

**Panasonic** Specialist Air Network







R410A

BUILT-IN GENIUS | Panasonic

# Panasonic FS Series Split Type Air Conditioners



**Indoor Unit** 

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# Indoor Unit (Tandem Combinations)

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INVERTER

Page 11



# are both DC Inverter and R410A



CS-F24DB4E5	CS-F28DB4E5	CS-F34DB4E5	CS-F43DB4E5	CS-F50DB4E5
CS-F24DD1E5	CS-F28DD1E5	CS-F34DD1E5	CS-F43DD1E5	CS-F50DD1E5
		CS-F34DTE5	CS-F43DTE5	CS-F50DTE5
6.3kW/7.1kW	7.1kW/8.0kW	10.0kW/11.2KW	12.5kW/14.0kW	14.0kW/16.0kW
CU-L24DBE5	CU-L28DBE5	CU-L34DBE5	CU-L43DBE5	CU-L50DBE8* CU-L50DBE5

\*3-Phase

# DC Inverter can attain both comfort a



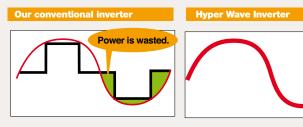
# Energy-saving operation

All the models of Panasonic FS Inverter Series are equipped with DC inverters for the higher EER operation. The new design attains quiet and high-efficient operation and reduces the running cost.

## Hyper Wave Inverter

The Panasonic group's experiences and actual results in the development of inverters are realised in the control. This control of the inverter demonstrates the maximum compressor torque. The FS series quickly warms the room up to the set temperature and maintains a comfortable condition, whilst ensuring energy efficiency and savings.

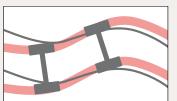




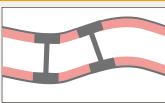
The current waveform deviates from the motor voltage waveform, so power is wasted.

The current waveform closely matches the motor voltage waveform, so power consumption is reduced.





Power is wasted when the car swings off course.



When the car stays right on course, there's no power loss.

## High-Efficiency Compressor

Using a powerful neodymium magnet for a motor allowed us to make the motor more compact. The winding rotor motor of less magnetic field distortion attains higher efficiency.





- Hyper Wave Inverter
  DC Inverter Compressor
- 3 New Large Diagonal Air Flow Fan



# nd energy-saving operation

# <text><text><text><text>

Space-saving design

2 Optimising layout of the indoor heat exchanger and the fan enables the increase in the fan diameter.

# Space-Saving Outdoor Unit

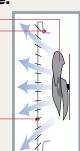
The improvement of the outdoor unit fan makes it possible to install the outdoor unit into a smaller space where the conventional model cannot be installed. Without sacrificing quietness, higher efficiency is also attained. More freedom in installation contributes to easy piping and facilitates installation. It will cut the installation cost.



The Sophisticated Air Path Design – Key to Compact Size.

# These three improvements minimise the air resistance.

- New large diagonal air flow fan The newly designed fan blades reduce the frontal discharge distance.
- 2 Improved front grille opening shape
- 3 Improved front grille grid shape



