



2 0 1 2

AIR CONDITIONING

GENERAL CATALOGUE





I n d e x

Residential	12
Single split inverter	14
Multi split inverter	28
Residential heating	50
 Light commercial	 58
Super Digital Inverter	64
Digital Inverter	66
Indoor units	70
 Business	 94
VRF Outdoor units	96
VRF Indoor units	110
Air treatment solutions	142
 Controls	 152
 Accessories	 176

Toshiba Group

Toshiba's origins go back to 1875 and two great inventors.

Hisashige Tanaka, the Thomas Edison of Asia, was renowned for his inventiveness.

The sign that welcomed visitors to Tanaka Engineering Works "Improving life with things people need" expressed his deep commitment to improve people's quality of life.

Ichisuke Fujioka was Japan's father of electronics. He manufactured the country's first incandescent lamps and pioneered the development of Japan's electronics industry.

Today, more than 130 years after, Toshiba Group provides a wide range of products and services that feature the best in innovative technologies and the finest quality.

By continually developing innovative technologies, we strive to create products and services that enhance human life, and which lead to a thriving healthy society.

In 2010, Toshiba Group enjoyed consolidated annual sales of over 6,4 billion JPY and employed approximately 200,000 people in more than 500 group companies worldwide.

A wide innovative range

Digital products: high value-added mobile phones; advanced audio and visual products; Personal Computers and business communication systems.

Electronic devices and components: advanced semiconductors and display technologies.

Social infrastructure systems: critical components that support power generating, broadcast, transportation, financial and distribution equipment and systems.

Consumer appliances: from refrigerators, and residential and commercial air conditioning systems, to automotive electronics and network services.

Corporate social responsibility



Toshiba signed the United Nations Global Compact in 2004 and from then has implemented and promoted these basic principles concerning human rights, labor, the environment and anti-corruption within the organization and towards its suppliers. Corporate social responsibility is reviewed every year by third parties and Toshiba has been awarded with several prizes for its success and commitment.

Leading the way to the future

Toshiba group focuses on the development of innovative products, developed to meet the emerging needs of the society and timely respond to the constant changes in the business environment.

Innovation is the key in all the Toshiba process: technology, research, development, production, procurement, marketing and sales. These new business processes will create customer value by anticipating and providing product and solutions to fulfill their needs.

Environmental based management

Toshiba Group manages its business operations as a corporate citizen of planet Earth with the future of the world in mind. With compliance with laws and regulations the Toshiba Group has formulated the Environmental Vision 2050.

A vision of a world in which "People lead richer lifestyles in harmony with the Earth" by 2050. Under this vision, it is the mission of Toshiba to reduce environmental impacts and create new value by promoting the development of Environmentally conscious products, which involves environmentally conscious product design, the assessment of environmental impact and disclosure of the environmental performance.

Our brand statement

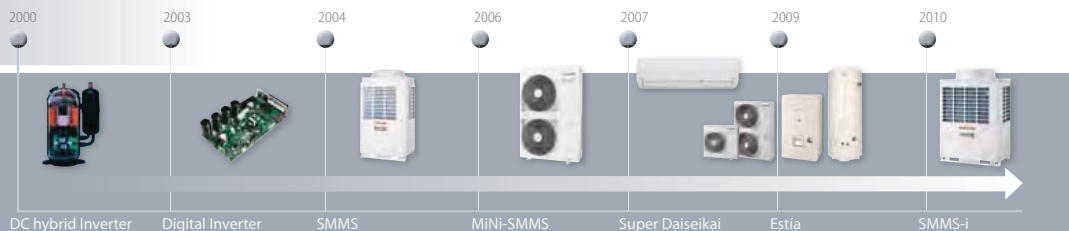
Toshiba delivers technology and products remarkable for their innovation and artistry contributing to a safer, more comfortable, more productive life. We bring together the spirit of innovation with our passion and conviction to shape the future and help protect the global environment - our shared heritage. We foster close relationships, rooted in trust and respect, with our customers, business partners and communities around the world.

Toshiba air conditioning

Toshiba produced its first air conditioning units in the 1950's, and immediately worked on introducing improvements. Its role as an innovator continued with the introduction of the rotary compressor and electronic controls. By the 1980's with a broad product offering, Toshiba was the first to introduce the inverter driven unit (1981) and the twin rotary compressor (in 1988). In 1999, Toshiba again led the industry with the launch of its product range operating with non-ozone depleting refrigerants (R-410A and R407C). Toshiba's spirit of innovation continues with its relentless drive for product and system improvements. Every year from 1994 onward Toshiba has received a prestigious award for its great achievement in the industry.

Innovations for worldwide air conditioning market

- 2000: revolutionary DC hybrid inverter.
- 2003: Digital Inverter.
- 2004: SMMS (the VRF system with the industry's highest COP).
- 2006: MiNi-SMMS.
- 2007: Super Daiseikai with Ag Plasma air purifier.
- 2009: Estia, Air-to-Water Heat Pump Super Daiseikai with improved COP.
- 2010: SMMS-i, the next generation energy efficient VRF system.



Advancing the eco evolution

Toshiba Carrier corporation is aiming to be the Advanced Eco Evolution "Made of and for Eco" and will contribute to a world in which people lead richer lifestyles in harmony with the Earth through imagination, innovation, and integrity. Deep in the psyche of each one of us is the ideal that we need to play a part in helping preserve our Earth. As relative new comers in the evolution of the Earth, it's undeniable that humankind has had a greater impact on our planet's eco-system than any other life form.

The industrial revolution sparked numerous innovations that raised levels of human comfort and prosperity globally. One such invention was the world's first modern electrical air conditioning system over a hundred years ago by Willis Carrier. Another was the automobile, giving people greater mobility. But these advancements came at a price: carbon dioxide levels and average regional temperatures have increased at alarming rates around the world, and air quality in our cities continue to deteriorate.

At Toshiba air conditioning, we believe we can make a difference. As a global vision for our evolving world, we are committed to advancing research and development of super energy-efficient, cleaner technologies and to innovate products that not only use significantly less energy but help maintain air quality through state-of-the-art air purification systems for the home and business. Intelligent ideas that use less of our Earth's resources, without sacrificing your personal comfort.

We call this vision "Advancing the eco-evolution".



Quality commitment philosophy

Toshiba has been studying, designing and creating innovative air conditioning systems for 60 years and as a result has always offered the highest performance on the market.

Quality has always been Toshiba's strength and will remain the trademark that will differentiate Toshiba air conditioners from the competition.

This is the philosophy behind every Toshiba product, developed and manufactured following strictly all the industry regulations, the quality of processes certifications and higher internal Toshiba quality standards, which includes controls on all finished products and supplied parts.

Toshiba products are certified with third parties institutes for quality, safety and performance (TUV, Eurovent, WEEE, RoHS, REACH).

Eurovent certification program



Eurovent Certification certifies the performance ratings of air-conditioning and refrigeration products according to European and international standards.

Toshiba participation in the Eurovent program is a guarantee to its customers and users that our products will operate in accordance with the design specifications, that the data published and communicated are real and therefore the energy consumption and costs are correctly stated.

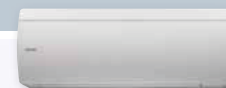
Toshiba solutions

Toshiba offers a solution for all applications: residential, light commercial and larger commercial buildings.

Residential indoor units are designed to blend perfectly with all interiors and incorporate advanced filtration systems to deliver optimum indoor air quality.

For small commercial premises, products are designed to deliver top performance combined with energy efficiency.

For larger applications, VRF systems combine flexibility, energy efficiency and respect for the environment, with a wide choice of stylish indoor units



Absolute comfort

Toshiba commitment to people drives a focused attention for the details in every stage of the development process, from design to user field tests. Therefore the products and systems installed feature higher standard of indoor air quality, sound levels, energy savings and environmental awareness.

Core technologies

Toshiba commitment to innovation led to the design of highly efficient and reliable components like:

IPDU inverter

DC Twin rotary compressor

IAQ filtration system

Seasonal Efficiency Performance

Toshiba units has always been designed to minimize the impact on the environment. This is reflected in the material used and most important in the efficiency of their units. Whatever method is used to measure the performance, Toshiba units has always been able to fulfill the requirements of different governments and authorities around the world.

In Europe the nominal efficiency method is becoming outdated. The Seasonal Energy Efficiency Ratio (SEER) and the Seasonal Coefficient Of Performance (SCOP) will be introduced. The SEER/SCOP measuring methos is more reliable and better represent the performance of the units during the year. Instead of a single reference temperature condition, with this new method the air conditioning systems are evaluated at different operating conditions (partial load); where Toshiba inverter units are known for being extremely efficient.

The SEER/SCOP measurement applies only to air conditioners in single or multi split combinations with a cooling capacity below 12kW.



Energy Efficiency Class	SEER	SCOP
A+++	SEER 8,50	SCOP 5,10
A+	6,10 SEER < 8,50	4,60 SCOP < 5,10
A+	5,60 SEER < 6,10	4,00 SCOP < 4,60
A	5,10 SEER < 5,60	3,40 SCOP < 4,00
B	4,60 SEER < 5,10	3,10 SCOP < 3,40
C	4,10 SEER < 4,60	2,80 SCOP < 3,10
D	3,60 SEER < 4,10	2,50 SCOP < 2,80
E	3,10 SEER < 3,60	2,20 SCOP < 2,50
F	2,60 SEER < 3,10	1,90 SCOP < 2,20
G	SEER < 2,60	SCOP < 1,90

Designed for the future

With the new European Eco Design Directive (ERP) the objective is the integration of environmental aspects into product design with the aim of improving the environmental performance of the [product] throughout its whole life cycle. Air conditioners have been identified as Energy related products (ErPs) because have an impact on energy consumption during use. Therefore a new set of rules for energy efficiency measurements and specifications have been defined which will be integrated in the new energy efficiency label.

Toshiba applies the calculation methods of the last draft of the future law that has been circulated by the EU commission end 2011. The data shown below are values that represent in these terms the energy efficiency throughout the year, in a climate area of EU similar to the one of Strasbourg. (The climate of Strasbourg will be set as reference for standard EU climate in the future law).

The future law will be voted in EU commission early 2012 to come effective early 2013. Toshiba nevertheless has decided to publish already some of these data to help you to start to familiarize with these measurements.

System type	Outdoor unit	Indoor units	Capacity Pdesignc kW	SEER	Energy label
Super Daiseikai	RAS-13SAVP2-E	RAS-13SKVP2-E	3,52	5,28	A
Suzumi plus	RAS-22SAV2-E	RAS-22SKV2-E	6,00	5,60	A+
Multi split Inverter 2:1	RAS-M18UAV-E	M16SKV-E RAS-M13SKV-E	5,20	5,90	A+
Multi split inverter 5:1	RAS- 5M34UAV-E1	RAS-M13SKV-E RAS-M13SKV-E RAS-M13SKV-E RAS-M13SKV-E RAS-M13SKV-E	10,00	5,29	A
Super digital inverter	RAV-SP564AT-E RAV-SP804AT-E	RAV-SM566KRT-E RAV-SM806KRT-E	5,00 7,10	5,49 5,35	A A



S E E R

SEASONAL EFFICIENCY
THE NEW EUROPEAN RATING
METHOD

Efficient part load performance

Toshiba Inverter and twin rotary compressor technology included in all the existing inverter unit are already ensuring low electricity costs. Toshiba units are known to be extremely efficient when operate in partial load condition (most of the year)



Well-being and beyond

Air conditioning plays a fundamental role in your well-being at home as well as at work. In fact, it is not only important to grant the desired temperature; it is also the right tool to get the best indoor air quality.

Selecting the most suitable system is key to maximizing performance and optimizing comfort.

Air treatment, low sound levels, guaranteed energy savings and easy installation of the indoor units make the Toshiba residential range the top choice for any home.

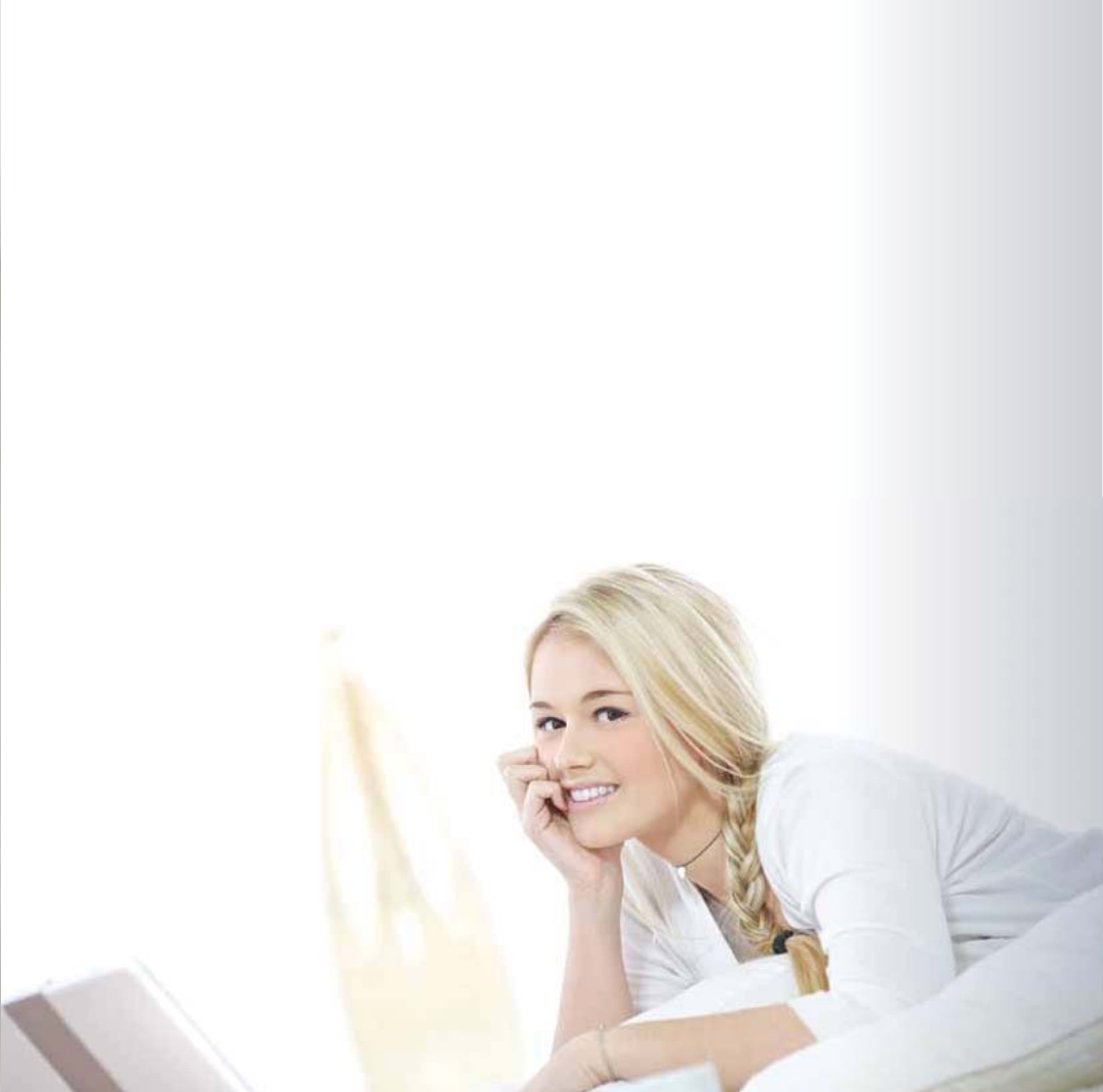
They have all the features a user can require: elegance, silence, energy efficiency and pure air delivery.



Residential

THE RESIDENTIAL RANGE

ULTIMATE INVERTER TECHNOLOGY,
ULTIMATE COMFORT.



When technology meets comfort

Toshiba was the first company to incorporate inverter technology into air conditioning systems in 1981 and since then it has always maintained a technological advantage over its competitors.

The development of the new and exclusive DC hybrid inverter system has reaffirmed this ability to innovate and maintain technological leadership in a fast-growing market. But for Toshiba, innovation also means a strong commitment to international institutions that carefully evaluate the impact of new technologies on our environment.

Toshiba combines technological development with care for future generations: the result is a range of extremely energy-efficient air conditioners, reducing greenhouse gas emissions at source.

Toshiba continuous research developed PWM technology, which is used together with the traditional PAM control.

The application of these two distinct technologies allows total control of performance and energy use.



The ultimate expression of inverter technology

Toshiba DC hybrid inverter technology controls the capacity supplied by the air conditioner. By modifying the supply current frequency or intensity, it ensures smooth linear variation of the rotation speed and capacity of the compressor – the heart of the air conditioner.

This allows the cooling and heating capacities to be matched to the actual operating conditions required.

When the room temperature is different from the set point, the air conditioner operates at maximum capacity, ensuring that a comfortable temperature will be reached quickly. Once the desired temperature is reached, the inverter precisely adjusts the capacity to maintain a temperature close to the set point.



Care for the environment

Toshiba has anticipated legislation on the control of refrigerant emissions to the atmosphere, and pioneers solutions that our technological leadership enables us to offer.



Filtration, purification, innovation

True quality in the residential environment goes beyond control of the air filtration.

With Toshiba residential air conditioners, air quality is guaranteed by many stages of filtration and additional functions such as pre-treatment, removal of fine particles, viruses, bacteria and allergens or total purification.

Electrostatic purification also guarantees a basic cost advantage as there are no ongoing replacement part costs.



HI-WALL

CONSOLE

Residential

INVERTER SYSTEMS

SINGLE SPLIT



One touch my comfort

Pre-programmed settings studied by Toshiba technicians in order to offer the right combination of comfort and energy savings.



Comfort sleep

The unit will create the best comfort levels while you are sleeping. The temperature will be increased by one degree after one hour and another one degree after two hours. After that it will stay at this temperature until morning.



Eco mode

Raises/lowers temperature automatically to prevent excessive cooling and also excessive electricity cost.



North european version

By running the air conditioner at the low-heat setting during the winter season, the indoor temperature is kept at about 8°C, reducing the chance that water may freeze inside the pipes of the building. The base plate of the outdoor unit is provided with a heater to prevent the drain water from freezing.



Self cleaning

Toshiba's self-cleaning function is designed to reduce the humidity that causes mould to form inside an air-conditioning unit. This advanced, efficient system reduces moisture in the coils and is activate when the air conditioner is switched off; the internal fan activates and dries the moisture in the coil for 20 minutes, then turns off automatically.



Power select mode

This feature helps make today's lifestyle more comfortable as it offers the benefit of saving electricity. The power selection mode is first set at 100%, indicating the compressor operation at its normal rated current.

When set at 75%, the compressor will limit the operation to 75% of the rated current. Similar action to perform when set at 50%. Maximum benefit is achieved as the lower percentage is set, bringing the results of higher electricity saving. Moreover it prevents over flow of electricity current and consequent black-out when other appliances need to be used at the same time.



One touch pre-set

This mode allows the user to set his/her most preferred settings and to restore all of them at the simple touch of a button.

The functions that can be memorized in the Preset Mode are: Operating Mode, Temperature, ON/OFF Timer Setting (including Repeat Timer), Louver setting, Fan-speed (including Auto Fan Speed), Hi-Power, Eco, Quiet operation.

Super Daiaseikai 5



RAS-**PKVP-E

Super Daiaseikai 6



RAS-**SKVP2-E

Suzumi plus



RAS-**SKV2-E

AvAnt



RAS-**7SKV-E3

Console bi-flow



RAS-B**UFV-E

	07	2,0 kW	PAVP			
	10	2,5 kW	PAVP	SAVP2	SAV2	7SAV
	13	3,5 kW	PAVP	SAVP2	SAV2	7SAV
	16	4,5 kW	PAVP	SAVP2	SAV2	7SAV
	18	5,0 kW	PAVP		SAV2	
	22	6,0 kW			SAV2	

Operations

Single split	✓		✓		✓	
Multi split	✓					✓

Filters

IAQ filter			✓		✓	
Plasma Air Purifier	✓		✓			
Ionizer			✓			
Active carbon catechin					✓	
Anti-dust prefilter	✓		✓		✓	✓

Functions

Self cleaning	✓		✓		✓	
Comfort sleep			✓		✓	
Hi Power	✓		✓		✓	
Eco	✓		✓		✓	
Louver control	✓		✓		✓	
One touch preset	✓		✓		✓	
Automatic restart	✓		✓		✓	
Timer 24h	✓		✓		✓	
Floor warming						✓
Quiet				✓	✓	✓
Power Select			✓			
8 Deg C (Holiday mode)	✓		✓			



**Super
DAISEIKAI**



The power of Daisaeikai Ionizer



By generating more than 1 million negative ions for every square centimeter of air, the Daiseikai ionizer will invite the freshness of nature into your personal place. The invigorating atmosphere of forest and waterfalls can be experience directly in your own home.

SuperDaiseikai has been designed and created with the objective to provide excellence, respecting the latest eco-evolution trends and maintaining the ultimate comfort.

Improved class A efficiency with COP value above 5 (5,36 for size 10).

New technology and advanced electronic reduced the Annual Energy Consumption of 30%*.

Dual stage compressor improve the load efficiency in a wide range of conditions.

Fast filtration: impurities are ionized by the ion charger and absorbed by the new heat exchanger.

Self cleaning to prevent the growth of mold inside the unit.

Nordic version with heat on the base plate of outdoor unit and winter operation mode.

SUPER DAISEIKAI

HIGH-WALL



INDOOR UNITS

RAS-07PKVP-E RAS-07PKVP-ND
RAS-10PKVP-E RAS-10PAVP-E
RAS-13PKVP-E RAS-13PAVP-E
RAS-16PKVP-E RAS-16PAVP-E
RAS-18PKVP-E RAS-18PAVP-E



OUTDOOR UNITS

RAS-07PAVP-E RAS-M14GAV-E
RAS-10PAVP-E RAS-M18UAV-E
RAS-13PAVP-E RAS-3M18SAV-E
RAS-16PAVP-E RAS-3M26UAV-E
RAS-18PAVP-E RAS-4M27UAV-E
RAS-5M34UAV-E



REMOTE CONTROLS

WIRELESS

PKVP + PAVP

Performance data

Outdoor unit			RAS-07PAVP-E	RAS-10PAVP-E	RAS-13PAVP-E	RAS-16PAVP-E	RAS-18PAVP-E
Indoor unit			RAS-07PKVP-E	RAS-10PKVP-E	RAS-13PKVP-E	RAS-16PKVP-E	RAS-18PKVP-E
Cooling capacity	kW		2	2,5	3,5	4,5	5
Cooling range (min. - max.)	kW		0,3 - 3,0	0,3 - 3,5	0,3 - 4,5	0,3 - 5,0	0,3 - 5,5
Power input (min. - rated - max.)	kW	CO	0,07 - 0,35 - 0,68	0,07 - 0,47 - 0,88	0,07 - 0,77 - 1,25	0,07 - 1,22 - 1,49	0,07 - 1,49 - 1,75
EER	W/W		5,63	5,26	4,55	3,69	3,36
Energy efficiency class		CO	A	A	A	A	A
Annual energy consumption	kWh		177	237	385	610	745
Heating capacity	kW		2,5	3	4	5,5	6
Heating range (min. - max.)	kW		0,3 - 5,0	0,3 - 5,8	0,3 - 6,1	0,3 - 6,5	0,3 - 6,7
Power input (min. - rated - max.)	kW	HP	0,07 - 0,44 - 1,30	0,07 - 0,56 - 1,60	0,07 - 0,84 - 1,60	0,07 - 1,34 - 1,70	0,07 - 1,54 - 1,75
COP	W/W		5,68	5,36	4,76	4,1	3,9
Energy efficiency class		HP	A	A	A	A	A

PKVP

Physical data Indoor unit

Indoor unit			RAS-10PKVP-E	RAS-13PKVP-E	RAS-16PKVP-E	RAS-18PKVP-E
Air Flow (h/l)	m³/h - l/s	CO	612/288 - 170/80	624/306 - 173/85	696/318 - 193/88	744/372 - 207/103
Sound pressure level (h/l)	dB(A)	CO	42/26	43/27	45/27	47/30
Sound power level (h/l)	dB(A)	CO	57/41	58/42	60/42	62/45
Air Flow (h/l)	m³/h - l/s	HP	648/348 - 180/97	666/348 - 185/97	696/348 - 193/97	744/384 - 207/107
Sound pressure level (h/l)	dB(A)	HP	42/26	43/27	45/27	47/30
Sound power level (h/l)	dB(A)	HP	57/41	58/42	60/42	62/45
Dimensions (HxWxD)	mm		295x790x242	295x790x242	295x790x242	295x790x242
Weight	kg		12	12	12	12

PAVP

Physical data Outdoor unit

Outdoor unit			RAS-07PAVP-E	RAS-10PAVP-E	RAS-13PAVP-E	RAS-16PAVP-E	RAS-18PAVP-E
Air Flow	m³/h - l/s	CO	1662 - 462	1800 - 500	2232 - 620	2232 - 620	2370 - 658
Sound pressure level	dB(A)	CO	46	48	50	50	52
Sound power level	dB(A)	CO	61	63	65	65	67
Operating range	°C	CO	-10÷46	-10÷46	-10÷46	-10÷46	-10÷46
Air Flow	m³/h - l/s	HP	1530 - 425	1662 - 462	2088 - 580	2088 - 580	2232 - 620
Sound pressure level	dB(A)	HP	46	48	50	50	52
Sound power level	dB(A)	HP	61	63	65	65	67
Operating range	°C	HP	-15÷24	-15÷24	-15÷24	-15÷24	-15÷24
Dimensions (HxWxD)	mm		550x780x290	550x780x290	550x780x290	550x780x290	550x780x290
Weight	kg		39	39	40	40	40
Compressor type			Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"	1/2" - 1/4"
Minimum pipe length	m		2	2	2	2	2
Maximum pipe length	m		20	20	20	20	20
Maximum height difference	m		10	10	10	10	10
Chargeless pipe length	m		15	15	15	15	15
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

Super
DAISEIKAI



Plasma air purifier



The plasma air purifier is made of one single filter element which does not need to be replaced periodically.

This filter element performs three main functions:

- Dust collection
- Bacteria removal
- Deodorization

Latest release in the Innovative Daiseikai family, with higher standard in efficiency and comfort.

New ergonomic and practical remote control with easy access to main buttons and a sliding panel to hide the control used less frequently.

Energy consumption with 5,1 EER in cooling (size 10).

Power change button: reduce the power to 75 or 50%. Helps preventing black-outs when other appliances are used.

New, modern aesthetic.

Self-cleaning with low density Ozone will eliminate all bacteria normally remaining after operation.

DC Hybrid Inverter technology with Twin Rotary compressor.

Nordic version with heat on the base plate of outdoor unit and winter operation mode.

SUPER DAISEIKAI 6

INVERTER HIGH-WALL



INDOOR UNITS

RAS-10SKVP2-E
RAS-13SKVP2-E
RAS-16SKVP2-E

RAS-25SKVP2-ND
RAS-35SKVP2-ND
RAS-45SKVP2-ND



OUTDOOR UNITS

RAS-10SAVP2-E
RAS-13SAVP2-E
RAS-16SAVP2-E

RAS-25SAVP2-ND
RAS-35SAVP2-ND
RAS-45SAVP2-ND



REMOTE CONTROLS

WIRELESS

SKVP2 + SAVP2

Performance data

		RAS-10SAVP2-E		RAS-13SAVP2-E		RAS-16SAVP2-E	
		RAS-10SKVP2-E		RAS-13SKVP2-E		RAS-16SKVP2-E	
Outdoor unit		RAS-10SAVP2-E		RAS-13SAVP2-E		RAS-16SAVP2-E	
Indoor unit		RAS-10SKVP2-E		RAS-13SKVP2-E		RAS-16SKVP2-E	
Cooling capacity	kW	2,51		3,52		4,53	
Cooling range (min. - max.)	kW	0,5 - 3,5		0,6 - 4,5		0,8 - 5,0	
Power input (min. - rated - max.)	kW CO	0,10 - 0,49 - 0,87		0,11 - 0,84 - 1,37		0,15 - 1,34 - 1,82	
EER	W/W	5,12		4,19		3,38	
Energy efficiency class	CO	A		A		A	
Annual energy consumption	kWh	245		420		670	
Heating capacity	kW	3,21		4,22		5,53	
Heating range (min. - max.)	kW	0,5 - 6,5		0,5 - 7,7		0,7 - 8,0	
Power input (min. - rated - max.)	kW HP	0,09 - 0,63 - 1,82		0,10 - 0,95 - 2,33		0,15 - 1,47 - 2,51	
COP	W/W	5,1		4,44		3,76	
Energy efficiency class	HP	A		A		A	

SKVP2

Physical data Indoor unit

		RAS-10SKVP2-E		RAS-13SKVP2-E		RAS-16SKVP2-E	
Indoor unit		RAS-10SKVP2-E		RAS-13SKVP2-E		RAS-16SKVP2-E	
Air Flow (max)	m³/h - l/s	630 - 175		660 - 183		690 - 192	
Sound pressure level (h/l)	dB(A) CO	42/27		43/27		45/29	
Sound power level (h)	dB(A) CO	55		56		58	
Air Flow (max)	m³/h - l/s	708 - 197		732 - 203		756 - 210	
Sound pressure level (h/l)	dB(A) HP	43/27		44/27		45/29	
Sound power level (h)	dB(A) HP	56		57		58	
Dimensions (HxWxD)	mm	275x790x205		275x790x205		275x790x205	
Weight	kg	9		9		9	

SAVP2

Physical data Outdoor unit

		RAS-10SAVP2-E		RAS-13SAVP2-E		RAS-16SAVP2-E	
Outdoor unit		RAS-10SAVP2-E		RAS-13SAVP2-E		RAS-16SAVP2-E	
Air Flow	m³/h - l/s	1800 - 500		2160 - 600		2520 - 700	
Sound pressure level	dB(A) CO	46		48		49	
Sound power level	dB(A) CO	59		61		62	
Operating range	°C CO	-10÷46		-10÷46		-10÷46	
Air Flow	m³/h - l/s	1440 - 400		1800 - 500		2160 - 600	
Sound pressure level (h)	dB(A) HP	47		50		50	
Sound power level (h)	dB(A) HP	60		63		63	
Operating range	°C HP	-15÷24		-15÷24		-15÷24	
Dimensions (HxWxD)	mm	630x800x300		630x800x300		630x800x300	
Weight	kg	41		41		41	
Compressor type		DC Twin Rotary		DC Twin Rotary		DC Twin Rotary	
Flare connections (gas-liquid)		3/8" - 1/4"		3/8" - 1/4"		1/2" - 1/4"	
Minimum pipe length	m	2		2		2	
Maximum pipe length	m	25		25		25	
Maximum height difference	m	10		10		10	
Chargeless pipe length	m	15		15		15	
Power supply	V-ph-Hz	220/240-1-50		220/240-1-50		220/240-1-50	

CO = cooling mode
HP = heating mode



Quiet and comfort sleep

QUIET **COMFORT** **COMFORT SLEEP**

By pressing the "quiet" button on the remote control, the units will start an extremely silent operation mode.

In comfort sleep mode, the system will compensate for naturally lower night air temperature to maintain a complete comfort.

This elegant unit combines an improved energy efficiency with indoor air quality.

One touch my comfort button. Memorize the desired operation parameters.

Toshiba IAQ filter filtration system includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Self cleaning function to remove moist from the internal components of the unit.

Toshiba DC hybrid inverter technology controls and adjust the capacity supplied by the air conditioner.

Modern stylish and compact design.

