

CAHV-Z450YA-HPB

HOT WATER HEAT PUMP



For outdoor installation
Heating Capacity: 40kW

The Mitsubishi Electric EcodanPro CAHV-Z delivers powerful, low-carbon heating and hot water using ultra-low R290 GWP refrigerant. Perfect for a wide range of commercial applications such as schools and hospitals, it can operate as a standalone unit or in scalable multi-unit systems. In a multi-unit setup, units cascade and rotate to meet demand, with a 7-unit system delivering up to 280kW*1 of efficient, reliable heating and hot water all year round.

Low Temperature Performance



Low Noise Operation



High Flow Temperatures



Low GWP Refrigerant



ecodan[®]pro

HOT WATER HEAT PUMP – FOR SPACE HEATING

Key Features

Ultra-Low GWP R290 Refrigerant

With Global Warming Potential (GWP) of just 3*3, the R290 refrigerant reduces embodied carbon, helps to future-proof projects and supports corporate social responsibility and sustainability targets.

High-Temperature Heating Performance

Delivers water temperatures up to 75°C, even at -15°C*1 ambient, ensuring reliable comfort in demanding conditions.

Scalable Cascade Control

Multiple units can be combined and managed in cascade, providing maximum design freedom for a wide range of applications.

Wide Water Temperature Range Without Boost Heaters

Supplies 24°C – 75°C flow temperatures without electric boosters, reducing energy consumption, running costs, and system complexity.

Rapid Defrost Operation

Minimises system downtime during defrost, helping maintain consistent heating performance in cold conditions.

Integrated R290 Safety Features

Built-in leak detection and an explosion proof relay supporting safe, compliant operation alongside peace of mind.

Quiet, Adaptable Operation

Low Noise Mode that minimises sound levels, and External Static Pressure Control allows flexible system design.

Anti-Simultaneous Defrost Control

Prevents full system shutdown during defrost cycles, ensuring continuous heating delivery.

Capacity Range

VERSION	DESCRIPTION	HEATING CAPACITY
CAHV-Z450YA-HPB	STANDARD MODEL	40kW
CAHV-Z450YA-HPB-BS	COASTAL PROTECTION MODEL	40kW

*1 Refer to Databook for more information.

*2 SPL is the sound pressure level measured at 1m from the unit and 1.5m above the floor in an anechoic chamber.

*3 GWP taken from the IPCC AR4 assessment report.

Specifications

			CAHV-Z450YA-HPB
POWER SUPPLY			3-PHASE 4-WIRE 380-400-415V 50/60Hz
CAPACITY (EN14511) ^{*1}		kW	40.0
	POWER INPUT	kW	12.62
	COP	kW/kW	3.17
MAXIMUM CURRENT INPUT		A	45.6
WATER PRESSURE DROP ^{*1}		kPa	10.2
TEMPERATURE RANGE ^{*2}	OUTLET WATER TEMPERATURE		24 - 75°C
	AIR TEMPERATURE	D.B.	-25 - 43°C
CIRCULATING WATER VOLUME RANGE ^{*3}		m³/h	4.0 - 7.0
SOUND PRESSURE LEVEL (MEASURED 1M BELOW UNIT IN AN ANECHOIC ROOM) ^{*1 *4}		dB(A)	65
WATER PIPE DIAMETER AND TYPE	INLET	mm (in)	40A (Rc 1 1/2")
	OUTLET	mm (in)	40A (Rc 1 1/2")
EXTERNAL FINISH	Acrylic painted steel sheet		
NET WEIGHT		kg	363
MAXIMUM DESIGN PRESSURE	WATER	MPa	1.0
	R290	MPa	3.85
MINIMUM WATER VOLUME		L	525
HEAT EXCHANGER	WATER-SIDE	Copper brazed stainless steel sheet	
	AIR-SIDE	Plate fins and copper tubes	
COMPRESSOR	TYPE	Inverter scroll hermetic compressor	
FAN	AIR FLOW RATE	m³/min	150 x2
	EXTERNAL STATIC PRESSURE		10 Pa (1mm H₂O)
			40 Pa ^{*5}
		TYPE AND QUALITY	Propeller fan x2
	CONTROL AND DRIVING MECHANISM	Inverter control, direct driven by motor	
DEFROSTING METHOD	Auto-defrost mode (Reversed refrigerant cycle)		
REFRIGERANT	TYPE AND FACTORY CHARGE	R290, 4.8kg	
COMPATIBLE CONTROLLERS	AE-C400E, EW-C50E, FTC6, PAR-W31MAA		
BMS CONTROL (MODBUS)		MelcoBEMS Mini Interface	

(1) Under normal heating conditions at the outdoor temp, 7°CDB/6°CWB, the outlet water temperature of 45°C, and the inlet water temperature of 40°C.

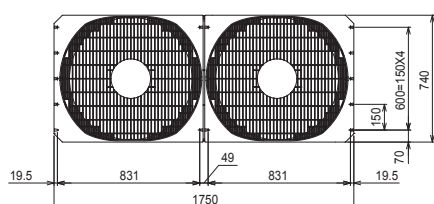
(2) Refer to the Databook.

(3) The unit can operate at water volume range 1.5 – 4.0m³/hr if the water volume exceeds 4.0m³/hr during defrost cycle.

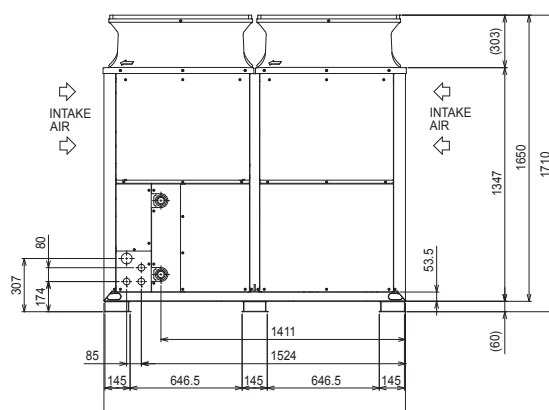
(4) The sound pressure level is a value measured in an anechoic room at 1m away and 1.5m above floor.

(5) When operating in external static pressure mode.

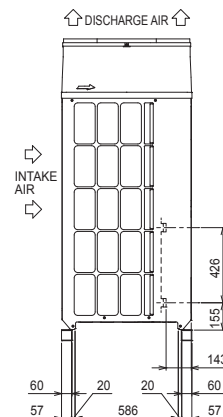
Top View



Front View



Side View



Optional Extras

- TW-TH16-E Temperature Sensors
- PAR-W31MAA Controller
- MelcoBEMS Mini BMS Interface

For more information please visit our website
or call our Applied Products Sales Team.
www.mitsubishi-electric.co.nz | 0800 784 382

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