

SINGLE FAN MiNi VRF

What you'll find inside:

- Technology
- Features
- Controllers
- Product specifications

+
Single
Phase

+
Energy
efficient

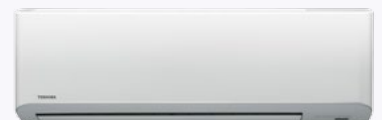
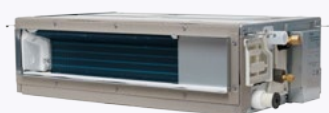
+
Heating &
cooling

TOSHIBA

AIR CONDITIONING



Single Fan MiNi VRF Apartment Ready



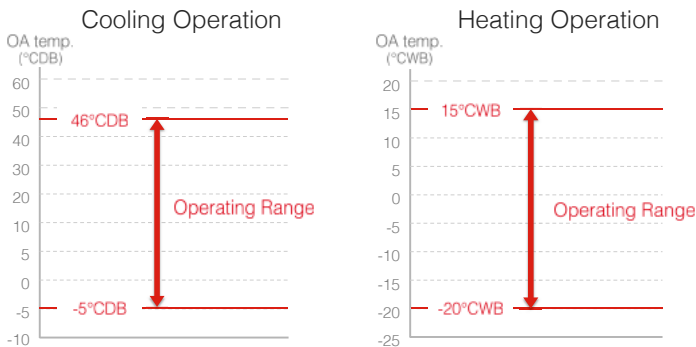
About Toshiba's Single Fan MiNi

As a leader in electronics, Toshiba Air Conditioning is committed to delivering the highest standards of quality and innovation. These principles apply to air conditioning, which we continue to develop market leading products suitable for residential and commercial applications.

Toshiba's passion for advancement consistently works to ensure that our air conditioners help protect the environment while delivering reassurance and reliability to users in all walks of life. All Toshiba systems are designed with an emphasis on energy efficiency, reliability, aesthetics and ease of installation.

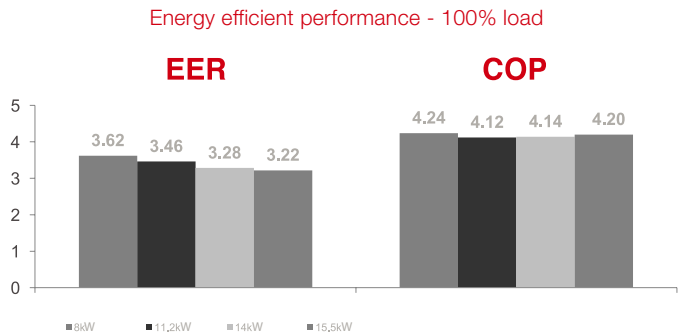
Operating Temperature Range

The compressor design and system controls result in the Single Fan MiNi VRF expanding its temperature operating range. This enables wider applications of the system in hotter and colder regions.



Energy Saving

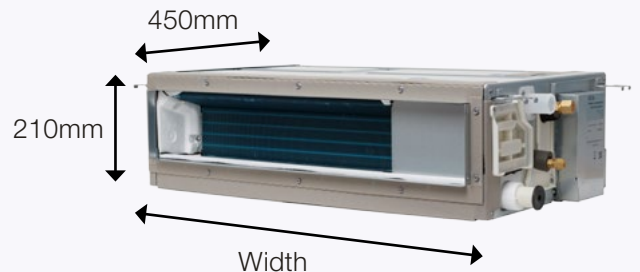
The efficient DC twin-rotary compressors and variable refrigerant pressure controlled inverter achieve greater energy efficient performance.



Super Slim Ducted

Toshiba's Super Slim Ducted (SSD) provides solutions to a variety of application challenges facing residential and apartment style living including commercial, hotel, and aged care, installations.

The SSD's built in features and control logic is a perfect fit with building management systems and Toshiba's network of VRF & light commercial products boasting an impressive line-up of 12 capacities from 2.2kW up to 8.0kW. The SSD's low profile of only 210mm high and 450mm deep makes bulkhead, and installations above wardrobe voids, a practical solution in today's space thirsty living areas and a perfect compliment to the Single Fan MiNi VRF.