SUZUMI+

INVERTER HIGH-WALL



INDOOR UNITS

RAS-10SKV2-E
RAS-13SKV2-E
RAS-16SKV2-E1
RAS-18SKV2-E
RAS-22SKV2-E



OUTDOOR UNITS

RAS-10SAV2-E
RAS-13SAV2-E
RAS-16SAV2-E1
RAS-18SAV2-E1
RAS-22SAV2-E



REMOTE CONTROLS

WIRELESS

SKV2 + SAV2

Performance data

Outdoor unit			RAS-10SAV2-E	RAS-13SAV2-E	RAS-16SAV2-E1	RAS-18SAV2-E1	RAS-22SAV2-E
Indoor unit			RAS-10SKV2-E	RAS-13SKV2-E	RAS-16SKV2-E1	RAS-18SKV2-E	RAS-22SKV2-E
Cooling capacity	kW		2,5	3,5	4,5	5	6
Cooling range (min. - max.)	kW		1,1 - 3,0	0,8 - 4,1	0,8 - 5,0	1,1 - 6,0	1,2 - 6,7
Power input (min. - rated - max.)	kW	CO	0,25 - 0,598 - 0,82	0,15 - 1,00 - 1,25	0,15 - 1,395 - 1,72	0,18 - 1,42 - 2,00	0,20 - 1,995 - 2,65
EER	W/W		4,18	3,50	3,23	3,52	3,01
Energy efficiency class	CO		A	A	A	A	B
Annual energy consumption	KWh		299	500	698	710	998
Heating capacity	kW		3,2	4,2	5,5	5,8	7
Heating range (min. - max.)	kW		0,9 - 4,8	0,9 - 5,6	0,9 - 6,9	0,8 - 6,3	1,0 - 7,5
Power input (min. - rated - max.)	kW	HP	0,17 - 0,75 - 1,40	0,15 - 1,08 - 1,58	0,15 - 1,52 - 1,98	0,14 - 1,56 - 1,70	0,18 - 2,05 - 2,21
COP	W/W		4,27	3,89	3,62	3,72	3,41
Energy efficiency class	HP		A	A	A	A	B

SKV2

Physical data Indoor unit

Indoor unit			RAS-10SKV2-E	RAS-13SKV2-E	RAS-16SKV2-E1	RAS-18SKV2-E	RAS-22SKV2-E
Air Flow	m³/h - l/s	CO	516 - 143	570 - 158	684 - 190	954 - 265	1080 - 300
Sound pressure level (h/l)	dB(A)	CO	38/26	39/26	45/30	44/32	47/35
Sound power level (h)	dB(A)	CO	51	52	58	59	62
Air Flow	m³/h - l/s	HP	570 - 158	624 - 173	738 - 205	990-275	1098/305
Sound pressure level (h/l)	dB(A)	HP	39/28	40/28	45/31	44/32	47/35
Sound power level (h)	dB(A)	HP	52	53	58	59	62
Dimensions (HxWxD)	mm		275x790x205	275x790x205	275x790x205	320x1050x228	320x1050x228
Weight	kg		9	9	9	13	13

SAV2

Physical data Outdoor unit

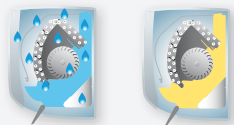
Outdoor unit			RAS-10SAV2-E	RAS-13SAV2-E	RAS-16SAV2-E1	RAS-18SAV2-E1	RAS-22SAV2-E
Air Flow	m³/h - l/s	CO	1800 - 500	2250 - 625	2160 - 600	2178 - 605	2316 - 643
Sound pressure level	dB(A)	CO	46	48	49	49	53
Sound power level	dB(A)	CO	59	61	62	64	68
Operating range	°C	CO	-10÷46	-10÷46	-10÷46	-10÷46	-10÷46
Air flow	m³/h - l/s	HP	1800 - 500	2250 - 625	1920 - 533	1914 - 532	2232 - 620
Sound pressure level	dB(A)	HP	47	50	50	50	52
Sound power level	dB(A)	HP	60	63	63	65	67
Operating range	°C	HP	-15÷24	-15÷24	-15÷24	-15÷24	-15÷24
Dimensions (HxWxD)	mm		550x780x290	550x780x290	550x780x290	550x780x290	550x780x290
Weight	kg		33	33	39	39	41
Compressor type			DC Rotary	DC Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"	1/2" - 1/4"	1/2" - 1/4"
Minimum pipe length	m		2	2	2	2	2
Maximum pipe length	m		20	20	20	20	20
Maximum height difference	m		10	10	10	10	10
Chargeless pipe length	m		15	15	15	15	15
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

AvAnt



Self cleaning function



AvAnt is endowed with the self-cleaning function, that reduces moisture that causes mould to form in the indoor unit. When the air conditioner is turned off, the internal fan runs and dries the moisture coil, before turning off automatically.

AvAnt-garde Inverter model specifically conceived for residential users. If your need is ideal temperature all year round, delivered with high energy saving and extremely low noise, Toshiba AvAnt Inverter is the solution.

A energy class in cooling and heating (capacities 10 and 13): high energy saving.

The lowest indoor unit noise of the category: only 20 dB(A) at low fan speed.*

3 in 1 filtration system: to reduce bacteria, prevent allergies and eliminate odours.

Modern compact design fit easily into every room.

Easy to use remote control.

Detachable front panel for easily perform all the regular maintenance routines.

AVANT

INVERTER HIGH-WALL



INDOOR UNITS

RAS-107SKV-E3
RAS-137SKV-E3
RAS-167SKV-E3



OUTDOOR UNITS

RAS-107SAV-E3
RAS-137SAV-E3
RAS-167SAV-E3



REMOTE CONTROLS

WIRELESS

7SKV + 7SAV

Performance data

		RAS-107SAV-E3	RAS-137SAV-E3	RAS-167SAV-E3
Outdoor unit		RAS-107SAV-E3	RAS-137SAV-E3	RAS-167SAV-E3
Indoor unit		RAS-107SKV-E3	RAS-137SKV-E3	RAS-167SKV-E3
Cooling capacity	kW	2,5	3,5	4,4
Cooling range (min. - max.)	kW	1,1 - 3,0	1,1 - 4,0	1,1 - 5,0
Power input (min. - rated - max.)	kW CO	0,26 - 0,76 - 0,97	0,25 - 1,08 - 1,33	0,26 - 1,56 - 1,90
EER	W/W	3,29	3,24	2,82
Energy efficiency class	CO	A	A	C
Annual energy consumption	KWh	380	540	780
Heating capacity	kW	3,2	4,2	5,2
Heating range (min. - max.)	kW	0,9 - 4,1	0,9 - 5,0	1,0 - 6,2
Power input (min. - rated - max.)	kW HP	0,20 - 0,87 - 1,20	0,17 - 1,14 - 1,48	0,19 - 1,52 - 1,81
COP	W/W	3,68	3,68	3,42
Energy efficiency class	HP	A	A	B

7SKV

Physical data Indoor unit

		RAS-107SKV-E3	RAS-137SKV-E3	RAS-167SKV-E3
Indoor unit		RAS-107SKV-E3	RAS-137SKV-E3	RAS-167SKV-E3
Air Flow (max)	m³/h - l/s CO	522 - 145	570 - 158	690 - 192
Sound pressure level (l/m/h)	dB(A) CO	29/33/38	26/33/39	30/40/45
Sound power level (l/m/h)	dB(A) CO	51	52	58
Air Flow (max)	m³/h - l/s HP	576 - 160	624 - 173	744 - 207
Sound pressure level (l/m/h)	dB(A) HP	30/35/40	28/34/40	31/40/45
Sound power level (l/m/h)	dB(A) HP	53	53	58
Dimensions (HxWxD)	mm	220x740x195	275x790x205	275x790x205
Weight	kg	8	9	9

7SAV

Physical data Outdoor unit

		RAS-107SAV-E3	RAS-137SAV-E3	RAS-167SAV-E3
Outdoor unit		RAS-107SAV-E3	RAS-137SAV-E3	RAS-167SAV-E3
Air flow	m³/h - l/s CO	1620 - 450	2250 - 625	2250 - 625
Sound pressure level	dB(A) CO	48	48	49
Sound power level	dB(A) CO	61	61	62
Operating range	°C CO	15-43	-10-46	-10-46
Air flow	m³/h - l/s HP	1620 - 450	2250 - 625	2250 - 625
Sound pressure level	dB(A) HP	50	50	50
Sound power level	dB(A) HP	63	63	63
Operating range	°C HP	-10-24	-15-24	-15-24
Dimensions (HxWxD)	mm	530x660x240	550x780x290	550x780x290
Weight	kg	27	33	40
Compressor type		DC Rotary	DC Rotary	DC Rotary
Flare connections (gas-liquid)		3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"
Minimum pipe length	m	2	2	2
Maximum pipe length	m	10	20	20
Maximum height difference	m	8	10	10
Chargeless pipe length	m	10	15	15
Power supply	V-ph-Hz	220-240/1/50	220-240/1/50	220-240/1/50
Filter			Active Carbon Catechin x 2	

CO = cooling mode
HP = heating mode



Bi-flow air delivery system



This feature enables users to select the favorable air flow outlet between the two available positioned at the top and bottom front of the unit.

The warm air distributed from the bottom front is a Toshiba original feature.

Innovative and compact unit to be installed on the floor and in low wall applications, fit perfectly under the window sills or in a low ceiling attic.

Unique floor heating function, to deliver a powerful flow at floor level for a uniform and comfortable room heating.

Compact and modern design in all three dimensions (60 x 70 x 22 cm).

Toshiba IAQ filter filtration system, includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Child lock function on the unit display panel.

Brightness level control of the display unit to reduce the led light glow.

Automatic restart function in case of unexpected electricity supply line power cuts.

UFV

INVERTER CONSOLE



INDOOR UNITS

RAS-B10UFV-E
RAS-B13UFV-E
RAS-B18UFV-E

OUTDOOR UNITS

RAS-10SAV2-E
RAS-13SAV2-E
RAS-18SAV2-E

RAS-M14GAV-E
RAS-M18UAV-E
RAS-3M18SAV-E
RAS-4M23SAV-E
RAS-3M26UAV-E
RAS-4M27UAV-E
RAS-5M34UAV-E1

REMOTE CONTROLS

WIRELESS

B_UFV + SAV2

Performance data

		RAS-10SAV2-E		RAS-13SAV2-E		RAS-18SAV2-E1	
Outdoor unit		RAS-B10UFV-E		RAS-B13UFV-E		RAS-B18UFV-E	
Cooling capacity	kW	2,5		3,5		5,0	
Cooling range (min. - max.)	kW	1,1 - 3,1		1,1 - 4,1		1,0 - 5,7	
Power input (min. - rated - max.)	kW	0,23 - 0,59 - 0,82		0,23 - 0,97 - 1,35		0,20 - 1,66 - 1,95	
EER	W/W	4,20		3,61		3,01	
Energy efficiency class	CO	A		A		B	
Annual energy consumption	KWh	298		485		830	
Heating capacity	kW	3,2		4,2		5,8	
Heating range (min. - max.)	kW	1,0 - 4,8		1,0 - 5,4		1,1 - 6,3	
Power input (min. - rated - max.)	kW	0,18 - 0,75 - 1,40		0,18 - 1,125 - 1,70		0,20 - 1,805 - 2,20	
COP	W/W	4,27		3,73		3,21	
Energy efficiency class	HP	A		A		C	

B_UFV

Physical data Indoor unit

		RAS-B10UFV-E		RAS-B13UFV-E		RAS-B18UFV-E	
Air Flow	m³/h - l/s	CO		468 - 130		510 - 142	
Sound pressure level (h/l)	dB(A)	CO		39/26		40/27	
Sound power level (h/l)	dB(A)	CO		54		55	
Air Flow	m³/h - l/s	HP		510 - 142		552 - 153	
Sound pressure level (h/l)	dB(A)	HP		39/26		40/27	
Sound power level (h/l)	dB(A)	HP		54		55	
Dimensions (h x w x d)	mm	600x700x220		600x700x220		600x700x220	
Weight	kg	16		16		16	

SAV2

Physical data Outdoor unit

		RAS-10SAV2-E		RAS-13SAV2-E		RAS-18SAV2-E1	
Air Flow	m³/h - l/s	CO		1800 - 500		2250 - 625	
Sound pressure level	dB(A)	CO		46		48	
Sound power level	dB(A)	CO		59		61	
Operating range	°C	CO		-10÷46		-10÷46	
Air Flow		HP		1800 - 500		2250 - 625	
Sound pressure level	dB(A)	HP		47		50	
Sound power level	dB(A)	HP		60		63	
Operating range	°C	HP		-15÷24		-15÷24	
Dimensions (h x w x d)	mm	550 x 780 x 290		550 x 780 x 290		550 x 780 x 290	
Weight	kg	33		33		39	
Compressor type		DC Rotary		DC Rotary		DC Twin Rotary	
Flare connections (gas-liquid)		3/8" - 1/4"		3/8" - 1/4"		1/2" - 1/4"	
Minimum pipe length	m	2		2		2	
Maximum pipe length	m	20		20		20	
Maximum height difference	m	10		10		10	
Chargeless pipe length	m	15		15		15	
Power supply	V-ph-Hz	220/240-1-50		220/240-1-50		220/240-1-50	

CO = cooling mode
HP = heating mode

Technology in multisplit systems.

With its best in class COP performance, Estia air to water heat pump system delivers more heating power with less energy consumption.

Estia uses high quality components and material which contribute to the overall savings in energy consumption.

With the Toshiba advanced inverter, Estia air to water heat pump system only delivers the heating capacity required; thus consuming only the necessary electricity.

The hot water temperature is also optimized thanks to Toshiba advanced control depending on the outside air temperature. The milder outside, the air-to-water systems automatically produces lower water temperature to anticipate decreased needs of space heating. The same control logic allows to anticipate as well increasing heating needs when weather conditions become extreme; this overall temperature management gives the best conditions of comfort.

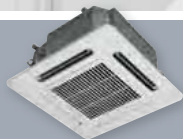
All this saving has a positive impact on the personal electricity bill and the whole community by reducing the CO₂ emissions in the atmosphere.



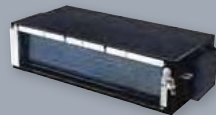
HI-WALL SKV



CONSOLE UPV



CASSETTE SMUV



DUCTED GDV

Residential

INVETER SYSTEMS

MULTI SPLIT



High Quality and savings

Toshiba high quality multi split systems contribute to drastically reduce the operating costs and increase the energy efficiency. The multisplit 5:1 outdoor unit has reached an outstanding COP of 4,24 in nominal conditions and even higher in partial load conditions where the Toshiba Inverters deliver their best performance.

Savings are measured also in term of installation time. Outdoor units are compact, easy to transport and with the long pipe run (up to 80m for the 5:1) can be placed anywhere in your building.

Absolute comfort

Toshiba commitment to people drives a focused attention for the details in every stage of the development process, from design to user field tests. Therefore the products and systems installed feature higher standard of indoor air quality, sound levels, energy savings and environmental awareness.

Special attention has been dedicated to the comfort during the night, with the improvement of the silent operation mode, available in the latest indoor units. This feature uses sensors and logic algorithms to vary and adapt the operating parameters to guarantee a quiet comfortable night.



Heat Pump	Indoor unit	PKVP	SKV	UFV	GDV	SMUV
	7	-	-	-	-	-
	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	-
	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	-
	16	-	-	-	-	-
	18	-	-	-	-	-
	22	-	-	-	-	-
	24	-	-	-	-	-
	7	-	-	-	-	-
	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	RAS-B16UFV-E	RAS-M16GDV-E	RAS-M16SMUV-E
	18	-	-	-	-	-
	22	-	-	-	-	-
	24	-	-	-	-	-
	7	-	-	-	-	-
	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	18	-	-	-	-	-
	22	-	-	-	-	-
	24	-	-	-	-	-
	7	-	RAS-M07SKV-E	-	-	-
	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	18	RAS-M18PKVP-E (ND)	-	RAS-B18UFV-E	-	-
	22	-	RAS-M22SKV-E	-	-	-
	24	-	RAS-M24SKV-E	RAS-B18UFV-E	-	-
	7	-	-	-	-	-
	10	-	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	13	-	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	16	-	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	18	-	-	-	-	-
	22	-	-	-	-	-
	24	-	-	-	-	-
	7	-	RAS-M07SKV-E	-	-	-
	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	18	RAS-M18PKVP-E (ND)	-	RAS-B18UFV-E	-	-
	22	-	RAS-M22SKV-E	-	-	-
	24	-	RAS-M24SKV-E	-	-	-
	7	-	RAS-M07SKV-E	-	-	-
	10	RAS-M10PKVP-E (ND)	RAS-M10SKV-E	RAS-B10UFV-E	RAS-M10GDV-E	RAS-M10SMUV-E
	13	RAS-M13PKVP-E (ND)	RAS-M13SKV-E	RAS-B13UFV-E	RAS-M13GDV-E	RAS-M13SMUV-E
	16	RAS-M16PKVP-E (ND)	RAS-M16SKV-E	-	RAS-M16GDV-E	RAS-M16SMUV-E
	18	RAS-M18PKVP-E (ND)	-	RAS-B18UFV-E	-	-
	22	-	RAS-M22SKV-E	-	-	-
	24	-	RAS-M24SKV-E	-	-	-



Installation flexibility

80m

The multisplit system allow up to 25m for one room installation and 80 meters of total pipe length.

Toshiba new Super efficient DC Twin rotary compressor enables top performance at low energy consumption. With this efficient unit, operating costs decrease dramatically, compare to other multisplit systems.

Toshiba multi-splits are equipped with Toshiba DC hybrid inverter, an enhanced feature that ensures improved performance and reliability.

Wide range of indoor units available: Super Daiseikai, high-wall, ducted, cassette 600x600 and the new Console from Toshiba.

Environmental conscious, with R-410A refrigerant and reduced overall CO₂ emissions.

Superior reliability, due to the reduction of the compressor ON/ OFF cycles.

Low noise levels.

Pipe elevation up to 15 meters in installation height.

MULTI-SPLIT

OUTDOOR UNIT



OUTDOOR UNITS

RAS-M18UAV-E

RAS-3M26UAV-E
RAS-4M27UAV-E
RAS-5M34UAV-E1

UAV

Performance data

		2-room RAS-M18UAV-E	3-room RAS-3M26UAV-E	4-room RAS-4M27UAV-E	5-room RAS-5M34UAV-E1
Outdoor unit					
Cooling capacity	kW	5,2	7,5	8,0	10,0
Cooling capacity (min. - max.)	kW	1,4 - 6,2	4,1 - 9,0	4,2 - 9,3	3,7 - 11,0
Power input	kW CO	1,44	2,0	2,29	2,92
EER	W/W	3,61	3,75	3,5	3,42
Energy efficiency class		A	A	A	A
Heating capacity	kW/h	5,6	9,0	9	12
Heating capacity (min. - max.)	kW	0,9 - 8,3	2,0 - 11,2	3,0 - 11,7	3,4 - 14,0
Power input	kW	1,19	2,20	1,93	2,83
COP	kW	4,71	4,09	4,67	4,24
Energy efficiency class	W/W	A	A	A	A

UAV

Physical data outdoor

		RAS-M18UAV-E	RAS-3M26UAV-E	RAS-4M27UAV-E	RAS-5M34UAV-E1
Outdoor unit					
Air Flow	m ³ /h - Us CO	1800-500	2507-696	2507-696	3245-901
Sound pressure level	dB(A) CO	49	48	48	51
Sound power level	dB(A) CO	64	63	63	66
Operating range	°C CO	5-43	10-43	10-43	10-43
Air Flow	HP	1950-542	2507-696	2507-696	3562-989
Sound pressure level	dB(A) HP	51	49	49	54
Sound power level	dB(A) HP	66	64	63	69
Operating range	°C HP	-15-24	-15-22	-15-22	-10-22
Dimensions (HxWxD)	mm	550x780x290	890x900x320	890x900x320	890x900x320
Weight	kg	41	69	69	75
Compressor type		DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections - gas		3/8" + 1/2"	1/2" x 2 + 3/8"	3/8" x 2 + 1/2" x 2	3/8" x 3 + 1/2" x 2
Flare connections - liquid		1/4" x 2	1/4" x 3	1/4" x 4	1/4" x 5
Maximum pipe length (per unit/total)	m	20 / 30	25 / 70	25 / 70	25 / 80
Maximum height difference	m	10	15	15	15
Chargeless pipe length	m	20	40	40	40
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode

HP = heating mode



DC Compressor



Fast and precise temperature management, with energy savings of 40 - 50% compared to fixed-speed systems.

Toshiba multi-splits are equipped with Toshiba DC hybrid inverter, an enhanced feature that ensures improved performance and reliability.

Wide range of indoor units available: Daiseikai, high-wall, ducted, cassette 600x600 and console.

A perfect combination of DC twin rotary compressor, DC hybrid inverter and R-410A refrigerant.

Superior reliability, due to the reduction of the compressor ON/ OFF cycles.

Low noise levels.

Flexibility: this system allows up to 25 m piping length for one room ensuring the overall length is not exceeded.

MULTI-SPLIT

OUTDOOR UNIT

GAV/SAV

Performance table

		2-room	3-room	4-room
		RAS-M14GAV-E	RAS-3M18SAV-E	RAS-4M23SAV-E
Outdoor unit				
Cooling capacity	kW	4,0	5,2	6,8
Cooling capacity (min. - max.)	kW	1,1 - 4,5	1,4 - 6,5	1,4 - 7,5
Power input	kW	1,08	1,34	1,95
EER	W/W	3,70	3,88	3,49
Energy efficiency class	CO	A	A	A
Heating capacity	kW	4,4	6,8	7,2
Heating capacity (min. - max.)	kW	0,5 - 5,2	0,8 - 7,7	1,4 - 8,4
Power input	kW	1,01	1,60	1,63
COP	W/W	4,35	4,25	4,42
Energy efficiency class	HP	A	A	A

GAV/SAV

Physical data outdoor

		RAS-M14GAV-E	RAS-3M18SAV-E	RAS-4M23SAV-E
Outdoor unit				
Air flow	m ³ /h - l/s	1812 - 503	2100 - 583	2802 - 778
Sound pressure level	dB(A) CO	46	47	47
Sound power level	dB(A) CO	59	62	62
Operating range	°C CO	5÷43	5÷43	5÷43
Sound pressure level	dB(A) HP	48	49	48
Sound power level	dB(A) HP	61	64	63
Operating range	°C HP	-15÷24	-15÷24	-15÷24
Dimensions (HxWxD)	mm	550x780x290	695x780x270	795x900x320
Weight	kg	36	47	55
Compressor type		DC Twin Rotary	Twin Rotary	Twin Rotary
Flare connections - gas		3/8" x 2	3/8" x 3	3/8" x 4
Flare connections - liquid		1/4" x 2	1/4" x 3	1/4" x 4
Maximum pipe length (per unit/total)	m	20/30	20/50	25/60
Maximum height difference	m	10	10	15
Chargeless pipe length	m	20	50	40
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

GAV/SAV

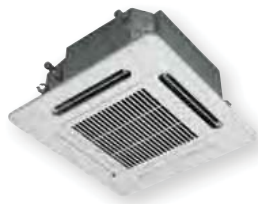


OUTDOOR UNITS

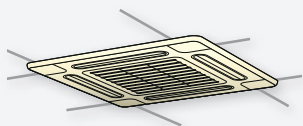
RAS-M14GAV-E

RAS-3M18SAV-E

RAS-4M23SAV-E



Standard size



Stylish design and compact dimensions to suit all standard 600x600 mm grid ceilings.

This 4-way cassette has been designed to suit all the standard 600x600 mm grid ceiling, for easy installation and maintenance.

Its compact and stylish panel design makes it discreet and unobtrusive. Both the installation and the maintenance are really easy, thanks to the simple access to electrical box by simply removing the suction grill.

Complete range from 10 to 16 k.

Easy maintenance: easy access to electrical box by simply removing the suction grill.

Easy installation by panel adjust pocket.

All units equipped with IR remotes as standard.

Corner pocket opening.

Slim design



230mm



Very slim design and only 230 mm high, for easier and versatile installations.



These ducted multi-split inverter units offer reliable and controllable comfort year-round.

The compact and quiet units are suitable for a wide range of residential and light commercial applications, with one outdoor unit serving up to four indoor units.

Easy-to-use infrared remote control or wired remote control as an option.

Low noise level: the unit operates very quietly.

Very slim design and only 230 mm high, for easier and more flexible installation.

Flexible air inlet: rear or below the unit.

Drain pump kit available as an option.

Up to 63,7 Pa static pressure.

4-WAY CASSETTE

INDOOR UNIT

G D V

DUCTED

INDOOR UNIT

SMUV

Physical data Indoor unit

Indoor unit		HP	RAS-M10SMUV-E	RAS-M13SMUV-E	RAS-M16SMUV-E
Air flow (h/l)	m³/h - l/s	CO	588 - 163	618 - 172	660 - 183
Sound pressure level (h/l)		dB(A) CO	37/30	38/30	40/31
Sound power level		dB(A) CO	52	53	55
Air flow (h/l)	m³/h	HP	558 - 432	618 - 432	660 - 450
Sound pressure level (h/l)		dB(A) HP	37/30	38/30	40/31
Sound power level		dB(A) HP	52	53	55
Dimensions (HxWxD)	mm		268x575x575	268x575x575	268x575x575
Weight	kg		15	15	15
Flare connections (gas - liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"

CO = cooling mode HP = heating mode

GDV

Physical data Indoor unit

Indoor unit		HP	RAS-M10GDV-E	RAS-M13GDV-E	RAS-M16GDV-E
Air flow (h/l)	m³/h – l/s	CO	720/400 - 200/111	780/428 - 217/119	780/428 - 217/119
Sound pressure level (h/l)	dB(A)	CO	31/23	32/24	33/25
Sound power level (h/l)	dB(A)	CO	44/36	45/37	46/38
Air flow (h/l)	m³/h – l/s	HP	720/450 - 200/111	780/428 - 217/119	780/428 - 217/119
Sound pressure level (h/l)	dB(A)	HP	32/24	33/25	34/26
Sound power level (h/l)	dB(A)	HP	45/37	46/33	47/34
Dimensions (HxWxD)	mm		230 × 750 × 440	230 × 750 × 440	230 × 750 × 440
Weight	kg		19	19	19
Flare connections (gas - liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"
External static pressure* (stand/upper limit)	Pa		35,3/54,9	41,2/63,7	41,2/63,7

CO = cooling mode HP = heating mode



Self cleaning function



When the air conditioner is turned off, the internal fan runs and dries the moisture coil, before turning off automatically.

The new SuperDaiseikai has been designed and created with the objective to provide excellence, respecting the latest eco-evolution trends and maintaining the ultimate comfort.

World's best class energy efficiency. Pure air. Premium design.

Fast filtration: impurities are ionized by the ion charger and absorbed by the new heat exchanger.

Washable front panel.

Compact Infra red Remote control with slide cover to hide the less used buttons.

Toshiba IAQ filters



Toshiba IAQ filter filtration system includes extremely powerful anti-virus, anti-bacteria and deodorizing effects.



This elegant unit combines an improved energy efficiency with indoor air quality.

Very silent with a unique "Quiet" button on the remote control, to further increase the acoustic comfort.

One touch my comfort button. Memorize the desired operation parameters.

Self cleaning function to remove moist from the internal components of the unit.

Modern and compact design.

P K V P

HI-WALL

INDOOR UNIT

S K V

HI-WALL

INDOOR UNIT

PKVP		Physical data Indoor unit			
Indoor unit		M10PKVP-E	M13PKVP-E	M16PKVP-E	M18PKVP-E
Air Flow (h/l)	m ³ /h - l/s	CO 624/306 - 173/85	696/318 - 193/88	744/372 - 207/103	804/408 - 223/113
Sound pressure level (h/l)	dB(A) CO	43/27	45/27	47/30	49/31
Sound power level (h/l)	dB(A) CO	58/42	60/42	62/45	64/46
Air Flow (h/l)	m ³ /h - l/s	HP 666/348 - 185/97	696/348 - 193/97	744/384 - 207/107	804/420 - 223/117
Sound pressure level (h/l)	dB(A) HP	43/27	45/27	47/30	49/31
Sound power level (h/l)	dB(A) HP	58/42	60/42	62/45	64/46
Dimensions (HxWxD)	mm	295 x 790 x 242	295 x 790 x 242	295 x 790 x 242	295 x 790 x 242
Weight	kg	12	12	12	12
Flare connections (gas-liquid)		3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"	1/2" - 1/4"

CO = cooling mode HP = heating mode

SKV		Physical data Indoor					
Indoor unit		RAS-	M07SKV-E	M10SKV-E	M13SKV-E	M16SKV-E	M22SKV-E
Air Flow	m ³ /h - l/s	CO 516 - 143	516 - 143	563 - 156	684 - 190	1080 - 300	1134 - 315
Sound pressure level (h/l)	dB(A) CO	38/25	38/25	39/26	45/30	47/35	49/37
Sound power level (h/l)	dB(A) CO	51/38	51/38	52/39	58/43	60/48	62/50
Air Flow	m ³ /h - l/s	HP 570 - 158	570 - 158	630 - 175	743 - 206	1098 - 305	1152 - 320
Sound pressure level (h/l)	dB(A) HP	38/27	39/27	40/28	45/31	47/35	49/37
Sound power level (h/l)	dB(A) HP	51/40	52/40	53/41	58/44	60/48	62/50
Dimensions (HxWxD)	mm	275x790x205	275x790x205	275x790x205	275x790x205	320x1050x228	320x1050x228
Weight	kg	9	9	9	9	13	13
Flare connections (gas-liquid)		3/8" - 1/4"	3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"	1/2" - 1/4"	1/2" - 1/4"

CO = cooling mode HP = heating mode

Floor heating function



Unique floor heating function, to deliver a powerful flow at floor level for a uniform and comfortable room heating.



Innovative and compact unit to be installed on the floor and in low wall applications, fit perfectly under the window sills or in a low ceiling attic.

Compact and modern design in all three dimensions (60x70x22 cm).

Bi-flow. Two outlets for complete personalized flow: flow intensity and air direction control.

Toshiba IAQ filter filtration system, includes extremely powerful anti virus, anti bacteria and the deodorizing effects.

Child lock function on the unit display panel.

Brightness level control of the display unit to reduce the led light glow.

Automatic restart function in case of unexpected electricity supply line power cuts.

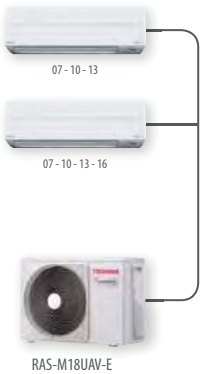
U F V

CONSOLE

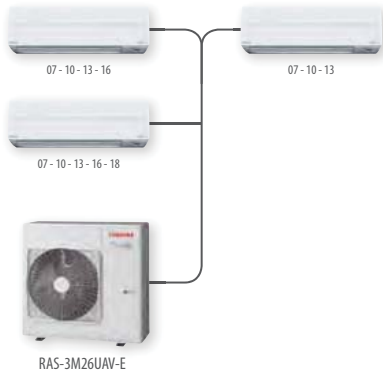
INDOOR UNIT

Indoor units combinations examples

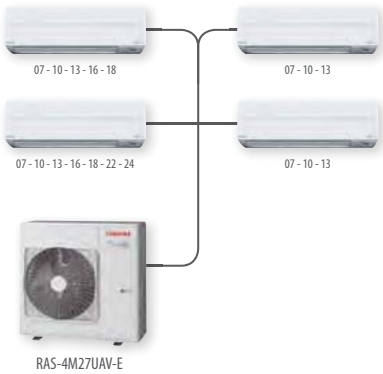
2:1



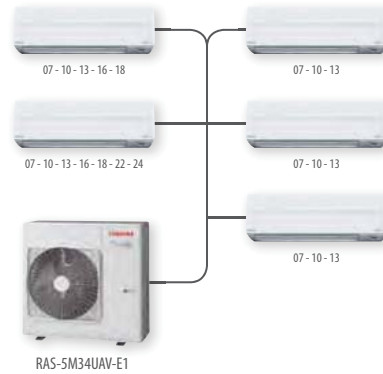
3:1



4:1



5:1



UFV		Physical data Indoor unit			
Indoor unit	HP	RAS-B10UFV-E	RAS-B13UFV-E	RAS-B18UFV-E	
Air Flow	m³/h - l/s	CO	468 - 130	510 - 142	600 - 167
Sound pressure level (h/l)	dB(A)	CO	39/26	40/27	46/34
Sound power level (h/l)	dB(A)	CO	54	55	61
Air Flow	m³/h - l/s	HP	510 - 142	552 - 153	642 - 178
Sound pressure level (h/l)	dB(A)	HP	39/26	40/27	46/34
Sound power level (h/l)	dB(A)	HP	54	55	61
Dimensions (HxWxD)	mm		600x700x220	600x700x220	600x700x220
Weight	kg		16	16	16
Flare connections (gas-liquid)			3/8" - 1/4"	3/8" - 1/4"	1/2" - 1/4"

CO = cooling mode HP = heating mode

Note: Different type of indoor units can be connected in the same system. Refer to the matching table to see the sizes available for each system combination.