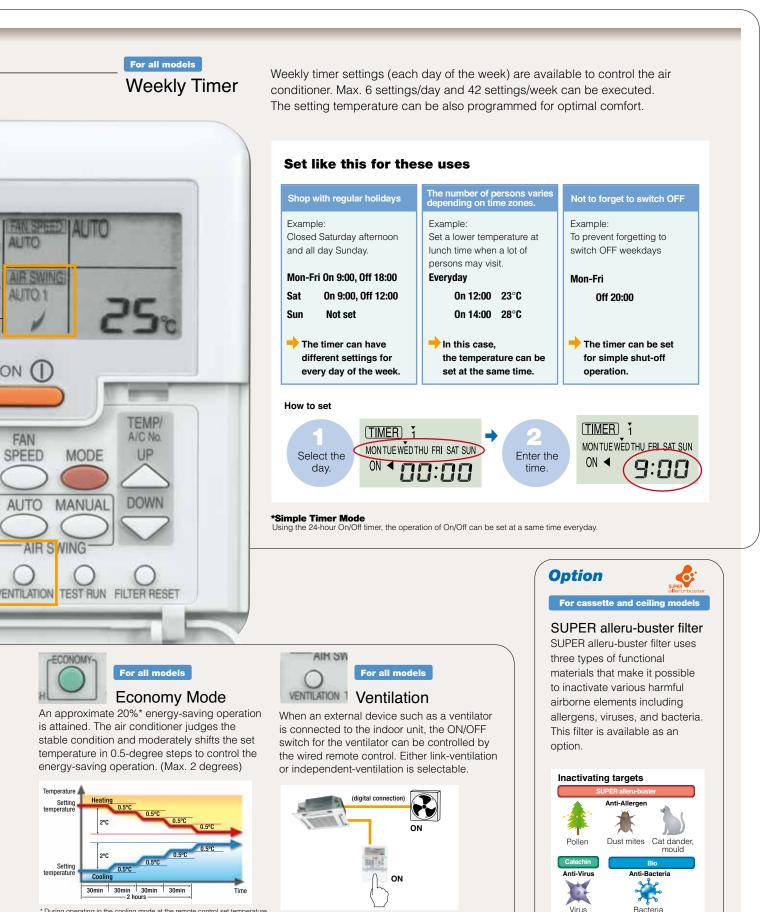
# Pursuing the Perfect Design – In Air Q





When odours are strong, and before and after the air conditioning season. The heat exchanger heats up to clear odours.

# uality, Airflow, and Convenience



 $^{\ast}$  During operating in the cooling mode at the remote control set temperature of 25° under the cooling standard temperature conditions. Can be operated with the wireless remote control.

Ventilators are not included in the product line. Optional printed circuit board (Interface Adapter for External Signals: CZ-TA30P\*) is needed.

Bacteria

CZ-SA11P (For cassette type) CZ-SA12P (For ceiling type)

# **4 Way Cassette**



Easy Maintenance and

Anti-Mould Long-Life Air Filter

Cleaning

\* For optimum comfort, we

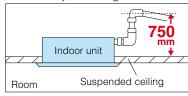
every 1.5 months

recommend cleaning the air filter

# Fast, Flexible Installation

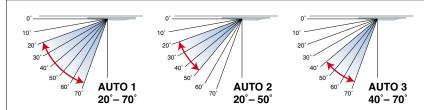
#### • 750 mm Drain-Up Mechanism

Drain hose can be elevated 750 mm from the base of the unit simply by connecting an elbow. This adds to ease of drain piping work, and flexibility in locating the indoor unit.



