

# Multi Density

## Close Coupled Precision Air Conditioning

Mitsubishi Electric's new Multi Density systems combine the efficiency, quality and simplicity of VRF with high performance close coupled air conditioning units.

Multi Density is ideal for applications where high sensible cooling and close control of temperature in high density applications is required. This system consists of multiple indoor 'coolside' close coupled air conditioners connected to a City Multi VRF outdoor unit. The result is a full inverter multi-split system, designed according to the best quality standards and dedicated to the most reliable I.T. environments.

The range is particularly suitable for high density racks and blade server cooling in data centres. It is able to cope with the high density of the thermal load, putting the air conditioning unit directly within the rows of racks to cool the localised heat sources (hot spots).

### Key Features & Benefits:

- High Efficiency - full Mitsubishi Electric inverter technology
- Small footprint
- Pipe runs up to 165m
- Trusted VRF technology

**R410A**



# R410A

CRAC UNITS (Computer Room Air Conditioning)		m-MRAC G02 009 m-MROW G02 009	m-MRAC G02 015 m-MROW G02 015	m-MRAC G02 025 m-MROW G02 025
COOLING CAPACITY (kW) <sup>1</sup>	Total	10.6	16.6	28.6
	Sensible	9.6	15.7	27.4
SHR <sup>2</sup>		0.91	0.94	0.96
EC SUPPLY FAN (no.)		2	4	5
AIRFLOW (m <sup>3</sup> /h)		1,500	2,700	4,200
NOMINAL EXTERNAL STATIC PRESSURE (Pa)		20	20	20
MAX EXTERNAL STATIC PRESSURE (Pa)		60	60	60
POWER INPUT (kW) <sup>3</sup>		0.18	0.34	0.85
REFRIGERANT		R410A	R410A	R410A
REFRIGERANT CIRCUITS (n°)		1	1	1
AIR FILTERS	NO.	2	2	2
	Extended filtering surface (m <sup>2</sup> )	0.35	0.35	0.35
	Efficiency (ISO EN 16890) (COARSE)	40%	40%	40%
SOUND LEVEL (ISO 3744) (dB(A)) <sup>4</sup>	Pressure Level	63.5	64.5	70.5
	Power Level	79	80	86
POWER SUPPLY (V / Ph / Hz)		230 / 1 / 50	230 / 1 / 50	230 / 1 / 50
ABSORBED CURRENT (A) <sup>5</sup>		0.8	1.5	4
STARTING CURRENT (A)		2.9	5.8	7.3
DIMENSIONS (mm)	Width	300	300	300
	Depth (MROW / MRAC)	1000 / 1200	1000 / 1200	1000 / 1200
	Height	2,085	2,085	2,085
NET WEIGHT (kg)	In-Flow	175	190	193
	Enclosure	185	200	203
CONNECTIONS	Refrigerant pipes diameter - Gas (Ø Inch)	3/4"	7/8"	1"
	Refrigerant pipes diameter - Liquid (Ø Inch)	1/2"	5/8"	3/4"
	Condensate (Ømm) <sup>5</sup>	16	16	16
	Power supply wiring cable (no. x mm <sup>2</sup> ) <sup>6</sup>	3G1.5	3G1.5	3G1.5

OUTDOOR UNITS		m-MOCU G02 050	2 x m-MOCU G02 050
RATED COOLING CAPACITY	kW	50	50 x 2
SYSTEM EER <sup>2</sup>	kW/kW	2.96	3.24
SOUND PRESSURE LEVEL (dB(A))	Cooling	65	68
WEIGHT (kg)		304	304 x 2
DIMENSIONS (mm)	Width x Depth x Height	1650 x 740 x 1750	1650 x 740 x 1750 [x2]
POWER SUPPLY (V / Hz)		380-415v, 50Hz	380-415v, 50Hz
PHASE		3	3
OUTDOOR POWER INPUT (kW)	Cooling (nominal)	15.2	13.7
STARTING CURRENT (A)		27.8	27.8 x 2
MAX RUNNING CURRENT (A)	Cooling	37.6	37.6 x 2
FUSE RATING (BS88) - HRC (A)		40	40 x 2
MAINS CABLE	No. Cores	566	566
MAX PIPE LENGTH (m)		165	165
MAX HEIGHT DIFFERENCE (m)		50 (40 <sup>7</sup> )	50 (40 <sup>7</sup> )
CHARGE REFRIGERANT (kg) / CO <sub>2</sub> EQUIVALENT (t)	R410A (GWP 2088)	11.8 / 24.6	11.8 / 24.6 x 2
GUARANTEED OPERATING RANGE (°C)	Max Temp	45	45
	Min Temp	-15	-15

**Notes:** THE COOLING CAPACITY DOES NOT CONSIDER THE SUPPLY FAN MOTOR THERMAL LOAD. \*1 All data are refers to the Rating Configuration with 2x m-MROW-Z G02 F/S 025 @35°C Outdoor Temperature and 35°C/27%rh Indoor Temperature. \*2 SHR = Sensible cooling capacity / Total cooling capacity. \*3 Corresponding to the nominal ESP=20Pa. \*4 Sound pressure level on air return at 1m. \*5 Rubber pipe - refers to internal diameter. \*6 Minimum section. It's possible to connect indoor units with a sum of sizing from 25 to 75. These units contain <HFC R410A [GWP100 2088]> fluorinated greenhouse gas. \*7 When outdoor unit is below indoor unit.



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**Note:** The fuse rating is for guidance only and please refer to the relevant databook for detailed specification. It is the responsibility of a qualified electrician/electrical engineer to select the correct cable size and fuse rating based on current regulation and site specific conditions. Mitsubishi Electric's air conditioning equipment and heat pump systems contain a fluorinated greenhouse gas, R410A (GWP:2088), R290 (GWP:3), R32 (GWP:675), R407C (GWP:1774), R134a (GWP:1430), R513A (GWP:631), R454B (GWP:466), R454C (GWP:148), R1234ze (GWP:7) or R1234yf (GWP:4). \*These GWP values are based on Regulation (EU) No 517/2014 from IPCC 4th edition. In case of Regulation (EU) No.626/2011 from IP CC 3rd edition, these are as follows. R410A (GWP:1975), R32 (GWP:550), R407C (GWP:1650) or R134a (GWP:1300).

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