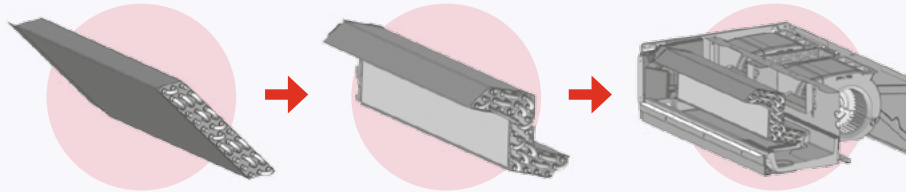


Capacity kW	Width (mm)
2.2 – 4.0	700
4.5 – 5.6	900
6.3 – 8.0	1,100

Key Technologies

Z Shaped Heat Exchanger

With installation design ease and user comfort in mind, the Super Slim Ducted comes with its own built-in DC driven drain pump and optional left/right drain discharge ports. The 'Z-shaped' heat exchanger arrangement and DC dynamo operated centrifugal fan cleverly combine to produce a space saving low profile unit.



Twin Rotary Compressor

The Toshiba DC Twin Rotary Compressor is compact and reliable with a wide operating range. It utilises two rollers rotating together making accurate compressor rotation possible, and the low oil release method combines to deliver higher performance efficiencies, and peaceful operation.

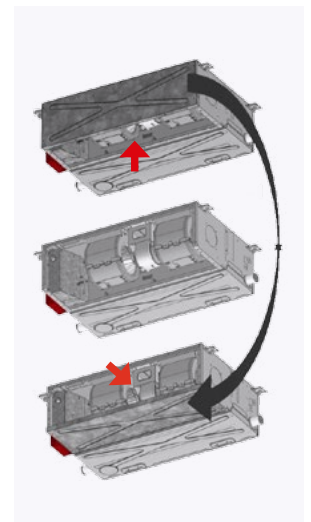


Installation Flexibility

Air intake and discharge is interchangeable to either rear or bottom configuration, all combining to produce quieter operation for enhanced user comfort and installation simplicity.

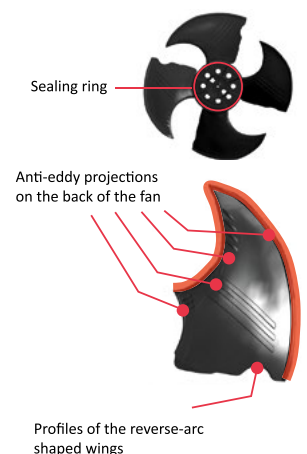
The electrical box is also conveniently positioned outside the unit providing straightforward access to power and communications terminals.

Once the inside cover of the electrical box (behind the terminal block) is opened, it reveals the PCB, neatly shielded against excessive ingress of airborne dust or dirt.



Propeller Fan

Toshiba's bat wing fan design increases the delivery of air volume while the anti-eddy ribs and rubber sealing rings work in harmony to reduce air resistance thus achieving quieter operation.



Key Features of Single Fan MiNi

Features Single Fan MiNi VRF

- Connects up to 6 indoor units for design flexibility including 450mm deep super slim ducted
- Toshiba's efficient and reliable twin rotary inverter compressor
- Lighter and more compact for easier installation and transportation
- 4 models ranging including 8kW, 11.2kW, 14kW and 15.5kW
- Maximum height of only - 900mm or 910mm per unit*
- Demand Response Enabled (DRM1)
- Diversity 80% to 135%
- 5 year peace of mind warranty

Features of the Super Slim Ducted

- Large range, 12 models from 2.2kW to 8.0kW.
- Built in drain pump
- Compact design: 210 mm high x 450mm deep across the range
- Ideal for bulkhead installation, above wardrobes in bedrooms
- Light weight 16kg
- Configurable R/A connections: rear or bottom entry
- Suitable for apartments using Toshiba's new single fan mini VRF condenser
- 5 year peace of mind warranty

Controllers

Some of the compatible controllers include:

Controllers

RBC-AMT32E & RBC-AMS41E

– wired controllers



RBC-AMS54E-ES – Backlit

wired controller



BMS-SM1280ETLE – Smart

Manager with Data Analyser



BMS-CT5121E – Touch Screen

Controller



* Refer to specs for exact model height



Indoor Units

Type	Model Name	Equivalent HP	Cooling Capacity (kW)	Heating Capacity (kW)
4-way air discharge cassette type	MMU-AP0094HP-E	1.00	2.80	3.20
	MMU-AP0124HP-E	1.25	3.60	4.00
	MMU-AP0154HP-E	1.70	4.50	5.00
	MMU-AP0184HP-E	2.00	5.60	6.30
	MMU-AP0244HP-E	2.50	7.10	8.00
	MMU-AP0274HP-E	3.00	8.00	9.00
	MMU-AP0304HP-E	3.20	9.00	10.00
	MMU-AP0364HP-E	4.00	11.20	12.50
	MMU-AP0484HP-E	5.00	14.00	16.00
	MMU-AP0564HP-E	6.00	16.00	18.00
Compact 4-way cassette (600 x 600) type	MMU-AP0074MH1-E	0.80	2.20	2.50
	MMU-AP0094MH1-E	1.00	2.80	3.20
	MMU-AP0124MH1-E	1.25	3.60	4.00
	MMU-AP0154MH1-E	1.70	4.50	5.00
2-way air discharge cassette type	MMU-AP0184MH1-E	2.00	5.60	6.30
	MMU-AP0072WH	0.80	2.20	2.50
	MMU-AP0092WH	1.00	2.80	3.20
	MMU-AP0122WH	1.25	3.60	4.00
	MMU-AP0152WH	1.70	4.50	5.00
	MMU-AP0182WH	2.00	5.60	6.30
	MMU-AP0242WH	2.50	7.10	8.00
	MMU-AP0272WH	3.00	8.00	9.00
	MMU-AP0302WH	3.20	9.00	10.00
	MMU-AP0362WH	4.00	11.20	12.50
1-way air discharge cassette type	MMU-AP0482WH	5.00	14.00	16.00
	MMU-AP0562WH	6.00	16.00	18.00
	MMU-AP0074YH-E	0.80	2.20	2.50
	MMU-AP0094YH-E	1.00	2.80	3.20
	MMU-AP0124YH-E	1.25	3.60	4.00
	MMU-AP0154SH-E	1.70	4.50	5.00
	MMU-AP0184SH-E	2.00	5.60	6.30
Concealed duct type	MMU-AP0244SH-E	2.50	7.10	8.00
	MMD-AP0076BHP-E	0.80	2.20	2.50
	MMD-AP0096BHP-E	1.00	2.80	3.20
	MMD-AP0126BHP-E	1.25	3.60	4.00
	MMD-AP0156BHP-E	1.70	4.50	5.00
	MMD-AP0186BHP-E	2.00	5.60	6.30
	MMD-AP0246BHP-E	2.50	7.10	8.00
	MMD-AP0276BHP-E	3.00	8.00	9.00
	MMD-AP0306BHP-E	3.20	9.00	10.00
	MMD-AP0366BHP-E	4.00	11.20	12.50
Concealed duct high static pressure type	MMD-AP0486BHP-E	5.00	14.00	16.00
	MMD-AP0566BHP-E	6.00	16.00	18.00
	MMD-AP0186HP-E	2.00	5.60	6.30
	MMD-AP0246HP-E	2.50	7.10	8.00
	MMD-AP0276HP-E	3.00	8.00	9.00
	MMD-AP0366HP-E	4.00	11.20	12.50
	MMD-AP0486HP-E	5.00	14.00	16.00
Slim duct type	MMD-AP0566HP-E	6.00	16.00	18.00
	MMD-AP0726HP-E	8.00	22.40	25.00
	MMD-AP0966HP-E	10.00	28.00	31.50
	MMD-AP0074SPH1-E	0.80	2.20	2.50
	MMD-AP0094SPH1-E	1.00	2.80	3.20
	MMD-AP0124SPH1-E	1.25	3.60	4.00
	MMD-AP0154SPH1-E	1.70	4.50	5.00
	MMD-AP0184SPH1-E	2.00	5.60	6.30
Super Slim duct type	MMD-AP0244SPH1-E	2.50	7.10	8.00
	MMD-AP0274SPH1-E	3.00	8.00	9.00
	MMD-AP0076MPHY	0.80	2.20	2.50
	MMD-AP0086MPHY	1.00	2.50	2.80
	MMD-AP0096MPHY	1.25	2.80	3.20
	MMD-AP0106MPHY	1.70	3.20	3.60
	MMD-AP0126MPHY	2.00	3.60	4.00
	MMD-AP0146MPHY	2.50	4.00	4.50
	MMD-AP0156MPHY	2.00	4.50	5.00
	MMD-AP0176MPHY	2.00	5.00	5.60
Under Ceiling type	MMD-AP0186MPHY	2.50	5.60	6.30
	MMD-AP0206MPHY	2.00	6.30	7.10
	MMD-AP0246MPHY	2.50	7.10	8.00
	MMD-AP0276MPHY	3.00	8.00	9.00
	MMC-AP0158HP-E	1.70	4.50	5.00
	MMC-AP0188HP-E	2.00	5.60	6.30
	MMC-AP0248HP-E	2.50	7.10	8.00
	MMC-AP0278HP-E	3.00	8.00	9.00
High wall type 3 series	MMC-AP0368HP-E	4.00	11.20	12.50
	MMC-AP0488HP-E	5.00	14.00	16.00
	MMC-AP0568HP-E	6.00	16.00	18.00
	MMK-AP0073H1	0.80	2.20	2.50
	MMK-AP0093H1	1.00	2.80	3.20
	MMK-AP0123H1	1.25	3.60	4.00
	MMK-AP0153H1	1.70	4.50	5.00
	MMK-AP0183H1	2.00	5.60	6.30
	MMK-AP0243H1	2.50	7.10	8.00