# Three Airflow Patterns for Extra Comfort

#### • Multi-Comfort Air Control



#### Specifications 4 Way Cassette

#### Noise Level Items Piping Net Weight Dimensions Pipe Length Sound Pressure Sound Power Connection Cooling Heating Power Powe EER Air eve Leve Capacity Capacity Source Input COP Volume ndoor Outdoor Indoor Outdoor Max. Outdoor Indoor Indoor Pane Max Max. (Hi/Lo) (Hi) (Hi) (Hi) Panel Outdoor Gas Liquid Chargeles Coolina Cooling Coolina Cooling Coolina Coolina Side Side Lenath Height Length\* (min-max) (min-max) mm mm mт Indoor 0.D. 0.D. Phase kW kW Pane dB kW W/W L/S dB(A) dB(A) dB kg kg kg mm (inch) m m m $\binom{11}{D}$ mm (inch) (W D Outdoor Hz 1.70 CS-F24DB4E5 246 950 795 1Φ 6.30 7.10 0,50-2,20 371 300 47 51 63 15.88 9.53 220-240 50 CZ-BT03P 36/32 840 950 900 26 4.5 71 50 30 30 (2.10-7.10) (2.20-8.00) 1.84 49 51 65 (5/8) (3/8) 3.86 300 CU-L24DBE5 840 45 320 50-3.1 2.00 795 CS-F28DB4E5 1φ 246 950 8.00 7.10 3.55 ).60-2.40 333 48 53 64 15.88 9.53 38/33 840 950 900 26 4.5 71 50 30 30 220-240 CZ-BT03F (2.20-8.00) (2.30-8.50) 3.79 50 66 (5/8)(3/8)CU-L28DBE5 50 840 45 320 2.59 CS-F34DB4E5 288 950 1,340 1Φ 10.00 11.20 450 1.15-3.20 3.86 52 57 57 66 15.88 9.53 900 320 CZ-BT03P . 220-240 42/37 840 950 28.5 4.5 110 50 30 30 (4.00-12.00) 2.90 54 68 (3/8) (4.00-14.00) 3.86 450 (5/8) CU-L34DBE5 840 45 50 10-4.1 3.64 CS-F43DB4E5 1**ф** 220-240 288 950 1.340 1.20-3.80) 12 50 14.00 15.88 3.43 517 53 61 67 9.53 CZ-BT03P CU-L43DBE5 46/41 840 950 900 28.5 4.5 110 50 30 30 (4.00-14.00) (4.00-16.00) 3.88 517 55 61 69 (5/8)(3/8)50 840 45 320 4 65 1.340 CS-F50DB4E5 288 950 15.88 1φ 9.53 .20-4.95 3.01 55 62 69 14.00 16.00 517 50 30 30 47/42 28.5 4.5 110 840 950 900 **C7-BT03P** 220-240 (5/8) (3/8) (4.00-18.00) (4.00-16.00) 4.75 3.73 517 57 62 71 840 45 320 CU-L50DBE5 50 4.65 3**ф** 380-415 CS-F50DB4E5 288 950 1.340 14.00 16.00 1.20-4.95) 15.88 9.53 3.01 533 62 68 54 CZ-BT03P 47/42 28.5 4.5 105 840 950 900 50 30 30 (4,00-16,00) (4.00-18.00) 4.69 3.41 533 56 62 70 (5/8)(3/8)CU-L50DBE8 50 840 45 320

#### Selectable Remote Control



#### **Versatile Functions**

• 950 mm Square Panel for All Models (FACIA: CZ-BT03P)



- Weekly Timer
  (Wired Remote Control only)
- 24-Hour On/Off Real Setting Timer
- Odour Wash
- Economy Mode
- Auto Restart Function
- Auto Changeover Function
- Auto Fan Mode
- Dry Mode Function
- Low Ambient Cooling Operation
   \* See page 11 for details
- Hot Start Control
- Self-Diagnostic Function
- Optional: SUPER alleru-buster filter (CZ-SA11P)



\* For pipe lengths greater than 30 metres, add refrigerant R410A at 50 grams/metre.

# **Ducted-Concealed**



## Thin (Only 29 cm\*), Lightweight Design

The unit has a height of only 29 cm, so it allows installation in limited ceiling spaces. The lightweight, attractive design simplifies installation, and matches virtually all room interiors.

\* Model: CS-F24DD1E5

## **Flexible Installation**

The powerful airflow enables a longer duct to be used. Since the air outlet can be installed away from the main unit, a variety of air conditioner layouts become possible.

## Easy Maintenance

Maintenance works can be done from the underside of the indoor unit.

# \* A remote control is in the same package with the indoor unit.

Remote Control

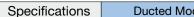


Wired Remote Control

#### **Versatile Functions**

- Auto Fan Mode
- Auto Restart Function
- Dry Mode Function
- Auto Changeover Function
- Low Ambient Cooling Operation e page 11 for details
- Weekly Timer
- •24-Hour On/Off Real Setting Timer
- Odour Wash
- Economy Mode
- Hot Start Control
- Self-Diagnostic Function