Outdoor unit		RAS-M14GAV-E		Combination ratings (size 14) heat pump													
Performances in Cooling mode																	
Operating status		Combination		Unit capacity (kW)		Cooling capacity (kW)			Power input (W)			Operating current (A)			EER	label	
		Unit A	Unit B	Unit A	Unit B	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.			
2 unit operation		10	10	1,95	1,95	1,4	3,9	4,4	230	1070	1290	1,43	4,9	5,84	3,64	A	
		13	10	2,33	1,67	1,4	4	4,5	230	1080	1300	1,43	4,94	5,89	3,70	A	
Performances in Heating mode																	
Operating status		Combination		Unit capacity (kW)		Heating capacity (kW)			Power input (W)			Operating current (A)			EER	label	
		Unit A	Unit B	Unit A	Unit B	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.			
2 unit operation		10	10	2,15	2,15	0,9	4,3	5,1	170	980	1230	1,06	4,39	5,51	4,39	A	
		13	10	2,5	1,9	0,9	4,4	5,2	170	1010	1250	1,06	4,53	5,6	4,36	A	

Outdoor unit		RAS-M18UAV-E		Combination ratings (size 18) heat pump													
Performances in Cooling mode																	
Operating status		Combination		Unit capacity (kW)		Cooling capacity (kW)			Power input (W)			Operating current (A)			EER	label	
		Unit A	Unit B	Unit A	Unit B	1,4	4,0	4,8	260	960	2150	1,61	4,50	9,54			
2 unit operation		07	07	2,00	2,00	1,4	4,0	4,8	260	960	2150	1,61	4,50	9,54	4,17	A	
		10	07	2,65	1,95	1,4	4,6	6,0	260	1200	2150	1,61	5,61	9,54	3,83	A	
		10	10	2,55	2,55	1,4	5,1	6,1	260	1410	2150	1,61	6,45	9,54	3,62	A	
		13	07	3,38	1,82	1,4	5,2	6,1	260	1440	2170	1,61	6,45	9,63	3,61	A	
		13	10	3,00	2,20	1,4	5,2	6,2	260	1440	2170	1,61	6,45	9,63	3,61	A	
		16	07	3,60	1,60	1,4	5,2	6,2	260	1440	2170	1,61	6,45	9,63	3,61	A	
		16	10	3,25	1,95	1,4	5,2	6,2	260	1440	2170	1,61	6,45	9,63	3,61	A	
		13	13	2,60	2,60	1,4	5,2	6,2	260	1440	2170	1,61	6,45	9,63	3,61	A	
		16	16	2,85	2,35	1,4	5,2	6,2	260	1440	2170	1,61	6,45	9,63	3,61	A	
Performances in Heating mode																	
Operating status		Combination		Unit capacity (kW)		Heating capacity (kW)			Power input (W)			Operating current (A)			EER	label	
		Unit A	Unit B	Unit A	Unit B	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.			
2 unit operation		07	07	2,70	2,70	0,9	5,4	8,0	200	1190	2480	1,24	5,35	11,12	4,54	A	
		10	07	3,79	1,61	0,9	5,4	8,2	200	1190	2530	1,24	5,35	11,22	4,54	A	
		10	10	2,70	2,70	0,9	5,4	8,2	200	1190	2530	1,24	5,35	11,22	4,54	A	
		13	07	3,64	1,96	0,9	5,6	8,2	200	1190	2530	1,24	5,35	11,22	4,71	A	
		13	10	3,11	2,49	0,9	5,6	8,3	200	1190	2530	1,24	5,35	11,22	4,71	A	
		16	07	3,76	1,84	0,9	5,6	8,3	200	1190	2530	1,24	5,35	11,22	4,71	A	
		16	10	3,24	2,36	0,9	5,6	8,3	200	1190	2530	1,24	5,35	11,22	4,71	A	
		13	13	2,80	2,80	0,9	5,6	8,3	200	1190	2530	1,24	5,35	11,22	4,71	A	
		16	16	2,93	2,67	0,9	5,6	8,3	200	1190	2530	1,24	5,35	11,22	4,71	A	

Outdoor unit		RAS-3M18SAV-E			Combination ratings (size 18) heat pump													
Performances in Cooling mode																		
Operating status		Combination			Unit capacity (kW)			Cooling capacity (kW)			Power input (W)			Operating current (A)			EER	label
		Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.		
3 unit operation		10	10	10	1,7	1,7	1,7	2,2	5,1	6,3	420	1340	1970	2,4	6,07	8,74	3,81	A
		13	10	10	2,14	1,53	1,53	2,2	5,2	6,5	420	1340	2100	2,4	6,07	9,32	3,88	A
		16	10	10	2,46	1,37	1,37	2,2	5,2	6,5	420	1340	2100	2,4	6,07	9,32	3,88	A
		13	13	10	1,92	1,92	1,37	2,2	5,2	6,5	420	1340	2100	2,4	6,07	9,32	3,88	A
Performances in Heating mode																		
Operating status		Combination			Unit capacity (kW)			Heating capacity (kW)			Power input (W)			Operating current (A)			EER	label
		Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.		
3 unit operation		10	10	10	2,23	2,23	2,23	2,2	6,7	7,5	420	1580	1950	2,4	7,16	8,74	4,24	A
		13	10	10	2,63	2,08	2,08	2,2	6,8	7,7	420	1600	2030	2,4	7,25	9,01	4,25	A
		16	10	10	2,95	1,93	1,93	2,2	6,8	7,7	420	1600	2030	2,4	7,25	9,01	4,25	A
		13	13	10	2,44	2,44	1,93	2,2	6,8	7,7	420	1600	2030	2,4	7,25	9,01	4,25	A

Outdoor unit		RAS-4M23SAV-E								Combination ratings (size 23) heat pump										
Performances in Cooling mode																				
Operating status		Combination				Unit capacity (kW)				Cooling capacity (kW)			Power input (W)			Operating current (A)			EER	label
		Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.		
4 unit operation		10	10	10	10	1,7	1,7	1,7	1,7	3	6,8	7,5	500	1950	2300	2,9	8,74	10,2	3,49	A
		13	10	10	10	2,16	1,55	1,55	1,55	3	6,8	7,5	500	1950	2300	2,9	8,74	10,2	3,49	A
		16	10	10	10	2,55	1,42	1,42	1,42	3	6,8	7,5	500	1950	2300	2,9	8,74	10,2	3,49	A
		13	13	10	10	1,98	1,98	1,42	1,42	3	6,8	7,5	500	1950	2300	2,9	8,74	10,2	3,49	A
Performances in Heating mode																				
Operating status		Combination				Unit capacity (kW)				Heating capacity (kW)			Power input (W)			Operating current (A)			EER	label
		Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.		
4 unit operation		10	10	10	10	1,8	1,8	1,8	1,8	2	7,2	8,4	500	1630	2110	2,90	7,31	9,36	4,42	A
		13	10	10	10	2,23	1,66	1,66	1,66	2	7,2	8,4	500	1630	2110	2,90	7,31	9,36	4,42	A
		16	10	10	10	2,53	1,56	1,56	1,56	2	7,2	8,4	500	1630	2110	2,90	7,31	9,36	4,42	A
		13	13	10	10	2,06	2,06	1,54	1,54	2	7,2	8,4	500	1630	2110	2,90	7,31	9,36	4,42	A

Outdoor unitRAS-3M26UAV-ECombination ratings (size 26) heat pump

Performances in Cooling mode

Operating status	Combination			Unit capacity (kW)			Cooling capacity (kW)			Power input (W)			Operating current (A)			EER	label
	Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.		
3 unit operation	07	07	07	2,00	2,00	2,00	3,8	6,0	8,4	950	1400	2720	4,59	6,41	12,07	4,29	A
	10	07	07	2,70	2,00	2,00	3,8	6,7	8,4	950	1660	2720	4,59	7,60	12,07	4,04	A
	13	07	07	3,60	1,95	1,95	3,9	7,5	8,6	960	2000	2750	4,64	9,15	12,20	3,75	A
	16	07	07	3,97	1,76	1,76	3,9	7,5	8,6	960	2000	2750	4,64	9,15	12,20	3,75	A
	18	07	07	4,17	1,67	1,67	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	07	07	4,50	1,50	1,50	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	24	07	07	4,80	1,35	1,35	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	10	10	07	2,70	2,70	2,00	3,8	7,4	8,4	950	1850	2720	4,59	8,47	12,07	4,00	A
	13	10	07	3,30	2,41	1,79	3,9	7,5	8,6	960	2000	2750	4,64	9,15	12,20	3,75	A
	16	10	07	3,67	2,20	1,63	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	10	07	3,87	2,09	1,55	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	10	07	4,21	1,89	1,40	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	24	10	07	4,51	1,72	1,27	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	13	13	07	2,95	2,95	1,60	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	16	13	07	3,31	2,72	1,47	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	13	07	3,50	2,59	1,40	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	13	07	3,85	2,37	1,28	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	24	13	07	4,16	2,17	1,17	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	16	16	07	3,07	3,07	1,36	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	16	07	3,26	2,93	1,30	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	16	07	3,60	2,70	1,20	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	24	16	07	3,92	2,48	1,10	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	10	10	10	2,50	2,50	2,50	3,9	7,5	8,6	960	2000	2750	4,64	9,15	12,20	3,75	A
	13	10	10	3,05	2,23	2,23	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	16	10	10	3,41	2,05	2,05	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	10	10	3,61	1,95	1,95	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	10	10	3,95	1,78	1,78	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	24	10	10	4,26	1,62	1,62	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	13	13	10	2,75	2,75	2,00	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	16	13	10	3,10	2,55	1,86	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	13	10	3,29	2,43	1,78	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	13	10	3,63	2,24	1,63	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	24	13	10	3,94	2,06	1,50	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	16	16	10	2,88	2,88	1,73	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	16	10	3,07	2,77	1,66	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	16	10	3,41	2,56	1,53	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	24	16	10	3,72	2,36	1,42	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	13	13	13	2,50	2,50	2,50	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	16	13	13	2,84	2,33	2,33	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	18	13	13	3,02	2,24	2,24	4,0	7,5	8,8	970	2000	2770	4,69	9,15	12,29	3,75	A
	22	13	13	3,36	2,07	2,07	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	24	13	13	3,67	1,91	1,91	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	16	16	13	2,66	2,66	2,19	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	18	16	13	2,84	2,56	2,10	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	22	16	13	3,17	2,38	1,95	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	24	16	13	3,48	2,21	1,81	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	16	16	16	2,50	2,50	2,50	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	18	16	16	2,68	2,41	2,41	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A
	22	16	16	3,00	2,25	2,25	4,1	7,5	9,0	980	2000	2800	4,73	9,15	12,42	3,75	A

Outdoor unitRAS-3M26UAV-ECombination ratings (size 26) heat pump

Performances in Heating mode

Operating status	Combination			Unit capacity (kW)			Cooling capacity (kW)			Power input (W)			Operating current (A)			COP	label
	Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.		
3 unit operation	07	07	07	2,70	2,70	2,70	2,0	8,1	10,8	380	1800	2750	Min.	Rated	Max.	4,50	A
	10	07	07	3,53	2,38	2,38	2,0	8,3	10,8	380	1900	2750	2,07	8,24	12,20	4,37	A
	13	07	07	4,33	2,34	2,34	2,0	9,0	10,8	380	2200	2750	2,07	8,70	12,20	4,09	A
	16	07	07	4,54	2,23	2,23	2,0	9,0	10,8	380	2200	2750	2,07	10,07	12,20	4,09	A
	18	07	07	4,74	2,13	2,13	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,20	4,09	A
	22	07	07	5,08	1,96	1,96	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	24	07	07	5,40	1,80	1,80	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	10	10	07	3,18	3,18	2,14	2,0	8,5	10,8	380	2000	2750	2,07	10,07	12,56	4,25	A
	13	10	07	3,85	3,08	2,08	2,0	9,0	10,8	380	2200	2750	2,07	9,15	12,20	4,09	A
	16	10	07	4,06	2,95	1,99	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,20	4,09	A
	18	10	07	4,25	2,83	1,91	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	10	07	4,60	2,63	1,77	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	24	10	07	4,93	2,43	1,64	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	13	13	07	3,54	3,54	1,91	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	16	13	07	3,75	3,41	1,84	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	18	13	07	3,94	3,28	1,77	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	13	07	4,29	3,06	1,65	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	24	13	07	4,61	2,85	1,54	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	16	16	07	3,61	3,61	1,77	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	18	16	07	3,80	3,49	1,71	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	16	07	4,14	3,26	1,60	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,56	4,09	A
	24	16	07	4,47	3,04	1,49	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A
	10	10	10	3,00	3,00	3,00	2,0	9,0	10,8	380	2200	2750	2,07	10,07	12,87	4,09	A
	13	10	10	3,46	2,77	2,77	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,20	4,09	A
	16	10	10	3,67	2,67	2,67	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	18	10	10	3,86	2,57	2,57	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	10	10	4,20	2,40	2,40	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	24	10	10	4,53	2,24	2,24	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	13	13	10	3,21	3,21	2,57	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	16	13	10	3,41	3,10	2,48	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	18	13	10	3,60	3,00	2,40	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	13	10	3,94	2,81	2,25	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,56	4,09	A
	24	13	10	4,26	2,63	2,11	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A
	16	16	10	3,30	3,30	2,40	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,87	4,09	A
	18	16	10	3,48	3,19	2,32	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	16	10	3,82	3,00	2,18	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,56	4,09	A
	24	16	10	4,14	2,81	2,05	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A
	13	13	13	3,00	3,00	3,00	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,87	4,09	A
	16	13	13	3,19	2,90	2,90	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	18	13	13	3,38	2,81	2,81	2,0	9,0	11,0	380	2200	2830	2,07	10,07	12,56	4,09	A
	22	13	13	3,71	2,65	2,65	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,56	4,09	A
	24	13	13	4,03	2,49	2,49	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A
16	16	13	3,09	3,09	2,81	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	
18	16	13	3,27	3,00	2,73	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	
22	16	13	3,60	2,83	2,57	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	
24	16	13	3,92	2,66	2,42	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	
16	16	16	3,00	3,00	3,00	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	
18	16	16	3,18	2,91	2,91	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	
22	16	16	3,50	2,75	2,75	2,0	9,0	11,2	380	2200	2900	2,07	10,07	12,87	4,09	A	

Outdoor unit		RAS-4M27UAV-E							Combination ratings (size 27) heat pump														
Performances in Cooling mode																							
Operating status		Combination				Unit capacity (kW)				Cooling capacity (kW)			Power input (W)			Operating current (A)			EER	label			
		Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated	Max.					
4 unit operation	07	07	07	07	1,8	1,78	1,78	1,78	4,0	7,1	8,6	850	2029	2620	4,11	9,29	11,62	3,50	A				
	10	07	07	07	2,3	1,72	1,72	1,72	4,0	7,5	8,7	890	2143	2640	4,30	9,81	11,71	3,50	A				
	13	07	07	07	2,9	1,57	1,57	1,57	4,1	7,6	8,9	900	2171	2700	4,35	9,94	11,98	3,50	A				
	16	07	07	07	3,3	1,47	1,47	1,47	4,1	7,7	9,0	930	2200	2730	4,49	10,07	12,11	3,50	A				
	18	07	07	07	3,5	1,42	1,42	1,42	4,1	7,8	9,1	930	2229	2760	4,49	10,20	12,24	3,50	A				
	22	*07	*07	*07	4,0	1,33	1,33	1,33	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	24	*07	*07	*07	4,3	1,22	1,22	1,22	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	10	10	07	07	2,2	2,18	1,62	1,62	4,1	7,6	8,9	900	2171	2700	4,35	9,94	11,98	3,50	A				
	13	10	07	07	2,7	2,00	1,48	1,48	4,1	7,7	9,0	930	2200	2730	4,49	10,07	12,11	3,50	A				
	16	10	07	07	3,1	1,88	1,39	1,39	4,1	7,8	9,1	930	2229	2760	4,49	10,20	12,24	3,50	A				
	18	10	07	07	3,4	1,82	1,35	1,35	4,1	7,9	9,2	940	2257	2790	4,54	10,33	12,38	3,50	A				
	22	*10	*07	*07	3,8	1,70	1,26	1,26	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	24	*10	*07	*07	4,1	1,57	1,16	1,16	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	13	13	07	07	2,6	2,56	1,39	1,39	4,1	7,9	9,2	940	2257	2790	4,54	10,33	12,38	3,50	A				
	16	13	07	07	3,0	2,43	1,31	1,31	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	13	07	07	3,1	2,33	1,26	1,26	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	22	*13	*07	*07	3,5	2,16	1,17	1,17	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	24	*13	*07	*07	3,8	2,00	1,08	1,08	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	16	16	07	07	2,8	2,77	1,23	1,23	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	16	07	07	3,0	2,67	1,19	1,19	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	18	07	07	2,9	2,86	1,14	1,14	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	10	10	10	07	2,0	2,03	2,03	1,50	4,1	7,6	8,9	900	2171	2700	4,35	9,94	11,98	3,50	A				
	13	10	10	07	2,6	1,90	1,90	1,41	4,1	7,8	9,1	930	2229	2760	4,49	10,20	12,24	3,50	A				
	16	10	10	07	3,0	1,79	1,79	1,33	4,1	7,9	9,2	940	2257	2790	4,54	10,33	12,38	3,50	A				
	18	10	10	07	3,2	1,74	1,74	1,29	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	22	*10	*10	*07	3,6	1,61	1,61	1,19	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	24	*10	*10	*07	3,9	1,49	1,49	1,10	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	13	13	10	07	2,4	2,45	1,79	1,32	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	16	13	10	07	2,8	2,29	1,67	1,24	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	13	10	07	3,0	2,21	1,61	1,19	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	22	*13	*10	*07	3,3	2,06	1,50	1,11	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	24	*13	*10	*07	3,7	1,91	1,39	1,03	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	16	16	10	07	2,6	2,63	1,58	1,17	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	16	10	07	2,8	2,54	1,52	1,13	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	18	10	07	2,7	2,72	1,47	1,09	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	13	13	13	07	2,3	2,26	2,26	1,22	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	16	13	13	07	2,6	2,13	2,13	1,15	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	13	13	07	2,8	2,06	2,06	1,11	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	16	16	13	07	2,4	2,45	2,01	1,09	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	16	13	07	2,6	2,37	1,95	1,05	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	10	10	10	10	2,0	1,98	1,98	1,98	4,1	7,9	9,2	940	2257	2790	4,54	10,33	12,38	3,50	A				
	13	10	10	10	2,5	1,81	1,81	1,81	4,1	7,9	9,2	940	2257	2790	4,54	10,33	12,38	3,50	A				
	16	10	10	10	2,9	1,71	1,71	1,71	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	18	10	10	10	3,1	1,65	1,65	1,65	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	22	*10	*10	*10	3,4	1,53	1,53	1,53	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	24	*10	*10	*10	3,7	1,42	1,42	1,42	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
	13	13	10	10	2,3	2,31	1,69	1,69	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A				
16	13	10	10	2,6	2,18	1,59	1,59	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
16	16	10	10	2,5	2,50	1,50	1,50	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
18	13	10	10	2,8	2,10	1,53	1,53	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
18	16	10	10	2,7	2,42	1,45	1,45	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
13	13	13	10	2,1	2,14	2,14	1,57	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
16	13	13	10	2,5	2,03	2,03	1,48	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
18	13	13	10	2,6	1,96	1,96	1,43	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					
13	13	13	13	2,0	2,00	2,00	2,00	4,2	8,0	9,3	950	2286	2820	4,59	10,46	12,51	3,50	A					

Outdoor unit RAS-5M34UAV-E1 Combination ratings (size 34) heat pump

Performances in Cooling mode																					
Operating status		Combination				Unit capacity (kW)				Cooling capacity (kW)				Power input (W)			Operating current (A)			EER	label
		Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	Unit A	Unit E	Min.	Rated	Max.	Min.	Rated	Max.	Min.	Rated		
5 unit operation	07	07	07	07	07	1.96	1.96	1.96	1.96	1.96	3.7	9.8	10.8	950	2865	3630	4.59	13.11	16.10	3.42	A
	10	07	07	07	07	2.50	1.85	1.85	1.85	1.85	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	07	07	07	07	3.13	1.69	1.69	1.69	1.69	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	07	07	07	07	3.56	1.58	1.58	1.58	1.58	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	07	07	07	07	3.81	1.52	1.52	1.52	1.52	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	10	10	07	07	07	2.34	2.34	1.74	1.74	1.74	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	10	07	07	07	2.95	2.16	1.60	1.60	1.60	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	10	07	07	07	3.38	2.03	1.50	1.50	1.50	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	10	07	07	07	3.61	1.95	1.45	1.45	1.45	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	07	07	07	2.73	2.73	1.48	1.48	1.48	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	13	07	07	07	3.14	2.58	1.39	1.39	1.39	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	13	07	07	07	3.37	2.49	1.35	1.35	1.35	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	07	07	07	2.97	2.97	1.32	1.32	1.32	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	16	07	07	07	3.19	2.87	1.28	1.28	1.28	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	10	10	10	07	07	2.21	2.21	2.21	1.64	1.64	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	10	10	07	07	2.80	2.04	2.04	1.51	1.51	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	10	07	07	2.60	2.60	1.90	1.40	1.40	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	10	10	07	07	3.21	1.92	1.92	1.42	1.42	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	10	10	07	07	3.44	1.86	1.86	1.38	1.38	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	13	07	07	2.43	2.43	2.43	1.31	1.31	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	13	13	07	07	2.80	2.30	2.30	1.25	1.25	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	13	13	07	07	3.02	2.23	2.23	1.21	1.21	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	10	07	07	2.84	2.84	1.70	1.26	1.26	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	16	10	07	07	3.06	2.75	1.65	1.22	1.22	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	13	07	07	2.67	2.67	2.19	1.19	1.19	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	16	13	07	07	2.88	2.59	2.13	1.15	1.15	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	10	10	10	10	07	2.09	2.09	2.09	2.09	1.55	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	10	10	10	07	2.65	1.94	1.94	1.94	1.43	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	10	10	10	07	3.05	1.83	1.83	1.83	1.36	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	10	10	10	07	3.28	1.77	1.77	1.77	1.31	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	10	10	07	2.48	2.48	1.81	1.81	1.34	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	13	10	10	07	2.86	2.35	1.71	1.71	1.27	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	13	10	10	07	3.07	2.28	1.66	1.66	1.23	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	10	10	07	2.72	2.72	1.63	1.63	1.21	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	13	10	07	2.32	2.32	2.32	1.69	1.25	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	13	13	10	07	2.68	2.21	2.21	1.61	1.19	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	13	10	07	2.56	2.56	2.11	1.54	1.14	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	13	13	07	2.18	2.18	2.18	2.18	1.18	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	13	13	13	07	2.53	2.08	2.08	2.08	1.13	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	13	13	07	2.42	2.42	1.99	1.99	1.08	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	10	10	10	10	10	1.98	1.98	1.98	1.98	1.98	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	10	10	10	10	2.53	1.84	1.84	1.84	1.34	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	10	10	10	10	2.91	1.75	1.75	1.75	1.25	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	10	10	10	10	3.13	1.69	1.69	1.69	1.69	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	13	13	10	10	10	2.36	2.36	1.72	1.72	1.72	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	13	10	10	10	2.73	2.25	1.64	1.64	1.64	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	18	13	10	10	10	2.95	2.18	1.59	1.59	1.59	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
	16	16	10	10	10	2.61	2.61	1.56	1.56	1.56	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A
13	13	13	10	10	2.22	2.22	2.22	1.62	1.62	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A	
16	13	13	10	10	2.58	2.12	2.12	1.55	1.55	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A	
18	13	13	10	10	2.78	2.06	2.06	1.50	1.50	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A	
16	16	13	10	10	2.49	2.49	2.04	1.49	1.49	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
13	13	13	13	10	2.09	2.09	2.09	2.09	1.53	3.7	9.9	10.9	950	2894	3670	4.59	13.24	16.28	3.42	A	
16	13	13	13	10	2.46	2.02	2.02	2.02	1.48	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
18	13	13	13	10	2.66	1.97	1.97	1.97	1.44	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
16	16	13	13	10	2.36	2.36	1.94	1.94	1.41	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
13	13	13	13	10	2.00	2.00	2.00	2.00	2.00	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
16	13	13	13	10	2.33	1.92	1.92	1.92	1.92	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
22	07	07	07	07	4.29	1.43	1.43	1.43	1.43	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
22	10	07	07	07	4.08	1.84	1.36	1.36	1.36	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
22	10	10	07	07	3.90	1.75	1.75	1.30	1.30	3.7	10.0	11	950	2923	3700	4.59	13.38	16.42	3.42	A	
22	10	10	10	07	3.73	1.68	1.68	1.68	1.24	3.7	10.0	11	950	2923	3700	4.59					

A step in the right direction of reducing pollution and CO₂ emissions.

The increase of CO₂ and other green house gases is a key concern.

Following the European commitment of reducing 20% of the emissions by 2020, energy waste from residential space heating and domestic hot water have been identified as the possible reduction targets.

Air-to-water heat pumps are considered as renewable energy technology compared to heating systems dependent on fossil fuel or non efficient electrical heating.

They are now considered as ideal solutions for space heating and domestic hot water.

Residential heat production by means of gas, oil or electricity contribute to raise the CO₂ emissions level in the atmosphere. In addition these traditional heating systems are less efficient and therefore the energy running costs increase.

Toshiba Estía air to water heat pumps are the ideal solution to increase energy efficiency (COP), using air as a main source of energy. This is an all in one system designed to deliver the right temperature for space heating, for domestic sanitary hot water and with the additional advantage of offering air conditioning in the warmer seasons.



E s t í a

INVERTER SYSTEMS

AIR TO WATER

World-leading energy efficiency - COP of 4,77*.

With its best in class COP performance, Estia air to water heat pump system delivers more heating power with less energy consumption.

Estia uses high quality components and material which contribute to the overall savings in energy consumption.

With the Toshiba advanced inverter, Estia air to water heat pump system only delivers the heating capacity required; thus consuming only the necessary electricity.

The hot water temperature is also optimized thanks to Toshiba advanced control depending on the outside air temperature. The milder outside, the air-to-water systems automatically produces lower water temperature to anticipate decreased needs of space heating. The same control logic allows to anticipate as well increasing heating needs when weather conditions become extreme; this overall temperature management gives the best conditions of comfort. All this saving has a positive impact on the personal electricity bill and the whole community by reducing the CO₂ emissions in the atmosphere.

*HWS-1103H-E model



OUTDOOR UNITS



HYDRO UNITS



HOT WATER TANK



Easy to install

Quick and easy to install. The hydro module unit can be placed safely in the most suitable place within the house. There's no need for chimney or underground capots which require additional works on site. The compact outdoor unit can be placed anywhere outside the house or on a balcony, thanks to extensive piping options.



Environment conscious

The use of Toshiba Estia heat pump contribute to the reduction of global CO₂ emissions in the atmosphere and limit the use of fossil fuels or other non-renewable energy primary sources. Whenever required for maintenance purpose, all the R410A refrigerant (non ozone depleting) can be completely sucked back to the outdoor unit through the powerful embedded Toshiba "pump down" operation.



One system, multiple solutions

Estia heat pump systems can be used in combination with different types of emitters: existing heating low temperature radiators, floor heating or fan coil units.



Incentives

Every country in Europe has already issued or is in the process of promoting incentives programs for the installation of heat pump systems. Grants or tax rebates are calculated using the nominal COP as a reference, with progressively annual efficiency entering into consideration. The installation of an Estia air to water heat pump system with top nominal COP and outstandingly high partial load COP thanks to its inverter DC Twin rotary compressor, guarantees to match most of the local governments requirements.



The right temperature at the right time

It can produce water at different temperatures for several applications simultaneously.

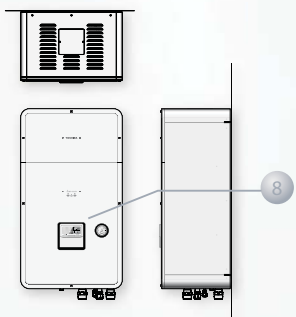
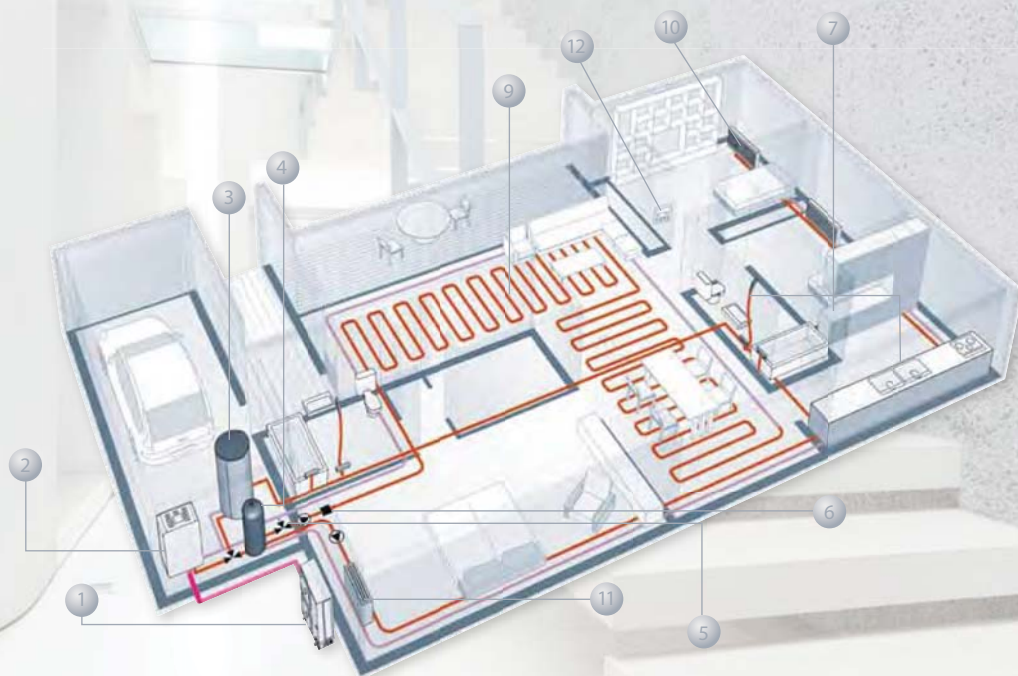
Toshiba Estia air to water heat pump system operates smoothly both with low outdoor air temperature down to -20 °C in winter and up to 43 °C in the summer season.

The system has a unique anti-ice build-up protection embedded. For low ambient countries, a new specific range of outdoor units (HWS-***3H8R-E) is proposed with an additional tape heater in the drain pan to prevent any ice build-up in extreme climate conditions.

E s t í a

INVERTER SYSTEMS

AIR TO WATER



1. Outdoor unit
2. Hydro unit
3. Domestic hot water tank
4. Buffer tank*
5. Mixing valve*
6. Temperature sensor
7. Hot water supply
8. Remote controller with weekly timer
9. Floor heating*
10. Low temperature radiator*
11. Fan coil unit*
12. Room temperature remote controller

*Local supply



Outdoor unit (single and three phases)

Toshiba has a long term experience of successes in air to air heat pump production. The same reliable and award winning technology is at the core of the new air to water heat pumps. Above all the advanced inverter technology and the DC twin rotary compressor.

Heat pumps are available also with three phases power supply with a capacity range up to 16kW.



Hydro unit

The high efficiency plate heat exchanger receives the optimum quantity of refrigerant to produce hot water at low or medium temperature (20-55 °C), or cold water (10-20 °C). A back-up heater (3, 6 or 9 kW options) further supports the operation for extreme conditions. The hydro unit integrates the advanced control of water temperature to allow an optimized distribution to emitters and to the domestic hot water tank.



Domestic hot water tank

The Estia tank is a compact stainless steel insulated tank producing domestic hot water for sanitary use. The performance of the overall system is also maximized thanks to the integrated coaxial heat exchanger which uses hot water produced by the heat pump (whenever energy efficient and possible). With the optimized control logic, whenever additional hot water is needed, an internal electrical heater is activated. This solution reduces running cost and guarantees a constant level hot water temperature.

Three storage capacities (150, 210 or 300 litres) meet any household requirements.



Controller with weekly timer

It controls the distribution of hot water for up to 2 zones and to the domestic hot water tank.

The built in software logic collects the signals from the sensors, regulates the water temperature and optimizes the system's energy consumption. In addition the anti-bacteria control routinely increases the temperature in the domestic hot water tank. The easy to use remote control is conveniently attached to the hydronic unit. With its large and detailed display it is possible to visualize and set all the major operating parameters and also program the weekly timer.

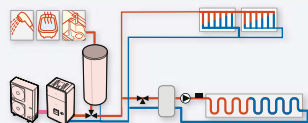


An additional controller directly linked to the hydronic module can be placed directly in the living area.

The new HWS-AMS11E wired remote controller allows an immediate access to set and achieve directly the desired room air temperature.



Two independent zones



Toshiba air to water heat pump systems can manage two independent zones.

This solution enables the delivery of water to diverse emitters at different temperature levels up to 55 °C.

This is an all in one system designed to deliver the right temperature for space heating, for domestic sanitary hot water and with the additional advantage of offering air conditioning in the warmer seasons.

World leading energy efficiency - COP up to 4,77.

Estia heat pump systems can be used in combination with different types of emitters: existing heating low temperature radiators, floor heating or fan coil units.

Contribute to reduce the CO₂ emissions in the atmosphere.

The remote controller is designed to be simple, intuitive and easy to use.

Toshiba Inverter uses the new vector controlled Intelligent Power Drive Unit, which enables a wider range of frequencies and voltages.

Domestic hot water from +40°C to +75°C.

Systems available in single and three phases.

