heat Recovery	WU-288ME2U9	Non Ducted	274,000	9.6	19.5	308,000	3.20	200,000	2.06
Heat Recovery	WU-312ME2U9	Ducted	298,000	10.4	17.7	334,000	3.27	202,000	2.16
Heat Recovery	WU-336ME2U9	Ducted	320,000	10.3	17.2	360,000	3.23	218,000	2.13
Heat Recovery	WU-360ME2U9	Ducted	342,000	10.1	16.6	386,000	3.20	226,000	2.10

## ECOi™ System Certified Efficiency Ratings

MF SERIES 3-WAY ECOi Heat Recovery System

MF2U9 New 3Pipe System Rating			COOLING PERFORMANCE			HEATING PERFORMANCE				
Type	System Model Number	Indoor Unit Types	Capacity Btu/h	EER	IEER	High Heating 47°F		Low Heating 17°F		SCHE
						Capacity (Btu/h)	COP	Capacity (Btu/h)	COP	
Heat Recovery	U-72MF2U9	Ducted	69,000	12.7	22.3	77,000	3.7	56,000	2.66	27.6
Heat Recovery	U-72MF2U9	Mixed	69,000	13	25.4	77,000	3.8	56,000	2.61	28.9
Heat Recovery	U-72MF2U9	Non-Ducted	69,000	13.3	28.5	77,000	3.9	56,000	2.56	30.2
Heat Recovery	U-96MF2U9	Ducted	92,000	11.1	23.2	103,000	3.32	70,000	2.44	29.8
Heat Recovery	U-96MF2U9	Mixed	91,000	10.95	24.4	103,000	3.36	66,000	2.41	29.1
Heat Recovery	U-96MF2U9	Non-Ducted	90,000	10.8	25.6	103,000	3.39	62,000	2.38	28.4
Heat Recovery	U-120MF2U9	Ducted	114,000	11.7	22.4	129,000	3.69	93,000	2.51	29.1
Heat Recovery	U-120MF2U9	Mixed	114,000	11.7	24.9	129,000	3.68	91,000	2.49	29.15
Heat Recovery	U-120MF2U9	Non-Ducted	114,000	11.7	27.4	129,000	3.66	90,000	2.46	29.2
Heat Recovery	U-144MF2U9	Ducted	138,000	11.7	22	154,000	3.26	100,000	2.42	28
Heat Recovery	U-144MF2U9	Mixed	138,000	11.05	23.7	154,000	3.29	98,000	2.48	28
Heat Recovery	U-144MF2U9	Non-Ducted	138,000	10.4	25.4	154,000	3.32	96,000	2.53	28
Heat Recovery	WU-168MF2U9	Ducted	160,000	10.8	20.7	180,000	3.29	126,000	2.47	26.4
Heat Recovery	WU-168MF2U9	Mixed	160,000	10.7	22.8	178,000	3.26	122,000	2.59	26.8
Heat Recovery	WU-168MF2U9	Non-Ducted	160,000	10.6	24.9	176,000	3.22	118,000	2.7	27.2
Heat Recovery	WU-192MF2U9	Ducted	184,000	10.8	20	206,000	3.42	148,000	2.49	25.8
Heat Recovery	WU-192MF2U9	Mixed	184,000	10.75	22.45	204,000	3.32	146,000	2.56	25.35
Heat Recovery	WU-192MF2U9	Non-Ducted	184,000	10.7	24.9	202,000	3.21	146,000	2.62	24.9
Heat Recovery	WU-216MF2U9	Ducted	184,000	10.4	19.7	232,000	3.28	162,000	2.45	23.7
Heat Recovery	WU-216MF2U9	Mixed	192,000	10.4	22.45	224,000	3.25	162,000	2.39	23.75
Heat Recovery	WU-216MF2U9	Non-Ducted	202,000	10.4	25.2	216,000	3.21	164,000	2.33	23.8
Heat Recovery	WU-240MF2U9	Ducted	210,000	10.5	19.1	258,000	3.3	184,000	2.43	24.2
Heat Recovery	WU-240MF2U9	Mixed	216,000	10.45	21.75	244,000	3.28	180,000	2.39	23.8
Heat Recovery	WU-240MF2U9	Non-Ducted	224,000	10.4	24.4	232,000	3.25	176,000	2.35	23.4
Heat Recovery	WU-264MF2U9	Ducted	250,000	9.5	18.8	274,000	3.2	192,000	2.39	22.4
Heat Recovery	WU-264MF2U9	Mixed	250,000	9.5	21.2	262,000	3.21	188,000	2.35	22.8
Heat Recovery	WU-264MF2U9	Non-Ducted	250,000	9.5	23.6	250,000	3.22	186,000	2.31	23.2
Heat Recovery	WU-288MF2U9	Ducted	262,000	9.3	18.9	278,000	3.21	200,000	2.34	19.2
Heat Recovery	WU-288MF2U9	Mixed	262,000	9.4	20.85	272,000	3.21	196,000	2.31	20.4
Heat Recovery	WU-288MF2U9	Non-Ducted	264,000	9.5	22.8	266,000	3.21	192,000	2.27	21.6
Heat Recovery	WU-312MF2U9	Ducted	298,000	9.9	18.8	334,000	3.35	242,000	2.45	24.1
Heat Recovery	WU-336MF2U9	Ducted	320,000	9.3	18.9	360,000	3.26	256,000	2.42	23.3
Heat Recovery	WU-360MF2U9	Ducted	342,000	9.4	18.6	386,000	3.32	270,000	2.4	22.8

## LE Series MINI ECOi™ MULTI SPLIT 2-WAY VRF HEAT PUMP SERIES

System Model Number	Indoor Unit Rating Type	High Cooling 95F			High Heating 47F		Low Heating 17F
		Capacity (Btu/h)	EER(95F)	SEER	Capacity (Btu/h)	HSPF	Capacity (Btu/h)
U-36LE1U6	Non-Ducted	39,000	11.5	17.0	43,000	9.8	28,000
U-36LE1U6	Ducted	37,000	9.6	13.1	38,500	7.8	25,000
U-36LE1U6	Mixed	38,000	10.55	15.05	40,750	8.8	26,500
U-52LE1U6	Ducted	51,500	9.4	14.6	57,500	7.7	32,000
U-52LE1U6	on-Ducted	52,000	10.2	17.4	58,500	9.6	32,000
U-52LE1U6	Mixed	51,750	9.8	16.0	58,000	8.65	32,000

# Notes

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