TOSHIBA

Whatever YOU need

TOSHIBA AIR CONDITIONING > **CATALOGUE VRF 2019**

Better Air Solutions

TOSHIBA
BUSINESS SOLUTIONS

MiNi SMMS-e, SMMS-e, SHRM-e

CREATING BENEFITS AROUND COMFORT

Benefits for the consultant

Absolute customisation...
A wide range of products ensures that the customers' requirements are fully addressed

Absolute validation...
Toshiba's VRF are EUROVENT certified and adhere to all current European legislations

Absolute control...
Fully integrated controls network, allowing unlimited access to the system controls and its operation

Absolute flexibility...
A high degree of system flexibility, aided by a fully flexible piping specification and an extremely compact modular design

Simplified design...
TOSHIBA DESIGN AIRS software makes the selection of a system's components simple

Benefits for the user

Infinite comfort...
Achieved by fully controllable room temperature, a perfect alternative to traditional heating & cooling systems

Infinite efficiency...
Low operating costs thanks to reduced installation costs and very high levels of efficiency via optimal load adjustment

Infinite integration...
Cooling, heating and fresh air ventilation, all perfectly and conveniently attuned to one another within a single system – and so easy to use!

Infinite reliability...
Hassle-free operation based upon decades of experience and intensive testing program for all systems

Infinite transparency...
Clearly defined billing so you can quickly review energy costs and consumption

Benefits for the installer

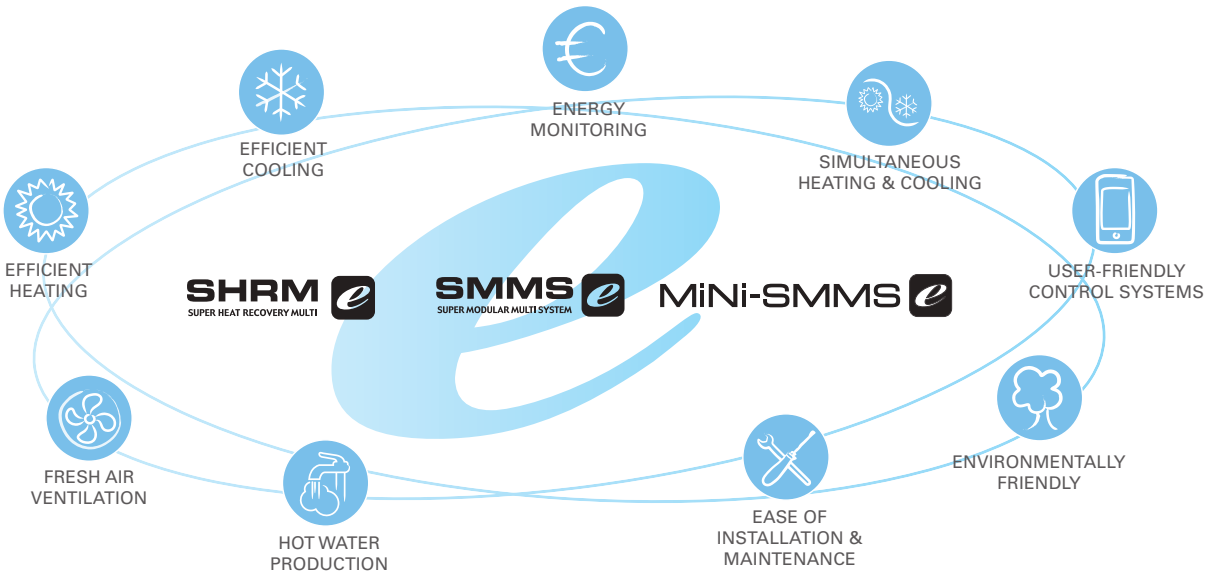
So simple...
One supplier – one point of contact for a total solution: cooling, heating, hot water, ventilation & controls

So versatile...
Maximized installation flexibility

So convenient...
Easy access for all service and maintenance needs

So professional...
Intensive training and instruction offered by local Toshiba trained experts

So assessable...
Simplified and swift commissioning assisted by the Wave Tool App



ECODESIGN
EUROPEAN DIRECTIVE

ECODESIGN

In the European Union, the Ecodesign Directive encourages HVAC manufacturers to design products taking into consideration their environmental impact throughout entire lifecycle.
It establishes a framework for the setting of mandatory energy efficiency requirements for all energy-related products (ERPs).

Lot 21: Heat pumps above 12 kW including residential, light commercial systems and VRF >>> DI, SDI, Big DI, MiNi SMMS-e, SMMS-e, SHRM-e.

For more information visit: **www.ecodesign.toshiba-airconditioning.eu**

DESIGNED FOR THE FUTURE

Toshiba Air Conditioning is committed to designing products and solutions with increasingly lower environmental impacts. This subsequently reducing indirect CO_2 emissions generated by electricity consumption. Toshiba Air Conditoning's long-standing commitment to sustainable development is ahead of schedule for the European climate and energy package requirements for 2030.

All Toshiba Air Conditoning products sold today in Europe are fully compliant with the latest Ecodesign directives.

NEW ENERGY EFFICIENCY METRIC
SEASONAL EFFICIENCY (S,C AND S,H)

The Seasonal Coefficient of Performance, is a new European parameter to rate heat pumps in terms of energy efficiency. It is an update to the Coefficient of Performance, which previously recorded the power consumed to power produced ratio in heating and cooling modes for one operating point.

Unlike the EER/COP, the SC / SH take into account performances during cooler seasons because it considers temperature variations by including numerous realistic measurement points. When combined, this results in a more accurate energy classification.

S,C/ S,H compared to EER/COP

TEMPERATURE (C°)		CAPACITY (KW)		AUXILIARY MODES (KWH)		HOURS	
EER COP	S,C S,H	EER COP	S,C S,H	EER COP	S,C S,H	EER COP	S,C S,H
One temperature requirement	Numerous rating temperatures (range of average temperatures)	Full load	Partial load + Full load	Auxiliary power modes are not considered	Incl. consumption auxiliary modes: - Standby mode - Off mode - Thermostat off, etc.	N/A	Number of hours at each air temperature (in hours)

SEASONAL COEFFICIENT OF PERFORMANCE CALCULATION

This is the ratio between annual heating/cooling demand and annual energy input over an entire heating/cooling season.

$$S,H = \frac{\text{ANNUAL HEATING DEMAND}}{\text{ANNUAL ENERGY INPUT}} \qquad S,C = \frac{\text{ANNUAL COOLING DEMAND}}{\text{ANNUAL ENERGY INPUT}}$$

SEER : 2.5* S,C - SCOP : 2.5* S,H

RELIABLE, EFFICIENT AND FLEXIBLE OUTDOOR UNITS

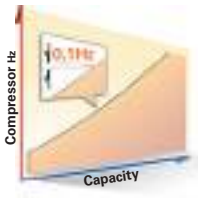
HIGH EFFICIENCY AND LOW OPERATION COST

Innovative compressor technology

Toshiba's infinitely variable inverter driven control can continually adjust the operating speed of the compressors in real time. This ensures that the capacity output precisely matches end user demand. The advantages of this control are further optimised by incorporating Toshiba's twin rotary compressors. These which enable Toshiba's VRF to achieve maximum performance and class-leading SEER values.