ESTIA

HEAT PUMP SYSTEM



OUTDOOR UNITS

HWS-803H-E
HWS-1103H-E
HWS-1103H8(R)-E
HWS-1403H-E
HWS-1403H8(R)-E
HWS-1603H8(R)-E

HYDRO UNITS

HWS-803XWHM3-E
HWS-803XWH76-E
HWS-803XWH79-E
HWS-1403XWHM3-E
HWS-1403XWH76-E
HWS-1403XWH79-E

HOT WATER TANK

HWS-1501CSHM3-E
HWS-2101CSHM3-E
HWS-3001CSHM3-E

REMOTE CONTROLS

Wired - HWS-AMS11E
Optional additional controller directly linked to the hydronic module. It can be placed directly in the living area for immediate and easy access.

HWS_XWH / HWS_H		System capacities					
Outdoor unit	HWS-	803H-E	1103H-E	1103H8(R)-E	1403H-E	1403H8(R)-E	1603H8(R)-E
Hydro unit combination	HWS-	803XWH**E	1403XWH**E	1403XWH**E	1403XWH**E	1403XWH**E	1403XWH**E
Nominal cooling power	kW	CO	6	10	11	11	13
Power input	kW	CO	2,13	3,52	3,52	4,08	4,8
EER	W/W	CO	2,82	2,84	2,84	2,7	2,71
Nominal heating power	kW	HP	8	11,2	11,2	14	16
Power input	kW	HP	1,82	2,35	2,39	3,11	3,72
COP	W/W	HP	4,4	4,77	4,69	4,5	4,3

HWS_H		Outdoor units data					
Outdoor unit	HWS-	803H-E	1103H-E	1103H8(R)-E	1403H-E	1403H8(R)-E	1603H8(R)-E
Dimensions (HxWxD)	mm	890x900x320	1340x900x320	1340x900x320	1340x900x320	1340x900x320	1340x900x320
Weight	kg	63	93	93	93	93	93
Airflow	m³/h - l/s	3420 - 950	6060 - 1683	6060 - 1683	6180 - 1717	6180 - 1717	6180 - 1717
Sound pressure Level	dB(A)	49	49	50	51	51	52
Sound power level	dB(A)	64	66	66	68	68	69
Compressor type		DC Twin rotary	DC Twin rotary	DC Twin rotary	DC Twin rotary	DC Twin rotary	DC Twin rotary
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A
Flare connections (gas-liquid)		5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"	5/8" - 3/8"
Minimum pipe length	m	5	5	5	5	5	5
Maximum pipe length	m	30	30	30	30	30	30
Maximum height difference	m	30	30	30	30	30	30
Chargeless pipe length	m	30	30	30	30	30	30
Operating range in space heating	°C	-20÷25	-20÷25	-20÷25	-20÷25	-20÷25	-20÷25
Operating range Domestic hot water	°C	-20÷43	-20÷43	-20÷43	-20÷43	-20÷43	-20÷43
Operating range in cooling	°C	10÷43	10÷43	10÷43	10÷43	10÷43	10÷43
Bottom tape heater power*	W	-	-	75	-	75	75
Power supply	V-ph-Hz	220/230-1-50	220/230-1-50	380/400-3N-50	220-230-1-50	380/400-3N-50	380/400-3N-50

HWS_XWH		Hydro units data					
	HWS-	803XWHM3-E	803XWH76-E	803XWH79-E	1403XWHM3-E	1403XWH76-E	1403XWH79-E
To be used with size		80	80	80	110-140-160	110-140-160	110-140-160
Leaving water temperature	°C	H	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C	20 ~ 55°C
	°C	C	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C	10 ~ 25°C
Dimensions (HxWxD)	mm	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355	925x525x355
Weight	kg	54	54	54	54	54	54
Sound pressure level	dB(A)	29	29	29	29	29	29
Electric back up heater capacity	kW	3	6	9	3	6	9
Electric back up heater supply	V-ph-Hz	220/230-1-50	380/400-3N-50	380/400-3N-50	220-230-1-50	380/400-3N-50	380/400-3N-50
Maximum current	A	13	13 x 2	13 x 3	13	13 x 2	13 x 3

HWS_CSHM		Domestic hot water tanks data			
	HWS-	1501CSHM3-E	2101CSHM3-E	3001CSHM3-E	
Water volume	litres	150	210	300	
Max water temperature	°C	75	75	75	
Electric heater	kW	2,75	2,75	2,75	
Power supply	V-ph-Hz	220/230-1-50	220/230-1-50	220/230-1-50	
Height	mm	1090	1474	2040	
Diameter	mm	550	550	550	
Weight	kg	31	41	60	
Material		Stainless steel	Stainless steel	Stainless steel	

Accessories

Model Name	Description	Functions
TCB-PCIN3E	Output signal PCB	Boiler operation output signal, Alarm output signal, Defrost output signal, Compressor operation output signal
TCB-PCMO3E	Input signal PCB	Room thermostat input, Emergency stop input
HWS-AMS11E	Wired RC	Wired Remote controller for Room air temperature control

* The capacities in this catalogue are calculated based on following conditions:
Heating: Leaving hot water temperature: 35°C (AT 5°C), Outdoor air temperature: 7°C DB / 6°C WB.
Cooling: Leaving cold water temperature: 7°C (AT 5°C), Outdoor air temperature: 35°C DB.
The sound pressure level is given at 1 m distance from outdoor units, and 1.5 m distance from hydro units.
CO = cooling mode HP = heating mode

The light commercial range. The applications

Digital and Super Digital Inverter air conditioners perfectly satisfy the requirement of the commercial sector for the best return on your investment.

Toshiba offers the best options on operating costs, flexibility and maintenance.

Moreover, thanks to its flexibility, Toshiba can always find the ideal product for any requirement: high performance, technology, compactness, optimum comfort.

Simplicity and beyond

The Digital Inverter range for business applications provides compact, light weight units with exceptional performance.

Thanks to the TCC-Link communication system, the systems suit any installation with little business disruption.

In addition, most of the Super Digital Inverter* boasts energy efficiency class A and enables an even larger range of applications.

The wide range of indoor units is able to satisfy any kind of requirement and the enhanced DC twin rotary compressor delivers stable performance with less friction, making this system really silent.

*except for 3HP high-wall



Light Commercial

THE LIGHT COMMERCIAL RANGE

THE MOST ADVANCED SYSTEMS
FOR THE PROFESSIONALS.



Solutions for professionals, from professionals.

Toshiba Digital and Super Digital Inverter systems deliver exceptional operating savings in extremely compact units. With state-of-the-art technologies, flexible controls and improved installation they bring comfort and convenience to any business installation.

A complete range of indoor units satisfies all commercial applications: ceiling, cassette, ducted, suspended, high-wall and flexi units.

The enlargement of the range with maximum cooling capacities up to 27 kW allows to address even more commercial applications with larger volumes.



INDOOR UNITS



OUTDOOR UNITS

When the inverter becomes digital

The technology of the Digital Inverter control module ensures optimised reproduction of the supply sine wave at the desired frequency, in order to reduce inefficient harmonics that inverters normally emit.

With this innovative control method, the Toshiba Digital Inverter brings state-of-the-art inverter technology to the commercial sector, offering considerable advantages in terms of capacity, energy savings and optimised comfort.

Who says that you must choose between improved performance and minimised consumption?

The Toshiba Digital and Super Digital Inverters systems are powerful and extremely efficient. They provide air conditioning with great energy savings.

The Super Digital Inverter provides the best efficiency part load conditions performance in the industry in cooling and heating mode. In most applications, these systems can reduce the Seasonal Energy Consumption.

The variable capacity management of the compressor allows the Digital and Super Digital Inverter to maintain room temperature control and to ensure minimum energy wastage.

Super Digital Inverter serie 4 and Digital Inverter serie 3 can fit R22 or R407C old pipes in case of replacement of high-consuming fixed speed systems.

All the flexibility you have ever dreamt of

If you want high performance, compact units and optimum comfort, Toshiba has the ideal product for your requirements.

With the continuous improvement of the inverter control system, Toshiba offers vector control for its DC hybrid inverter, which enhances system efficiency and reduces noise levels.

High-tech elements include improved coils, high precision components and higher refrigerant compression thanks to redesigned compression channels.

Super Digital and Digital Inverter systems able to satisfy applications that require cooling at low operating conditions down to -15°C , while powerful heating capacities are possible at -20°C outdoor temperature.

The enhanced Eco-driving DC twin-rotary compressor delivers stable performance with extremely low rotor friction, making it ideal for noise-sensitive applications as well as for efficient operations in partial load conditions.

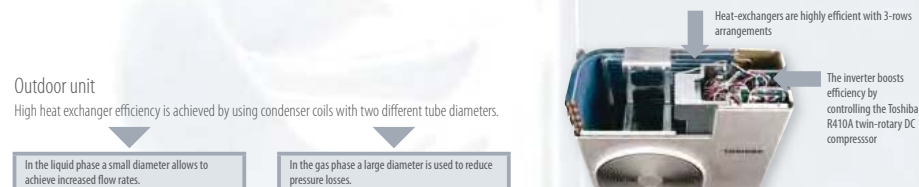
Light Commercial

INVERTER SYSTEMS

DIGITAL AND SUPER DIGITAL

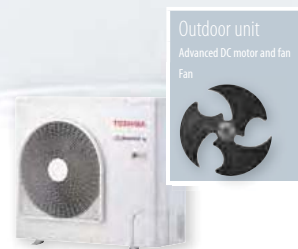
The condensing coil

The condensing coil of SDI uses two different tubes to obtain the most efficient heat transfer. The phase changes from gas to liquid and the diameter is adapted according to the refrigerant state. The new big DI condensing coils goes even further to ensure maximum capacity and efficiency in the smallest footprint by using 3-rows heat exchanger.



A powerful breeze

The fan in the outdoor unit has been redesigned to deliver higher static pressure and a reduction in sound levels to offset a more compact heat exchanger. New fan blades have been designed to reduce turbulence with "anti-eddy" protuberances and a reverse curved profile. In this way, despite a more compact coil, airflow has been increased and sound power decreased.



Toshiba DI3 & SDI4: the ideal solution to replace old units, reusing existing refrigerant lines

Whatever you choose for top energy efficiency (SDI) or for compactness and cost competitiveness (DI), all the Toshiba LC range meets the increasing market needs, in terms of comfort and ease of installation. Thanks to the filter positioned in the refrigerant circuit, the SDI & DI systems, equipped with R410A refrigerant, can use piping designed for old R22 or R407C refrigerant. High-mesh filters and stable lubricant oil against chloride compounds, combined with high-tech Toshiba control, are key to make SDI and DI units suitable for reuse existing piping. This solution offers significant benefits in terms of performances, acoustic comfort and efficiency.

2012 new products and features

- New infra red remote control kit
- Hi-wall serie SM_KRT (6 series)
- Low height standard ducted SM_BT (6 series)
- Upgraded Digital Inverter units size 4HP and 5HP (E1 series)



	Super Digital Inverter	Digital Inverter	Big Digital Inverter
Outdoor units			
Indoor units	RAV-SPxxx4AT - series 4	RAV-SMxxx3AT - series 3	RAV-SMxxx4AT - series 4
Four-way cassette RAV-SMxxx UT-E	Single split Twin split Triple split	Single split Twin split Triple split	Twin split Triple split Double-twin split
Cassette 600x600 mm RAV-SMxxxMUT-E	Single split Twin split Triple split	Single split Twin split Triple split	Double-twin split
Ducted RAV-SMxxx BT-E	Single split Twin split Triple split	Single split Twin split Triple split	Twin split Triple split Double-twin split
HP inverter		Single split Twin split Triple split	Single split Twin split Triple split
	Slim duct RAV-SMxxxSDT-E		Double-twin split
			Single split
	High Static pressure duct RAV-SMxxx ZDT-E		
	Single split Twin split Triple split	Single split Twin split Triple split	Twin split Triple split Double-twin split
Ceiling RAV-SMxxx CT-E			
	Single split Twin split Triple split	Single split Twin split Triple split	Triple split Double-twin split
Hi Wall RAV-SMxxx KRT-E			
		Single split	
Flexi RAV-SMxxx XT-E			

SUPER
DIGITAL INVERTER



Vector controlled inverter



Intelligent Power Drive Unit, which produces a power supply whose wide range of frequencies and voltage provide superb control and energy efficiency.

The Super Digital Inverter, series 4, sets a new limit for the industry energy performance.

Advanced air management system: high efficiency fan motors, larger fans and new fan grille design.

Piping and operating limits improved. The new system can work at extremely low temperatures, in cooling and heating. Admitted pipe length is up to 75 m.

The structure and magnetic action of the new Eco-driving twin-rotary compressors provide excellent energy performance at full load as well as in partial load conditions (operation down to 10 rps).

Long pipe runs, up to 75 m length and 30 m elevation for increased installation flexibility (4HP ÷ 6HP).

Wide operating range: down to -15 °C in cooling mode and down to -20 °C in heating mode (2HP ÷ 6HP).

SUPER DIGITAL INVERTER

INVERTER OUTDOOR UNIT



OUTDOOR UNITS

RAV-SP404AT-E
RAV-SP454AT-E
RAV-SP564AT-E

RAV-SP804AT-E

RAV-SP1104AT-E
RAV-SP1104AT8-E
RAV-SP1404AT-E
RAV-SP1404AT8-E
RAV-SP1604AT8-E



CASSETTE

RAV-SM_UT
RAV-SM_MUT

DUCTED

RAV-SM_BT
RAV-SM_SDT

HI-WALL

RAV-SM_KRT

OTHERS

RAV-SM_CT

SP_AT

Physical data Outdoor units

Outdoor unit		RAV-SP404AT-E 1,5 HP	RAV-SP454AT-E 1,7 HP	RAV-SP564AT-E 2 HP	RAV-SP804AT-E 3 HP	RAV-SP1104AT-E 4 HP	RAV-SP1404AT-E 5 HP
Air Flow	m ³ /h - l/s	2400 - 667	2400 - 667	2400 - 667	3000 - 833	6060 - 1683	6180 - 1716
Sound pressure level	dB(A) CO	45	45	47	48	49	51
Sound power level	dB(A) CO	62	62	63	64	66	68
Operating range	°C CO	-15 / 43	-15 / 43	-15 / 43	-15 / 43	-15 / 43	-15 / 43
Sound pressure level	dB(A) HP	47	47	48	49	50	52
Sound power level	dB(A) HP	64	64	64	65	67	69
Operating range	°C HP	-15 / 15	-15 / 15	-20 / 15	-20 / 15	-20 / 15	-20 / 15
Dimensions (HxWxD)	mm	550x780x290	550x780x290	550x780x290	890x900x320	1340 x 900 x 320	1340 x 900 x 320
Weight	kg	40	40	44	63	93	93
Compressor type		DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections							
Gas	in	1/2	1/2	1/2	5/8	5/8	5/8
Liquid	in	1/4	1/4	1/4	3/8	3/8	3/8
Minimum pipe length	m	5	5	5	5	3	3
Maximum pipe length	m	30	30	50	50	75	75
Maximum height difference	m	30	30	30	30	30	30
Chargeless pipe length	m	20	20	20	30	30	30
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

SP_AT8

Physical data Outdoor units

Outdoor unit		RAV-SP1104AT8-E 4 HP	RAV-SP1404AT8-E 5 HP	RAV-SP1604AT8-E 6 HP
Air Flow	m ³ /h - l/s	6060 - 1683	6180 - 1717	6180 - 1717
Sound pressure level	dB(A) CO	49	51	51
Sound power level	dB(A) CO	66	68	68
Operating range	°C CO	-15 / +46	-15 / +46	-15 / +46
Sound pressure level	dB(A) HP	50	52	53
Sound power level	dB(A) HP	67	69	70
Operating range	°C HP	-20 / +15	-20 / +15	-20 / +15
Dimensions (HxWxD)	mm	1340x900x320	1340x900x320	1340x900x320
Weight	kg	95	95	95
Compressor type		DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections				
Gas	in	5/8	5/8	5/8
Liquid	in	3/8	3/8	3/8
Minimum pipe length	m	3	3	3
Maximum pipe length	m	75	75	75
Maximum height difference	m	30	30	30
Chargeless pipe length	m	30	30	30
Power supply	V-ph-Hz	380/415-3N-50	380/415-3N-50	380/415-3N-50

CO = cooling mode
HP = heating mode



Twin rotary compressor



Toshiba state of the art compressor features a powerful new magnetic rotor with great surface area to increase efficiency and reduce the operating noise.

This Toshiba Digital Inverter enables old high-energy consumption air conditioning systems to be replaced by the most advanced inverter units, with significant benefits in terms of performance, acoustic comfort and energy-efficiency.

Extremely light and compact condensing units: easy to install in small spaces.

Compatible with a wide choice of indoor units: ceiling, 4-way cassette, compact 4-way cassette, ducted, high-wall and flexi units.

The Vector Intelligent Drive Unit (IPDU) technology ensures high performance.

Simplified maintenance using the new TCC-Link wired remote control panel.

Night operation to minimize the outdoor unit sound.

Energy saving operating mode with 1% step setting between 100% to 50 %.

SM_AT

Physical data Outdoor unit

Outdoor unit			RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E1	RAV-SM1403AT-E1	RAV-SM1603AT-E
			2 HP	3 HP	4 HP	5 HP	6 HP
Air Flow	m ³ /h - l/s		2400 - 667	2700 - 750	4500 - 1250	4500 - 1250	6180 - 1717
Sound pressure level	dB(A)	CO	46	48	53	54	51
Sound power level	dB(A)	CO	63	65	70	71	68
Operating range	°C	CO	-15 / +43	-15 / +43	-15 / +43	-15 / +43	-15 / +43
Sound pressure level	dB(A)	HP	48	50	54	54	53
Sound power level	dB(A)	HP	65	67	70	70	70
Operating range	°C	HP	-15 / +15	-15 / +15	-15 / +15	-15 / +15	-15 / +15
Dimensions (HxWxD)	mm		550x780x290	550x780x290	795x900x320	795x900x320	1340x900x320
Weight	kg		38	44	76	76	99
Compressor type			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Flare connections							
Gas	in		1/2	5/8	5/8	5/8	5/8
Liquid	in		1/4	3/8	3/8	3/8	3/8
Minimum pipe length	m		5	5	5	5	5
Maximum pipe length	m		30	30	50	50	50
Maximum height difference	m		30	30	30	30	30
Chargeless pipe length	m		20	20	30	30	30
Power supply	V-ph-Hz		220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CO = cooling mode
HP = heating mode

DIGITAL INVERTER

INVERTER OUTDOOR UNIT

S M _ A T



OUTDOOR UNITS

RAV-SM563AT-E
RAV-SM803AT-E

RAV-SM1103AT-E1
RAV-SM1403AT-E1

RAV-SM1603AT-E



CASSETTE

RAV-SM_UT
RAV-SM_MUT

DUCTED

RAV-SM_BT
RAV-SM_SDT

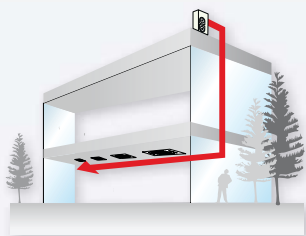
HI-WALL

RAV-SM_KRT

OTHERS

RAV-SM_CT
RAV-SM_XT

Long pipe run



Installations can reach up to 70m in total length and 30m in elevation.



The Big DI three phases inverter units proposes an alternative cost competitive solution for medium size applications like shop and small office buildings.

This system is the ideal solution in case of a large volume with single temperature control as it allows simultaneous operation of 2, 3 or up to 4 identical indoor units with the branching kit options.

Cost competitive solution for high capacity applications of up to 27 kW** cooling, concentrated in only 0.29 m2 footprint.

Toshiba top high-tech features: twin rotary DC compressor, DC fan motor, new propeller fan, vector controlled inverter and a 3-row heat exchanger

Wide operation range down to -20 °C in heating mode, down to -15 °C and up to 46 °C in cooling mode: comfortable environment throughout the whole year.

Small footprint.

SM_AT8

Physical data Outdoor unit

Outdoor unit		RAV-SM2244AT8-E		RAV-SM2804AT8-E	
		8 HP		10 HP	
Air Flow	m ³ /h - l/s	8000 - 2222		9000 - 2500	
Sound pressure level	dB(A) CO	56		57	
Sound power level	dB(A) CO	72		74	
Operating range	°C CO	-15 / +46		-15 / +46	
Sound pressure level	dB(A) HP	57		58	
Sound power level	dB(A) HP	74		75	
Operating range	°C HP	-20 / +15		-20 / +15	
Dimensions (HxWxD)	mm	1540 x 900 x 320		1540 x 900 x 320	
Weight	kg	134		134	
Compressor type		DC Twin Rotary		DC Twin Rotary	
Flare connections					
Gas	in	1 1/8		1 1/8	
Liquid	in	1/2		1/2	
Minimum pipe length	m	7.5		7.5	
Maximum pipe length	m	70		70	
Maximum height difference	m	30		30	
Chargeless pipe length	m	30		30	
Power supply	V-ph-Hz	380/415-3N-50		380/415-3N-50	

CO = cooling mode
HP = heating mode

BIG DI

INVERTER OUTDOOR UNIT



OUTDOOR UNITS

RAV-SM2244AT8-E
RAV-SM2804AT8-E



INDOOR UNITS

RAV-SM2242DT-E
RAV-SM2802DT-E

4-way



Wide air flow in all directions



Every component for the air distribution was designed to guarantee the users the maximum flexibility of operation and the optimum air delivery in any conditions. The louver shape ensure uniform distribution and long air throw while the louver motors controls the direction and patterns of air flow.

4-way cassette is designed to provide uniform air distribution and total comfort; it is the ideal solution for small commercial applications.

Two louver shape options: straight flow louver and wide flow louver; optimum air distribution.

Light-weight unit, for easy and quick installation.

Built-in high-lift drain pump.

Self-cleaning function and the Ag-ion tip for anti-mould in drain cap.

Individual setting of louver position: 3 different Swing modes: standard, diagonally opposite, turn-around.

Wireless remote control and optional wired remote controller and timer.

Different panel option to blend easily in different ceiling design.

4-WAY CASSETTE

DI AND SDI INVERTER



INDOOR UNITS

RAV-SM564UT-E
RAV-SM804UT-E

RAV-SM1104UT-E
RAV-SM1404UT-E
RAV-SM1604UT-E

OUTDOOR UNITS

RAV-SP564AT-E
RAV-SP804AT-E
RAV-SP1104AT-E
RAV-SP1404AT-E
RAV-SP1604AT-E

RAV-SM563AT-E
RAV-SM803AT-E
RAV-SM1103AT-E1
RAV-SM1403AT-E1
RAV-SM1603AT-E

With branching kits
RAV-SM2244AT8-E
RAV-SM2804AT8-E

REMOTE CONTROLS

Wireless
TCB-AX32E2
RBC-AX32U(W)-
RBC-AX32U(WS)-E

Wired
RBC-AMS51E-EN(ES)
RBC-AMS41E
RBC-AMT32E
RBC-AS21E2

SM_UT + SP_AT

Performance data with Super Digital Inverter

Outdoor unit		RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1104AT8-E	RAV-SP1404AT-E	RAV-SP1404AT8-E	RAV-SP1604AT8-E
Indoor unit (Cassette)		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E	RAV-SM1404UT-E	RAV-SM1604UT-E
Cooling capacity	kW	5,3	7,1	10,0	10,0	12,5	12,5	14,0
Cooling range (min. - max.)	kW	1,2 - 5,6	1,9 - 8,0	2,6 - 12,0	2,6 - 12,0	2,6 - 14,0	2,6 - 14,0	2,6 - 16,0
Power input (min. - rated - max.)	kW CO	0,20 - 1,47 - 1,95	0,30 - 1,86 - 2,52	0,64 - 2,21 - 3,88	0,66 - 2,37 - 3,60	0,64 - 3,16 - 4,21	0,66 - 3,46 - 4,40	0,66 - 4,49 - 5,70
EER		3,61	3,82	4,52	4,22	3,96	3,61	3,12
Energy efficiency class	CO	A	A	A	A	-	-	-
Annual energy consumption	kWh	735	930	1105	1185	1580	1730	2245
Heating capacity	kW	5,6	8,0	11,2	11,2	14,0	14,0	16,0
Heating range (min. - max.)	kW	0,9 - 8,1	1,3 - 11,3	2,4 - 13,0	2,4 - 15,6	2,4 - 16,5	2,4 - 18,0	2,4 - 19,0
Power input (min. - rated - max.)	kW HP	0,15 - 1,21 - 2,40	0,25 - 1,91 - 3,52	0,52 - 2,34 - 3,75	0,53 - 2,42 - 4,30	0,52 - 3,21 - 4,50	0,53 - 3,42 - 5,50	0,53 - 4,30 - 6,51
COP		4,63	4,19	4,79	4,63	4,36	4,09	3,72
Energy efficiency class	HP	A	A	A	A	-	-	-

SM_UT + SM_AT

Performance data with Digital Inverter

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E1	RAV-SM1403AT-E1	RAV-SM1603AT-E
Indoor unit (4-way Cassette)		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E	RAV-SM1604UT-E
Cooling capacity	kW	5,3	6,7	10,0	12,0	14,0
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 8,0	3,0 - 11,2	3,0 - 13,2	3,0 - 16,0
Power input (min. - rated - max.)	kW CO	0,35 - 1,65 - 1,86	0,45 - 2,09 - 2,60	0,60 - 3,11 - 4,10	0,65 - 3,74 - 4,50	0,65 - 4,49 - 5,70
EER		3,21	3,21	3,22	3,21	3,12
Energy efficiency class	CO	A	A	A	A	-
Annual energy consumption	kWh	825	1045	1555	1870	2245
Heating capacity	kW	5,6	8,0	11,2	14,0	16,0
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0	3,0 - 13,0	3,0 - 16,0	3,0 - 18,0
Power input (min. - rated - max.)	kW HP	0,35 - 1,44 - 2,08	0,45 - 2,21 - 3,03	0,60 - 2,93 - 4,30	0,65 - 3,80 - 4,50	0,65 - 4,43 - 6,51
COP		3,89	3,62	3,82	3,68	3,61
Energy efficiency class	HP	A	A	A	A	-

SM_UT

Physical data Indoor unit

Indoor unit		RAV-SM564UT-E	RAV-SM804UT-E	RAV-SM1104UT-E	RAV-SM1404UT-E	RAV-SM1604UT-E
Air Flow (H/L)	m³/h - l/s	1050/780 - 291/217	1230/810 - 341/225	2010/1170 - 558/325	2100/1230 - 583/341	2130/1260 - 592/350
Sound pressure level (H-M-L)	dB(A)	32-29-28	35-31-28	43-38-33	44-38-34	45-40-36
Sound power level (H-M-L)	dB(A)	47-44-43	50-46-43	58-53-48	59-53-49	60-55-51
Dimensions (HxWxD)	mm	256 × 840 × 840	256 × 840 × 840	319 × 840 × 840	319 × 840 × 840	319 × 840 × 840
Weight	kg	20	20	24	24	24
Panel dimensions (HxWxD)	mm	30×950×950	30×950×950	30×950×950	30×950×950	30×950×950
Panel weight	kg	4,2	4,2	4,2	4,2	4,2

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed



Corner pockets opening



Ease of access to the corner pockets facilitates installation and small adjustment of the panel alignment for perfect ceiling fitting.

This 4-way cassette has been especially designed for small commercial applications where a compact efficient unit is needed.

Fit all standard 600x600 mm grid ceilings; one single chassis dimension for all the available capacities.

Draught prevention, slim function and clean ceiling functions make this unit ideal for a large number of applications.

Built-in water condensate discharge drain pump.

TCC Link control panel makes control of the system flexible and simplifies maintenance.

COMPACT 4-WAY CASSETTE

DI AND SDI INVERTER

SM_MUT + SP_AT

Performance data with Super Digital Inverter

Outdoor unit		RAV-SP404AT-E	RAV-SP454AT-E	RAV-SP564AT-E
Indoor unit (600X600 Cassette)		RAV-SM404MUT-E	RAV-SM454MUT-E	RAV-SM564MUT-E
Cooling capacity	kW	3,6	4,0	5,0
Cooling range (min. - max.)	kW	1,5 - 4,0	1,5 - 4,5	1,2 - 5,6
Power input (min. - rated - max.)	kW CO	0,36 - 1,00 - 1,49	0,36 - 1,19 - 1,49	0,21 - 1,56 - 2,29
EER	W/W	3,60	3,36	3,21
Energy efficiency class	CO	A	A	A
Annual energy consumption	kWh	500	595	780
Heating capacity	kW	4,0	4,5	5,6
Heating range (min. - max.)	kW	1,5 - 5,0	1,5 - 5,6	0,9 - 7,4
Power input (min. - rated - max.)	kW HP	0,36 - 0,97 - 2,20	0,36 - 1,16 - 2,30	0,17 - 1,54 - 2,37
COP	W/W	4,12	3,88	3,64
Energy efficiency class	HP	A	A	A

SM_MUT + SM_AT

Performance data with Digital Inverter

Outdoor unit		RAV-SM563AT-E
Indoor unit (600X600 Cassette)		RAV-SM564MUT-E
Cooling capacity	kW	5,0
Cooling range (min. - max.)	kW	1,5 - 5,6
Power input	kW CO	0,40 - 1,61 - 1,86
EER	W/W	3,11
Energy efficiency class	CO	B
Annual energy consumption	kWh	805
Heating capacity	kW	5,6
Heating range (min. - max.)	kW	1,5 - 6,3
Power input	kW HP	0,40 - 1,61 - 2,40
COP	W/W	3,48
Energy efficiency class	HP	B

SM_MUT

Physical data Indoor units

Indoor unit		RAV-SM404MUT-E	RAV-SM454MUT-E	RAV-SM564MUT-E
Air Flow (H/L)	m³/h - l/s	660/468 - 183/130	660/468 - 183/130	798/546 - 222/152
Sound pressure level (H-M-L)	dB(A)	40-36-31	40-36-31	43-39-34
Sound power level (H-M-L)	dB(A)	55-51-46	55-51-46	58-54-49
Dimensions (HxWxD)	mm	268x575x575	268x575x575	268x575x575
Weight	kg	16	16	16
Panel dimensions (HxWxD)	mm	27x700x700	27x700x700	27x700x700
Panel weight	kg	3	3	3

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed



INDOOR UNITS

RAV-SM404MUT-E
RAV-SM454MUT-E
RAV-SM564MUT-E



OUTDOOR UNITS

RAV-SP404AT-E
RAV-SP454AT-E
RAV-SP564AT-E



RAV-SM563AT-E



With branching kits
RAV-SM2244AT8-E
RAV-SM2804AT8-E



REMOTE CONTROLS

Wireless
TCB-AX32E2



Wired
RBC-AM551E-EN(ES)
RBC-AMS41E
RBC-AMT32E
RBC-AS21E2



Wide range of applications



The use of ducts ensures flexible installations even in complex room layouts as polygonal rooms, narrow rooms or indoor spaces with fixtures and obstacles.

Whatever the shape of the room, ducted units ensure uniform temperatures in it. It's ideal for hotels, banks and similar applications, where hidden units and very low noise levels are needed.

Compact size. The reduced height of the unit (275mm) extend the number of possible applications.

New DC fan motor for high external static pressure (max 120 Pa).

PC board panel easily accessible from the side of the unit.

Double option for air intake: rear or bottom, plus a pre-punched knockout hole for fresh air supply connection.

High lift drain pump reach up to 290mm enabling flexible condensate removal piping layout design.