INVERTER



#### **Ducted Models**

	Items					EER		문꼬		Noise Pressure	Sound	d Power	Dimen	isions		et ight		oing ection		Pipe Lengt	h
		Cooling Capacity (min-max)	Heating Capacity (min-max)	Power Source	Power Input Cooling Heating	EER (PL) COP Cooling Heating	Volume Cooling	Stati		Outdoor (Hi) Cooling Heating	Indoor (Hi) Cooling Heating	outdoor (Hi) Cooling Heating	Indoor	Outdoor	Indoor	Outdoor	Gas Side	Liquid Side	Max. Length	Max. Height	Max. Chargeless Length**
	loor tdoor	kW	kW	Phase V Hz	kW	w/w	L/s	₽ª (mmAq)	dB(A)	dB(A)	dB	dB	$( \begin{smallmatrix} M \\ H \\ W \\ D \end{smallmatrix} )$	mm (H W) D	kg	kg	0.D. mm (inch)	0.D. mm (inch)	m	m	m
	CS-F24DD1E5 CU-L24DBE5	6.30 (2.00-6.50)	<b>7.10</b> (2.10-7.50)	1φ 220-240 50	2.09 (0.65-2.45) 2.08 (0.65-3.20)	3.01 <mark>3.41</mark>	317 367	69 (7.0)	45/41	47 49	61 <mark>59</mark>	63 <mark>65</mark>	290 1,000+100 500	795 900 320	35	71	15.88 (5/8)	9.53 (3/8)	50	30	30
Models	CS-F28DD1E5 CU-L28DBE5	7.10 (2.10-7.50)	8.00 (2.20-8.50)	1φ 220-240 50	2.36 (0.70-2.50) 2.34 (0.70-3.30)	3.01 3.42	500 500	98 (10.0)	47/43	48 50	63 <mark>61</mark>	64 66	360 1,000+100 650	795 900 320	46	71	15.88 (5/8)	9.53 (3/8)	50	30	30
Static Pressure Models	CS-F34DD1E5 CU-L34DBE5	10.00 (4.00-12.00)	<b>11.20</b> (4.00-13.50)	1φ 220-240 50	3.07 (1.40-3.55) 3.25 (1.40-4.35)	3.26 3.45	667 <mark>667</mark>	98 (10.0)	50/46	52 54	65 <mark>63</mark>	66 <mark>68</mark>	430 1,000+100 650	1,340 900 320	50	110	15.88 (5/8)	9.53 (3/8)	50	30	30
High Sta	CS-F43DD1E5 CU-L43DBE5	12.50 (4.00-13.50)	14.00 (4.00-15.50)	1φ 220-240 50	4.15 (1.40-4.50) 4.22 (1.40-5.10)	3.01 <mark>3.32</mark>	834 <mark>834</mark>	98 (10.0)	50/46	53 <mark>55</mark>	65 <mark>63</mark>	67 <mark>69</mark>	430 1,000+100 650	1,340 900 320	50	110	15.88 (5/8)	9.53 (3/8)	50	30	30
	CS-F50DD1E5 CU-L50DBE5	14.00 (4.00-16.00)	16.00 (4.00-18.00)	1ф 220-240 <sub>50</sub>	5.06 (1.45-5.50) 4.79 (1.40-5.90)	2.77 3.10* 3.34	1000 1000	98 (10.0)	52/48	55 <mark>57</mark>	67 <mark>65</mark>	69 71	430 1,000+100 650	1,340 900 320	54	110	15.88 (5/8)	9.53 (3/8)	50	30	30
	CS-F50DD1E5 CU-L50DBE8	14.00 (4.00-16.00)	16.00 (4.00-18.00)	3 <b>¢</b> 380-415 50	5,16 (1,45-5,50) 4,69 (1,40-6.00)	2.71 3.10* 3.41	1000 1000	98 (10.0)	52/48	54 <mark>56</mark>	67 <mark>65</mark>	68 70	430 1,000+100 650	1,340 900 320	54	105	15.88 (5/8)	9.53 (3/8)	50	30	30

\* Where specified energy efficiency values, EER (PL), part load, complies with AS/NZS3823.