Infinite variable control

This feature has been continually evolved and developed, since its inception by Toshiba engineers back in 2004 with the original SMMS system. The control has the ability to adjust the compressor rotational speed in a near seamless 0.1 Hz steps. This control when matched with Toshiba's newest and latest Twin Rotary compressors, allows the system to respond precisely to the capacity needs of the end user, whilst minimizing energy losses.



Maximum part load and full load efficiencies

Thanks to Toshiba's unique twin rotary compressor, re-designed heat exchanger and "intelligent flow" technology, the Toshiba's VRF achieve a SEER of 9.68 (MiNi SMMS-e), one of the highest seasonal efficiency in the market.

Maximum efficiency is obtained under 50% part load conditions, under which VRF systems operate predominantly.
The expert use and evolution of Toshiba's core technologies have allowed the Toshiba VRF system to achieve the highest part load COP and EER in the industry.

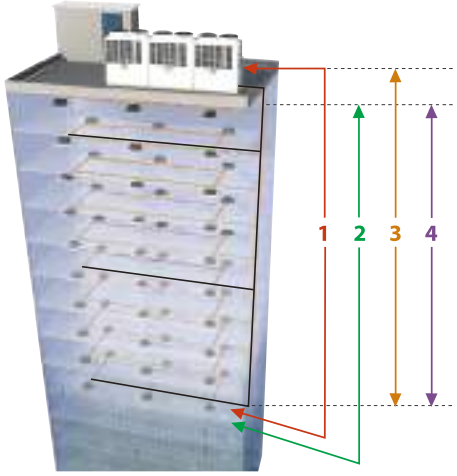
FLEXIBLE DESIGN AND QUICK INSTALLATION

Piping design flexibility

Toshiba's piping technology makes them one of the industries leaders in system flexibility and ease of installation and with the e-series VRF system, the level of flexibility has increased further, giving more options to the contractor and installer alike.

Simplified connection

For a clean installation, Y joints are used to connect outdoor units and indoor units thereby limiting the number of bends and brazes.



1 Total piping length:
up to 1,000 m

2 Farthest equivalent length:
up to 235 m

3 Equivalent length of farthest piping from 1st branching:
up to 90 m

4 Height between outdoor unit and indoor unit:
up to 90 m

PROJECT REFERENCES

SHOP

Images rights: AIR-COND / Photographer Simon Fischbacher: www.simonfischbacher.at

Project

BLUE TOMATO
Trendy snowboard-fashion-retailer, reconstruction

Innsbruck, Austria

Constraints

- Corridor configuration
- Downtown store
- Shop style
- Rooftop CDU integration

Installer

EDMUND SPARER
Klima & Kältetechnik GmbH

Ampass, Austria

TOSHIBA SOLUTION

16HP SMMS-e x 1

1.3HP 4-Way Cassette x 3

4HP Ceiling unit x 4

OFFICE

Images rights: AIR-COND / Photographer Simon Fischbacher: www.simonfischbacher.at

Project

IMGANG
Architect's office in the oldtown of Innsbruck, reconstruction

Innsbruck, Austria

Constraints

- Invisible system
- Low sound level
- Premium comfort

Installer

EDMUND SPARER
Klima & Kältetechnik GmbH

Ampass, Austria

TOSHIBA SOLUTION

6HP MiNi SMMS-e x 1

0.8 HP Slim Duct unit x 5

HOTEL

Project

GENNADI GRAND RESORT HOTEL
Luxury five-star hotel guest-room air-conditioning

Rhodes Island, Greece

Constraints

- Grade A high efficiency building
- Low-height architecture
- Sea-side location

Installer

RODOS AIR

Rhodes Island, Greece

TOSHIBA SOLUTION

SMMS-e

Slim Duct

CHOOSE YOUR ADAPTED SYSTEM SOLUTION
MAPPING BY APPLICATIONS

OUTDOOR UNITS

Residential | Light commercial | Business

Reversible cooling or heating

MiNi SMMS Sideblow
1fan & 2 fans

Mainly individual housing

Up to 250 m² per system
Max. 10 IDUs per system

Up to 250 m² per system and max. 10 IDUs per system

1 phase electrical power supply only

MiNi SMMS-e 1Ph & 3Ph

Individual housing mainly

Up to 250 m² per system
Max. 13 IDUs per system

Stand alone
SMMS-e & SMMS-e

Collective housing mainly

3-phase electrical power supply only

Up to 3,000 m² per system
Max. 64 IDUs per system

Simultaneous cooling & heating

SHRM-e

Collective housing mainly

3-phase electrical power supply only

Up to 2,500 m² per system
Max. 64 IDUs per system
Hot water production capability

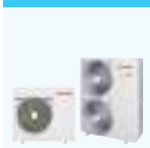
INDOOR UNITS

Cassette		o (4-way standard or compact)	o (All types)	o (4-way standard or compact for lobby)	o (All types)
Duct	o (Standard duct)	o (Standard or high static pressure)	o (Slim or standard)	o (Slim for rooms & standard for lobby)	o
High-wall	o	o	o	o (For rooms - low sound version)	o
Ceiling		o			o
Console	o (Bi-flow version)		o	o (For lobby)	o

The data provided on this page is for informational purposes only and not for the purpose of providing legal or other professional advice.