Type	Model Name	Equivalent HP	Cooling Capacity (kW)	Heating Capacity (kW)
Floor standing cabinet type	MML-AP0074H-E	0.80	2.20	2.50
	MML-AP0094H-E	1.00	2.80	3.20
	MML-AP0124H-E	1.25	3.60	4.00
	MML-AP0154H-E	1.70	4.50	5.00
	MML-AP0184H-E	2.00	5.60	6.30
	MML-AP0244H-E	2.50	7.10	8.00
Floor Console	MML-AP0074NH-E	0.80	2.20	2.50
	MML-AP0094NH-E	1.00	2.80	3.20
	MML-AP0124NH-E	1.25	3.60	4.00
	MML-AP0154NH-E	1.70	4.50	5.00
Floor standing concealed type	MML-AP0184NH-E	2.00	5.60	6.30
	MML-AP0074BH-E	0.80	2.20	2.50
	MML-AP0094BH-E	1.00	2.80	3.20
	MML-AP0124BH-E	1.25	3.60	4.00
Floor standing type	MML-AP0154BH-E	1.70	4.50	5.00
	MML-AP0184BH-E	2.00	5.60	6.30
	MML-AP0244BH-E	2.50	7.10	8.00
	MMF-AP0156H-E	1.70	4.50	5.00
	MMF-AP0186H-E	2.00	5.60	6.30
	MMF-AP0246H-E	2.50	7.10	8.00
Fresh air intake indoor unit type	MMF-AP0276H-E	3.00	8.00	9.00
	MMF-AP0366H-E	4.00	11.20	12.50
	MMF-AP0486H-E	5.00	14.00	16.00
	MMF-AP0566H-E	6.00	16.00	18.00
Air-to-Air Heat Exchangers*	MMD-AP0481HFE	5.00	14.00	8.90
	MMD-AP0721HFE	8.00	22.40	13.90
	MMD-AP0961HFE	10.00	28.00	17.40
		Air Flow in CMH (m³/h)		
VN-M150HE		150		
VN-M250HE		250		
VN-M350HE		350		
VN-M500HE		500		
VN-M650HE		650		
VN-M800HE		800		
VN-M1000HE		1000		
VN-M1500HE		1500		
VN-M2000HE		2000		

Controls	
NRC-01HE	Wired Remote Controller for Air-to-Air Heat Exchanger, DX Coils & Humidifier
RBC-AMS41E	Remote controller with weekly timer (7-day timer function)
RBC-AMS54E-ES	Back lit remote controller with weekly timer (7-day timer function)
TCB-EXS21TLE	Schedule timer is connected directly to the TCC Link Central Control network and can set timer functions for up to 64 indoor units in up to 8 programmable control groups
TCB-SC642TLE2	Central controller can control all the individual functions of 64 indoor units individually. Can also connect to the weekly timer.
TCB-CC163TLE2	On-Off controller. Can be connected to up to 16 indoor units via the TCC-Link Central Control network to provide simple "1 touch" ON/OFF control
BMS-SM1280ETLE	Smart Manager with Data Analyser. Advanced Central Control device that can be connected to up to 128 indoor units (2 x 64 IDU TCC-Link Connections). The Smart manager model has the ability of control from a Local Area Network and, with the addition of an additional Interface, is capable of Energy Monitoring and report creation functions
BMS-CT5121E	Touch Screen Controller can be connected to 512 indoor units and offers Energy Monitoring and schedule program functions. The Touch Screen is connected to the air conditioner control network directly by relay interfaces. Password function available.
BMS-WB2561PWE BMS-WED1GTE	Web based controls. BMS-WB2561PWE (Web Server/Gateway) is an advanced Central Control device for large installations or where high-level control and/or energy monitoring functions are required (up to 256 FCU). With the use of this additional Master - BMS-WB01GTE - device it is possible to connect up to 2,048 indoor units
BACnet® BMS-IFBN640TLE	The Toshiba BACnet® control system which enables control of the attached air conditioner product from a BACnet building management system.
LonWorks® LN Interface TCB-IFLN642TLE	The Toshiba Lonworks interface 100 % LonMark Compliant and is designed to connect the Toshiba Air Conditioning system to a Lonworks BMS. This Interface connects directly to the Toshiba TCC-Link Central Control Network on the air conditioner side and can be wired on the indoor or outdoor side. Up to 64 indoor units
Modbus® Interface TCB-IFMB641TLE	The Toshiba Modbus® interface is designed to connect the Toshiba Air Conditioning system to a Modbus BMS. The Toshiba Interface connects directly to the Toshiba TCC-Link Central Control Network on the Air Conditioner and can be wired on the Indoor or outdoor side. The interface then uses the Modbus RTU protocol based on the RS-485 type serial communications protocol to connect to a suitable Modbus Master device. Finally, this Modbus Master device is connected to the BMS control system