DUCTED

DI AND SDI INVERTER



INDOOR UNITS

RAV-SM406BT-E
RAV-SM456BT-E
RAV-SM566BT-E

OUTDOOR UNITS

RAV-SP564AT-E
RAV-SP804AT-E
RAV-SP1104AT-E
RAV-SP1104AT8-E
RAV-SP1404AT-E
RAV-SP1404AT8-E
RAV-SP1604AT-E

RAV-SM563AT-E
RAV-SM803AT-E
RAV-SM1103AT-E1
RAV-SM1403AT-E1
RAV-SM1603AT-E

With branching kits
RAV-SM2244AT8-E
RAV-SM2804AT8-E

REMOTE CONTROLS

Wireless
TCB-AX32E2

Wired
RBC-AM551E-EN(ES)
RBC-AM541E
RBC-AMT32E
RBC-AS21E2

SM_BT + SP_AT

Performance data with Super Digital Inverter

Outdoor unit		RAV-SP404AT-E	RAV-SP454AT-E	RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1104AT8-E	RAV-SP1404AT-E	RAV-SP1404AT8-E	RAV-SP1604AT8-E
Indoor unit (Standard Duct)		RAV-SM406BT-E	RAV-SM456BT-E	RAV-SM566BT-E	RAV-SM806BT-E	RAV-SM1106BT-E	RAV-SM1106BT-E	RAV-SM1406BT-E	RAV-SM1406BT-E	RAV-SM1606BT-E
Cooling capacity	kW	3,6	4	5	7,1	10	10	12,5	12,5	14
Cooling range (min. - max.)	kW	1,5 - 4,0	1,5 - 4,5	1,2 - 5,6	1,9 - 8,0	2,6 - 12,0	2,6 - 12,0	2,6 - 14,0	2,6 - 14,0	2,6 - 16,0
Power input (rated)	kW C	1,07	1,23	1,56	2,06	2,64	2,64	3,83	3,86	4,65
EER		3,38	3,24	3,21	3,45	3,79	3,79	3,26	3,24	3,01
Energy efficiency class	C	A	A	A	A	A	A	-	-	-
Annual energy consumption	kWh	780	1105	780	1105	1470	1470	1915	1930	1930
Heating capacity	kW	4	4,5	5,6	8	11,2	11,2	14	14	16
Heating range (min. - max.)	kW	1,5 - 5,0	1,5 - 4,5	1,5 - 5,6	1,3 - 10,6	2,4 - 13,0	2,4 - 14,0	2,4 - 16,5	2,4 - 18,0	2,4 - 19,0
Power input (rated)	kW H	1,04	1,24	1,55	2,21	2,77	2,77	3,67	3,67	4,6
COP		3,84	3,63	3,61	3,62	4,04	4,04	3,81	3,81	3,48
Energy efficiency class	H	A	A	A	A	A	A	-	-	-

SM_BT + SP_AT

Performance data with Digital Inverter

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E1	RAV-SM1403AT-E1	RAV-SM1603AT-E
Indoor unit (Standard Duct)		RAV-SM566BT-E	RAV-SM806BT-E	RAV-SM1106BT-E	RAV-SM1406BT-E	RAV-SM1606BT-E
Cooling capacity	kW	5	6,7	10	12,1	14
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 7,4	3,0 - 11,2	3,0 - 13,2	3,0 - 16,0
Power input (rated)	kW C	1,78	2,38	3,5	4,28	5,13
EER		2,81	2,81	2,86	2,83	2,73
Energy efficiency class	C	C	C	C	-	-
Annual energy consumption	kWh	890	1265	1780	2210	2210
Heating capacity	kW	5,6	8	11,2	13,4	16
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0	3,0 - 12,5	3,0 - 16,0	3,0 - 18,0
Power input (rated)	kW H	1,71	2,41	3,14	3,91	4,69
COP		3,27	3,32	3,57	3,43	3,41
Energy efficiency class	H	C	C	B	-	-

SM_BT

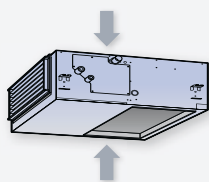
Physical data indoor

Indoor unit		RAV-SM406BT-E	RAV-SM456BT-E	RAV-SM566BT-E	RAV-SM806BT-E	RAV-SM1106BT-E	RAV-SM1406BT-E	RAV-SM1606BT-E
Air Flow (H/L)	m ³ /h - l/s	800/480 - 222/133	800/480 - 222/133	800/480 - 222/133	1200/720 - 333/200	2100/1260 - 583/350	2100/1260 - 583/350	2100/1260 - 583/350
Sound pressure level (H-M-L)	dB(A)	33-29-25	33-29-25	33-29-25	34-30-26	40-36-33	40-36-33	40-36-33
Sound power level (H-M-L)	dB(A)	55-51-46	55-51-46	55-51-46	55-51-46	63-58-54	63-58-54	63-58-54
Dimensions (HxWxD)	mm	275x700x750	275x700x750	275x700x750	275x1000x750	275x1400x750	275x1400x750	275x1400x750
Weight	kg	23	23	23	30	40	40	40
External static pressure (stand/upper limit)	Pa	30/120	30/120	30/120	30/120	50/120	50/120	50/120

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed



Low height profile



Its slim profile of only 210mm make this product the perfect solution for concealed installation in low ceiling voids.

Very compact design unit designed to distribute air in multiple location form a low hidden false ceiling.

Two choice of selection for the air inlet flow: bottom or back side.

Natural drain discharge port and drain pump (up to 850 mm).

Cleanable prefilter included.

Fresh air inlet possibility via a pre-punched knock hole.

Four steps static pressure set-up.

Easy to combine with different type of air diffusers.

SLIM DUCT

DI AND SDI INVERTER

SM_SDT + SP_AT

Performance data with Super Digital Inverter

Outdoor unit		RAV-SP404AT-E	RAV-SP454AT-E	RAV-SP564AT-E
Indoor unit (Slim duct)		RAV-SM404SDT-E	RAV-SM454SDT-E	RAV-SM564SDT-E
Cooling capacity	kW	3,6	4,0	5,0
Cooling range (min. - max.)	kW	1,5 - 4,0	1,5 - 4,5	1,2 - 5,6
Power input (min. - rated - max.)	kW CO	0,37 - 1,03 - 1,25	0,37 - 1,2 - 1,49	0,21 - 1,56 - 2,29
EER	W/W	3,50	3,33	3,21
Energy efficiency class	CO	A	A	A
Annual energy consumption	kWh	515	600	780
Heating capacity	kW	4,0	4,5	5,6
Heating range (min. - max.)	kW	1,5 - 5,0	1,5 - 5,6	0,9 - 7,4
Power input (min. - rated - max.)	kW HP	0,37 - 1,00 - 2,20	0,37 - 1,15 - 2,30	0,17 - 1,44 - 2,37
COP	W/W	4,00	3,91	3,89
Energy efficiency class	HP	A	A	A

SM_SDT + SM_AT

Performance data with Digital Inverter

Outdoor unit		RAV-SM563AT-E
Indoor unit (Slim duct)		RAV-SM564SDT-E
Cooling capacity	kW	5,0
Cooling range (min. - max.)	kW	1,5 - 5,6
Power input (min. - rated - max.)	kW CO	0,21 - 1,66 - 2,78
EER	W/W	3,01
Energy efficiency class	CO	B
Annual energy consumption	kWh	830
Heating capacity	kW	5,6
Heating range (min. - max.)	kW	1,5 - 6,3
Power input (min. - rated - max.)	kW HP	0,38 - 1,59 - 2,40
COP	W/W	3,52
Energy efficiency class	HP	B

SM_SDT

Physical data Outdoor unit

Indoor unit		RAV-SM404SDT-E	RAV-SM454SDT-E	RAV-SM564SDT-E
Air Flow (H/L)	m³/h - l/s	690/522 - 192/145	690/522 - 192/145	780/582 - 217/162
Sound pressure level (H-M-L)*	dB(A)	39-36-33	39-36-33	45-40-36
Sound power level (H-M-L)*	dB(A)	54-51-48	54-51-48	60-55-51
Dimensions (HxWxD)	mm	210x845x645	210x845x645	210x845x645
Weight	kg	22	22	22
External static pressure (stand/upper limit)	Pa	5/24	5/24	4/24

CO = cooling mode
HP = heating mode
*bottom air inlet



INDOOR UNITS

RAV-SM404SDT-E
RAV-SM454SDT-E
RAV-SM564SDT-E

OUTDOOR UNITS

RAV-SP404AT-E
RAV-SP454AT-E
RAV-SP564AT-E

RAV-SM563AT-E

With branching kits
RAV-SM2244AT8-E

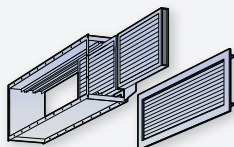
REMOTE CONTROLS

Wireless
TCB-AX32E2

Wired
RBC-AM551E-EN(ES)
RBC-AMS41E
RBC-AMT32E
RBC-AS21E2



High efficiency filters



Easy to connect optional filter chamber designed to host standard long life pre-filters and high efficiency filters with a dust collecting effect up to 90% (NBS colorimetric mode).

This is Toshiba's most powerful ducted unit delivering air flows up to 5040 m³/h.

Unobtrusive unit, it can be installed easily and discretely in any interior. It is the ideal solution for both new and refurbishing buildings.

Inspection hole enables easy access and maintenance.

Wide range of options available: filter chamber, long-life filter, drain pump kit.

Static pressure can be set to 3 levels (68, 137 and 196 Pa).

SM_DT8 + SM_AT8

Performance data with Digital Inverter Big

Outdoor unit		RAV-SM224AT8-E	RAV-SM2804AT8-E
Indoor unit (High Static duct)		RAV-SM2242DT-E	RAV-SM2802DT-E
Cooling capacity	kW	20,0	23,0
Cooling range (min. - max.)	kW	9,8 - 22,4	9,8 - 27,0
Power input (min. - rated - max.)	kW CO	3,26 - 7,20 - 9,09	3,36 - 8,75 - 12,76
EER	W/W	2,78	2,63
Energy efficiency class	CO	-	-
Annual energy consumption	kWh	3600	4375
Heating capacity	kW	22,4	27,0
Heating range (min. - max.)	kW	9,8 - 25,0	9,8 - 31,5
Power input (min. - rated - max.)	kW HP	2,57 - 6,49 - 7,45	2,57 - 8,15 - 11,01
COP	W/W	3,45	3,31
Energy efficiency class	HP	-	-

SM_DT

Physical data Indoor units

Indoor unit		RAV-SM2242DT-E	RAV-SM2802DT-E
Air Flow (H/L)	m ³ /h - l/s	3600 - 1000	4200 - 1167
Sound pressure level	dB(A)	54	55
Sound power level	dB(A)	74	75
Dimensions (HxWxD)	mm	470x1380x1250	470x1380x1250
Weight	kg	160	160
External static pressure (H/M/L)	Pa	196/137/68,6	196/137/68,6

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed

HI-STATIC PRESSURE DUCTED UNIT

DIGITAL INVERTER



INDOOR UNITS

RAV-SM2242DT-E
RAV-SM2802DT-E



OUTDOOR UNITS

RAV-SM2244AT8-E
RAV-SM2804AT8-E



REMOTE CONTROLS

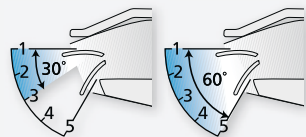
Wireless
TCB-AX32E2



Wired
RBC-AM551E-EN(ES)
RBC-AMS41E
RBC-AMT32E
RBC-AS21E2



Automatic louver control



The air flow angle is automatically set to the most suitable setting according to the cooling or heating needs. An automatic swing mode evenly distribute the air flow in the indoor ambient.

These ceiling suspended units are the ideal solution for offices, classrooms and restaurants.

The automatic louvre control and low noise levels are the key characteristics of this state-of-the-art unit.

Drain pan positioned inside the unit ensures the maximum hygiene and is easily recyclable thanks to its stain resistant polypropylene resin body.

The infra-red receiver sensor slot is positioned on the unit for an easier and direct wireless control.

Installation efficiency: for ceiling mounting, the unit can be suspended simply by adjusting 2 screws on the intake grille.

Self cleaning to prevent the growth of mold inside the unit.

CEILING

DI AND SDI INVERTER

SM_CT + SP_AT

Performance data with Super Digital Inverter

Outdoor unit		RAV-SP564AT-E	RAV-SP804AT-E	RAV-SP1104AT-E	RAV-SP1104AT8-E	RAV-SP1404AT-E	RAV-SP1404AT8-E
Indoor unit (Ceiling)		RAV-SM564CT-E	RAV-SM804CT-E	RAV-SM1104CT-E	RAV-SM1104CT-E	RAV-SM1404CT-E	RAV-SM1404CT-E
Cooling capacity	kW	5,0	7,1	10,0	10,0	12,5	12,5
Cooling range (min. - max.)	kW	1,2 - 5,6	1,9 - 8,0	2,6 - 12,0	2,6 - 12,0	2,6 - 14,0	2,6 - 14,0
Power input (min. - rated - max.)	kW CO	0,21 - 1,56 - 2,26	0,30 - 2,21 - 2,88	0,64 - 2,67 - 3,70	0,66 - 2,79 - 3,81	0,64 - 3,73 - 4,47	0,66 - 3,83 - 4,85
EER	W/W	3,21	3,21	3,75	3,58	3,35	3,26
Energy efficiency class	CO	A	A	A	A	-	-
Annual energy consumption	kWh	780	1105	1335	1395	1865	1915
Heating capacity	kW	5,6	8,0	11,2	11,2	14,0	14,0
Heating range (min. - max.)	kW	0,9 - 7,4	1,3 - 10,6	2,4 - 13,0	2,40 - 14,0	2,4 - 16,5	2,40 - 18,0
Power input (min. - rated - max.)	kW HP	0,17 - 1,47 - 2,34	0,27 - 2,16 - 3,50	0,52 - 2,62 - 4,00	0,53 - 2,67 - 4,26	0,52 - 3,65 - 4,60	0,53 - 3,70 - 5,95
COP	W/W	3,81	3,70	4,27	4,19	3,84	3,78
Energy efficiency class	HP	A	A	A	A	-	-

SM_CT + SM_AT

Performance data with Digital Inverter

Outdoor unit		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E1	RAV-SM1403AT-E1
Indoor unit (Ceiling)		RAV-SM564CT-E	RAV-SM804CT-E	RAV-SM1104CT-E	RAV-SM1404CT-E
Cooling capacity	kW	5,0	7,0	10,0	12,3
Cooling range (min. - max.)	kW	1,5 - 5,6	1,5 - 7,4	3,0 - 11,2	3,0 - 13,2
Power input (min. - rated - max.)	kW CO	0,45 - 1,82 - 1,95	0,50 - 2,53 - 2,76	0,60 - 3,51 - 4,10	0,65 - 4,52 - 4,85
EER	W/W	2,75	2,77	2,85	2,72
Energy efficiency class	CO	D	D	C	-
Annual energy consumption	kWh	910	1265	1755	2260
Heating capacity	kW	5,6	8,0	11,2	14
Heating range (min. - max.)	kW	1,5 - 6,3	1,5 - 9,0	3,0 - 12,5	3,0 - 16,0
Power input (min. - rated - max.)	kW HP	0,45 - 1,64 - 2,40	0,50 - 2,47 - 3,20	0,60 - 3,20 - 4,10	0,65 - 4,14 - 4,60
COP	W/W	3,41	3,24	3,50	3,38
Energy efficiency class	HP	B	C	B	-

SM_CT

Physical data Indoor units

Indoor unit		RAV-SM564CT-E	RAV-SM804CT-E	RAV-SM1104CT-E	RAV-SM1404CT-E
Air Flow (H/L)	m³/h - l/s	780/600 - 217/167	1110/876 - 308/243	1650/1270 - 458/352	1800/1386 - 500/385
Sound pressure level (H-M-L)	dB(A)	38-33-30	38-36-33	41-38-35	43-40-37
Sound power level (H-M-L)	dB(A)	51-48-45	53-51-48	56-53-50	58-55-52
Dimensions (HxWxD)	mm	210x910x680	210x1180x680	210x1595x680	210x1595x680
Weight	kg	21	25	33	33

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed

S M _ C T



INDOOR UNITS

RAV-SM564CT-E
RAV-SM804CT-E

RAV-SM1104CT-E
RAV-SM1404CT-E

OUTDOOR UNITS

RAV-SP564AT-E
RAV-SP804AT-E
RAV-SP1104AT-E
RAV-SP1104AT8-E
RAV-SP1404AT-E
RAV-SP1404AT8-E

RAV-SM563AT-E
RAV-SM803AT-E
RAV-SM1103AT-E1
RAV-SM1403AT-E1

With branching kits
RAV-SM2244AT8-E
RAV-SM2804AT8-E

REMOTE CONTROLS

Wireless
TCB-AX32E2
RBC-AX32CE2

Wired
RBC-AMS51E-EN(ES)
RBC-AMS41E
RBC-AMT32E
RBC-AS21E2



Comfort sleep



Pressing as button to start the OFF timer operation that automatically adjusts the room temperature and the fan speed.

With its attractive and slim-line design, this high-wall is suitable for offices, restaurants and other applications where elegance is required.

Drain hose can be connected to both side of the unit, increasing the installation flexibility and drain pipe length.

Wireless remote control with pre-set functions accessible with dedicated buttons: hi-power mode, quiet mode, comfort sleep, eco-mode.

Self cleaning feature to prevent mould formation on the heat exchanger coils.

Auto louvre mode allows optimum and uniform air distribution.

HIGH-WALL

DI AND SDI INVERTER

SM_6KRT + SP_AT

Performance data with Super Digital Inverter

Outdoor unit			RAV-SP564AT-E	RAV-SP804AT-E
Indoor unit (High-wall)			RAV-SM566KRT-E	RAV-SM-806KRT-E
Cooling capacity	kW		5,0	7,1
Cooling range (min. - max.)	kW		1,2 - 5,6	1,9 - 8,0
Power input (min. - rated - max.)	kW	CO	0,21 - 1,44 - 2,05	0,3 - 2,21 - 2,88
EER			3,47	3,21
Energy efficiency class		CO	A	A
Annual energy consumption	kWh		720	1105
Heating capacity	kW		5,6	8,0
Heating range (min. - max.)	kW		1,5 - 5,6	1,3 - 10,6
Power input (min. - rated - max.)	kW	HP	0,17 - 1,50 - 2,57	0,27 - 2,34 - 3,87
COP			3,73	3,42
Energy efficiency class		HP	A	B

SM_6KRT + SM_AT

Performance data with Digital Inverter

Outdoor unit			RAV-SM563AT-E	RAV-SM803AT-E
Indoor unit (High-wall)			RAV-SM566KRT-E	RAV-SM806KRT-E
Cooling capacity	kW		5,0	6,7
Cooling range (min. - max.)	kW		1,5 - 5,6	1,5 - 8,0
Power input (min. - rated - max.)	kW	CO	0,40 - 1,66 - 1,86	0,50 - 2,37 - 2,85
EER			3,01	2,83
Energy efficiency class		CO	B	C
Annual energy consumption	kWh		830	1185
Heating capacity	kW		5,6	8,0
Heating range (min. - max.)	kW		1,5 - 6,3	1,5 - 9,0
Power input (min. - rated - max.)	kW	HP	0,40 - 1,64 - 2,40	0,50 - 2,49 - 3,46
COP			3,41	3,21
Energy efficiency class		HP	B	C

SM_6KRT

Physical data Indoor units

Indoor unit		RAV-SM566KRT-E	RAV-SM806KRT-E
Air Flow (h/l)	m ³ /h - l/s	840/660 - 233/183	1020/660 - 283/183
Sound pressure level (H-M-L)	dB(A)	42-39-36	47-41-46
Sound power level (H-M-L)	dB(A)	57-54-51	62-56-51
Dimensions (HxWxD)	mm	320x1050x228	320x1050x228
Weight	kg	12	12

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed

S M _ K R T



INDOOR UNITS

RAV-SM564KRT-E
RAV-SM804KRT-E

OUTDOOR UNITS

RAV-SP564AT-E
RAV-SP804AT-E

RAV-SM563AT-E
RAV-SM803AT-E

With branching kits
RAV-SM2244AT8-E
RAV-SM2804AT8-E

REMOTE CONTROLS

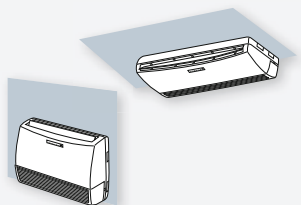
Wireless
included

Wired
RBC-AMS51E-EN(ES)
RBC-AMS41E
RBC-AMT32E
RBC-AS21E2

FLEXI



Versatile installation



Low wall and ceiling-suspended installations are both possible, with no modification or additional accessories.

The stylish Flexi unit can add a touch of elegance to a commercial space. Installation flexibility and indoor air quality are two of the many advantages of the system.

Triple-action filtration system: the first step removes large particles, then a passive electrostatic filter removes solid particles down to 0,01 micron in size and finally the Zeolite Plus filter absorbs even smaller airborne pollutants.

Natural air distribution: in ceiling-suspended applications, air can be directed either horizontally, parallel to the ceiling or away from the room occupants for non intrusive air distribution.

High-lift drain pump kit: raises drain piping up to 290 mm for flexible condensate piping layout (option suitable for ceiling suspended unit only).

SM_XT + SM_AT

Performance data with Digital Inverter

Outdoor unit			RAV-SM563AT-E	RAV-SM803AT-E
Indoor unit (Flexi)			RAV-SM562XT-E	RAV-SM802XT-E
Cooling capacity	kW		5,0	6,7
Cooling range (min. - max.)	kW		1,5 - 5,6	1,5 - 7,0
Power input (min. - rated - max.)	kW	CO	0,55 - 1,87 - 2,01	0,55 - 2,72 - 2,85
EER			2,67	2,46
Energy efficiency class		CO	C	E
Annual energy consumption	kWh		935	1360
Heating capacity	kW		5,6	8,0
Heating range (min. - max.)	kW		1,5 - 6,3	1,5 - 9,0
Power input (min. - rated - max.)	kW	HP	0,55 - 1,70 - 2,40	0,55 - 2,67 - 3,46
COP			3,29	3,00
Energy efficiency class		HP	C	D

SM_XT

Physical data Indoor units

Indoor unit		RAV-SM562XT-E	RAV-SM802XT-E
Air Flow (h/l)	m ³ /h - l/s	840/600 - 233/178	1110/640 - 308/177
Sound pressure level (h-l)	dB(A)	43-36	46-37
Sound power level (h-l)	dB(A)	58-51	61-52
Dimensions (HxWxD)	mm	208x1093x633	208x1093x633
Weight	kg	23	23

CO = cooling mode
HP = heating mode
H-M-L = High - Medium - Low speed

CONSOLE

DI INVERTER

S M _ X T



INDOOR UNITS

RAV-SM562XT-E
RAV-SM802XT-E



OUTDOOR UNITS

RAV-SM563AT-E
RAV-SM803AT-E



REMOTE CONTROLS

Wireless included

Extended 5 meters sensor leads pre-fitted to improve installation time and flexibility.



Enables connection of 3rd Party Air Handling Units (with a DX Coil) to TOSHIBA LC Outdoor units, (DI, SDI and DI-Big).

Universal Interface with a wide range of Cooling Capacities (4.6kW to 27.0kW)
Control achieved using a standard Toshiba remote controller, not supplied with this kit.
Set by DN Code adjustment during installation.
Relay isolated inputs to prevent accidental wiring errors damaging the PCB.
Input/output signal available: Operation output, AC Fan Motor output, alarm output,
external ON/OFF input, safety cut out input.



INDOOR UNITS



OUTDOOR UNITS

Super Digital Inverter

Digital Inverter Big

DX Controller unit		Physical data	
	R4V-		DXC010
Dimensions (HxWxD)	mm		400x300x150
Weight	kg		10
Operating range - Cooling coil "Air on" temp	°C		15°CWB÷24°CWB
Operating range - Heating coil "Air on" temp	°C		15°CDB÷28°CDB
Power supply	V-ph-Hz		220/240-1-50

DX Controller unit	Performance data							
	RAV-	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010
Outdoor Unit Cooling Capacity		2 HP	3 HP	4 HP	5 HP	6 HP	8 HP	10 HP
		RAV-SM563AT-E	RAV-SM803AT-E	RAV-SM1103AT-E	RAV-SM1403AT-E	RAV-SM1603AT-E	RAV-SM2244AT8-E	RAV-SM2804T8-E
	SDI	RAV-SP564AT-E	RAV-SP803AT-E	RAV-SP1104AT8(E)-E	RAV-SP1404AT8(E)-E	RAV-SP1604AT8-E		
Cooling capacity (min-rated*~max) DI	kW	4.1~5.3~5.6	5.4~7.1~7.4	7.2~10.0~11.2	10.1~12.5~13.2		14.1~20.0~22.4	20.1~23.0~27.0
Cooling capacity (min-rated*~max) SDI	kW	4.1~5.3~5.6	5.4~7.1~8.0	7.2~10.0~12.0	10.1~12.5~14.0	12.6~14.0~16.0		
Heating capacity (min-rated*~max) DI	kW	4.6~5.6~6.3	7.5~8.0~9.0	8.1~11.2~12.5	11.3~14.0~16.0			
Heating capacity (min-rated*~max) SDI	kW	4.6~5.6~7.4	7.5~8.0~10.6	8.1~11.2~13.0	11.3~14.0~16.5	14.1~16.0~19.0	16.1~22.4~25.0	22.5~27.0~31.5
AHU Air Flow Volume (min-rated*~max)	m3/h	720~900~1080	1060~1320~1580	1280~1600~1920	1680~2100~2520	1850~2800~3420	2880~3600~4320	3360~4200~5040
Coil Internal Volume (min-max)	dm3	0.8~1.1	1.0~1.4	1.5~2.1	1.7~2.7	1.7~3.0	3.0~4.2	3.0~5.4

Cooling and heating capacities are based on the following conditions:

Cooling capacities are based on: indoor temperature: 27 °C DB/19 °C WB, Outdoor temperature: 35 °C DB

Heating capacities are based on: indoor temperature: 20°C DB, Outdoor temperature: 7°C DB/6°CWB.

Cooling Mode Coil "Air On" Temp : Minimum 15°CWB (18°CDB) / Maximum 24°CWB (32°CDB)

Air temperatures flowing across the coil below this level, can in some circumstances, cause icing and freezing issues with the coil and eventually forcing the system to shut down and also be detrimental to the outdoor unit itself.

Heating Mode Coil "Air On" Temp : Minimum 15°CDB / Maximum 28°CDB

In the reverse cycle mode when the outdoor unit is producing hot gas, the coil in the AHU is effectively the condenser. Air temperatures flowing across the coil below this level, can cause over condensing of the refrigerant. This can result in liquid being returned to the compressor which will cause a mechanical failure of the outdoor unit. Low air temperatures will also cause the unit to use it's defrost mode more often.

Fresh Air Intake

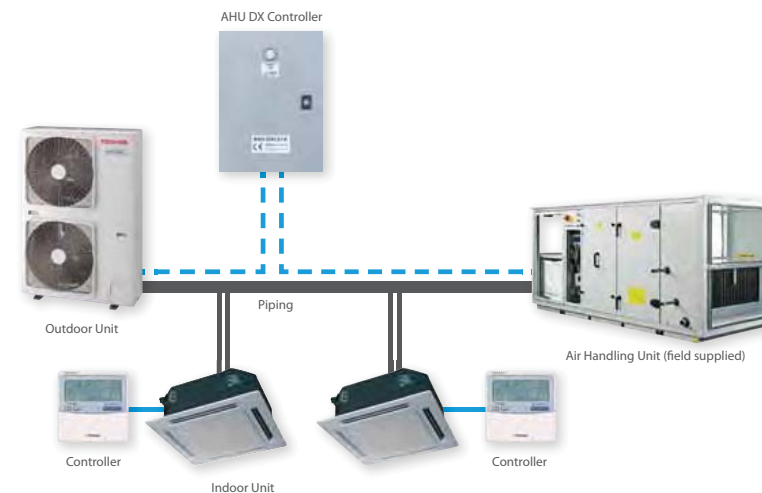
If you wish to use Fresh Air which is outside of these Coil "Air On" limits it has to either be pre-conditioned by other equipment, or mixed with return air (or a combination of both) so that it remains inside these limits, in order to ensure reliable operation.

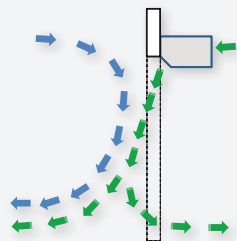
Automatic Mode

Please be aware that frequent mode changes could occur when using Automatic mode.

TA sensor

The TA sensor should be positioned in the return air duct. In case, it's not representative enough of the occupants area temperature, remote temperature sensor TCB-TC21LE2 should be used in the room.





The door air curtain is used to separate one environment from another. It creates a "curtain" of moving air that is blown over the opening of a doorway. This invisible "wall" barrier made of air will not allow air to flow through it.

The main advantages of this units are:

Energy savings – stops drafts and reduces infiltration of outdoor air into heated or air conditioned areas.

Comfort – protects people indoor (employee and customers) by preventing cold or heat to flow indoor at door openings and at the same time keep the conditioned air inside the building from escaping.

Increase safety – allow easy access to door opening while preventing the flow of undesired smells and blocking the passage of small insects.

Working principle

The air intake is from the conditioned environment.

This air is accelerated and forced through a narrow discharge along the length of the air curtain creating a laminar airflow.

AIR CURTAIN

DI AND SDI INVERTER

Branching Kits

TWIN, TRIPLE, DOUBLE TWIN

Toshiba range in 2012

Toshiba plan to launch a range of air curtains in 2012 in four styles:

- Cassette
- Under Ceiling
- Built in
- Recessed

Initially available the 1,5m and 2,5m length models, followed by the introduction of 1m and 2m models.

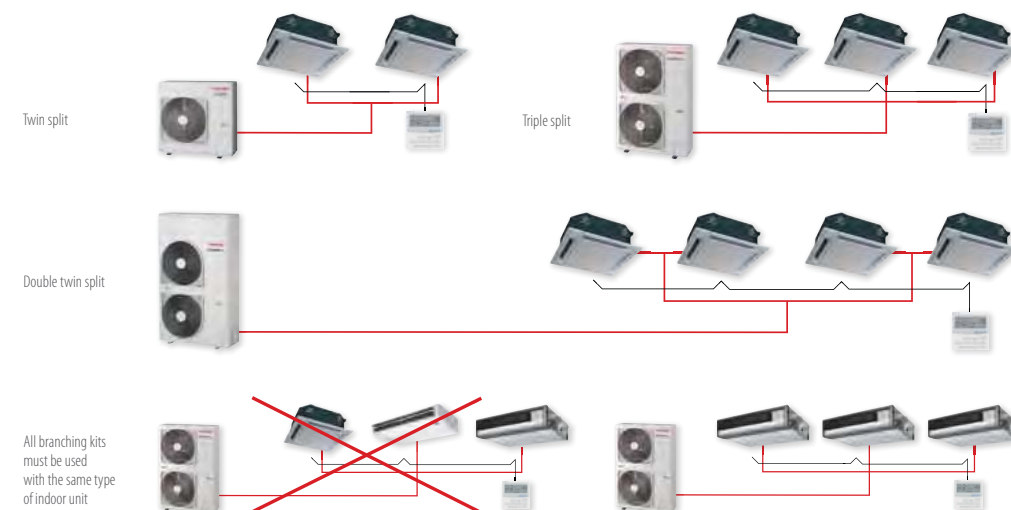


OUTDOOR UNITS

Digital Inverter

Super Digital Inverter

Digital Inverter Big



With these kits is possible to connect more than one indoor unit of the same size and capacity to a single outdoor unit in order to improve the air distribution in a large zone.

One unit is designated the master unit which manage the room temperature reference for the other indoor units.

The indoor units should be installed in the same room, operate simultaneously and share a single controller.

Precise capacity control in all conditions.

Ideal for large shops, open-plan offices and other similar application.

User friendly controls.

Twinning requires a connection kit that includes an electromagnetic noise filter and pipe joint.

Triple combination requires a piping connection kit to optimize refrigerant flow.

The branching kits operates with all light commercial indoor units.

Check the matching table below for the allowed size/units combinations.