CHOOSE YOUR ADAPTED SYSTEM SOLUTION

OUTDOOR UNIT MAPPING FOR EUROPE


Side Blow VRF


MiNi SMMS-e 1PH


MiNi SMMS-e 3PH


SMMS-e


SHRM-e

		R410A	R410A	R410A	R410A	R410A			R410A			R410A	
		MCY-MHP0_4HT-E	MCY-MHP0_4HS-E	MCY-MHP0_4HS8-E	MMY-SAP_6HT8P-E	MMY-MAP_6T8P-E			MMY-MAP_6T8P-E			MMY-MAP_6FT8P-E	
		Heat pump			Heat pump	Heat pump			Cooling only			Heat pump	
					Single module / Stand alone	Single module	Standard combinations	High efficiency / High capacity combinations	Single module	Space saving combinations	High efficiency / High capacity combinations	Single module	Combinations
	4	●▼	●▼	●▼									
	5	●▼	●▼	●▼									
	6	●▼	●▼	●▼									
	8				●▼	●▼			●▼			●▼	
	10				●▼	●▼			●▼			●▼	
	12				●▼	●▼			●▼			●▼	
	14					●▼			●▼			●▼	
	16					●▼			●▼			●▼	
	18					●▼			●▼			●▼	
	20					●▼		●	●▼			●▼	
	22					●▼		●	●▼				●
	24						●			●	●		●
	26						●			●	●		●
	28						●			●	●		●
	30						●			●	●		●
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	42						●	●		●	●		●
	44						●	●		●	●		●
	46						●			●	●		●
	48						●			●	●		●
	50						●			●	●		●
	52						●			●	●		●
	54						●	●		●	●		●
	56						●			●	●		
	58						●			●	●		
	60						●			●	●		
Fresh air solution	Fresh air duct					•	•	•	•	•	•		
	Air to Air heat exchanger + DX coil		•	•		•	•	•	•	•	•	•	•
	Standard DX Kit	•	•	•		•	•	•	•	•	•	•	•
	0/10v DX kit					•	•	•					
Hot water	Hot water module					•	•	•					
Small capacity indoor units	0.6HP indoor unit	•	•	•	•	•	•	•	•	•	•	•	•
Accessories	Leak detection	•	•	•	•	•	•	•	•	•	•	•	•
	Leak detection with pump down		•	•	•	•	•	•	•	•	•	•	•

●:cooling - ●:Heat pump - ▼:Eurovent certified

MCY-MHT_HP
SIDEBLOW

CAPACITY OPERATION

Compact, efficient, adaptable, energy saver, the side blow VRF is the solution to cool and heat small/medium size buildings.

4HP > **6**HP

-20°C > **+46**°C

Features

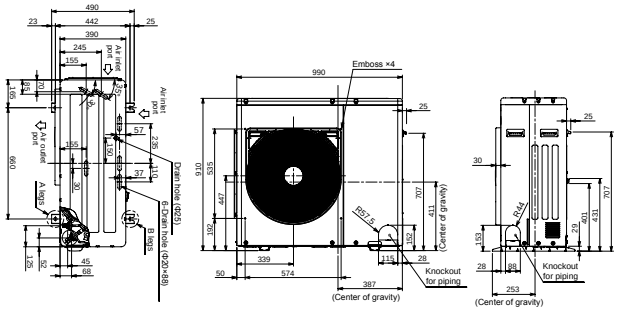
Outdoor unit		HP	MCY-	MHP0406HT-E	MHP0506HT-E
Cooling capacity		kW		12.1	14.0
Heating capacity		kW		12.5	16.0
				9.7	12.4
Capacity range		HP		4	5
Power supply		V-ph-Hz		1phase 50Hz 220/230/240V 1 phase 60Hz 220V	1phase 50Hz 220/230/240V 1 phase 60Hz 220V
Efficiency	EER rated	W/W		3.73	3.55
	EER 50% load	W/W		6.1	5.4
	SEER	ŋ/std		8.08	7.88
Efficiency	COP rated	W/W		4.4	4.2
	COP 50% load	W/W		5.3	5.7
	COP -7°C 100% load	W/W		3.9	3.6
	SCOP	ŋ/std		3.83	3.88
Electrical characteristics	Running current	A	C	14.4/13.8/13.2	18.7/17.9/17.1
	Power input	kW	C	3.2	3.9
	Running current	A	H	13.4/12.8/12.3	18.3/17.5/16.8
	Power input	kW	H	2.8	3.9
Dimensions (h x w x d)		mm		910x990x390	910x990x390
Weight		kg		100.0	100.0
Compressor	Type			Hermetic twin rotary compressor	Hermetic twin rotary compressor
	Motor output	kW		3.75	3.75
Fan unit	Type			Propeller fan (Quantity 1)	Propeller fan (Quantity 1)
	Motor output	W		100	100
	Air volume	m^3/h		4020	4260
External static pressure available		Pa			
R410A refrigerant charge		kg		3.3	3.3
		CO_2 Teq		6.9	6.9
Power supply wiring	MCA	A		26.5	28.0
	MCOP	A		32.0	32.0
Pipe connection	Gas line type - Diameter			Flare - 5/8"	Flare - 5/8"
	Liquid line type - Diameter			Flare - 3/8"	Flare - 3/8"
Connectivity	Max. number of connected indoor units			8	10
	Diversity ratio	Min/Max		80/130%	
Sound pressure level	Cooling	dB(A)	C	54	55
	Heating	dB(A)	H	57	58
Sound power level	Cooling	dB(A)	C	73	73
	Heating	dB(A)	H	73	74
Operation temperature range	Cooling	CDB	C	-5/+46	
	Heating	CWB	H	-20/+15	

C = Cooling mode
H = Heating mode

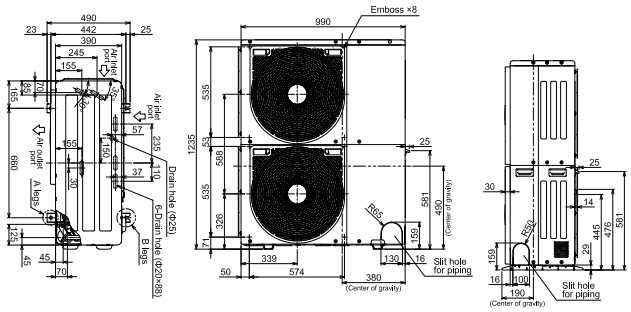
Drawings

Unit: mm

MCY-MHP0406HT-E
MCY-MHP0506HT-E



MCY-MHP0404HT-E
MCY-MHP0504HT-E
MCY-MHP0604HT-E



Piping rules

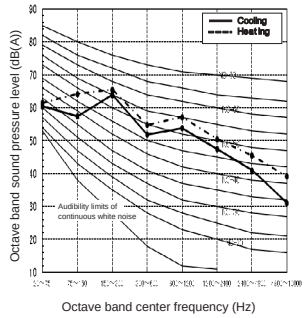
			Allowable value		
			With PMV kit	Without PMV kit	Piping section
Piping length	Total extension of pipe (Liquid pipe, real length)		75m	90m	L1 + L2 + L3 + a + b + c + d + e + f
	Farthest piping length	Length	50m	60m	L1 + L3 + f
			40m	50m	
	Max equivalent length of main piping		25m	30m	L1
	Max equivalent length of farthest piping form 1st branching		15m	20m	L3 + f
	Max. real length of indoor unit connecting piping		10m	10m	a, b, c, d, e, f
	Real length between PMV kit and indoor unit		-	Between 2m and 10m	
Difference in height	Height between indoor and outdoor units	Upper outdoor unit	15m	15m	
		Lower outdoor unit	15m	15m	
	Height between indoor unit and PMV kit	Upper outdoor unit	10m	10m	