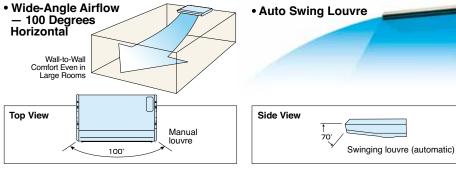
\*\* For pipe lengths greater than 30 metres, add refrigerant R410A at 50 grams/metre.

# **Ceiling - Suspended**



## Easier Maintenance and Cleaning





**Ceiling Models** 

# **Versatile Functions**

- Auto Restart Function
- Auto Fan Mode
- Weekly Timer (Wired Remote Controller only)
- 24-Hour On/Off Real Setting Timer
- Odour Wash

Rear-right

Right

- Economy Mode
- Low Ambient Cooling Operation e page 11 for details
- Auto Changeover Function
- Dry Mode Function
- Hot Start Control
- Self-Diagnostic Function
- Optional: SUPER alleru-buster filter (CZ-SA12P)



Items	Coolina	Heating	Power	Power	EER	Air		Noise Pressure evel	Soun	d Power evel	Dime	nsions	Net W	/eight		oing nection		Pipe Length	ı
	Capacity (min-max)	Capacity (min-max)	Source	Input Cooling Heating	COP Cooling Heating	Volume Cooling Heating	Indoor (Hi/Lo)	Outdoor (Hi) Cooling Heating	Indoor (Hi) Cooling Heating	Outdoor (Hi) Cooling Heating	Indoor	Outdoor	Indoor	Outdoor	Gas Side	Liquid Side	Max. Length	Max. Height	Max. Chargeless Length*
Indoor Outdoor	kW	kW	Phase V Hz	kW	W/W	L/S	dB(A)	dB(A)	dB	dB	$mm \\ \begin{pmatrix} H \\ W \\ D \end{pmatrix}$	mm (H D	kg	kg	0.D. mm (inch)	0.D. mm (inch)	m	m	m
CS-F34DTE5 CU-L34DBE5	10.00 (4.00-12.00)	11.20 (4.00-13.50)	1φ 220-240 50	3.00 (1.25-3.40) 3.28 (1.25-4.20)	3.33 <mark>3.41</mark>	483 483	47/43	52 <mark>54</mark>	64 <mark>64</mark>	66 <mark>68</mark>	250 1,600 700	1,340 900 320	43	110	15.88 (5/8)	9.53 (3/8)	50	30	30
CS-F43DTE5 CU-L43DBE5	12.50 (4.00-13.50)	14.00 (4.00-15.50)	1φ 220-240 50	4.15 (1.30-4.30) 4.00 (1.25-5.00)	3.01 <mark>3.50</mark>	517 <mark>517</mark>	49/45	53 55	66 <mark>66</mark>	67 <mark>69</mark>	250 1,600 700	1,340 900 320	47	110	15.88 (5/8)	9.53 (3/8)	50	30	30
CS-F50DTE5 CU-L50DBE5	14.00 (4 00-16 00)	16.00 (4.00-18.00)	1φ 220-240 50	4.81 (1.35-5.10) 4.79 (1.30-5.90)	2.91 <mark>3.34</mark>	533 533	50/46	55 57	67 <mark>65</mark>	69 71	250 1,600 700	1,340 900 320	47	110	15 <u>.</u> 88 (5/8)	9.53 (3/8)	50	30	30
CS-F50DTE5 CU-L50DBE8	14.00 (4.00-16.00)	16.00 (4.00-18.00)	3ф 380-415 50	4.81 (1.35-5.10) 4.69 (1.30-6.00)	2.91 <mark>3.41</mark>	533 <mark>533</mark>	50/46	54 56	67 <mark>67</mark>	68 70	250 1,600 700	1,340 900 320	47	105	15.88 (5/8)	9.53 (3/8)	50	30	30

\* For pipe lengths greater than 30 metres, add refrigerant R410A at 50 grams/metre.

