

e-Series Modular Chiller Range

EAC/HV-M1500/1800YC(-N)(-BS)



Chiller systems have been used for decades to deliver controlled cooling to buildings, but with increasing pressure on energy efficiency and running costs, we now need a low-carbon, cost effective option.

Comprising of cooling only and heat pump models, Mitsubishi Electric's R32 range of e-Series Modular Chillers allow up to six individual units to be connected together to provide system capacities up to 1,080kW.



High Efficiency

The e-Series R32 Modular Chiller range uses highly efficient scroll compressor technology originating from Mitsubishi Electric City Multi units, along with advanced inverters and controls to deliver exceptional efficiency with a wide operating range. R32 e-Series Modular Chillers offer higher seasonal part-load efficiencies than conventional R410A chillers, resulting in lower running costs for the end user.

Unique Modular Approach

Using a modular approach reduces space requirements and simplifies logistics and installation. A modular approach also lends itself to a staged installation for future HVAC demands, as modular chillers can be scaled accordingly.

Reduced Plant Space

The e-Series Modular Chiller system can achieve between 30% - 40% space savings when compared to traditional chillers. Each module can be installed in a group of up to six units using the internal header. For designers looking to optimise roof and plant space, this is an enormous benefit over large unitary chillers.

Low Noise Levels

The e-Series Modular Chillers are by their nature much quieter than conventional chillers. By utilising highly efficient fan and compressor technologies within a uniquely shaped chassis, the e-Series Modular Chiller range offers market leading low noise levels.

Environmentally Conscious

The new R32 e-Series Modular Chillers offer significant environmental benefits over conventional R410A chillers. The use of R32 compatible compressors and flat tube heat exchangers allows for approximately 68% reduction in refrigeration volume and approximately 89% reduction in CO₂ equivalent in the EACV-M1500YC(-N)(-BS).



Specifications

150kW/180kW Modular Chillers (Cooling Only)