Sound pressure levels

Unit: dB(A)

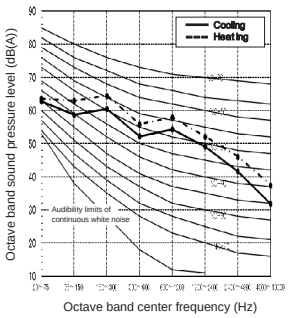
MCY-MHP0406HT-E

Sound pressure level (dB(A))	Cooling	Heating
	54	57



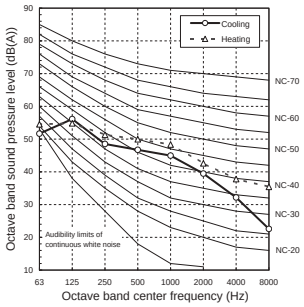
MCY-MHP0506HT-E

Sound pressure level (dB(A))	Cooling	Heating
	55	58



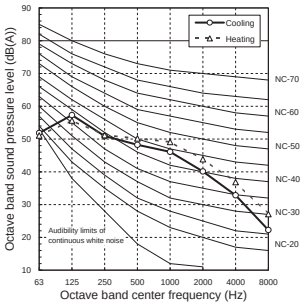
MCY-MHP0404HT-E

Sound pressure level (dB(A))	Cooling	Heating
	50	52



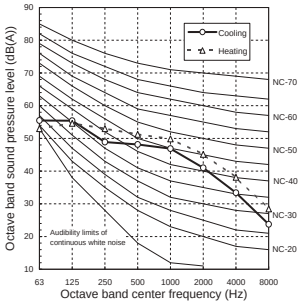
MCY-MHP0504HT-E

Sound pressure level (dB(A))	Cooling	Heating
	51	54



MCY-MHP0604HT-E

Sound pressure level (dB(A))	Cooling	Heating
	52	55



Night mode sound pressure levels

Sound reduction and capacity approximation (Reference)

	Type	Night operation sound reduction dB (A)	Capacity	
			Cooling	Heating
Single fan	0406	50	Approx. 95%	Approx. 80%
	0506	50	Approx. 85%	Approx. 75%
Dual fan	0404	47/50	Approx. 85%	Approx. 95%
	0504	47/50	Approx. 80%	Approx. 80%
	0604	50	Approx. 80%	Approx. 70%

Accessories

	Name	Model name	Capacity	Appearance	Remarks
Branching joints and headers	Y-shape branching joint	RBM-BY55E	Under 6.4hp		
	4-branching header	RBM-HY1043E	Under 14.2hp		
	8-branching header	RBM-HY1083E	Under 14.2hp		
PM kits	PMV Kits	RBM-PMV0363E	For 0.6 to 1.3hp IDUs		
		RBM-PMV0903E	For 1.7 to 3hp IDUs		
Optional PCB of outoor unit	Power peak-cut control board	TCB-PCDM4E			Limit capacity of the VRF outdoor unit at 85%, 75%, 70% or 60% load or stop it. Dry contact
	External master ON/OFF, night mode and priority selection control board	TCB-PCMO4E			Dry contact
	Output control board	TCB-PCIN4E			Operation output: The operation indicator is on while any indoor unit in the system is operating. Error output: The error indicator is on when an error is occurred one of the indoor or outdoor units in the system. Dry contact

MCY-MHP_HS(8)
MINI SMMS-e 1&3PH

CAPACITY

4HP > **6**HP

OPERATION

-20°C > **+46**°C

Incorporating all of Toshiba's VRF experience and knowledge into a system that measures no more than 1.2 m high, results in a perfect solution for all small to medium building heating and cooling requirements.

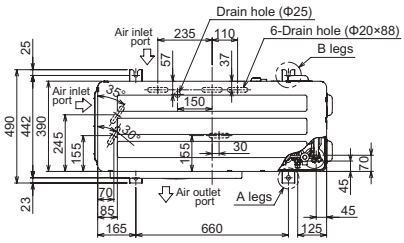
Features

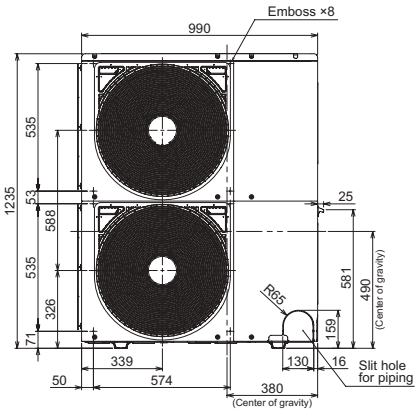
Outdoor unit		HP	MCY-MHP0404HS-E	MCY-MHP0504HS-E	MCY-MHP0604HS-E	MCY-MHP0404HS8-E	MCY-MHP0504HS8-E	MCY-MHP0604HS8-E
Capacity range		HP	4	5	6	4	5	6
Cooling capacity		kW	12.1	14.0	15.5	12.1	14.0	15.5
Heating capacity		kW	12.5	16.0	18.0	12.5	16.0	18.0
Power supply		V-ph-Hz	1phase 50Hz 220/230/240V	1phase 50Hz 220/230/240V	1phase 50Hz 220/230/240V	3phase 50Hz 380/400/415V	3phase 50Hz 380/400/415V	3phase 50Hz 380/400/415V
Efficiency	EER rated	W/W	4.28	4.00	3.61	4.29	4.03	3.65
	EER 50% load	W/W	6.932	6.863	6.783	6.932	6.481	5.909
	SEER	/std	376.8%/9.42	369.2%/9.23	387.2%/9.68	378.8%/9.47	371.6%/9.29	389.6%/9.74
Efficiency	COP rated	W/W	4.83	4.27	4.18	4.86	4.30	4.22
	COP 50% load	W/W	6.632	6.2	6.164	6.702	6.25	6.25
	COP -7°C 100% load	W/W	4.28	3.802	3.724	4.323	3.825	3.75
	SCOP	/std	166.8%/4.17	169.6%/4.24	174.8%/4.37	167.6%/4.19	170%/4.25	175.2%/4.38
Electrical characteristics	Running current	A	13.5/13.0/12.4	16.6/15.9/15.2	20.1/19.2/18.4	4.8 / 4.5 / 4.4	5.7 / 5.4 / 5.2	7.0 / 6.7 / 6.4
	Power input	kW	2.83	3.50	4.29	2.82	3.47	4.25
	Running current	A	12.5/12.0/11.5	17.8/17.0/16.3	20.2/19.3/18.5	4.4 / 4.2 / 4.0	6.1 / 5.8 / 5.6	7.0 / 6.6 / 6.4
	Power input	kW	2.59	3.75	4.31	2.57	3.72	4.27
Dimensions (h x w x d)		mm	1235x990x390			1235x990x390		
Weight		kg	127	127	127	125	125	125
Compressor	Type		Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor	Hermetic twin rotary compressor
	Motor output	kW	3.75	3.75	3.75	3.75	3.75	3.75
Fan unit	Type		Propeller fan (Quantity 2)	Propeller fan (Quantity 2)	Propeller fan (Quantity 2)	Propeller fan (Quantity 2)	Propeller fan (Quantity 2)	Propeller fan (Quantity 2)
	Motor output	W	100+100	100+100	100+100	100 + 100	100 + 100	100 + 100
	Air volume	m^3/h	5660	5820	6050	5660	5820	6050
External static pressure available		Pa	30	30	30	30	30	30
R410A refrigerant charge		kg	6.4	6.4	6.4	6.4	6.4	6.4
		CO_2 Teq	13.363	13.363	13.363	13.363	13.363	13.363
Power supply wiring	MCA	A	23.5	26.5	28.0	12.5	12.5	12.5
	MCOP	A	32.0	32.0	32.0	16.0	16.0	16.0
Pipe connection	Gas line type - Diameter		Flare - 5/8"	Flare - 5/8"	Flare - 3/4"	Flare - 5/8"	Flare - 5/8"	Flare - 3/4"
	Liquid line type - Diameter		Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"
Connectivity	Max. number of connected indoor units		8	10	13	8	10	13
	Diversity ratio	Min/Max	50/130%					
Sound pressure level	Cooling	dB(A)	49	50	51	49	50	51
	Heating	dB(A)	52	53	54	52	53	54
Sound power level	Cooling	dB(A)	66	68	68	66	68	68
	Heating	dB(A)	69	70	71	67	69	70
Operation temperature range	Cooling	CDB	-5 to 46	-5 to 46	-5 to 46	-5 to 46	-5 to 46	-5 to 46
	Heating	CWB	-20 to 15	-20 to 15	-20 to 15	-20 to 15	-20 to 15	-20 to 15