Specifications

# Outdoor Units

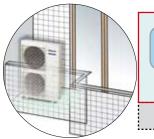


# Flexible Installation in Smaller Spaces

A variety of improvements has reduced installation time and space.

#### Space-Saving Outdoor Unit

By improving the fan, we were able to make the outdoor unit small enough to fit in spaces too tight for conventional units.

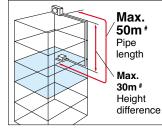




#### 50m Long Piping

Piping can be extended up to 30 metres without additional gas charging, and up to 50 metres with additional gas charging.

By giving you more flexibility in positioning the outdoor unit, this gives you a wider range of installation options.



Allowable	Pipe	Lenath

Allowable Pipe Lengt	# Additional gas is required.							
	6.3kW - 7.1kW	10.0kW	12.5kW - 14.0kW					
Max. Length #	50 m	50 m	50 m					
Max. Chargeless Length	30 m	30 m	30 m					
Max. Height Difference #	30 m* <sup>1</sup> 20 m* <sup>2</sup>	30 m* <sup>1</sup> 20 m* <sup>2</sup>	30 m*1 20 m*2					

\*1 When installing the outdoor unit at a higher position than the indoor unit. \*2 When installing the outdoor unit at a lower position than the indoor unit.

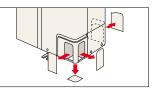
# Quiet, Efficient Design

A host of silencing technologies achieve super-quiet operation. We've also improved operating efficiency and reduced energy consumption.



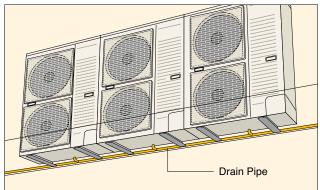
Noise-Suppressing Winglet Fan

 Flexible 4-Way Piping Piping can be routed in any of four directions



#### Centralised Drain Method

The drain outlets can be gathered into a single drain pipe even when multiple outdoor units are installed to a wall.



#### Side-by-Side Continuous Installation

Even outdoor units with different capacities can be installed side by side in an efficient, orderly layout. To make this possible, we have positioned the service port in the front and given all models the same depth.

## Low Ambient Cooling Operation

The unit can be used for cooling even when the outdoor temperature is extremely low. This is ideal for locations that require cooling even in winter.

## • Regular cooling conditions:

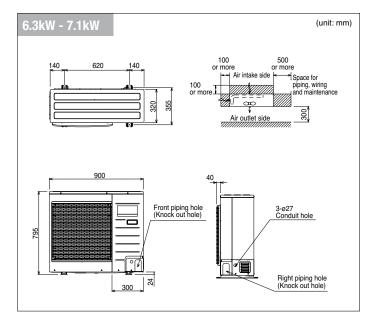
-5°C\* to 43°C (outdoor temperature)

\* However, cooling operation at -15°C is possible in non-residential computer rooms, etc., where the temperature is not less than 21°C and humidity is not more than 45%

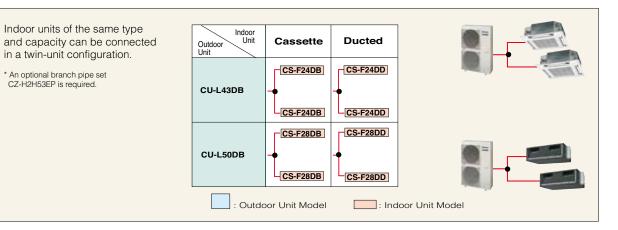
#### • Regular heating conditions:

-20°C to 24°C (outdoor temperature)