	SDI	DI	BIG DI
TWIN	✓	✓	✓
TRIPLE	✓	✓	✓
DOUBLETWIN			✓

Cooling		Twin Split SDI							
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	EER W/W	Energy class	AEC kWh
				nominal kW	min. - max. kW				
4-way cassette	SP1104AT-E	SM564UT-E	4	10,0	2,6 - 12,0	2,21	4,52	A	1105
4-way cassette	SP1104AT8-E	SM564UT-E	4	10,0	2,6 - 12,0	2,37	4,22	A	1185
4-way cassette	SP1404AT-E	SM804UT-E	5	12,5	2,6 - 14,0	3,16	3,96	-	1580
4-way cassette	SP1404AT8-E	SM804UT-E	5	12,5	2,6 - 14,0	3,46	3,61	-	1730
4-way cassette	SP1604AT8-E	SM804UT-E	6	14,0	2,6 - 16,0	4,49	3,12	-	2245
Compact 4-way cassette	SP804AT-E	SM404MUT-E	3	7,1	1,9 - 8,0	2,21	3,21	A	1105
Compact 4-way cassette	SP1104AT-E	SM564MUT-E	4	10,0	2,6 - 12,0	2,67	3,75	A	1335
Compact 4-way cassette	SP1104AT8-E	SM564MUT-E	4	10,0	2,6 - 12,0	2,79	3,58	-	1395
Ducted	SP804AT-E	SM406BT-E	3	7,1	1,9 - 8,0	2,06	3,45	A	1030
Ducted	SP1104AT-E	SM566BT-E	4	10,0	2,6 - 12,0	2,64	3,79	A	1320
Ducted	SP1104AT8-E	SM566BT-E	4	10,0	2,6 - 12,0	2,64	3,79	A	1320
Ducted	SP1404AT-E	SM806BT-E	5	12,5	2,6 - 14,0	3,83	3,26	-	1915
Ducted	SP1404AT8-E	SM806BT-E	5	12,5	2,6 - 14,0	3,83	3,26	-	1915
Ducted	SP1604AT8-E	SM806BT-E	6	14,0	2,6 - 16,0	4,65	2,81	-	2325
Slim duct	SP804AT-E	SM404SDT-E	3	7,1	1,9 - 8,0	2,21	3,21	A	1105
Slim duct	SP1104AT-E	SM564SDT-E	4	10,0	2,6 - 12,0	2,77	3,61	A	1385
Slim duct	SP1104AT8-E	SM564SDT-E	4	10,0	2,6 - 12,0	2,79	3,58	A	1395
Ceiling	SP1104AT-E	SM564CT-E	4	10,0	2,6 - 12,0	2,67	3,75	A	1335
Ceiling	SP1104AT8-E	SM564CT-E	4	10,0	2,6 - 12,0	2,79	3,58	A	1395
Ceiling	SP1404AT-E	SM804CT-E	5	12,5	2,6 - 14,0	3,73	3,35	-	1865
Ceiling	SP1404AT8-E	SM804CT-E	5	12,5	2,6 - 14,0	3,83	3,26	-	1915
Ceiling	SP1604AT8-E	SM804CT-E	6	14,0	2,6 - 16,0	4,99	2,81	-	2495
High-wall	SP1104AT-E	SM566KRT-E	4	10,0	2,6 - 12,0	2,77	3,61	A	1385
High-wall	SP1104AT8-E	SM566KRT-E	4	10,0	2,6 - 12,0	2,92	3,42	A	1460
High-wall	SP1404AT-E	SM806KRT-E	5	12,5	2,6 - 14,0	3,88	3,17	-	1940
High-wall	SP1404AT8-E	SM806KRT-E	5	12,3	2,6 - 13,5	4,00	3,08	-	2000
High-wall	SP1604AT8-E	SM806KRT-E	6	14,0	2,6 - 16,0	5,10	2,75	-	2550

Heating		Twin Split SDI							
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	nominal kW	capacity		Power input kW	EER W/W	Energy class
					min. - max. kW				
4-way cassette	SP1104AT-E	SM564UT-E	4	11,2	2,4 - 13,0		2,34	4,79	A
4-way cassette	SP1104AT8-E	SM564UT-E	4	11,2	2,4 - 15,6		2,42	4,63	A
4-way cassette	SP1404AT-E	SM804UT-E	5	14,0	2,4 - 16,5		3,21	4,36	-
4-way cassette	SP1404AT8-E	SM804UT-E	5	14,0	2,4 - 18,0		3,42	4,09	-
4-way cassette	SP1604AT8-E	SM804UT-E	6	16,0	2,4 - 19,0		4,30	3,72	-
Compact 4-way cassette	SP804AT-E	SM404MUT-E	3	8,0	1,3 - 10,6		2,16	3,70	A
Compact 4-way cassette	SP1104AT-E	SM564MUT-E	4	11,2	2,4 - 13,0		2,67	4,19	A
Compact 4-way cassette	SP1104AT8-E	SM564MUT-E	4	11,2	2,4 - 14,0		2,67	4,19	A
Ducted	SP804AT-E	SM406BT-E	3	8	1,3 - 10,6		2,21	3,62	A
Ducted	SP1104AT-E	SM566BT-E	4	11,2	2,4 - 13,0		2,77	4,04	A
Ducted	SP1104AT8-E	SM566BT-E	4	11,2	2,4 - 14,0		2,77	4,04	A
Ducted	SP1404AT-E	SM806BT-E	5	14,0	2,4 - 16,5		3,67	3,81	-
Ducted	SP1404AT8-E	SM806BT-E	5	14,0	2,4 - 18,0		3,67	3,81	-
Ducted	SP1604AT8-E	SM806BT-E	6	16,0	2,4 - 19,0		4,60	3,48	-
Slim duct	SP804AT-E	SM404SDT-E	3	8,0	1,3 - 10,6		2,16	3,70	A
Slim duct	SP1104AT-E	SM564SDT-E	4	11,2	2,4 - 13,0		2,67	4,19	A
Slim duct	SP1104AT8-E	SM564SDT-E	4	11,2	2,4 - 14,0		2,67	4,19	A
Ceiling	SP1104AT-E	SM564CT-E	4	11,2	2,4 - 13,0		2,62	4,27	A
Ceiling	SP1104AT8-E	SM564CT-E	4	11,2	2,4 - 14,0		2,67	4,19	A
Ceiling	SP1404AT-E	SM804CT-E	5	14,0	2,4 - 16,5		3,65	3,84	-
Ceiling	SP1404AT8-E	SM804CT-E	5	14,0	2,4 - 18,0		3,70	3,78	-
Ceiling	SP1604AT8-E	SM804CT-E	6	16,0	2,4 - 19,0		4,60	3,48	-
High-wall	SP1104AT-E	SM566KRT-E	4	11,2	2,4 - 13,0		2,8	4,00	A
High-wall	SP1104AT8-E	SM566KRT-E	4	11,2	2,4 - 14,0		2,85	3,93	A
High-wall	SP1404AT-E	SM806KRT-E	5	14,0	2,4 - 16,5		3,83	3,66	-
High-wall	SP1404AT8-E	SM806KRT-E	5	14,0	2,4 - 18,0		3,88	3,61	-
High-wall	SP1604AT8-E	SM806KRT-E	6	16,0	2,4 - 19,0		4,88	3,28	-

Cooling		Twin split DI							
Indoor unit model	Outdoor unit	Indoor unit	HP	capacity		Power input	EER	Energy class	AEC
				nominal	min. - max				
	RAV-	RAV-		kW	kW	kW	W/W		kWh
4-way cassette	SM1103AT-E1	SM564UT-E	4	10,0	3,0 - 11,2	3,11	3,22	A	1555
4-way cassette	SM1403AT-E1	SM804UT-E	5	12,5	3,0 - 13,2	4,09	3,06	-	2045
4-way cassette	SM1603AT-E	SM804UT-E	6	14,0	3,0 - 16,0	4,49	3,12	-	2245
Compact 4-way cassette	SM1103AT-E1	SM564MUT-E	4	10,0	3,0 - 11,2	3,52	2,84	C	1760
Ducted	SM1103AT-E1	SM566BT-E	4	10,0	3,0 - 11,2	3,5	2,86	C	1750
Ducted	SM1403AT-E1	SM806BT-E	5	12,1	3,0 - 13,2	4,28	2,83	-	2140
Ducted	SM1603AT-E	SM806BT-E	6	14,0	3,0 - 16,0	5,13	2,73	-	2565
Slim duct	SM1103AT-E1	SM564SDT-E	4	10,0	3,0 - 11,2	3,55	2,82	C	1775
Ceiling	SM1103AT-E1	SM564CT-E	4	10,0	3,0 - 11,2	3,51	2,85	C	1755
Ceiling	SM1403AT-E1	SM804CT-E	5	12,3	3,0 - 13,2	4,52	2,72	-	2260
Ceiling	SM1603AT-E	SM804CT-E	6	14,0	3,0 - 16,0	4,99	2,81	-	2495
High-wall	SM1103AT-E1	SM566KRT-E	4	10,0	3,0 - 11,2	3,48	2,87	C	1740
High-wall	SM1403AT-E1	SM806KRT-E	5	12,1	3,0 - 13,0	4,57	2,65	-	2285
High-wall	SM1603AT-E	SM806KRT-E	6	14,0	3,0 - 16,0	5,10	2,75	-	2550

Heating		Twin split DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	COP W/W	Energy class
				nominal kW	min. - max. kW			
4-way cassette	SM1103AT-E1	SM564UT-E	4	11,2	3,0 - 13,0	2,93	3,82	A
4-way cassette	SM1403AT-E1	SM804UT-E	5	14,0	3,0 - 16,0	3,80	3,68	-
4-way cassette	SM1603AT-E	SM804UT-E	6	16,0	3,0 - 18,0	4,43	3,61	-
Compact 4-way cassette	SM1103AT-E1	SM564MUT-E	4	11,2	3,0 - 13,0	3,14	3,57	B
Ducted	SM1103AT-E1	SM566BT-E	4	11,2	3,0 - 12,5	3,14	3,57	B
Ducted	SM1403AT-E1	SM806BT-E	5	13,4	3,0 - 16,0	3,91	3,43	-
Ducted	SM1603AT-E	SM806BT-E	6	16,0	3,0 - 18,0	4,69	3,41	-
Slim duct	SM1103AT-E1	SM564SDT-E	4	11,2	3,0 - 12,5	3,14	3,57	B
Ceiling	SM1103AT-E1	SM564CT-E	4	11,2	3,0 - 12,5	3,20	3,50	B
Ceiling	SM1403AT-E1	SM804CT-E	5	14,0	3,0 - 16,0	4,14	3,38	-
Ceiling	SM1603AT-E	SM804CT-E	6	16,0	3,0 - 18,0	4,69	3,41	-
High-wall	SM1103AT-E1	SM566KRT-E	4	11,2	3,0 - 12,5	3,14	3,57	B
High-wall	SM1403AT-E1	SM806KRT-E	5	14,0	3,0 - 16,0	4,24	3,30	-
High-wall	SM1603AT-E	SM806KRT-E	6	16,0	3,0 - 18,0	4,98	3,21	-

Cooling		Twin split Big DI					
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	EER W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM1104UT-E	8	20,0	9,8 - 22,4	6,24	3,21
4-way cassette	SM2804AT8-E	SM1404UT-E	10	23,0	9,8 - 27,0	8,19	2,81
Ducted	SM2244AT8-E	SM1106BT-E	8	20,0	9,8 - 22,4	7,12	2,81
Ducted	SM2804AT8-E	SM1406BT-E	10	23,0	9,8 - 27,0	9,55	2,41
Ceiling	SM2244AT8-E	SM1104CT-E	8	20,0	9,8 - 22,4	7,12	2,81
Ceiling	SM2804AT8-E	SM1404CT-E	10	23,0	9,8 - 27,0	9,55	2,41

Heating		Twin split Big DI					
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	COP W/W
				nominal kW	min. - max kW		
4-way cassette	SM2244AT8-E	SM1104UT-E	8	22,4	9,8 - 25,0	5,82	3,85
4-way cassette	SM2804AT8-E	SM1404UT-E	10	27,0	9,8 - 31,5	7,48	3,61
Ducted	SM2244AT8-E	SM1106BT-E	8	22,4	9,8 - 25,0	6,40	3,50
Ducted	SM2804AT8-E	SM1406BT-E	10	27,0	9,8 - 31,5	7,92	3,41
Ceiling	SM2244AT8-E	SM1104CT-E	8	22,4	9,8 - 25,0	6,40	3,50
Ceiling	SM2804AT8-E	SM1404CT-E	10	27,0	9,8 - 31,5	7,92	3,41

Cooling		Triple split SDI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	EER W/W	AEC kWh
				nominal kW	min. - max kW			
4-way cassette	SP1604AT8-E	SM564UT-E	6	14,0	2,6 - 16,0	4,49	3,12	2245
Compact 4-way cassette	SP1604AT8-E	SM564MUT-E	6	14,0	2,6 - 16,0	4,99	2,81	2495
Ducted	SP1604AT8-E	SM566BT-E	6	14,0	2,6 - 16,0	4,55	3,01	2325
Slim duct	SP1604AT8-E	SM564SDT-E	6	14,0	2,6 - 16,0	4,99	2,81	2495
Ceiling	SP1604AT8-E	SM564CT-E	6	14,0	2,6 - 16,0	4,99	2,81	2495
High-wall	SP1604AT8-E	SM566KRT-E	6	14,0	2,6 - 16,0	5,10	2,75	2550

Heating		Triple split SDI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	COP	
				nominal kW	min. - max kW		W/W	W/W
4-way cassette	SP1604AT8-E	SM564UT-E	6	16,0	2,4 - 19,0	4,30	3,72	
Compact 4-way cassette	SP1604AT8-E	SM564MUT-E	6	16,0	2,4 - 19,0	4,60	3,48	
Ducted	SP1604AT8-E	SM566BT-E	6	16,0	2,4 - 19,0	4,60	3,48	
Slim duct	SP1604AT8-E	SM564SDT-E	6	16,0	2,4 - 19,0	4,60	3,48	
Ceiling	SP1604AT8-E	SM564CT-E	6	16,0	2,4 - 19,0	4,60	3,48	
High-wall	SP1604AT8-E	SM566KRT-E	6	16,0	2,4 - 19,0	4,88	3,28	

Cooling		Triple split DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	EER W/W	AEC kWh
				nominal kW	min. - max. kW			
4-way cassette	SM1603AF-E	SM564UT-E	6	14,0	3,0 - 16,0	4,49	3,12	2245
Compact 4-way cassette	SM1603AF-E	SM564MUT-E	6	14,0	3,0 - 16,0	4,99	2,81	2495
Ducted	SM1603AF-E	SM566BT-E	6	14,0	3,0 - 16,0	5,13	2,73	2565
Slim duct	SM1603AF-E	SM564SDT-E	6	14,0	3,0 - 16,0	4,99	2,81	2495
Ceiling	SM1603AF-E	SM564CT-E	6	14,0	3,0 - 16,0	4,99	2,81	2495
High-wall	SM1603AF-E	SM566KRT-E	6	14,0	3,0 - 16,0	5,10	2,75	2550

Heating		Triple split DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	COP	
				nominal kW	min. - max. kW		W/W	W/W
4-way cassette	SM1603AF-E	SM564UT-E	6	16,0	3,0 - 18,0	4,43	3,61	
Compact 4-way cassette	SM1603AF-E	SM564MUT-E	6	16,0	3,0 - 18,0	4,69	3,41	
Ducted	SM1603AF-E	SM566BT-E	6	16,0	3,0 - 18,0	4,69	3,41	
Slim duct	SM1603AF-E	SM564SDT-E	6	16,0	3,0 - 18,0	4,69	3,41	
Ceiling	SM1603AF-E	SM564CT-E	6	16,0	3,0 - 18,0	4,69	3,41	
High-wall	SM1603AF-E	SM566KRT-E	6	16,0	3,0 - 18,0	4,98	3,21	

Cooling		Triple split Big DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	EER W/W	
				nominal kW	min. - max kW			
4-way cassette	SM2244AT8-E	SM804UT-E	8	20,0	9,8 - 22,4	6,24	3,21	
4-way cassette	SM2804AT8-E	SM804UT-E	10	23,0	9,8 - 27,0	8,19	2,81	
Ducted	SM2244AT8-E	SM806BT-E	8	20,0	9,8 - 22,4	7,12	2,81	
Ducted	SM2804AT8-E	SM806BT-E	10	23,0	9,8 - 27,0	9,55	2,41	
Ceiling	SM2244AT8-E	SM804CT-E	8	20,0	9,8 - 22,4	7,12	2,81	
Ceiling	SM2804AT8-E	SM804CT-E	10	23,0	9,8 - 27,0	9,55	2,41	
High-wall	SM2244AT8-E	SM806KRT-E	8	20,0	9,8 - 22,4	7,12	2,81	
High-wall	SM2804AT8-E	SM806KRT-E	10	23,0	9,8 - 27,0	9,55	2,41	

Heating		Triple split Big DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	COP	
				nominal kW	min. - max. kW		W/W	W/W
4-way cassette	SM2244AT8-E	SM804UT-E	8	22,4	9,8 - 25,0	5,82	3,85	
4-way cassette	SM2804AT8-E	SM804UT-E	10	27,0	9,8 - 31,5	7,48	3,61	
Ducted	SM2244AT8-E	SM806BT-E	8	22,4	9,8 - 25,0	6,40	3,50	
Ducted	SM2804AT8-E	SM806BT-E	10	27,0	9,8 - 31,5	7,92	3,41	
Ceiling	SM2244AT8-E	SM804CT-E	8	22,4	9,8 - 25,0	6,40	3,50	
Ceiling	SM2804AT8-E	SM804CT-E	10	27,0	9,8 - 31,5	7,92	3,41	
High-wall	SM2244AT8-E	SM806KRT-E	8	22,4	9,8 - 25,0	6,40	3,50	
High-wall	SM2804AT8-E	SM806KRT-E	10	27,0	9,8 - 31,5	7,92	3,41	

Cooling		Double twin split Big DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	EER W/W	
				nominal kW	min. - max. kW			
4-way cassette	SM2244AT8-E	SM564UT-E	8	20,0	9,8 - 22,4	6,24	3,21	
4-way cassette	SM2804AT8-E	SM804UT-E	10	23,0	9,8 - 27,0	8,19	2,81	
Compact 4-way cassette	SM2244AT8-E	SM564MUT-E	8	20,0	9,8 - 22,4	7,12	2,81	
Ducted	SM2244AT8-E	SM566BT-E	8	20,0	9,8 - 22,4	7,12	2,81	
Ducted	SM2804AT8-E	SM806BT-E	10	23,0	9,8 - 27,0	9,55	2,41	
Slim duct	SM2244AT8-E	SM564SDT-E	10	20,0	9,8 - 22,4	7,12	2,81	
Ceiling	SM2244AT8-E	SM564CT-E	8	20,0	9,8 - 22,4	7,12	2,81	
Ceiling	SM2804AT8-E	SM804CT-E	10	23,0	9,8 - 27,0	9,55	2,41	
High-wall	SM2244AT8-E	SM566KRT-E	8	20,0	9,8 - 22,4	7,12	2,81	
High-wall	SM2804AT8-E	SM806KRT-E	10	23,0	9,8 - 27,0	9,55	2,41	

Heating		Double twin split Big DI						
Indoor unit model	Outdoor unit RAV-	Indoor unit RAV-	HP	capacity		Power input kW	COP	
				nominal kW	min. - max. kW		W/W	W/W
4-way cassette	SM2244AT8-E	SM564UT-E	8	22,4	9,8 - 25,0	5,82	3,85	
	SM2804AT8-E	SM804UT-E	10	27,0	9,8 - 31,5	7,76	3,48	
Compact 4-way cassette	SM2244AT8-E	SM564MUT-E	8	22,4	9,8 - 25,0	6,40	3,50	
Ducted	SM2244AT8-E	SM566BT-E	8	22,4	9,8 - 25,0	6,40	3,50	
	SM2804AT8-E	SM806BT-E	10	27,0	9,8 - 31,5	7,92	3,41	
Slim duct	SM2244AT8-E	SM564SDT-E	10	22,4	9,8 - 25,0	6,40	3,50	
	SM2244AT8-E	SM564CT-E	8	22,4	9,8 - 25,0	6,40	3,50	
Ceiling	SM2804AT8-E	SM804CT-E	10	27,0	9,8 - 31,5	7,92	3,41	
	SM2244AT8-E	SM566KRT-E	8	22,4	9,8 - 25,0	6,40	3,50	
High-wall	SM2804AT8-E	SM806KRT-E	10	27,0	9,8 - 31,5	7,92	3,41	

The business solutions

VRF technology offers the best solution for large commercial and industrial buildings: including hotels, hospitals, leisure and shopping centers.

The dual inverter compressor guarantees high efficiency levels, operating flexibility and reduced maintenance requirements.

Moreover, the wide range of indoor units makes VRF system the most flexible choice to satisfy any kind of requirement and to be ideal for many installations.

Committed to quality

Quality has always been Toshiba's strength and will remain the trademark that will differentiate Toshiba air conditioners from the competition.

This is the philosophy behind every Toshiba product especially in the highly technological VRF systems where the use of the special inverter controlled compressors, guarantee a significant reduction in mechanical and electrical stress.

This is due to the more gradual startup compared with traditional on/off compressors, increasing the durability and reliability of the components. SMMSi and SHRM models also feature the active Oil Management System that constantly checks the oil level in each compressor and automatically transfers oil from another outdoor unit, if an oil shortage is detected in any compressor.



Business

THE BUSINESS RANGE

THE MOST ADVANCED SOLUTIONS
FOR LARGER BUILDINGS.

Precision is our top priority

Sophisticated inverter control permits matching of the actual refrigerant flow to the capacity required by each indoor unit in an application. This results in optimised efficiency of the refrigerant cycle and increased precision in maintaining the required temperature, improving comfort for the occupants.

The required capacity and the related technical parameters for each indoor unit are electronically transmitted to the outdoor unit in order to optimise the zone load calculation and to control the actual refrigerant flow to each indoor unit, using the special Pulsed Modulating Valves (PMV).

Silence is golden

As a result of detailed improvements such as the fan drive circuit, fan blade design and construction of the outlet duct, our design teams have successfully reduced outdoor unit noise levels.

An optional night operation/sound deadening control circuit board is available for reducing noise levels overnight by limiting the system's maximum operation. This has resulted in operating noise levels below 50 dB(A).

The exclusive use of inverter-driven compressors also significantly contributes to reduce noise emissions.

Accurate refrigerant flow

Refrigerant flow is adapted rapidly to match the capacity required, irrespective of each indoor unit type, position or length of piping. This results in optimum efficiency in the refrigerant cycle and precise temperature control creating improved comfort for the occupant. The characteristic values of each indoor unit are input into the outdoor unit, and optimum refrigerant control is achieved through continuous monitoring and adjustment.

By measurement of refrigerant conditions within each indoor unit, the load requirement is calculated and the flow of refrigerant to each indoor unit is controlled. The operating capacity of the outdoor units is matched to meet the overall system requirement.



SMMS-i



MINISMMS



SHRM-i



With the innovative and sophisticated Toshiba technology and the use of 3 compressors and 3 inverter SMMSi systems ensures extraordinary flexibility in any application. The SMMSi offers innovations in energy savings with highly efficient DC twin rotary compressors and advanced vector-controlled inverters boasting higher COP at 50% partial load.



The Toshiba MiNi-SMMS is a small VRF system suitable for both commercial applications and more private spaces. Great flexibility and control power are combined in a VRF system, which is small and compact enough to fit a balcony.

It managed to bridge the gap between the versatile Multi-Split Systems and the larger capacity of the SMMSi.



New Toshiba three-pipe VRF Super Heat Recovery Multi System (SHRM-i) delivers simultaneously cooling and heating to different zones or rooms and has exceptional energy efficiency.

Its compact flow selector enables the system to heat and cool simultaneously and can be used in restricted spaces.

Four outdoor unit model line-up that can be installed in 18 different combinations up to a capacity of 42 HP.

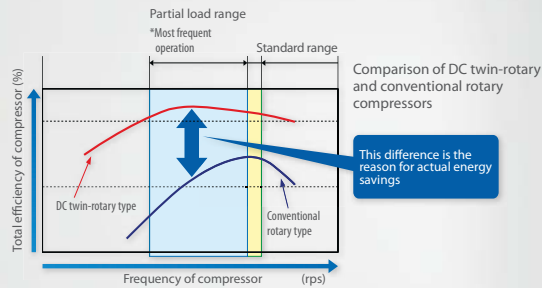
Business

INVERTER SYSTEMS

VARIABLE REFRIGERANT FLOW

DC Twin rotary compressor advantage

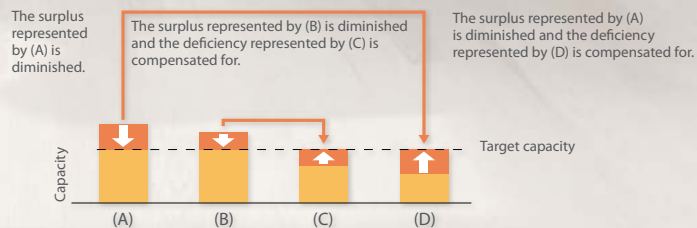
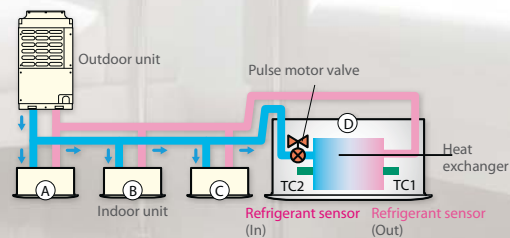
The systems consumption is highly effected by the outside temperature and most of the time the compressor work in part load conditions. Toshiba DC Twin rotary compressor is widely know for its great performance in part load which lead to a seasonal power consumption lower than the conventional rotary compressor.



Optimal refrigerant control

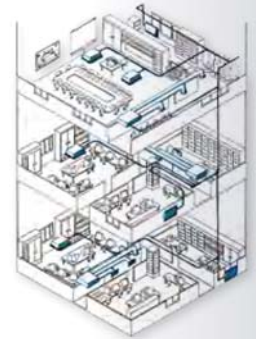
When a multiple number of indoor units are connected on a system, an insufficient or excess amount of refrigerant may be supplied to indoor units depending on the difference in length of the connection pipe from the outdoor unit. This is caused by pressure loss and heat leaks as the refrigerant travels through the pipes, resulting in incorrect amounts of refrigerant being supplied to the indoor units.

Optimal refrigerant flow control featuring intelligent control over the refrigerant sensors and opening rate of individual pulse motor valves realizes stable indoor temperatures throughout a building with height differences of up to 40m between indoor units.



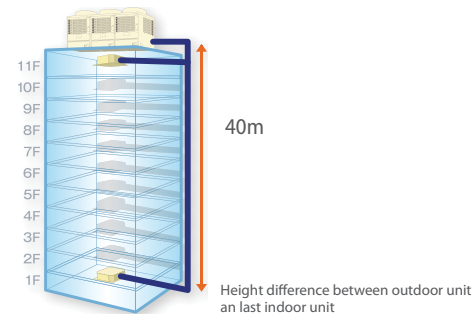
Simplified piping design

Toshiba double header branching and Y shape joints and piping lines combination is very flexible, allowing the shortest route between the outdoor and the indoor. Installation material and time are minimized and in addition the sytne will have less refrigerant in the circuit.



High installation flexibility

Toshiba VRF units enable installations with great equivalent length and height differences between outdoor and indoor units. This makes it much easier to design for floors with many small rooms, or for tenants who often rearrange their floor layouts. SMMSi units may reach up to 40 meters in height, the equivalent of a 11 story building.



Effective air management

Better air management contributes to the achievement of high energy efficiency. It also allows higher standard pressure for applications with condensing units installed indoors (city environments, etc).

Toshiba engineers have focused on the air management components in order to improve the amount and speed of the air throw while reducing to the minimum the noise and the sound of the rotating parts.

Toshiba uses in all the outdoor unit specially designed patented fan propeller and high power motor drive.



Y shape pipe joints



Unique solution to facilitate the installation process. This joint reduces the number of bends with consequent tidier installation and more regular refrigerant flow in the gas pipe circuit.

The new generation of VRF units with innovative components and advanced intelligence to deliver total value in air conditioning systems.

New DC twin rotary compressor with outstanding capacity under partial load drive to improve efficiency and comfort (3 compressors from size 14).

Fast calculating vector-controlled inverter to exploit the compressor's full potential and provide smoother operation with optimized energy savings.

Piping flexibility increases the design options; up to 235m in equivalent length and 40 m of height difference (equivalent to 11 floors).

Compressor shield and unit casing designed to reduce the vibration and contain the noise levels.

New patented four blades fan propeller with a large diameter (740mm) and a high power motor.

SUPER MODULAR MULTI SYSTEM

VRF OUTDOOR UNIT



OUTDOOR UNITS

Cooling only
MAP0501T8-E
MAP0601T8-E
MAP0804T8-E
MAP1004T8-E
MAP1204T8-E
MAP1404T8-E
MAP1604T8-E

Heat pump
MAP0501HT8-E
MAP0601HT8-E
MAP0804HT8-E
MAP1004HT8-E
MAP1204HT8-E
MAP1404HT8-E
MAP1604HT8-E

MMY-MAP_HT8			Performance data						
Outdoor unit	CO	MMY-	MAP0501T8-E	MAP0601T8-E	MAP0804T8-E	MAP1004T8-E	MAP1204T8-E	MAP1404T8-E	MAP1604T8-E
Outdoor unit	HP	MMY-	MAP0501HT8-E	MAP0601HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1404HT8-E	MAP1604HT8-E
			5 HP	6 HP	8 HP	10 HP	12 HP	14 HP	16 HP
Cooling capacity *	kW		14	16	22,4	28	33,5	40	45
Power input	kW	CO	3,65	4,64	5,4	7,41	9,55	11,5	13,7
EER	W/W		3,83	3,44	4,14	3,77	3,50	3,47	3,28
Running current	A	CO	5,85	7,28	8,5	11,4	14,7	17,7	20,8
Heating capacity **	kW		16	18	25	31,5	37,5	45	50
Power input	kW	HP	3,84	4,56	5,53	7,5	10,2	11,2	14,2
COP	W/W		4,16	3,94	4,52	4,2	3,67	4,02	3,52
Running current	A	HP	6,09	7,08	8,8	11,8	16	17,6	22
Maximum overcurrent protection ***	A		20	20	32	32	40	40	50

* based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°C db

** based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°C db/6°C wb

*** if outdoor units are combined, refer to the installation manual

MMY-MAP_HT8			Physical data Outdoor units						
Outdoor unit	CO	MMY-	MAP0501T8-E	MAP0601T8-E	MAP0804T8-E	MAP1004T8-E	MAP1204T8-E	MAP1404T8-E	MAP1604T8-E
Outdoor unit	HP	MMY-	MAP0501HT8-E	MAP0601HT8-E	MAP0804HT8-E	MAP1004HT8-E	MAP1204HT8-E	MAP1404HT8-E	MAP1604HT8-E
Air Flow	m ³ /h		9000	9000	9900	10500	11600	12000	13000
Air Flow	l/s		2500	2500	2750	2916	3222	3333	3611
Sound Power Level	dB(A)	HP	75	76	78	79	83	83	84
Sound pressure level	dB(A)	HP	55	56	56	58	62	62	64
Sound Power Level	dB(A)	CO	75	76	77	78	82	82	83
Sound pressure level	dB(A)	CO	55	56	55	57	59	60	62
External Static pressure available	Pa		35	35	60	60	50	40	40
Dimensions (HxWxD)	mm		1800x990x750	1800x990x750	1830x990x780	1830x990x780	1830x990x780	1830x1210x780	1830x1210x780
Weight	kg	HP	228	228	242	242	242	330	330
Weight	kg	CO	227	227	241	241	241	330	330
Compressor type			Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg		8,5	8,5	11,5	11,5	11,5	11,5	11,5
Suction line type - diameter			Flare - 5/8"	Brazed - 3/4"	Brazed - 7/8"	Brazed - 7/8"	Brazed - 1-1/8"	Brazed - 1-1/8"	Brazed - 1-1/8"
Liquid line type - diameter			Flare - 3/8"	Flare - 3/8"	Flare - 1/2"	Flare - 1/2"	Flare - 1/2"	Flare - 5/8"	Flare - 5/8"
Farthest piping equivalent length	m		175	175	235	235	235	235	235
Farthest piping actual length **	m		150	150	190	190	190	190	190
Maximum pipe length	m		300	300	500	500	500	500	500
Maximum lift (outdoor unit above/below) ***	m		50/40	50/40	70/40	70/40	70/40	70/40	70/40
Operating range - db	°C	CO	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43	-5÷43
Operating range - wb	°C	HP	-20÷15,5	-20÷15,5	-20÷15,5	-20÷15,5	-20÷15,5	-20÷15,5	-20÷15,5
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

** Less than 34HP or less combination: 300m

*** If the height difference between indoor units exceeds 3 m and if the indoor unit is above, max, lift is reduced to 30 m

CO = cooling mode

HP = heating mode

Capacity data tables standard models					Capacity data tables high efficiency models				
	Model Name (MMY-)	Cooling capacity	Heating capacity	Appearance		Model Name (MMY-)	Cooling capacity	Heating capacity	Appearance
5 HP	MAP0501HT7	14,0 kW	16,0 kW						
6 HP	MAP0601HT7	16,0 kW	18,0 kW						
8 HP	MAP0804HT8-E	22,4 kW	25,0 kW						
10 HP	MAP1004HT8-E	28,0 kW	31,5 kW						
12 HP	MAP1204HT8-E	33,5 kW	37,5 kW						
14 HP	MAP1404HT8-E	40,0 kW	45,0 kW						
16 HP	MAP1604HT8-E	45,0 kW	50,0 kW			16 HP	AP1624HT8-E	45,0 kW	
18 HP	AP1814HT8-E	50,4 kW	56,5 kW						
20 HP	AP2014HT8-E	56,0 kW	63,0 kW						
22 HP	AP2214HT8-E	61,5 kW	69,0 kW						
24 HP	AP2414HT8-E	68,0 kW	76,5 kW			24 HP	AP2404HT8-E	68,0 kW	
26 HP	AP2614HT8-E	73,0 kW	81,5 kW			26 HP	AP2624HT8-E	73,0 kW	
28 HP	AP2814HT8-E	78,5 kW	88,0 kW			28 HP	AP2824HT8-E	78,5 kW	
30 HP	AP3014HT8-E	85,0 kW	95,0 kW			30 HP	AP3024HT8-E	85,0 kW	
32 HP	AP3214HT8-E	90,0 kW	100,0 kW			32 HP	AP3224HT8-E	90,0 kW	
34 HP	AP3414HT8-E	96,0 kW	108,0 kW			34 HP	AP3424HT8-E	96,0 kW	
36 HP	AP3614HT8-E	101,0 kW	113,0 kW			36 HP	AP3624HT8-E	101,0 kW	
38 HP	AP3814HT8-E	106,5 kW	119,5 kW			38 HP	AP3824HT8-E	106,5 kW	
40 HP	AP4014HT8-E	112,0 kW	127 kW			40 HP	AP4024HT8-E	112,0 kW	
42 HP	AP4214HT8-E	118,0 kW	132,0 kW			42 HP	AP4244HT8-E	118,0 kW	
44 HP	AP4414HT8-E	123,5 kW	138,0 kW			44 HP	AP4424HT8-E	123,5 kW	
46 HP	AP4614HT8-E	130,0 kW	145,0 kW			46 HP	AP4624HT8-E	130,0 kW	
48 HP	AP4814HT8-E	135,0 kW	150,0 kW			48 HP	AP4824HT8-E	135,0 kW	

Figures in tables above are of 50 Hz units. See the data book for figures of 60Hz units.
Preliminary values noted for cooling and heating capacity.
There are also units with only cooling capacity. Power: 3-phase 50 Hz 400V (380 ~ 415V)
Rated conditions Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DBHeating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

The standard piping means that main pipe length is 5 m, branching pipe length 2,5 m of branch piping connected with a 0 meter height.
The source voltage must not fluctuate more than ±10%.
The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.Combination data tableStandard modelsHigh efficiency models

Indoor units number		
Standard models	High efficiency models	Max Number of indoor units
5 HP		8
6 HP		10
8 HP		13
10 HP		16
12 HP		20
14 HP		23
16 HP	16 HP=8+8	27
18 HP=10+8		30
20 HP=10+10		33
22 HP=12+10		37
24 HP=12+12	24 HP=8+8+8	40
26 HP=16+10	26 HP=10+8+8	43
28 HP=16+12	28 HP=10+10+8	47
30 HP=16+14	30 HP=10+10+10	48
32 HP=16+16	32 HP=8+8+8+8	48
34 HP=12+12+10	34 HP=10+8+8+8	48
36 HP=12+12+12	36 HP=10+10+8+8	48
38 HP=16+12+10	38 HP=10+10+10+8	48
40 HP=16+12+12	40 HP=10+10+10+10	48
42 HP=16+14+12	42 HP=12+10+10+10	48
44 HP=16+16+12	44 HP=12+12+10+10	48
46 HP=16+16+14	46 HP=12+12+12+10	48
48 HP=16+16+16	48 HP=12+12+12+12	48

Combination data table standard models					Combination data table High efficiency models				
	Module combination	Dimensions	EER	COP		Module combination	Dimensions	EER	COP
16 HP		1830 x 1210 x 780	3,28	3,52	16 HP		1830 x 1980 x 780	4,13	4,52
18 HP		1830 x 1980 x 780	3,93	4,34	18 HP				
20 HP		1830 x 1980 x 780	3,78	4,20	20 HP				
22 HP		1830 x 1980 x 780	3,63	3,90	22 HP				
24 HP		1830 x 1980 x 780	3,46	3,62	24 HP		1830 x 2970 x 780	4,10	4,45
26 HP		1830 x 2200 x 780	3,46	3,76	26 HP		1830 x 2970 x 780	3,99	4,39
28 HP		1830 x 2200 x 780	3,38	3,57	28 HP		1830 x 2970 x 780	3,87	4,29
30 HP		1830 x 2420 x 780	3,37	3,74	30 HP		1830 x 2970 x 780	3,74	4,18
32 HP		1830 x 2420 x 780	3,28	3,52	32 HP		1830 x 3960 x 780	4,13	4,52
34 HP		1830 x 2970 x 780	3,55	3,78	34 HP		1830 x 3960 x 780	4,00	4,37
36 HP		1830 x 2970 x 780	3,49	3,66	36 HP		1830 x 3960 x 780	3,93	4,34
38 HP		1830 x 3190 x 780	3,47	3,72	38 HP		1830 x 3960 x 780	3,85	4,26
40 HP		1830 x 3190 x 780	3,41	3,60	40 HP		1830 x 3960 x 780	3,78	4,17
42 HP		1830 x 3410 x 780	3,42	3,72	42 HP		1830 x 3960 x 780	3,68	4,04
44 HP		1830 x 3410 x 780	3,34	3,55	44 HP		1830 x 3960 x 780	3,61	3,90
46 HP		1830 x 3630 x 780	3,34	3,66	46 HP		1830 x 3960 x 780	3,52	3,76
48 HP		1830 x 3630 x 780	3,28	3,52	48 HP		1830 x 3960 x 780	3,48	3,68

Mini-SMMS



Bat wing fan



The patented bat wing fan shape increase the delivery of high volumes of air reducing the air resistance and the vibrations an consequently the noise levels.