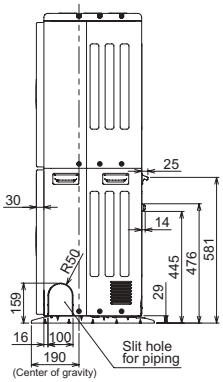
Drawings

Unit: mm

All models







Piping rules

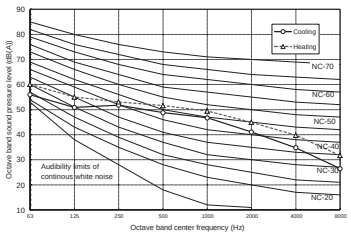
			Allowable value		
			With PMV kit	Without PMV kit	Piping section
Piping length	Total extension of pipe (Liquid pipe, real length)		150m	180m	L1 + L2 + L3 + a + b + c + d +e + f
	Farthest piping length	Equivalent length	65m	125m	L1 + L3 + f
		Real length	80m	120m	
	Max equivalent length of main piping		50m	65m	L1
	Max equivalent length of farthest piping form 1st branching		15m	35m	L3 + f
	Max. real length of indoor unit connecting piping		15m	15m	a, b, c, d, e, f
	Real length between PMV kit and indoor unit		Between 2m and 10m	-	
Difference in height	Height between indoor and outdoor units	Upper outdoor unit	30m	30m	
		Lower outdoor unit	20m	20m	
	Height between indoor unit and PMV kit	Upper outdoor unit	15m	15m	

Sound pressure levels

Unit: dB(A)

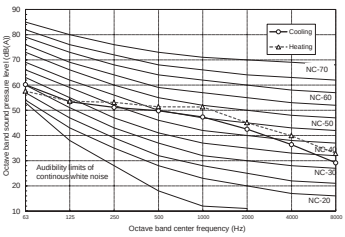
MCY-MHP0404HS-E

Sound pressure level (dB(A))	Cooling	Heating
	49	52



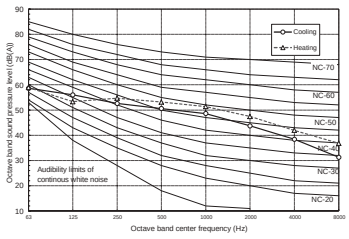
MCY-MHP0504HS-E

Sound pressure level (dB(A))	Cooling	Heating
	50	53



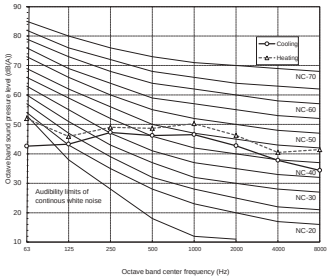
MCY-MHP0604HS-E

Sound pressure level (dB(A))	Cooling	Heating
	51	54



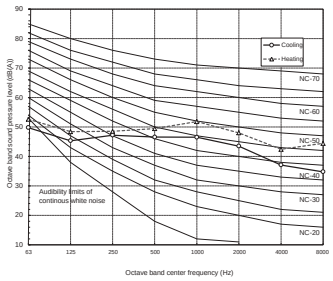
MCY-MHP0404HS8-E

Sound pressure level (dB(A))	Cooling	Heating
	49	52



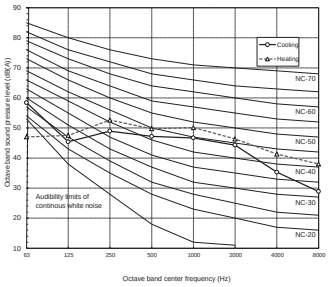
MCY-MHP0504HS8-E

Sound pressure level (dB(A))	Cooling	Heating
	50	53



MCY-MHP0604HS8-E

Sound pressure level (dB(A))	Cooling	Heating
	51	54



Night mode sound pressure levels

Sound reduction and capacity approximation (Reference)

Outdoor unit (base unit)	During low-noise mode dB(A)		Capacity*	
	Cooling	Heating	Cooling	Heating
Model 0404*	46	48	approx. 90 %	approx. 95 %
Model 0504*	46	48	approx. 80 %	approx. 80 %
Model 0604*	47	49	approx. 80 %	approx. 75 %