### Inverter: CU-L24DBE5/CU-L28DBE5

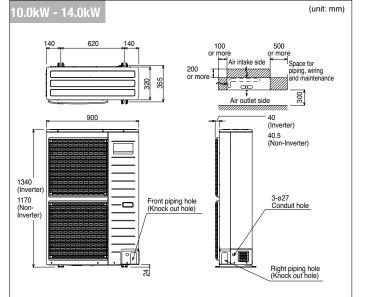


# **Indoor Unit Tandem Combination**





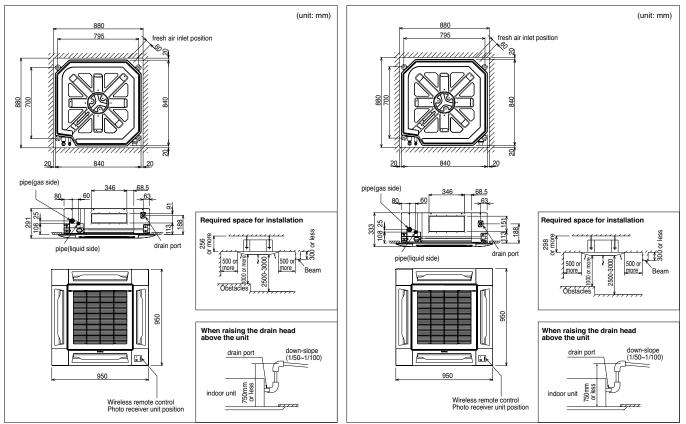
#### Inverter: CU-L34DBE5/CU-L43DBE5/ CU-L50DBE5/CU-L50DBE8