COOLING ONLY			EACV-M1500YC(-N)(-BS)	EACV-M1800YC(-N)(-BS)
POWER SOURCE			3-phase 4-wire 380-400-415V 50/60Hz	3-phase 4-wire 380-400-415V 50/60Hz
COOLING CAPACITY ¹		kW	150	180
		kcal/h	129,000	154,800
		BTU/h	511,800	614,160
	Power Input	kW	44.73	57.02
	Cooling Current 380 - 400 - 415V	A	76 - 72 - 69	96 - 91 - 88
	EER		3.35	3.16
	IPLV ³		6.42	6.31
COOLING CAPACITY (EN14511) ²		kW	149.18	178.8
		kcal/h	128,295	153,768
		BTU/h	509,002	610,066
	Power Input	kW	45.55	58.22
	EER		3.28	3.07
	Eurovent Efficiency Class		A	B
	SEER		5.52	5.36
MAXIMUM CURRENT INPUT	A	120	120	
WATER PRESSURE DROP ¹	kPa	55	78	
TEMP RANGE	Cooling	°C	Outlet water 4-30	outlet water 4-30
	Outdoor	°C	-15-52	-15-52
CIRCULATING WATER VOLUME	Nominal	m ³ /h	25.8	31
	Range	m ³ /h	12.9-43.0	12.9-43.0
SOUND PRESSURE LEVEL (measured in anechoic room) at 1m ¹		dB(A)	65	67
SOUND POWER LEVEL (measured in anechoic room) ¹		dB(A)	83	85
DIAMETER OF WATER PIPE (Standard piping)	Inlet		65A grooved pipe coupling joint (76.3mm OD)	65A grooved pipe coupling joint (76.3mm OD)
	Outlet		65A grooved pipe coupling joint (76.3mm OD)	65A grooved pipe coupling joint (76.3mm OD)
DIAMETER OF WATER PIPE (Internal header piping)	Inlet		150A grooved pipe coupling joint (165.2mm OD)	150A grooved pipe coupling joint (165.2mm OD)
	Outlet		150A grooved pipe coupling joint (165.2mm OD)	150A grooved pipe coupling joint (165.2mm OD)
EXTERNAL FINISH			Polyester powder coating steel plate	Polyester powder coating steel plate
EXTERNAL DIMENSION	Width x Depth x Height	mm	3400x1080x2350	3400x1080x2350
NET OPERATING WEIGHT	Standard Piping	kg	1074	1074
	Internal Header Piping "-N" Model	kg	1142	1142
DESIGN PRESSURE	R32	MPa	4.15	4.15
	Water	MPa	1.0	1.0
HEAT EXCHANGER	Water Side		Stainless steel plate and copper brazing	Stainless steel plate and copper brazing
	Air Side		Salt-resistant corrugated fin & aluminium micro channel	Salt-resistant corrugated fin & aluminium micro channel
COMPRESSOR	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Maker		Mitsubishi Electric Corporation	Mitsubishi Electric Corporation
	Starting Method		Inverter	Inverter
	Quantity		4	4
	Motor Output	kW	11.5 x 4	11.5 x 4
	Lubricant		MEL46EH	MEL46EH
	FAN	Air Flow Rate	m ³ /min	270 x 4
		L/s	4500 x 4	4500 x 4
		cfm	9534 x 4	9534 x 4
	Type, Quantity		Propeller fan x 4	Propeller fan x 4
	Starting Method		Inverter	Inverter
	Motor Output	kW	0.92 x 4	0.92 x 4
PROTECTION	High Pressure Protection		High pres.Sensor & High pres.Switch at 4.15MPa (601psi)	High pres.Sensor & High pres.Switch at 4.15MPa (601psi)
	Inverter Circuit		Over-heat protection, Over current protection	Over-heat protection, Over current protection
	Compressor		Over-heat protection	Over-heat protection
REFRIGERANT R32 (GWP 675)	Full Charge	kg	4.7 x 4 circuits (18.8 total) ⁴	4.7 x 4 circuits (18.8 total) ⁴
	CO ₂ Equivalent ⁵	t	12.7	12.7
	Control		LEV	LEV

Pump not included in e-Series units.

Due to continuous improvement, the above specifications may be subject to change without notice.

*1 Under normal cooling conditions at outdoor temp 35°CDB/24°CWB. Outlet water temp 7°C, inlet water temp 12°C. Pump input not included.

*2 Under normal cooling conditions at outdoor temp 35°CDB/24°CWB. Outlet water temp 7°C, inlet water temp 12°C. Pump input included, per EN14511.

*3 Calculations in accordance with AHRI 550-590.

*4 The factory charge of refrigerant for EACV-M1500YCL(-N)(-BS) and EACV-M1800YCL(-N)(-BS) is 3kg x 4 circuits (12kg total).

*5 Values based on Regulation (EU) No.517/2014.

150kW/180kW Modular Chillers (Heat Pump)