*Relative to maximum capacity

Accessories

	Name	Model name	Capacity	Appearance	Remarks
Branching joints and headers	Y-shape branching joint	RBM-BY55E	Under 6.4hp		
	4-branching header	RBM-HY1043E	Under 14.2hp		
	8-branching header	RBM-HY1083E	Under 14.2hp		
PM kits	PMV Kits	RBM-PMV0363E	For 0.6 to 1.3hp IDUs		
		RBM-PMV0903E	For 17 to 3hp IDUs		
Optional PCB of outoor unit	Power peak-cut control board	TCB-PCDM4E			Limit capacity of the VRF outdoor unit at 85%, 75%, 70% or 60% load or stop it. Dry contact
	External master ON/OFF, night mode and priority selection control board	TCB-PCMO4E			Dry contact
	Output control board	TCB-PCIN4E			Operation output: The operation indicator is on while any indoor unit in the system is operating. Error output The error indicator is on when an error is occurred on even one of the indoor or outdoor units in the system. Dry contact

MMY-SAP_6HT8P
SMMS-e STAND ALONE

CAPACITY 8HP > 12HP

OPERATION -25°C > 46°C

Keep all benefits of Toshiba SMMS-e with 50% less precharge refrigerant: new intelligent and innovative features that maximise end user comfort and system efficiencies.

Features

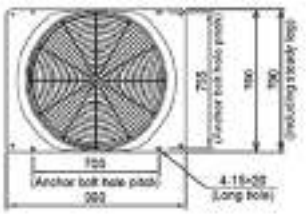
Outdoor unit		HP	MMY-	SAP0806HT8P-E	SAP1006HT8P-E	SAP1206HT8P-E
Cooling capacity[1]		kW		22.4	28.0	33.5
Heating capacity[2]		kW		25.0	31.5	37.5
Capacity range		HP		8	10	12
Power supply		V-ph-Hz		380/415-3-50	380/415-3-50	380/415-3-50
Efficiency	EER rated	W/W		4.04	3.54	3.25
	EER 50% load	W/W		6.4	6.06	5.68
	SEER	/std		256.8%/6.42	250.8%/6.27	247.6%/6.19
Efficiency	COP rated	W/W		4.42	4.15	3.84
	COP 50% load	W/W		6.31	5.85	5.37
	COP -7°C 100% load	W/W		3.58	3.32	3.02
	SCOP	/std		151.6%/3.79	152.4%/3.81	147.2%/3.68
Electrical characteristic	Running current	A	C	8.8	12.4	16.0
	Power input	kW	C	5.54	7.90	10.30
	Running current	A	H	9.0	11.9	15.1
	Power input	kW	H	5.65	7.59	9.76
Dimensions (h x w x d)		mm		1830 x 990 x 780	1830 x 990 x 780	1830 x 990 x 780
Weight		kg			227	
Compressor	Type				Hermetic Twin Rotary	
	Motor output	kW		2.1x2	3.1x2	3.9x2
Fan unit	Type				Propeller fan	
	Motor output	W		1	1	1
	Air volume	m^3/h		9700		12200
External static pressure available		Pa		60	60	50
R410A refrigerant charge		kg		5.7	5.7	5.7
		CO_2 Teq		11.90	11.90	11.90
Power supply wiring	MCA	A		20.5	21.5	26.1
	MCOP	A		25.0	25.0	32.0
Pipe connection	Gas line type - Diameter			Brazed - 3/4"	Brazed - 7/8"	Brazed -1-1/8"
	Liquid line type - Diameter			Flare - 1/2"	Flare - 1/2"	Flare - 1/2"
Connectivity	Max. number of connected indoor units			18	22	27
	Diversity ratio	Min/Max			50/135%	
Sound pressure level	Cooling	dB(A)	C	55	57	59
	Heating	dB(A)	H	56	58	61
Sound power level	Cooling	dB(A)	C	74	74	80
	Heating	dB(A)	H	74	74	82
Operation temperature range	Cooling	CDB	C		-10/46	
	Heating	CWB	H		-25/15.5	

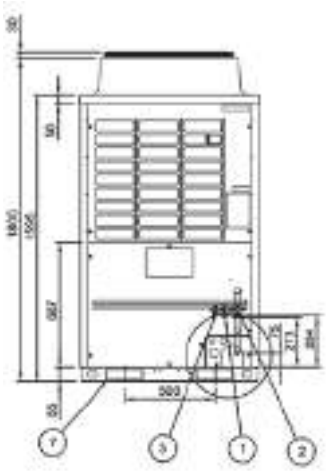
C = Cooling mode
H = Heating mode

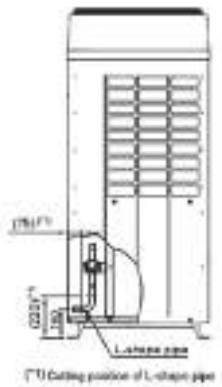
Drawings

Unit: mm

All models







Piping rules

			Allowable value	Piping section
Piping length	Total extension of pipe (Liquid pipe, real length)		300m	LA + LB + La + Lb + Lc + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j
	Farthest piping length	Equivalent length	235m	LA + L1 + L3 + L4 + L5 + L6 + j
		Real length	190m	
	Equivalent length of farthest piping form 1st branching		90m	L3 + L4 + L5 + L6 + j
	Max. equivalent length of main piping	Equivalent length	120m	L1
		Real length	100m	
	Max. real length of indoor unit connecting piping		30m	a, b, c, d, e, f, g, h, i, j
	Max. equivalent length between branches		50m	L2, L3, L4, L5, L6, L7
Difference in height	Height between indoor and outdoor units	Upper outdoor unit	70m	
		Lower outdoor unit	40m	
	Height between indoor units		40m	

(*1) : (D) is outdoor unit farthest from the 1st branch and (j) is the indoor unit farthest from the 1st branch.
(*2) : If the height difference (H1) between indoor and outdoor unit exceeds 3 m, set 65 m or less.
(*4) : If the height difference (H2) between indoor units exceeds 3 m, set 50 m or less.
(*5) : If the height difference (H2) between indoor units exceeds 3 m, set 30 m or less
(*7) : Extension up till 90m is possible with conditions below

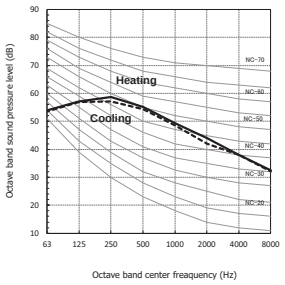
- Outdoor temperature cooling : 10 - 46 (DB)
  Heating : -5 - 15.5 (WB)
- Equivalent length of farthest piping from 1st branching Li < 50 m
- Real length of main piping L1 < 100 m
- Height difference between indoor units H2<3M
- Total capacity of combined indoor units: 90% - 105%
- Single CDU, and up to 20HP
- Minimum capacity of connectable indoor: unit 4HP or larger