## **CASSETTE TYPE**

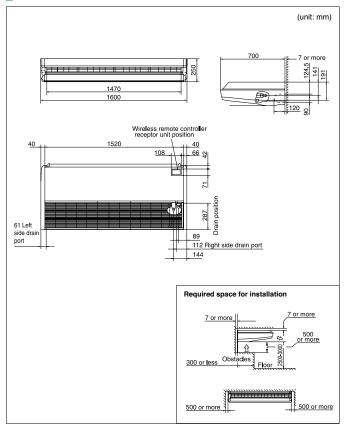
#### CS-F24DB4E5/CS-F28DB4E5

## CS-F34DB4E5/CS-F43DB4E5/CS-F50DB4E5

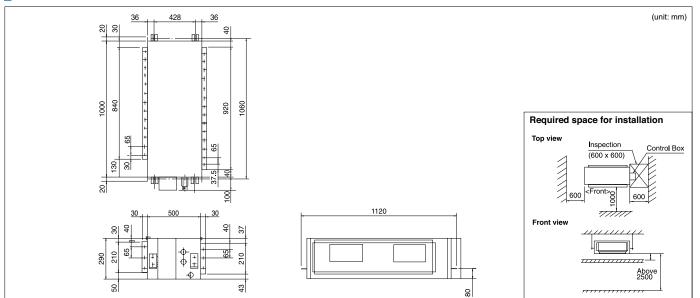


# **CEILING TYPE**

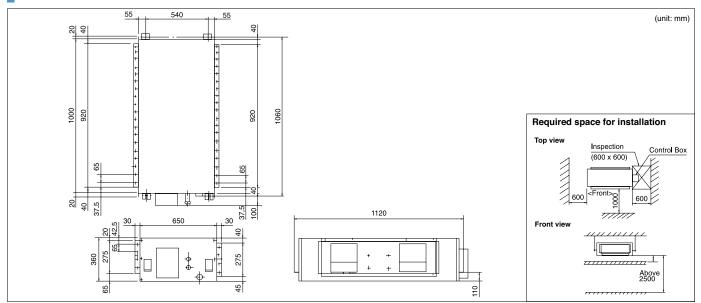
#### CS-F34DTE5/CS-F43DTE5/CS-F50DTE5



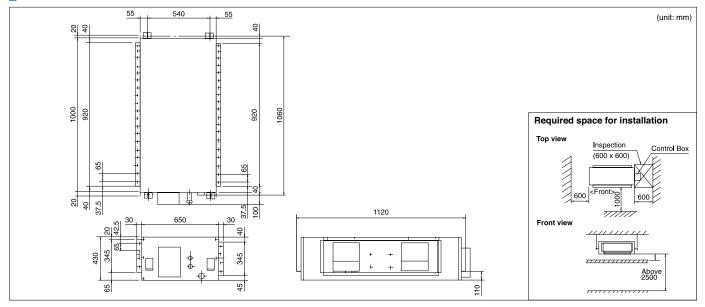
## CS-F24DD1E5

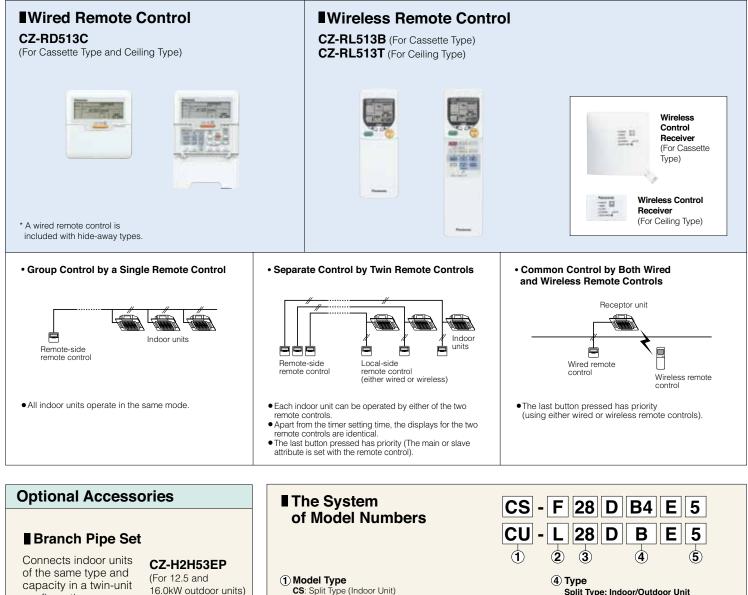


CS-F28DD1E5



#### CS-F34DD1E5/CS-F43DD1E5/CS-F50DD1E5





**CS**: Split Type (Indoor Unit) **CU**: Split Type (Outdoor Unit)

• Guaranteed Operating Range

2 Function

Indoor Unit F: Can be used with Inverter, Non-Inverter Models Outdoor Unit L: Inverter Models

- 3 Capacity
- Value = Capacity (Btu/h) x 1/1000 e.g. 28,000 Btu/h x 1/1000 ≒ 28

Cooling -5°C DB

43°C DB

Heating

24°C DB

-20°C DB

D1: Ducted (High Static Pressure Models) т Ceiling Outdoor Unit for Cassette, в Ceiling and Ducted Indoor Unit

Split Type: Indoor/Outdoor Unit

- **5** Power Supply
  - 5: 50Hz (Single Phase) 8: 50Hz (3-Phase)

B4: Cassette (4-Way)

#### SPECIFICATIONS

configuration.

• Outdoor Unit Sound Pressure Level is 1 metre from front & 1.5 metres from base of unit.

#### Rating Conditions

	Cooling	Heating	Outdoor	
Inside air temperature	27°C DB/19°C WB	20°C DB	Minimum	
Outside air temperature	35°C DB	7°C DB/6°C WB	Maximum	

• Where specified energy efficiency values, EER (PL), part load, complies with AS/NZS3823.



(Residential Warranty)



#### ISO 9001 Certification CERTIFIED TO MS ISO 9001: 2000

Panasonic HA Air-Conditioning (MA) Sdn. Bns. (PHAAM) Registration No. AR 1010

This Panasonic air conditioner factory in Malaysia has received ISO 9001 certification, ISO 9001 Certification attests to the excellent quality assurance systems in place at the factory.

#### Environmental Management Systems Approval Certificate



MS ISO 14001 CERT. NO. P06860001 CERTIFIED TO MS ISO 14001: 2004 Panasonic HA Air-Conditioning (MA) Sdn. Bns. (PHAAM)



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• Specifications are subject to change without notice for further improvement. • Publication effective October 2010.

• Due to the printing process, product colours can vary from those shown. • All graphics are provided merely for the purpose of illustrating a point.