Outdoor Units

Outdoor unit model name				MCY-MHP0305HT	MCY-MHP0405HT	MCY-MHP0506HT	MCY-MHP0606HT		
Outdoor unit type				Inverter	Inverter	Inverter	Inverter		
Capacity code		HP	3	4	5	6			
Cooling Capacity		(*1)	kW	8.0	11.2	14.0	15.5		
Heating Capacity		(*1)	kW	9.0	12.5	16.0	17.0		
Power supply		(*2)	1phase 50Hz 220 / 230 / 240V				1phase 50Hz 220 / 230 / 240V		
Cooling	Running current	A	10.7 / 10.2 / 9.8		16.1 / 15.4 / 14.7		18.7/17.9/17.1		
	Power consumption	kW	2.05		3.39		3.94		
	Power factor	%	87		96		96		
	EER		3.62		3.46		3.28		
	Running current	A	10.8 / 10.4 / 9.9		14.8 / 14.1 / 13.6		18.3/17.5/16.8		
	Power consumption	kW	2.10		3.09		3.86		
Heating	Power factor	%	88		95		96		
	COP		4.24		4.12		4.14		
	Running current	A	10.8 / 10.4 / 9.9		14.8 / 14.1 / 13.6		18.3/17.5/16.8		
Dimension	Unit	Height	mm	900		910			
		Width	mm	990		990			
		Depth	mm	390		390			
Total Weight	Unit	kg	80		99				
Compressor	Type	Hermetic twin rotary compressor							
	Motor output	kW	2.72		3.75		3.75		
Fan Unit	Motor output	W	100		100		100		
	Air volume	m ³ /h	3,680		4,000		4380		
Heat exchanger			Finned tube				Finned tube		
Refrigerant R410A(Charged refrigerant amount(kg))		(*3)	2.3		3.3		3.3		
High-pressure switch		MPa	ON:3.73, OFF:2.90		ON:3.73, OFF:2.90		ON:4.15, OFF:3.20		
Protective devices			(*4)						
Refrigerant piping	Connecting port diameter	Gas side (main pipe)	mm	15.9		15.9		19.1	
		Liquid side (main pipe)	mm	9.5		9.5		9.5	
	Connecting method	Gas side		flare		flare		flare	
		Liquid side		flare		flare		flare	
Max. No. of connected indoor units			5		6		6		
Sound pressure level	Cooling	dB(A)	53		54		55		
	Heating	dB(A)	54		55		57		
Operation temperature range	Cooling	CDB	-5 to 46		-5 to 46		-5 to 46		
	Heating	CWB	-20 to 15		-20 to 15		-20 to 15		

(*1) Rated conditions

Cooling : Indoor 27 degC Dry Bulb /19 degC Wet Bulb , Outdoor 35 degC Dry Bulb.

Heating : Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb / 6 degC WetBulb.

The standard pipe means that equivalent piping length of 7.5m and standard 0m piping height difference.

(*2) The source voltage must not fluctuate more than $\pm 10\%$

(*3) The amount dose not consider extra piping length and indoor unit type. Refrigerant must be added on site in accordance with the actual piping length and indoor unit type.

(*4) Discharge temp. sensor / Suction temp. sensor / High-pressure sensor / Low-pressure sensor / High-pressure switch / Compressor case thermostat / PC board fuse

(*5) Select wire size base on the larger value of MCA. MCA : Minimum Circuit Amps

(*6) MOCP:Maximum overcurrent protection (Amps)

AHIC is committed to continuously improving its product to ensure the highest quality and reliability standards, and to meet local regulations and market requirements.

Product specifications in this brochure are only indicative and are subject to change. These are not intended to be used in place of the engineering or installation book

All features and specifications are subject to change without prior notice.

All images provided in this catalogue are used for illustration purposes only.

Cooling and heating capacities mentioned for the products are nominal capacities at standard operation conditions.

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Equipment rates in accordance with MEPS 3823.2-2011 E&OE



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AIR CONDITIONING