Sound pressure levels

Unit: dB(A)

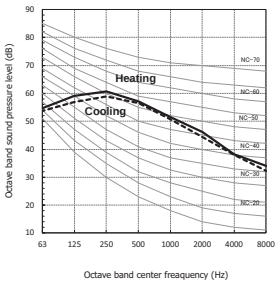
MMY-SAP0806HT8P-E

Sound pressure Level (dB(A))	Cooling	Heating
	55.0	56.0



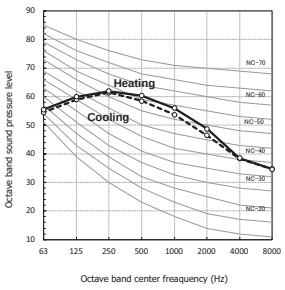
MMY-SAP1006HT8P-E

Sound pressure Level (dB(A))	Cooling	Heating
	57.0	58.0



MMY-SAP1206HT8P-E

Sound pressure Level (dB(A))	Cooling	Heating
	59.0	61.0



Night mode sound pressure levels

Sound reduction and capacity approximation (Reference)

	Night operation sound reduction dB (A)	Capacity	
		Cooling	Heating
0806 type	50	Approx. 85%	Approx. 80%
1006 type	50	Approx. 70%	Approx. 65%
1206 type	50	Approx. 60%	Approx. 55%

Accessories

	Name	Model name	Capacity	Appearance	Remarks
Branching joints and headers	Y-shape branching joint	RBM-BY55E	Under 6.4hp		
		RBM-BY105E	From 6.4 to 14.2hp		
		RBM-BY205E	From 14.2 to 25.2hp		
		RBM-BY305E	25.2hp or more		
	4-branching header	RBM-HY1043E	Under 14.2hp		
		RBM-HY2043E	From 14.2 to 25.2hp		
	8-branching header	RBM-HY1083E	Under 14.2hp		
		RBM-HY2083E	From 14.2 to 25.2hp		
Optional PCB of outoor unit	Power peak-cut control board	TCB-PCDM4E			Limit capacity of the VRF outdoor unit at 85%, 75%, 70% or 60% load or stop it. Dry contact
	External master ON/OFF control board	TCB-PCMO4E			Dry contact
	Output control board	TCB-PCIN4E			Operation output : The operation indicator is on while any indoor unit in thesystem is operating. Error output : The error indicator is on when an error is occurred on evenone of the indoor or outdoor units in the system. Dry contact

MCY-MHT_HP
SMMS-e

CAPACITY 8HP > 60HP

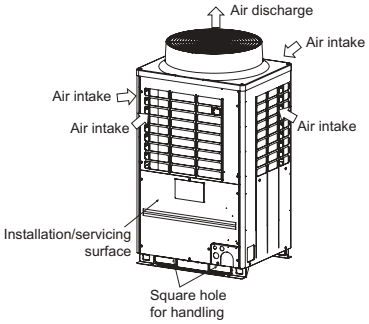
OPERATION -25°C > +46°C

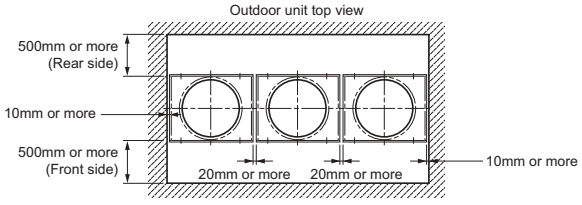
Toshiba's latest generation all inverter VRF system has continued to evolve and includes many new intelligent and innovative features that maximise end user comfort and system efficiencies.

Features

Outdoor unit		CO	MMY-	MAP0806T8P-E	MAP1006T8P-E	MAP1206T8P-E	MAP1406T8P-E	MAP1606T8P-E	MAP1806T8P-E	MAP2006T8P-E	MAP2206T8P-E
Outdoor unit		HP	MMY-	MAP0806HT8P-E	MAP1006HT8P-E	MAP1206HT8P-E	MAP1406HT8P-E	MAP1606HT8P-E	MAP1806HT8P-E	MAP2006HT8P-E	MAP2206HT8P-E
Capacity range		HP		8	10	12	14	16	18	20	22
Cooling capacity		kW		22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5
Heating capacity +7°C		kW		25.0	31.5	37.5	45.0	50.0	56.0	63.0	64.0
Heating capacity -7°C		kW		19.8	24.2	27.9	34.6	37.2	43.1	46.9	47.6
Power supply		V-ph-Hz		380/415-3-50	380/415-3-50	380/415-3-50	380/415-3-50	380/415-3-50	380/415-3-50	380/415-3-50	380/415-3-50
Efficiency	EER rated	W/W		4.04	3.64	3.35	3.25	3.15	3.45	3.24	2.65
	EER 50% load	W/W		6.4	6.22	5.839	5.7	5.639	5.5	5.37	5.339
	SEER	/std		249.6%/6.24	246%/6.15	241.2%/6.03	227.6%/5.69	213.2%/5.33	240.4%/6.01	229.6%/5.74	202.8/5.07
Efficiency	COP rated	W/W		4.52	4.25	3.89	4.02	3.88	3.97	3.71	3.74
	COP 50% load	W/W		6.44	6.01	5.43	5.77	5.55	5.41	5.05	5.07
	COP -7°C 100% load	W/W		3.66	3.40	3.06	3.23	3.05	3.19	2.91	2.94
	SCOP	/std		145.6%/3.64	141.6%/3.54	146.8%/3.67	142.8%/3.57	148%/3.7	143.6%/3.59	144%/3.6	139.6%/3.49
Electrical characteristics	Running current	A	C	8.8	12.1	15.5	19.5	22.4	22.9	26.8	35.6
	Power input	kW	C	5.54	7.69	10.00	12.30	14.30	14.60	17.30	23.20
	Running current	A	H	8.8	11.6	15.0	17.8	20.2	22.1	26.1	26.5
	Power input	kW	H	5.53	7.41	9.65	11.20	12.90	14.10	17.00	17.10
Dimensions (h x w x d)		mm		1830 x 990 x 780	1830 x 990 x 780	1830 x 990 x 780	1830 x 1210 x 780	1830 x 1210 x 780	1830 x 1600 x 780	1830 x 1600 x 780	1830 x 1600 x 780
Weight		kg	CO/HP		241/242			299/300		370/371	
Compressor	Type						Hermetic Twin Rotary				
	Motor output	kW		2.1x2	3.1x2	3.9x2	4.8x2	5.8x2	6.5x2	7.6x2	9x2
Fan unit	Type						Propeller fan				
	Motor output	W		1	1	1	1	1	2	2	2
	Air volume	m^3/h		9700		12200		12600	17300	17900	18500
External static pressure available		Pa		60	60	50	50	40	50	40	40
R410A refrigerant charge		kg	HP/CO	11.5/10.5	11.5/10.5	11.5/10.5	11.5/11.5	11.5/11.5	11.5/11.5	11.5/11.5	11.5/11.5
		CO_2 Teq	HP/CO	24/21.9	24/21.9	24/21.9	24/24	24/24	24/24	24/24	24/24
Power supply wiring	MCA	A		20.5	21.5	36.1	31	35.8	40.6	44.9	49.3
	MCOP	A		25		32		40	50	63	
Pipe connection	Gas line type - Diameter			Brazed - 3/4"	Brazed - 7/8"	Brazed -1-1/8"	Brazed -1-1/8"	Brazed -1-1/8"	Brazed -1-1/8"	Brazed -1-1/8"	Brazed -1-1/8"
	Liquid line type - Diameter			Flare - 1/2"	Flare - 1/2"	Flare - 1/2"	Flare - 5/8"	Flare - 5/8"	Flare - 5/8"	Flare - 5/8"	Flare - 3/4"
	Balance diameter			Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"
Connectivity	Max. number of connected indoor units			18	22	27	31	36	40	45	49
	Diversity ratio	Min/Max					50/135%				
Sound pressure level	Cooling	dB(A)	C	55	57	59	60	62	60	61	61
	Heating	dB(A)	H	56	58	61	62	64	61	62	62
Sound power level	Cooling	dB(A)	C	74	74	80	80	81	81	82	83
	Heating	dB(A)	H	74	74	82	82	83	83	84	84
Operation temperature range	Cooling	CDB	C				-10/46				
	Heating	CWB	H				-25/15.5				