HEAT PUMP			EAHV-M1500YC(-N)(-BS)	EAHV-M1800YC(-N)(-BS)
POWER SOURCE			3-phase 4-wire 380-400-415V 50/60Hz	3-phase 4-wire 380-400-415V 50/60Hz
COOLING CAPACITY ^{*1}		kW	150.00	180.00
		kcal/h	129,000	154,800
		BTU/h	511,800	614,160
	Power Input	kW	44.73	57.02
	Cooling Current 380-400-415V	A	76 - 72 - 69	96 - 91 - 88
	EER		3.35	3.16
	IPLV ^{*3}		6.42	6.31
COOLING CAPACITY (EN14511) ^{*2}		kW	149.18	178.80
		kcal/h	128,295	153,768
		BTU/h	509,002	610,066
	Power Input	kW	45.55	58.22
	EER		3.28	3.07
	Eurovent Efficiency Class		A	B
	SEER		5.52	5.36
HEATING CAPACITY ^{*3}		kW	150.00	180.00
		kcal/h	129,000	154,800
		BTU/h	511,800	614,160
	Power Input	kW	42.61	53.09
	Heating Current 380-400-415V	A	72 - 68 - 66	90 - 85 - 82
	COP		3.52	3.39
	HEATING CAPACITY (EN14511) ^{*4}		kW	150.82
		kcal/h	129,705	155,832
		BTU/h	514,598	618,254
Power Input		kW	43.43	54.29
COP			3.47	3.34
SCOP Low/Medium			3.31/2.88	3.31/2.88
MAXIMUM CURRENT INPUT			A	120
WATER PRESSURE DROP ^{*1}			kPa	55
TEMP RANGE	Cooling	°C	Outlet water 4~30	Outlet water 4~30
	Heating	°C	Outlet water 25~55	Outlet water 25~55
	Outdoor	°C	-15~43	-15~43
CIRCULATING WATER VOLUME	Nominal	m ³ /h	25.8	31
	Range	m ³ /h	12.9~43.0	12.9~43.0
SOUND PRESSURE LEVEL (measured in anechoic room) at 1m ^{*1}			dB(A)	65
SOUND POWER LEVEL (measured in anechoic room) ^{*1}			dB(A)	83
DIAMETER OF WATER PIPE (Standard piping)	Inlet		65A grooved pipe coupling joint (76.3mm OD)	65A grooved pipe coupling joint (76.3mm OD)
	Outlet		65A grooved pipe coupling joint (76.3mm OD)	65A grooved pipe coupling joint (76.3mm OD)
DIAMETER OF WATER PIPE (Internal header piping)	Inlet		150A grooved pipe coupling joint (165.2mm OD)	150A grooved pipe coupling joint (165.2mm OD)
	Outlet		150A grooved pipe coupling joint (165.2mm OD)	150A grooved pipe coupling joint (165.2mm OD)
EXTERNAL FINISH			Polyester powder coating steel plate	Polyester powder coating steel plate
EXTERNAL DIMENSION	Width x Depth x Height	mm	3400x1080x2350	3400x1080x2350
NET OPERATING WEIGHT	Standard Piping	kg	1315	1315
	Internal Header Piping	kg	1382	1382
DESIGN PRESSURE	R32	MPa	4.15	4.15
	Water	MPa	1.0	1.0
HEAT EXCHANGER	Water Side		Stainless steel plate and copper brazing	Stainless steel plate and copper brazing
	Air Side		Salt-resistant cross fin & aluminium tube	Salt-resistant cross fin & aluminium tube
COMPRESSOR	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Maker		Mitsubishi Electric Corporation	Mitsubishi Electric Corporation
	Starting Method		Inverter	Inverter
	Quantity		4	4
	Motor Output	kW	11.5 x 4	11.5 x 4
	Lubricant		MEL46EH	MEL46EH
	FAN	Air Flow Rate	m ³ /min	270 x 4
		L/s	4500 x 4	4500 x 4
		cfm	9534 x 4	9534 x 4
	Type, Quantity		Propeller fan x 4	Propeller fan x 4
	Starting Method		Inverter	Inverter
	Motor Output	kW	0.92 x 4	0.92 x 4
PROTECTION	High Pressure Protection		High pres.Sensor & High pres.Switch at 4.15MPa (601psi)	High pres.Sensor & High pres.Switch at 4.15MPa (601psi)
	Inverter Circuit		Over-heat protection, Over current protection	Over-heat protection, Over current protection
	Compressor		Over-heat protection	Over-heat protection
REFRIGERANT R410A (GWP 675)	Type x Charge		11.5 x 4 Circuits (46 total) ^{*5}	11.5 x 4 Circuits (46 total) ^{*5}
	CO ₂ Equivalent ^{*7}		31.0	31.0
	Control		LEV	LEV

Pump not included in e-Series units.

Due to continuous improvement, the above specifications may be subject to change without notice.