The miniSMMS unit is able to cool up to 9 rooms with a single system: the perfect choice for small and mid-size installations.

The energy efficiency at partial load operation contribute to keep very low the seasonal power consumption.

Vector-controlled inverter optimize and control the refrigerant flow and the twin rotary compressor operations.

Compatible with the full range of VRF indoor units for the maximum installation flexibility.

PMV optional kit to perform this function on the refrigerant pipe and not in the unit to further reduce the overall sound.

Small footprint, long pipe length, high lift and horizontal air discharge contribute to perform installation even in confined spaces.

MINI MULTI SYSTEM

VRF OUTDOOR UNIT

Mini-SMMS



OUTDOOR UNITS

Heat pump
MCY-MAP0401HT
MCY-MAP0501HT
MCY-MAP0601HT

MCY-MAP_HT

Performance data

Outdoor unit	HP	MCY-MAP0401HT	MCY-MAP0501HT	MCY-MAP0601HT
		4 HP	5 HP	6 HP
Cooling capacity	kW	12,1	14	15,5
Power input	kW CO	2,82	3,47	4,63
EER	W/W	4,29	4,03	3,35
Running current	A CO	13,2	16,1	21,4
Heating capacity	kW	12,5	16	18
Power input	kW HP	2,71	4	4,85
COP	W/W	4,61	4	3,71
Running current	A HP	12,5	18,3	22,2
Peak demand current	A	25	28	31

MCY-MAP_HT

Physical data Outdoor units

Outdoor unit	HP	MCY-MAP0401HT	MCY-MAP0501HT	MCY-MAP0601HT
Air Flow	m³/h - l/s	5820 - 1612	6120 - 1695	6420 - 1778
Sound pressure level	dB(A) CO/HP	49/50	50/52	51/53
Dimensions (HxWxD)	mm	1340x900x320	1340x900x320	1340x900x320
Weight	kg	117	117	117
Compressor type		Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg	7,2	7,2	7,2
Suction line type - diameter		Flare - 5/8"	Flare - 5/8"	Brazing - 3/4"
Liquid line type - diameter	CO/HP	Flare - 3/8"	Flare - 3/8"	Flare - 3/8"
Maximum equivalent length separation*	m	125	125	125
Maximum actual piping separation*	m	100	100	100
Maximum total pipe length*	m	180	180	180
Maximum lift (indoor unit above/below)	m	20/30	20/30	20/30
Operating range - db	°C CO	-5÷43	-5÷43	-5÷43
Operating range - wb	°C HP	-15,0÷15,5	-15,0÷15,5	-15,0÷15,5
Power supply	V-ph-Hz	230-1-50	230-1-50	230-1-50

* When PMV Kit is used: Maximum equivalent length separation (80 m); Maximum actual piping separation (65 m); Maximum total pipe length (150 m)
CO = cooling mode HP = heating mode

Indoor units number

Number of indoor units	(Max)	6	8	9
Total capacity of connectable indoor units	HP (Min)	3,2	4	4,8
Total capacity of connectable indoor units	HP (Max)	5,2	6,5	7,8

Technical specifications PMV kit

Model Name	Indoor unit capacity code
RMB-PMV0362E	0,8 - 1,25 HP
RMB-PMV0902E	1,7 - 2 - 2,5 HP

Indoor units combinations

Model Name	Cooling capacity	Heating capacity	Number of indoor units	Total capacity of connectable indoor units
			Max	Min Max
MCY-MAP0401HT	4 HP	12,1 kW	6	3,2 HP 5,2 HP
MCY-MAP0501HT	5 HP	14,0 kW	8	4,0 HP 6,5 HP
MCY-MAP0601HT	6 HP	15,5 kW	9	4,8 HP 7,8 HP



Compact size 14

Hi efficient three pipes VRF Heat recovery model with high COP and EER in partial load mode.

Large capacity units with three compressors and three inverter (12 and 14 HP).

5 outdoor unit model line-up that can be installed in 18 different combination up to a capacity of 42 HP.

Complete range of VRF indoor unit including air to air heat exchangers.

Precise refrigerant control with the Toshiba unique technology of header sub-branches configuration.

Extended piping capabilities up to 500m of total length and 40m of height.*

Great performances in cold climate; the SHRM-i units operates with an outside temperature down to -10°C in cooling and -20°C in heating.

Wide range of Toshiba controls including the new smart manager with data analyzer.

*Preliminary

SUPER HEAT RECOVERY SYSTEM

VRF OUTDOOR UNIT



OUTDOOR UNITS

MMY-MAP0804FT8-E
MMY-MAP1004FT8-E

MMY-MAP1204FT8-E
MMY-MAP1404FT8-E

MMY-MAP_4FT8		Performance data				
Outdoor unit	HP	MMY-	MMY-MAP0804FT8-E	MMY-MAP1004FT8-E	MMY-MAP1204FT8-E	MMY-MAP1404FT8-E
			8 HP	10 HP	12 HP	14 HP
Cooling capacity*	kW		22,4	28	33,5	40
Power input	kW	CO	5,17	7,28	8,38	11,3
EER	W/W		4,33	3,85	4	3,54
Running current	A	CO	8,3	11,4	13,4	17,9
Heating capacity**	kW		25	31,5	37,5	45
Power input	kW	HP	5,68	7,5	9,05	12,7
COP	W/W		4,4	4,2	4,14	3,54
Running current	A	HP	9,1	12	14,5	19,9
Peak demand current	A		TBD	TBD	TBD	TBD

MMY-MAP_4FT8		Physical data Outdoor units				
Outdoor unit	HP	MMY-	MMY-MAP0804FT8-E	MMY-MAP1004FT8-E	MMY-MAP1204FT8-E	MMY-MAP1404FT8-E
Air Flow	m ³ /h - l/s		8500 - 2358	9100 - 2520	11700 - 3240	13000 - 3611
Sound pressure level	dB(A)		TBD	TBD	TBD	TBD
Dimensions (HxWxD)	mm	HP	1830x990x750	1830x990x750	1830x1210x750	1830x1210x750
Weight	kg	HP	256	256	331	331
Compressor type		CO	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg	CO	TBD	TBD	TBD	TBD
Suction line type - diameter			Brazed - 7/8"	Brazed - 7/8"	Brazed - 1-1/8"	Brazed - 1-1/8"
Liquid line type - diameter			Flare - 1/2"	Flare - 1/2"	Flare - 1/2"	Flare - 5/8"
Discharge line connection type - diameter		HP	Flare - 3/4"	Flare - 3/4"	Flare - 3/4"	Flare - 3/4"
Farthest piping equivalent length	m	CO	190	190	190	190
Farthest piping actual length	m		165	165	165	165
Maximum total pipe length***	m		500	500	500	500
Maximum lift (Indoor unit above/below)	m		30/50	30/50	30/50	30/50
Operating range - db	°C	CO	-10~+43	-10~+43	-10~+43	-10~+43
Operating range - wb	°C	HP	-20~-15,5	-20~-15,5	-20~-15,5	-20~-15,5
Power supply	V-ph-Hz		380/415-3-50	380/415-3-50	380/415-3-50	380/415-3-50

* Based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°C db

** Based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°C db/6°C wb

*** Less than 34HP or less combination: 300m

CO = cooling mode HP = heating mode

Capacity data tables

Model Name (MMY-)	Cooling capacity	Heating capacity	Appearance	Model Name (MMY-)	Cooling capacity	Heating capacity	Appearance
16 HP AP1614FT8-E	45,0 kW	50,0 kW	8+8	30 HP AP3014FT8-E	85,0 kW	95,0 kW	8+10+12
18 HP AP1814FT8-E	50,4 kW	56,5 kW	10+8	32 HP AP3214FT8-E	90,0 kW	100,0 kW	10+10+12
20 HP AP2014FT8-E	56,0 kW	63,0 kW	10+10	34 HP AP3414FT8-E	96,0 kW	108,0 kW	10+12+12
22 HP AP2214FT8-E	61,5 kW	69,0 kW	12+10	36 HP AP3614FT8-E	101,0 kW	113,0 kW	12+12+12
24 HP AP2414FT8-E	68,0 kW	76,5 kW	12+12	38 HP AP3814FT8-E	106,5 kW	119,5 kW	12+12+14
26 HP AP2614FT8-E	73,0 kW	81,5 kW	14+12	40 HP AP4014FT8-E	112,0 kW	127 kW	12+14+14
28 HP AP2814FT8-E	78,5 kW	88,0 kW	14+14	42 HP AP4214FT8-E	118,0 kW	132,0 kW	14+14+14



The three-pipe VRF Super Heat Recovery Multi System (SHRM) delivers simultaneously cooling and heating and has exceptional energy efficiency.

High efficiency heat exchanger with sub-heat exchanger.

Compact flow selector to adjust the temperature either by unit or by area or to simultaneously operate in cooling and heating mode.

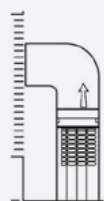
Compact size outdoor unit to facilitate the unit transportation and installation (fits in an elevator).

Piping branch installation flexibility with the Toshiba Y shape design. 150m of equivalent length and up to 50m height from outdoor to indoor.

Group control up to 8 single indoor units for a single flow selector.

SUPER HEAT RECOVERY SYSTEM

VRF OUTDOOR UNIT



With the outdoor external static pressure up to 45Pa the unit can be effectively installed in basements or in floor by floor applications.

S H R M



OUTDOOR UNITS

MMY-MAP0802FT8-E
MMY-MAP1002FT8-E
MMY-MAP1202FT8-E

MMY-MAP_FT8		Performance data		
Outdoor unit		MMY-MAP0802FT8-E	MMY-MAP1002FT8-E	MMY-MAP1202FT8-E
		8 HP	10 HP	12 HP
Cooling capacity*	kW	22,4	28	33,5
Power input	kW CO	6,07	8,54	12,9
EER	W/W	3,69	3,18	2,6
Running current	A CO	9,25	13,15	19,85
Heating capacity**	kW	25	31,5	35,5
Power input	kW HP	6,29	8,73	9,65
COP	W/W	3,97	3,61	3,68
Running current	A HP	9,55	13,4	14,85
Peak demand current***	A	30	30	30

* Based on an indoor air temperature of 27°C db/19°C wb and an outdoor air temperature of 35°C db

** Based on an indoor air temperature of 20°C db and an outdoor air temperature of 7°C db/6°C wb

*** If outdoor units are combined, refer to the installation manual

MMY-MAP_FT8		Physical data Outdoor units		
Outdoor unit		MMY-MAP0802FT8-E	MMY-MAP1002FT8-E	MMY-MAP1202FT8-E
Air Flow	m ³ /h - l/s	9900 - 2742	10500 - 2909	10500 - 2909
Sound pressure level	dB(A)	57	58	59
Dimensions (HxWxD)	mm	1800x990x750	1800x990x750	1800x990x750
Weight	kg	263	263	263
Compressor type		Twin Rotary	Twin Rotary	Twin Rotary
Refrigerant charge R410A	kg	11,5	11,5	11,5
Suction line type - diameter		Brazed - 7/8"	Brazed - 7/8"	Brazed - 1-1/8"
Liquid line type - diameter		Flare - 1/2"	Flare - 1/2"	Flare - 1/2"
Discharge line connection type - diameter		Brazed - 3/4"	Brazed - 3/4"	Brazed - 3/4"
Maximum equivalent length separation	m	150	150	150
Maximum actual piping separation	m	125	125	125
Maximum total pipe length	m	300	300	300
Maximum lift (Indoor unit above/below)*	m	30/50	30/50	30/50
Operating range - db	°C CO	-10÷43	-10÷43	-10÷43
Operating range - wb*	°C HP	-20÷16	-20÷16	-20÷16
Running current	A HP	9,55	13,4	14,85
Power supply	V-ph-Hz	380/415-3-50	380/415-3-50	380/415-3-50

* The unit can be operated even if outdoor temperature gets down to -20°C; warranty covers only up to -15°C because operation beyond that temperature is out of specification.
When outdoor air temperature falls to under -15°C, it may cause shortening the product lifetime.

CO = cooling mode HP = heating mode

MMY-MAP_FT8		Indoor units combinations					
Model Name		Cooling capacity	Heating capacity	Outdoor units in combination	Number of indoor units Max	Total cap. of connectable indoor units Min Max	
	MMY-MAP0802FT8-E	8 HP	22,4 kW	25,0 kW	1	13	5,6 HP 10,8 HP
	MMY-MAP1002FT8-E	10 HP	28,0 kW	31,5 kW	1	16	7,0 HP 13,5 HP
	MMY-MAP1202FT8-E	12 HP	33,5 kW	35,5 kW	1	16	8,4 HP 14,4 HP
	MMY-AP1602FT8-E	16 HP	45,0 kW	50,0 kW	2 (22,4kW+22,4kW)	27	11,2 HP 21,6 HP
	MMY-AP1802FT8-E	18 HP	50,4 kW	56,5 kW	2 (22,4kW+28kW)	30	12,6 HP 24,3 HP
	MMY-AP2002FT8-E	20 HP	56,0 kW	63,0 kW	2 (28kW+28kW)	33	14,0 HP 27,0 HP
	MMY-AP2402FT8-E	24 HP	68,0 kW	76,5 kW	3 (22,4kW+22,4kW+22,4kW)	40	16,8 HP 32,4 HP
	MMY-AP2602FT8-E	26 HP	73,0 kW	81,5 kW	3 (22,4kW+22,4kW+28kW)	43	18,2 HP 35,1 HP
	MMY-AP2802FT8-E	28 HP	78,5 kW	88,0 kW	3 (22,4kW+28kW+28kW)	47	19,6 HP 37,8 HP
	MMY-AP3002FT8-E	30 HP	84,0 kW	95,0 kW	3 (28kW+28kW+28kW)	48	21,0 HP 40,5 HP

Toshiba VRF systems has a wide range of indoor units which enable designer and tenants to make the right product choice in terms of aesthetic and performances

Up to 48 units

14 different type of units ranging from 0,8 to 10HP are connectable to the VRF outdoor units.
With the SMMSi and SHRM range it is possible to install up to 48 different units individually controlled or managed centrally with the wide range of Toshiba controls solutions.

Fresh air intake

Most of the units have the possibility to be connected directly to a fresh air supply or linked to a dedicated air to air heat exchanger to ensure a constant fresh air renewal.

Cassette

The cassette type unit is the preferred solution for offices and buildings with false ceiling installations. Toshiba range of cassette units are suitable for local standard ceiling panels.

The choice can be made between products with different air flow configurations: 1, 2, 4 air outlets. The 4 way cassettes feature a selectable automatic air flow pattern in speed and direction. The designer can also select other Cassette types: compact 600x600 4-way, 1-way and the new slimmer 2-way cassette.

Ducted

Large building applications make extensive use of ducts to deliver the air in the different parts of the building.

Toshiba designers have been able to create different units types with high technology features in order to serve different purposes:

Slim duct - for applications where the ductwork space is limited in height and length (Hotels).

High-static - for applications that require elevated external static pressure (open space).

Standard static - when limited duct work is involved (office).

Fresh air intake - to manage the distribution of fresh air throughout the ductwork of a building.

Heat exchangers - to treat the incoming air and benefit of the free cooling process

Hi-walls and ceiling

A preferred solution for buildings where false ceiling cannot be used.

It is the perfect choice for those applications that need air conditioning in conjunction with the existing conventional radiator heating. Hi-walls in VRF range adopt similar high-end design of the units used in residential applications.

These type of products are very silent, with personalized air flow control and powerful indoor air quality filters.

Floor standing consoles

Typical installations where the indoor unit is placed on the floor against one wall or under a window sill.

Toshiba range offers solution for:

Concealed installations: where the console is hidden behind a panel in order to be unobtrusive and blend perfectly in the interior.

Classic cabinet: positioned usually in places of radiators around the perimeter of the building or at the base of the building columns in the room.

Floor standing: these are slim tall units that can be placed in different positions. These units feature the additional horizontal swing pattern (from left to right) which make them the preferred solution for corner installations (restaurants).



CASSETTE



DUCTED



HI-WALLS
AND CEILING



FLOOR STANDING
CONSOLES

B u s i n e s s

VRF SYSTEMS

INDOOR UNITS

Indoor units range

Model Type	HP kW	0,8 2,2	1,0 2,8	1,3 3,6	1,7 4,5	2,0 5,6	2,5 7,1	3,0 8,0	3,2 9,0	4,0 11,2	5,0 14,0	6,0 16,0	8,0 22,4	10,0 28
Cassette														
Compact 4-way MMU-AP***MH			•	•	•	•								
4-way MMU-AP***H			•	•	•	•	•	•	•	•	•	•		
2-way MMU-AP***WH			•	•	•	•	•	•	•	•	•	•	•	
1-way MMU-AP***H/SH			•	•	•	•	•							
Duct														
Slim MMD-AP***SPH			•	•	•	•	•							
Concealed MMD-AP***BH			•	•	•	•	•	•	•	•	•	•		
Concealed High Static MMD-AP***H							•	•	•	•	•	•	•	•
Fresh air intake MMD-AP***HFE											•		•	•
Ceiling MMC-AP***H			•		•	•	•	•		•	•			
Floor Standing														
Bi-flow console MML-AP***NH			•	•	•	•	•							
Cabinet MML-AP***H			•	•	•	•	•							
Concealed MML-AP***BH			•	•	•	•	•	•						
Tall MMF-AP***H					•	•	•	•		•	•	•		
High Wall														
Serie 2 MMK-AP***2H			•	•	•									
Serie 3 MMK-AP***3H			•	•	•	•	•							

Indoor units range

Model Type	Model Name	Capacity Code	Cooling cap. (kW)	Heating cap. (kW)	Model Type	Model Name	Capacity Code	Cooling cap. (kW)	Heating cap. (kW)
4-way cassette					Slim Duct				
	MMU-AP0092H	1,00	2,80	3,20		MMD-AP0074SPH-E	0,80	2,20	2,50
	MMU-AP0122H	1,25	3,60	4,00		MMD-AP0094SPH-E	1,00	2,80	3,20
	MMU-AP0152H	1,70	4,50	5,00		MMD-AP0124SPH-E	1,25	3,60	4,00
	MMU-AP0182H	2,00	5,60	6,30		MMD-AP0154SPH-E	1,70	4,50	5,00
	MMU-AP0242H	2,50	7,10	8,00		MMD-AP0184SPH-E	2,00	5,60	6,30
	MMU-AP0272H	3,00	8,00	9,00					
	MMU-AP0302H	3,20	9,00	10,00					
	MMU-AP0362H	4,00	11,20	12,50					
	MMU-AP0482H	5,00	14,00	16,00					
	MMU-AP0562H	6,00	16,00	18,00					
Compact 4-way cassette					Under-ceiling				
	MMU-AP0074MH-E	0,80	2,20	2,50		MMC-AP0154H-E	1,70	4,50	5,00
	MMU-AP0094MH-E	1,00	2,80	3,20		MMC-AP0184H-E	2,00	5,60	6,30
	MMU-AP0124MH-E	1,25	3,60	4,00		MMC-AP0244H-E	2,50	7,10	8,00
	MMU-AP0154MH-E	1,70	4,50	5,00		MMC-AP0274H-E	3,00	8,00	9,00
	MMU-AP0184MH-E	2,00	5,60	6,30		MMC-AP0364H-E	4,00	11,20	12,50
						MMC-AP0484H-E	5,00	14,00	16,00
					High-wall compact				
						MMK-AP0074MH-E	0,80	2,20	2,50
						MMK-AP0094MH-E	1,00	2,80	3,20
						MMK-AP0124MH-E	1,25	3,60	4,00
2-way cassette					High-wall				
	MMU-AP0072WH	0,80	2,20	2,50		MMK-AP0073H	0,80	2,20	2,50
	MMU-AP0092WH	1,00	2,80	3,20		MMK-AP0093H	1,00	2,80	3,20
	MMU-AP0122WH	1,25	3,60	4,00		MMK-AP0123H	1,25	3,60	4,00
	MMU-AP0152WH	1,70	4,50	5,00		MMK-AP0153H	1,70	4,50	5,00
	MMU-AP0182WH	2,00	5,60	6,30		MMK-AP0183H	2,00	5,60	6,30
	MMU-AP0242WH	2,50	7,10	8,00		MMK-AP0243H	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					
	MMU-AP0482WH	5,00	14,00	16,00					
	MMU-AP0562WH	6,00	16,00	18,00					
1-way cassette					Bi-flow console				
	MMU-AP0074VH-E	0,80	2,20	2,50		MML-AP0074NH-E	0,80	2,20	2,50
	MMU-AP0094VH-E	1,00	2,80	3,20		MML-AP0094NH-E	1,00	2,80	3,20
	MMU-AP0124VH-E	1,25	3,60	4,00		MML-AP0124NH-E	1,25	3,60	4,00
	MMU-AP0154SH-E	1,70	4,50	5,00		MML-AP0154NH-E	1,70	4,50	5,00
	MMU-AP0184SH-E	2,00	5,60	6,30		MML-AP0184NH-E	2,00	5,60	6,30
	MMU-AP0244SH-E	2,50	7,10	8,00					
					Floor standard cabinet type				
						MML-AP0074H	0,80	2,20	2,50
						MML-AP0094H	1,00	2,80	3,20
						MML-AP0124H	1,25	3,60	4,00
						MML-AP0154H	1,70	4,50	5,00
						MML-AP0184H	2,00	5,60	6,30
						MML-AP0244H	2,50	7,10	8,00
Concealed duct, stand type					Floor standing Concealed type				
	MMD-AP0074BH-E	0,80	2,20	2,50		MML-AP0074BH-E	0,80	2,20	2,50
	MMD-AP0094BH-E	1,00	2,80	3,20		MML-AP0094BH-E	1,00	2,80	3,20
	MMD-AP0124BH-E	1,25	3,60	4,00		MML-AP0124BH-E	1,25	3,60	4,00
	MMD-AP0154BH-E	1,70	4,50	5,00		MML-AP0154BH-E	1,70	4,50	5,00
	MMD-AP0184BH-E	2,00	5,60	6,30		MML-AP0184BH-E	2,00	5,60	6,30
	MMD-AP0244BH-E	2,50	7,10	8,00		MML-AP0244BH-E	2,50	7,10	8,00
	MMD-AP0274BH-E	3,00	8,00	9,00					
	MMD-AP0304BH-E	3,20	9,00	10,00					
	MMD-AP0364BH-E	4,00	11,20	12,50					
	MMD-AP0484BH-E	5,00	14,00	16,00					
	MMD-AP0564BH-E	6,00	16,00	18,00					
Concealed duct, high static pressure					Tall floor-standing				
	MMD-AP0184H-E	2,00	5,60	6,30		MMF-AP0154H-E	1,70	4,50	5,00
	MMD-AP0244H-E	2,50	7,10	8,00		MMF-AP0184H-E	2,00	5,60	6,30
	MMD-AP0274H-E	3,00	8,00	9,00		MMF-AP0244H-E	2,50	7,10	8,00
	MMD-AP0364H-E	4,00	11,20	12,50		MMF-AP0274H-E	3,00	8,00	9,00
	MMD-AP0484H-E	5,00	14,00	16,00		MMF-AP0364H-E	4,00	11,20	12,50
	MMD-AP0724H-E	8,00	22,40	25,00		MMF-AP0484H-E	5,00	14,00	16,00
	MMD-AP0964H-E	10,00	28,00	31,50		MMF-AP0564H-E	6,00	16,00	18,00
					Fresh Air Intake				
						MMD-AP0481HFE	5,00	14,00	8,90
						MMD-AP0721HFE	8,00	22,40	13,90
						MMD-AP0961HFE	10,00	28,00	17,40

4-way



Panel design choice



These options gives the user the possibility to select the decoration more suitable for its ceiling interior design.

Cassette unit with built-in advanced technology to deliver the optimal air flow in all the room or to specific desired directions.

Individual louver control with three optional swing patterns: standard flow, dual alternate flow and cycle swing.

Self cleaning operation designed to remove impurities from the coil surface and to prevent mould formation.

Easy to install and maintain. The electrical box is accessible by opening the hinged panel.

Long life pre-filter with a wide bended surface to effectively collect dust particles.

Up to 850mm lift pump for effective condensate water removal. External condensate pipe quick connection.

MMU-AP_2H

Performance data

Indoor unit	MMU-	AP0092H	AP0122H	AP0152H	AP0182H	AP0242H	AP0272H	AP0302H	AP0362H	AP0482H	AP0562H
Cooling capacity	kW	2,8	3,6	4,5	5,6	7,1	8	9	11,2	14	16
Heating capacity	kW	3,2	4	5	6,3	8	9	10	12,5	16	18
Power consumption	kW	0,021	0,021	0,023	0,026	0,036	0,036	0,043	0,088	0,112	0,112
Running current	A	0,23	0,23	0,27	0,29	0,38	0,38	0,43	0,73	0,88	0,88
Starting current	A	0,3	0,3	0,33	0,36	0,42	0,42	0,59	0,87	1,23	1,26

MMU-AP_2H

Physical data Indoor units

Indoor unit	MMU-	AP0092H	AP0122H	AP0152H	AP0182H	AP0242H	AP0272H	AP0302H	AP0362H	AP0482H	AP0562H
Air Flow (h/l)	m ³ /h	800/680	800/680	930/790	1050/800	1290/800	1290/800	1320/850	1970/1070	2130/1130	2130/1230
Air Flow (h/l)	l/s	222/188	222/188	258/219	291/222	357/222	357/222	366/235	546/296	590/313	590/341
Sound pressure level (h/l)	dB(A)	30/27	30/27	31/27	32/27	35/28	35/28	38/30	43/32	46/33	46/33
Dimensions (HxWxD)	mm	256x840x840	256x840x840	256x840x840	256x840x840	256x840x840	256x840x840	256x840x840	319x840x840	319x840x840	319x840x840
Weight	kg	18	18	20	20	20	20	20	25	25	25
Panel dimensions (HxWxD)	mm	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950	30x950x950
Panel weight	kg	4	4	4	4	4	4	4	4	4	4
Connecting pipe, gas		3/8"	3/8"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Drain port diameter	mm	25	25	25	25	25	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

4-WAY

CASSETTE TYPE UNIT



INDOOR UNITS

MMU-AP0092H
MMU-AP0122H
MMU-AP0152H
MMU-AP0182H
MMU-AP0242H
MMU-AP0272H
MMU-AP0302H



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range

SHRM

Matching with all indoor units range

MiniSMMS

Matching with all indoor units range, except MMU-AP0562H



IR receiver

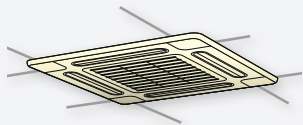


LOCAL CONTROLS

Infra-red remote kit - RBC-AX32UW/WS-E
Lite vision control - RBC-AMS51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Standard size



Stylish design and compact dimensions to suit all standard 600x600 mm grid ceilings.

The compact 4-way cassette suits all the standard 600x600 mm grid ceiling, to allow simple and easy installation and maintenance.

Equipped with draft prevention and clean ceiling functions this unit delivers the required amount of air without disturbing the users.

All the capacity sizes have the same physical dimensions so the installation looks much smarter and consistent.

Access to the corner pockets for practical installation, maintenance and precise panel adjustment for perfect ceiling fitting.

Built-in water condensate discharge pump.

Auxiliary fresh air intake flange hole for constantly supply renewed air.

MMU-AP_MH

Performance data

Indoor unit	MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3
Power consumption	kW	0,034	0,036	0,038	0,041	0,052
Running current	A	0,28	0,30	0,31	0,34	0,42
Starting current	A	0,49	0,52	0,54	0,59	0,73

MMU-AP_MH

Physical data Indoor units

Indoor unit	MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-E
Air Flow (h/l)	m ³ /h	552/378	570/378	594/402	660/468	762/522
Air Flow (h/l)	l/s	153/105	158/105	165/112	183/130	211/145
Sound pressure level (h/l)	dB(A)	36/28	37/28	37/29	40/30	44/34
Dimensions (HxWxD)	mm	268x575x575	268x575x575	268x575x575	268x575x575	268x575x575
Weight	kg	17	17	17	17	17
Panel dimensions (HxWxD)	mm	27x700x700	27x700x700	27x700x700	27x700x700	27x700x700
Panel weight	kg	3	3	3	3	3
Connecting pipe, gas	in	3/8"	3/8"	3/8"	5/8"	5/8"
Connecting pipe, liquid	in	1/4"	1/4"	1/4"	1/4"	1/4"
Drain port diameter	mm	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

COMPACT 4-WAY

CASSETTE TYPE UNIT

MMU-AP_4MH



INDOOR UNITS

MMU-AP0074MH-E
MMU-AP0094MH-E
MMU-AP0124MH-E
MMU-AP0154MH-E
MMU-AP0184MH-E

OUTDOOR UNITS

SMMS-i

Matching with all indoor units range

SHRM

Matching with all indoor units range

MiniSMMS

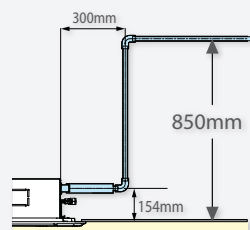
Matching with all indoor units range

LOCAL CONTROLS

Infra-red remote kit -TCB-AX32E2
Lite vision control - RBC-AMS51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



High lift condensate pump



Condensate discharge piping design is simplified with the external quick connection and the powerful drain pump which raises water up to 850mm.