Installation space





Leave space necessary for running, installation and servicing.

- If there is an obstacle above the outdoor unit, leave a space of 2000 mm or more to the top end of the outdoor unit.
- If there is a wall around the outdoor unit, make sure that its height does not exceed 800 mm.

Also applicable for SMMSe stand alone and SHRME

Capacity table - Standard models

Capacity		Combination	Model	EER/SEER	COP/SCOP	Max indoor connectivity	
HP	Cooling/Heating in kW						
8	22.4/25	8	MMY-MAP0806HT8P-E	4.04/6.24	4.52/3.64	18	
10	28/31.5	10	MMY-MAP1006HT8P-E	3.64/6.15	4.25/3.54	22	
12	33.5/37.5	12	MMY-MAP1206HT8P-E	3.35/6.03	3.89/3.67	27	
14	38.4/45	14	MMY-MAP1406HT8P-E	3.25/5.69	4.02/3.57	31	
16	45/50	16	MMY-MAP1606HT8P-E	3.15/5.33	3.88/3.7	36	
18	50.4/56	18	MMY-MAP1806HT8P-E	3.45/6.01	3.97/3.59	40	
20	56/62	20	MMY-MAP2006HT8P-E	3.24/5.74	3.71/3.6	45	
22	61.5/63	22	MMY-MAP2206HT8P-E	2.65/5.07	3.74/3.49	49	
24	67/75	12 + 12	MMY-AP2416HT8P-E	3.35/6.03	3.88/3.67	52	
26	73.5/82.5	14 + 12	MMY-AP2616HT8P-E	3.3/5.85	3.97/3.62	58	
28	78.5/87.5	16 + 12	MMY-AP2816HT8P-E	3.23/5.65	3.89/3.69	63	
30	85/95	16 + 14	MMY-AP3016HT8P-E	3.19/5.5	3.94/3.6	64	
32	90/100	16 + 16	MMY-AP3216HT8P-E	3.15/5.33	3.88/3.7	64	
34	95.4/106	18 + 16	MMY-AP3416HT8P-E	3.3/5.69	3.93/3.64	64	
36	101/113	20 + 16	MMY-AP3616HT8P-E	3.2/5.56	3.78/3.64	64	
38	106.5/114	22 + 16	MMY-AP3816HT8P-E	2.84/5.2	3.8/3.59	64	
40	112/126	20 + 20	MMY-AP4016HT8P-E	3.24/5.74	3.71/3.6	64	
42	117.5/127	22 + 20	MMY-AP4216HT8P-E	2.9/5.4	3.72/3.55	64	
44	123/128	22 + 22	MMY-AP4416HT8P-E	2.65/5.07	3.74/3.49	64	
46	130/145	16 + 16 + 14	MMY-AP4616HT8P-E	3.18/5.44	3.92/3.67	64	
48	135/150	16 + 16 + 16	MMY-AP4816HT8P-E	3.15/5.33	3.88/3.7	64	
50	140.4/156	18 + 16 + 16	MMY-AP5016HT8P-E	3.25/5.58	3.91/3.66	64	
52	146/163	20 + 16 + 16	MMY-AP5216HT8P-E	3.18/5.49	3.81/3.66	64	
54	151.5/164	22 + 16 + 16	MMY-AP5416HT8P-E	2.92/5.24	3.82/3.62	64	
56	157/176	20 + 20 + 16	MMY-AP5616HT8P-E	3.21/5.62	3.75/3.62	64	
58	162.5/177	22 + 20 + 16	MMY-AP5816HT8P-E	2.97/5.38	3.77/3.59	64	
60	168/178	22 + 22 + 16	MMY-AP6016HT8P-E	2.77/5.16	3.78/3.55	64	

Capacity table - High efficiency & high capacity models

Capacity		Combination	Model	EER/SEER	COP/SCOP	Max indoor connectivity	
HP	Cooling/Heating in kW						
20 HP	56/63	10 + 10	MMY-AP2026HT8P-E	3.63/6.15	4.26/3.54	45	
22 HP	61.5/69	12 + 10	MMY-AP2226HT8P-E	3.47/6.11	4.04/3.61	49	
36 HP	100.5/112.5	12 + 12 + 12	MMY-AP3626HT8P-E	3.35/6.03	3.89/3.67	64	
38 HP	107/120	14 + 12 + 12	MMY-AP3826HT8P-E	3.31/5.91	3.93/3.63	64	
40 HP	113.5/127.5	14 + 14 + 12	MMY-AP4026HT8P-E	3.28/5.8	3.98/3.6	64	
42 HP	120/135	14 + 14 + 14	MMY-AP4226HT8P-E	3.25/5.69	4.01/3.57	64	
44 HP	125/140	16 + 14 + 14	MMY-AP4426HT8P-E	3.21/5.56	3.97/3.62	64	
54 HP	152/171	20 + 20 + 14	MMY-AP5426HT8P-E	3.24/5.74	3.78/3.59	64