*1 Under normal cooling conditions at outdoor temp 35°CDB/24°CWB. Outlet water temp 7°C, inlet water temp 12°C. Pump input not included.

*2 Under normal cooling conditions at outdoor temp 35°CDB/24°CWB. Outlet water temp 7°C, inlet water temp 12°C. Pump input included, per EN14511.

*3 Under normal heating conditions at outdoor temp 7°CDB/6°CWB. Outlet water temp 45°C, inlet water temp 40°C. Pump input not included.

*4 Under normal heating conditions at outdoor temp 7°CDB/6°CWB. Outlet water temp 45°C, inlet water temp 40°C. Pump input included, per EN14511.

*5 Calculations in accordance with AHRI 550-590.

*6 The factory charge of refrigerant for EAHV-M1500YCL(-N)(-BS) and EAHV-M1800YCL(-N)(-BS) is 3kg x 4 circuits (12kg total).

*7 Values based on Regulation (EU) No.517/2014.



Black Diamond Technologies and Mitsubishi Electric – an Exclusive Partnership Since 1981

The Mitsubishi Electric Product Range has been exclusively distributed by 100% locally Owned and Operated Black Diamond Technologies Limited for over 40 years in New Zealand.

The combination of an internationally trusted brand with the comfort of a locally owned and operated company means that you will always get the best products, the best local service and the best local support.

Based in Wellington with a further 4 support offices throughout New Zealand, Black Diamond Technologies Limited is here to help.

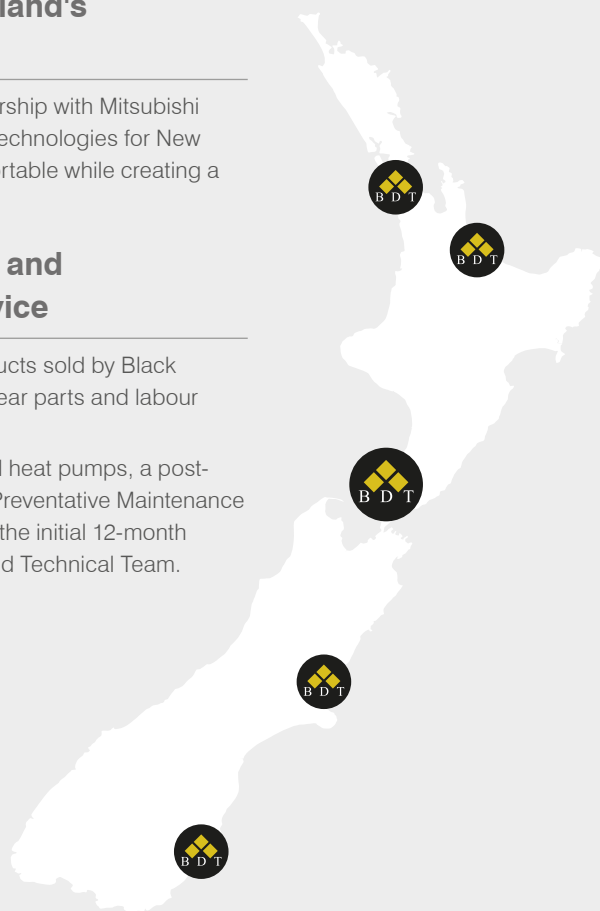
Our Vision – Creating New Zealand's Sustainable Future

Black Diamond Technologies Limited in partnership with Mitsubishi Electric, strives to develop and introduce new technologies for New Zealanders that will make our lives more comfortable while creating a greener tomorrow.

Peace of Mind Commissioning and Preventative Maintenance Service

Commercial chiller and heat pump HVAC products sold by Black Diamond Technologies are provided with a 1-year parts and labour warranty from the time of commissioning.

To validate the warranty on specific chillers and heat pumps, a post-commissioning Black Diamond Technologies Preventative Maintenance Service is required; this includes 4 site visits in the initial 12-month period and is carried out by our specially trained Technical Team.



For more information please visit our website or call our Customer Service Team.

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