Slim, compact, light-weight and easy to install, it fits discretely any room interior, in addition, thanks to its silent operation, this model creates a very pleasant, quiet and comfortable environment.

White decoration panel design enable the installation in ceilings together with the standard 4-way cassette.

Compact dimensions (height 295mm) and limited weight (19 kg) for units up to 4,5 kW.

Unique air flow control with the air current balanced between two directions, for maximum comfort. Fresh air intake inlet to ensure constant air renewal.

Enhanced Indoor Air Quality with standard long-life filters with a wide bended surface to effectively collect dust particles and optional high efficiency filters.

Fresh air intake: ensures constant air renewal.

Wide range of accessories, including a wireless infrared remote control kit.

MMU-AP_WH

Performance data

Indoor unit	MMU-	AP0072WH	AP0092WH	AP0122WH	AP0152WH	AP0182WH	AP0242WH	AP0272WH	AP0302WH	AP0362WH	AP0482WH	AP0562WH
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6	7,1	8	9	11,2	14	16
Heating capacity	kW	2,5	3,2	4	5	6,3	8	9	10	12,5	16	18
Power consumption	kW	0,029	0,029	0,029	0,030	0,044	0,054	0,054	0,064	0,076	0,088	0,117
Running current	A	0,23	0,23	0,23	0,24	0,32	0,39	0,39	0,46	0,48	0,57	0,75
Starting current	A	0,35	0,35	0,35	0,36	0,48	0,59	0,59	0,69	0,72	0,86	1,13

MMU-AP_WH

Physical data Indoor units

Indoor unit	MMU-	AP0072WH	AP0092WH	AP0122WH	AP0152WH	AP0182WH	AP0242WH	AP0272WH	AP0302WH	AP0362WH	AP0482WH	AP0562WH
Air Flow (h/m ³ /l)	m ³ /h	558/498/450	558/498/450	558/498/450	600/534/450	900/750/618	1050/840/738	1050/840/738	1260/900/780	1740/1434/1182	1800/1482/1230	2040/1578/1320
Air Flow (h/m ³ /l)	l/s	155/138/125	155/138/125	155/138/125	167/148/125	250/208/172	291/233/205	291/233/205	350/250/780	483/398/328	500/412/342	567/438/367
Sound pressure level (h/m ³ /l)	dB(A)	34/32/30	34/32/30	34/32/30	35/33/30	35/33/30	38/35/33	38/35/33	40/37/34	42/39/36	43/40/37	46/42/39
Dimensions (HxWxD)	mm	295x815x570	295x815x570	295x815x570	295x815x570	345x1180x570	345x1180x570	345x1180x570	345x1180x570	345x1600x570	345x1600x570	345x1600x570
Weight	kg	19	19	19	19	26	26	26	26	36	36	36
Panel dimensions (HxWxD)	mm	20x1050x680	20x1050x680	20x1050x680	20x1050x680	20x1415x680	20x1415x680	20x1415x680	20x1415x680	20x1835x680	20x1835x680	20x1835x680
Panel weight	kg	10	10	10	10	14	14	14	14	14	14	14
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Drain port diameter	mm	25	25	25	25	25	25	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

2-WAY

CASSETTE TYPE UNIT

MMU-AP_2WH



INDOOR UNITS

MMU-AP0072WH
MMU-AP0092WH
MMU-AP0122WH
MMU-AP0152WH

MMU-AP0182WH
MMU-AP0242WH
MMU-AP0272WH
MMU-AP0302WH
MMU-AP0362WH
MMU-AP0482WH
MMU-AP0562WH



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range

SHRM

Matching with all indoor units range



MiniSMMS

Matching with all indoor units range, except MMU-AP0562WH



IR receiver



LOCAL CONTROLS

Infra-red remote kit - RBC-AX23UW(W)-E
Lite vision control - RBC-AMS51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Front air discharge



Toshiba's innovative slim-line 1-way cassette is simple to install and is suitable for small areas, such as hotels or offices guestrooms and reception rooms.

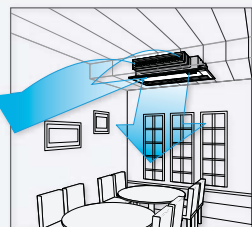
Compact structure: 235x850x400 mm (sizes 2,2 to 3,6).

Flexible installation: ideal for false ceiling applications where the space for the unit is limited.

Water condensate drain pump lift condensate water up to 350mm .

Low noise level: it operates down to 34 dB(A) (sizes 2,2 to 3,6).

Auxiliary fresh air intake flange.



Possibility to connect a frontal air discharge duct to blow the air in the room horizontally.

MMU-AP_YH/SH

Performance data

Indoor unit	MMU-	AP0074YH-E	AP0094YH-E	AP0124YH-E	AP0154SH-E	AP0184SH-E	AP0244SH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6	7,1
Heating capacity	kW	2,5	3,2	4	5	6,3	8
Power consumption	kW	0,053	0,053	0,053	0,042	0,046	0,075
Running current	A	0,24	0,24	0,24	0,34	0,37	0,62
Starting current	A	0,6	0,6	0,6	0,51	0,54	0,80

MMU-AP_YH/SH

Physical data Indoor units

Indoor unit	MMU-	AP0074YH-E	AP0094YH-E	AP0124YH-E	AP0154SH-E	AP0184SH-E	AP0244SH-E
Air Flow (h/l)	m ³ /h	540/420	540/420	540/420	750/630	780/660	1140/810
Air Flow (h/l)	l/s	150/116	150/116	150/116	208/175	216/183	316/224
Sound pressure level (h/m/l)	dB(A)	42/34	42/34	42/34	37/32	38/34	45/37
Sound power level (h/m/l)	dB(A)	57/54/49	57/54/49	57/54/49	57/54/51	57/54/51	58/56/52
Dimensions (HxWxD)	mm	235x850x400	235x850x400	235x850x400	200x1000x710	200x1000x710	200x1000x710
Weight	kg	22	22	22	21	21	22
Panel dimensions (HxWxD)	mm	18x1050x470	18x1050x470	18x1050x470	20x1230x800	20x1230x800	20x1230x800
Panel weight	kg	3,5	3,5	3,5	5,5	5,5	5,5
Connecting pipe, gas	in	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"
Connecting pipe, liquid	in	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
Drain port diameter	mm	25	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

1-WAY

CASSETTE TYPE UNIT

MMU-AP_4YH/SH

**INDOOR UNITS**

MMU-AP0074YH-E
MMU-AP0094YH-E
MMU-AP0124YH-E

MMU-AP0154SH-E
MMU-AP0184SH-E
MMU-AP0244SH-E

**OUTDOOR UNITS**

SMMS-i

Matching with all
indoor units range



SHRM

Matching with all
indoor units range



MiniSMMS

Matching with all
indoor units range



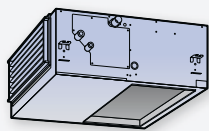
IR receiver

**LOCAL CONTROLS**

Infra-red remote kit - RBC-AX32CE2
Lite vision control - RBC-AM51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Front or back return



Versatility in installation by selecting the return air flow direction.

Rear inlet as standard and underside configuration kit as an option.

Whatever the shape of the room, this flexible model ensures a uniform temperature and air distribution, and enhances the Indoor Air Quality for optimum user comfort.

External static pressure can be raised up to 110 Pa for extensive ducting.

Low noise level: at low fan speed, it operates down to 26 dB(A).

Ideal for sites with restriction on the space above ceiling level, the unit features a high-lift drain pipe (270 mm).

Enhanced Indoor Air Quality with large surface standard filters and high efficiency filters as an option.

Fresh air intake outlet to quickly and easily connect to a contact fresh air intake supply duct.

MMD-AP_BH	Performance data											
Indoor unit	MMD-	AP0074BH-E	AP0094BH-E	AP0124BH-E	AP0154BH-E	AP0184BH-E	AP0244BH-E	AP0274BH-E	AP0304BH-E	AP0364BH-E	AP0484BH-E	AP0564BH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6	7,1	8,0	9,0	11,2	14,0	16,0
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3	8,0	9,0	10,0	12,5	16,0	18,0
Power consumption	kW	0,033	0,033	0,039	0,039	0,050	0,060	0,060	0,071	0,107	0,128	0,128
Running current	A	0,29	0,29	0,34	0,34	0,43	0,52	0,52	0,61	0,83	0,98	0,98
Starting current	A	0,50	0,50	0,59	0,59	0,75	0,90	0,90	1,05	1,44	1,70	1,70

MMD-AP_BH	Physical data Indoor units											
Indoor unit	MMD-	AP0074BH-E	AP0094BH-E	AP0124BH-E	AP0154BH-E	AP0184BH-E	AP0244BH-E	AP0274BH-E	AP0304BH-E	AP0364BH-E	AP0484BH-E	AP0564BH-E
Air Flow (h/l)	m ³ /h	480/340	480/340	570/400	650/480	780/540	1140/870	1140/870	1260/870	1620/1200	1980/1490	1980/1490
Air Flow (h/l)	l/s	133/94	133/94	158/111	180/133	216/150	316/241	316/241	349/241	449/332	548/413	548/413
Sound pressure level (h/l)	dB(A)	30/28/26	30/28/26	31/29/27	31/29/27	32/30/28	33/31/29	33/31/29	34/32/29	36/34/32	36/34/32	36/34/32
Sound power level (h/l)	dB(A)	52/49/46	52/49/46	53/50/47	54/51/47	55/52/48	55/52/49	55/52/49	56/53/50	57/54/51	59/56/53	59/56/53
Dimensions (HxWxD)	mm	320x550x800	320x550x800	320x550x800	320x700x800	320x700x800	320x1000x800	320x1000x800	320x1000x800	320x1350x800	320x1350x800	320x1350x800
Weight	kg	28	28	28	32	32	43	43	43	55	55	55
Panel dimensions (HxWxD)	mm	9x652x500	9x652x500	9x652x500	9x802x500	9x802x500	9x1102x500	9x1102x500	9x1102x500	9x1452x500	9x1452x500	9x1452x500
Panel weight	kg	3,5	3,5	3,5	4	4	6	6	6	7	7	7
External static pressure	Pa	50	50	50	50	50	50	50	50	50	50	50
Max external static pressure	Pa	110	110	110	110	110	110	110	110	110	110	110
Connecting pipe, gas	in	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	5/8"
Connecting pipe, liquid	in	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Drain port diameter	mm	25	25	25	25	25	25	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

STANDARD MODEL

DUCTED TYPE UNIT



INDOOR UNITS

MMD-AP0074BH-E
MMD-AP0094BH-E
MMD-AP0124BH-E

MMD-AP0154BH-E
MMD-AP0184BH-E
MMD-AP0244BH-E
MMD-AP0274BH-E
MMD-AP0304BH-E



OUTDOOR UNITS

SMMS-i
Matching with all indoor units range

SHRM
Matching with all indoor units range

MiniSMMS
Matching with all indoor units range, except MMD-AP0564BH-E



IR receiver



LOCAL CONTROLS

Infra-red remote kit - TBC-AX32E2
Lite vision control - RBC-AMS51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Extremely silent



Exceptionally low noise level - down to 24 dB(A) - make this unit the right choice for bedrooms and hotel rooms.

Whether installed in a ceiling void or in a false ceiling, Toshiba new slim duct offers the ultimate technology, with exceptional energy savings, high performance and easy installation.

This ultra flexible, invisible and silent unit creates a pleasant and comfortable environment for a wide range of applications, such as hotels, offices and shops.

Very slim design: only 21 cm height, for easier and more flexible installation.

Ideal for sites with restriction on the space above ceiling level where only minimum height units can be installed.

Static pressure up to 46Pa. This feature combined with the unobtrusive installation is the preferred solution in old building with decorated high ceiling living.

Can be installed in any ceiling void and coupled with any kind of air diffuser.

Testo		Performance data				
Indoor unit	MMD-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6
Heating capacity	kW	2,5	3,2	4	5	6,3
Power consumption	kW	0,039	0,039	0,043	0,045	0,054
Running current	A	0,29	0,29	0,31	0,32	0,39
Starting current	A	0,51	0,51	0,54	0,56	0,68

MMD-AP_SPH		Physical data Indoor units				
Indoor unit	MMD-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E
Air Flow (h/l)	m ³ /h	540/400	540/400	600/450	690/520	780/580
Air Flow (h/l)	l/s	150/111	150/111	166/125	191/144	216/161
Sound pressure level, rear suction (h/l)	dB(A)	28/24	28/24	29/25	32/28	33/29
Sound pressure level, bottom suction (h/l)	dB(A)	36/30	36/30	38/32	39/33	40/36
Dimensions (HxWxD)	mm	210x845x645	210x845x645	210x845x645	210x845x645	210x845x645
Weight	kg	22	22	22	23	23
External static pressure	Pa					
Max external static pressure	Pa					
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"
Drain port diameter	mm	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

SLIM MODEL

DUCTED TYPE UNIT



INDOOR UNITS

MMD-AP0074SPH-E
MMD-AP0094SPH-E
MMD-AP0124SPH-E
MMD-AP0154SPH-E
MMD-AP0184SPH-E



OUTDOOR UNITS

SMMS-i
Matching with all indoor units range



SHRM
Matching with all indoor units range



MiniSMMS
Matching with all indoor units range



IR receiver

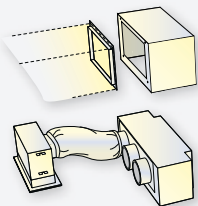


LOCAL CONTROLS

Infra-red remote kit - TBC-AX32E2
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Diffuser flexibility



Different type of air ducts and diffusers can be used. The powerful air flow make it suitable for applications with long ducts.

This is Toshiba's most powerful ducted unit delivering air flows up to 5040m³/h with an external static pressure up to 196 Pa.

Unobtrusive, flexible and compact, it can be installed easily and discretely in any interior and it is the ideal solution for both new and refurbishing projects.

Inspection hole enables easy access and maintenance.

Wide range of options available: filter chamber, long-life filter, drain pump kit, etc.

Static pressure can be set to 3 levels (68,6, 137 and 196 Pa).

Renewal of indoor ambient air with the constant fresh air supply through the field installed fresh air intake connection.

Diffuser design flexibility to select the right layout for the room shape and use requirements.

MMD-AP_H

Performance data

Indoor unit	MMD-	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	AP0724H-E	AP0964H-E
Cooling capacity	kW	5,6	7,1	8,0	11,2	14,0	22,4	28,0
Heating capacity	kW	6,3	8	9	12,5	16	25	31,5
Power consumption	kW	0,184	0,299	0,299	0,368	0,414	1,20	1,26
Running current	A	0,81	1,35	1,35	1,63	1,84	5,25	5,52
Starting current	A	1,3	3,5	3,5	4,1	4,8	13,6	14,8

MMD-AP_H

Physical data Indoor units

Indoor unit	MMD-	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	AP0724H-E	AP0964H-E
Air Flow (h)	m ³ /h	900	1320	1320	1600	2100	3600	4200
Air Flow (h)	l/s	249	366	366	443	582	997	1163
Sound pressure level	dB(A)	37	40	40	40	40	49	50
Dimensions (HxWxD)	mm	380x850x660	380x850x660	380x850x660	380x850x660	380x1200x660	470x1380x1250	470x1380x1250
Weight	kg	50	52	52	56	67	150	150
External static pressure	Pa	137	137	137	137	137	137	137
Max external static pressure	Pa	196	196	196	196	196	196	196
Connecting pipe, gas	in	1/2"	5/8"	5/8"	5/8"	5/8"	7/8"	7/8"
Connecting pipe, liquid	in	1/4"	3/8"	3/8"	3/8"	3/8"	1/2"	1/2"
Drain port diameter	mm	25	25	25	25	25	25	25
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

HIGH STATIC PRESSURE MODEL

DUCTED TYPE UNIT

MMD-AP_H



INDOOR UNITS

MMD-AP0184H-E
MMD-AP0244H-E
MMD-AP0274H-E
MMD-AP0364H-E
MMD-AP0484H-E
MMD-AP0724H-E
MMD-AP0964H-E



OUTDOOR UNITS

SMMS-i
Matching with all indoor units range



SHRM
Matching with all indoor units range



MiniSMMS
Matching with all indoor units range, up to MMD-AP0484H



IR receiver

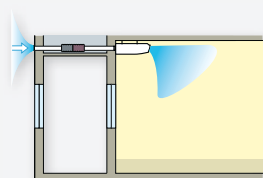


LOCAL CONTROLS

Infra-red remote kit - TBC-AX32E2
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Fresh air intake hole



This unit has a dedicated pre-punched knock-out hole for allowing the connection with a fresh air supply pipe.

It creates a very pleasant and relaxing environment, diffusing rapidly and uniformly the required temperature, in cooling and heating modes.

This model is the best solution for ceilings where are not present or is possible to build voids.

It can be used for a wide range of applications, but is particularly recommended for refurbishment projects.

The unit features a highlift drain pipe (600 mm).

Optimum louver control: air flow angle is automatically set to the most suitable setting according to your cooling or heating needs, and an automatic swing mode enables air flow to reach all areas in the room.

Selectable piping connection position: Three possibilities (top, rear or right side of the unit) for the refrigerant and two possibilities (top, rear) for the condensate drain.

MMC-AP_H

Performance data

Indoor unit	MMC-	AP0154H-E	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E
Cooling capacity	kW	4,5	5,6	7,1	8	11,2	14
Heating capacity	kW	5	6,3	8	9	12,5	16
Power consumption	kW	0,033	0,038	0,050	0,050	0,091	0,110
Running current	A	0,29	0,32	0,42	0,42	0,78	0,84
Starting current	A	0,43	0,48	0,62	0,62	1,17	1,25

MMC-AP_H

Physical data Indoor units

Indoor unit	MMC-	AP0154H-E	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E
Air Flow (h/l)	m ³ /h	720/540	780/540	1110/840	1110/840	1650/1200	1800/1320
Air Flow (h/l)	l/s	199/150	216/150	307/233	307/233	457/332	499/366
Sound pressure level (h/l)	dB(A)	35/30	36/30	38/33	38/33	41/35	43/37
Dimensions (HxWxD)	mm	210x910x680	210x910x680	210x1180x680	210x1180x680	210x1595x680	210x1595x680
Weight	kg	22	22	26	26	34	34
Connecting pipe, gas	in	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"
Connecting pipe, liquid	in	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"
Drain port diameter	mm	20	20	20	20	20	20
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CEILING

SUSPENDED UNIT

MMC-AP_4H



INDOOR UNITS

MMC-AP0154H-E
MMC-AP0184H-E

MMC-AP0244H-E
MMC-AP0274H-E
MMC-AP0364H-E
MMC-AP0484H-E



SMMS-i

Matching with all indoor units range

SHRM

Matching with all indoor units range

MiniSMMS

Matching with all indoor units range



IR receiver



LOCAL CONTROLS

Infra-red remote kit - RBC-AX32CE2
Lite vision control - RBC-AMS51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Washable filters



Filters for dust collection can be easily removed by lifting the front panel and can be cleaning simple washing them under running water.

This compact high-wall is perfect for limited spaces, such as offices, small shops or hotel rooms.

The unit is compact (only 275x790x208 mm) and light-weight (11 kg), it is perfect for installation above the doors or in narrow corridors.

This high-wall also achieves outstanding sound level performances down to 29dB(A).

Automatic louver swing patterns to evenly distribute the air into the room.

Remote controller for easy access to the preferred setting.

MMK-AP_MH

Performance data

Indoor unit	MMK-	AP0074MH-E	AP0094MH-E	AP0124MH-E
Cooling capacity	kW	2,2	2,8	3,6
Heating capacity	kW	2,5	3,2	4,0
Power consumption	kW	0,017	0,018	0,019
Running current	A	0,17	0,18	0,19
Starting current	A	0,22	0,23	0,24

MMK-AP_MH

Physical data Indoor units

Indoor unit	MMK-	AP0074MH-E	AP0094MH-E	AP0124MH-E
Air Flow (h/l)	m ³ /h	480/360	510/360	540/360
Air Flow (h/l)	l/s	133/100	141/100	150/100
Sound pressure level (h/l)	dB(A)	35/29	36/29	37/29
Dimensions (HxWxD)	mm	275x790x208	275x790x208	275x790x208
Weight	kg	11	11	11
Connecting pipe, gas		3/8"	3/8"	3/8"
Connecting pipe, liquid		1/4"	1/4"	1/4"
Drain port diameter	mm	16	16	16
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50

COMPACT

HI-WALL TYPE UNIT

MMK-AP_4MH



INDOOR UNITS

MMK-AP0074MH-E
MMK-AP0094MH-E
MMK-AP0124MH-E



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range



SHRM

Matching with all indoor units range



MiniSMMS

Matching with all indoor units range



IR control

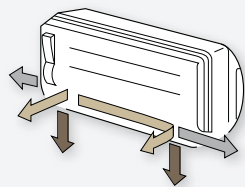


LOCAL CONTROLS

Infra-red remote included
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Refrigerant connection options



Six directions possibilities for the connection of the auxiliary refrigerant pipe, to simplify the installation process: left or right (bottom, rear, side).

Classic elegant unit with modern white colour panel and rounded surfaces to easily blend in with any room interior.

Total comfort is granted, thanks also to the 70° directional auto-swing louver that provide uniform air distribution.

Enhanced indoor air quality filters.

Wireless infra-red remote control with buttons for the direct access to the regulation of the main operating function.

Self cleaning function to effectively remove impurity and moist from the internal components of the units.

MMK-AP_H

Performance data

Indoor unit	MMK-	AP0073H	AP0093H	AP0123H	AP0153H	AP0183H	AP0243H
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6	7,1
Heating capacity	kW	2,5	3,2	4	5	6,3	8
Power consumption	kW	0,018	0,021	0,021	0,043	0,043	0,050
Running current	A	0,17	0,19	0,19	0,32	0,32	0,37
Starting current	A	0,22	0,24	0,24	0,41	0,41	0,47

MMK-AP_H

Physical data Indoor units

Indoor unit	MMK-	AP0073H	AP0093H	AP0123H	AP0153H	AP0183H	AP0243H
Air Flow (h/l)	m ³ /h	570/390	600/390	600/390	840/540	840/540	1020/570
Air Flow (h/l)	l/s	158/108	166/108	166/108	233/150	233/150	283/158
Sound pressure level (h/l)	dB(A)	35/28	37/28	37/28	41/33	41/33	46/34
Dimensions (haxwxd)	mm	320x1050x228	320x1050x228	320x1050x228	320x1050x228	320x1050x228	320x1050x228
Weight	kg	15	15	15	15	15	15
Gas	in	3/8"	3/8"	3/8"	1/2"	1/2"	5/8"
Liquid	in	1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
Drain port diameter	mm	16	16	16	16	16	16
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

STANDARD

HI-WALL TYPE UNIT

MMK-AP_3H



INDOOR UNITS

MMK-AP0073H
MMK-AP0093H
MMK-AP0123H

MMK-AP0153H
MMK-AP0183H
MMK-AP0243H



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range

SHRM

Matching with all indoor units range

MiniSMMS

Matching with all indoor units range



IR control



LOCAL CONTROLS

Infra-red remote included
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Floor heating function



Unique floor heating function, to deliver a powerful flow at floor level for a uniform and comfortable room heating.

Innovative and compact unit to be installed on the floor and in low wall applications, fit perfectly under the window sills or in a low ceiling attic.

Compact and modern design in all three dimensions (60x70x22 cm); single size for all range capacities.

Bi-flow. Two outlets for complete personalized flow: flow intensity and air direction control.

Toshiba IAQ filter filtration system, includes extremely powerful anti virus, anti-bacteria and the deodorizing effects.

Brightness level control of the display unit to reduce the led light glow.

Wireless remote control with a pre-set function and a unique hi-power button for immediate and fast air delivery.

MML-AP_NH

Performance data

Indoor unit	MML-	AP0074NH-E	AP0094NH-E	AP0124NH-E	AP0154NH-E	AP0184NH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3
Power consumption	kW	0,021	0,021	0,025	0,034	0,052
Running current	A	0,20	0,20	0,23	0,29	0,42
Starting current	A	0,26	0,26	0,30	0,38	0,55

MML-AP_NH

Physical data Indoor units

Indoor unit	MML-	AP0074NH-E	AP0094NH-E	AP0124NH-E	AP0154NH-E	AP0184NH-E
Air Flow (h/l)	m ³ /h	510/282	510/282	552/324	624/384	726/426
Air Flow (h/l)	l/s	142/78.3	142/78.3	153/90	173/106.7	202/56.1
Sound pressure level (h/l)	dB(A)	38/32/26	38/32/26	40/34/29	43/37/31	47/40/34
Dimensions (HxWxD)	mm	600x700x220	600x700x220	600x700x220	600x700x220	600x700x220
Weight	kg	17	17	17	17	17
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"
Drain port diameter	mm	16	16	16	16	16
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

BI-FLOW MODEL

CONSOLE TYPE UNIT

MML-AP_4NH



INDOOR UNITS

MML-AP0074NH-E
MML-AP0094NH-E
MML-AP0124NH-E
MML-AP0154NH-E
MML-AP0184NH-E



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range



SHRM

Matching with all indoor units range



MiniSMMS

Matching with all indoor units range



IR control

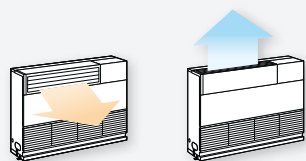


LOCAL CONTROLS

Infra-red remote included
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Choice of air flow direction



Units have horizontal air distribution as a standard. With a simple operation during installation the air flow can be changed into upward direction.

This console unit represents the best choice for refurbishment projects of small spaces where there is not possible a ceiling or wall installation.

Its compact dimensions and the cabinet shape make the installation very easy and flexible.

Refrigerant and drain piping with four installation possibilities: top, rear, left or right side of the unit.

Minimum space required for installation and servicing. With horizontal flow can be installed with only 200mm of free space above the unit.

One single cabinet dimensions for all the capacity range models, give the advantage to have the same unit style in room with different sizes.

MML-AP_H

Performance data

Indoor unit	MML-	AP0074H-E	AP0094H-E	AP0124H-E	AP0154H-E	AP0184H-E	AP0244H-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6	7,1
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3	8,0
Power consumption	kW	0,056	0,056	0,092	0,092	0,102	0,102
Running current	A	0,26	0,26	0,43	0,43	0,47	0,47
Starting current	A	0,6	0,6	0,8	0,8	1,1	1,1

MML-AP_H

Physical data Indoor units

Indoor unit	MML-	AP0074H-E	AP0094H-E	AP0124H-E	AP0154H-E	AP0184H-E	AP0244H-E
Air Flow (h/l)	m ³ /h	480/360	480/360	900/650	900/650	1080/780	1080/780
Air Flow (h/l)	l/s	133/100	133/100	250/180	250/180	299/216	299/216
Sound pressure level (h/l)	dB(A)	39/35	39/35	45/38	45/38	49/39	49/39
Dimensions (HxWxD)	mm	630x950x230	630x950x230	630x950x230	630x950x230	630x950x230	630x950x230
Weight	kg	37	37	37	37	40	40
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"	5/8"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
Drain port diameter	mm	20	20	20	20	20	20
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

STANDARD FLOOR MODEL

CONSOLE TYPE UNIT

MML-AP_4H



INDOOR UNITS

MML-AP0074H-E
MML-AP0094H-E
MML-AP0124H-E
MML-AP0154H-E
MML-AP0184H-E
MML-AP0244H-E



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range



SHRM

Matching with all indoor units range



MiniSMMS

Matching with all indoor units range



IR control



LOCAL CONTROLS

Infra-red remote kit - TBC-AX32E2
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Wireless control kit



With the infra red receiver sensor, the concealed unit can be operated with a wireless remote control from a distance up to 8 meter.

This chassis is compact and slim, it's very easy to install and to conceal behind a decorative panel to blend with any room interior.

Ideal for office and other commercial buildings with large fluctuation in load, the unit fits perfectly specialist applications such as libraries and hospitals.

Very compact design can be installed under a window sill, only 600 mm in height.

with its limited depth, only 200mm, the unit can be installed along the wall ensuring space saving.

Removable split front panel with immediate access to the main components; access to the drain pan is on the right side of the unit.

MML-AP_BH		Performance data					
Indoor unit	MML-	AP0074BH-E	AP0094BH-E	AP0124BH-E	AP0154BH-E	AP0184BH-E	AP0244BH-E
Cooling capacity	kW	2,2	2,8	3,6	4,5	5,6	7,1
Heating capacity	kW	2,5	3,2	4,0	5,0	6,3	8,0
Power consumption	kW	0,056	0,056	0,056	0,090	0,090	0,095
Running current	A	0,25	0,25	0,25	0,45	0,45	0,46
Starting current	A	0,6	0,6	0,6	0,8	0,8	1,0

MML-AP_BH		Physical data Indoor units					
Indoor unit	MML-	AP0074BH-E	AP0094BH-E	AP0124BH-E	AP0154BH-E	AP0184BH-E	AP0244BH-E
Air Flow (h/l)	m ³ /h	460/300	460/300	460/300	740/490	740/490	950/640
Air Flow (h/l)	l/s	127/83	127/83	127/83	205/136	205/136	263/177
Sound pressure level (h/l)	dB(A)	36/32	36/32	36/32	36/32	36/32	42/33
Dimensions (HxWxD)	mm	600x745x220	600x745x220	600x745x220	600x1045x220	600x1045x220	600x1045x220
Weight	kg	21	21	21	29	29	29
Connecting pipe, gas		3/8"	3/8"	3/8"	1/2"	1/2"	5/8"
Connecting pipe, liquid		1/4"	1/4"	1/4"	1/4"	1/4"	3/8"
Drain port diameter	mm	20	20	20	20	20	20
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

CONCEALED CHASSIS

CONSOLE TYPE UNIT

MML-AP_4BH



INDOOR UNITS

MML-AP0074BH-E
MML-AP0094BH-E
MML-AP0124BH-E
MML-AP0154BH-E
MML-AP0184BH-E
MML-AP0244BH-E



OUTDOOR UNITS

SMMS-i
Matching with all indoor units range

SHRM
Matching with all indoor units range

MiniSMMS
Matching with all indoor units range



IR control

LOCAL CONTROLS

Infra-red remote kit - TBC-AX32E2
Lite vision control - RBC-AMSS1E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2



Corner installation swing



The unit can be installed in the corner of the room, in this case the automatic swing angle can be fixed to deliver the air only where is needed.

This system is particularly suitable to air condition large rooms like shops or showrooms or with low ceilings like restaurants or lofts.

The units has high air flow rates and superior air throw values.

Their wide automatic vertical and horizontal air distribution angles permits the distrobution of the flow in large rooms.

Very small footprint: 0,128 m2 up to 8 kW and 0,243 m2 up to 16 kW.

High air flows: from 180 l/s to 600 l/s (660 m3/h to 2160 m3/h).

Wide air distribution angle: up to 150°.

Large capacity range: cooling capacities from 4,5 kW to 16 kW and heating capacities from 5 kW to 18 kW.

MMF-AP_H

Performance data

Indoor unit	MMF-	AP0154H-E	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	AP0564H-E
Cooling capacity	kW	4,5	5,6	7,1	8	11,2	14	16
Heating capacity	kW	5	6,3	8	9	12,5	16	18
Power consumption	kW	0,15	0,15	0,19	0,19	0,28	0,35	0,35
Running current	A	0,67	0,67	0,88	0,88	1,29	1,6	1,6
Starting current	A	0,9	0,9	1,1	1,1	1,7	2,1	2,1

MMF-AP_H

Physical data Indoor units

Indoor unit	MMF-	AP0154H-E	AP0184H-E	AP0244H-E	AP0274H-E	AP0364H-E	AP0484H-E	AP0564H-E
Air Flow (h/l)	m³/h	900/660	900/660	1200/840	1200/840	1920/1380	2160/1560	2160/1560
Air Flow (h/l)	l/s	249/183	249/183	332/233	332/233	532/382	598/432	598/432
Sound pressure level (h/l)	dB(A)	46/38	46/38	49/40	49/40	51/44	54/46	54/46
Dimensions (HxWxD)	mm	1750x600x210	1750x600x210	1750x600x210	1750x600x210	1750x600x390	1750x600x390	1750x600x390
Weight	kg	48	48	49	49	65	65	65
Connecting pipe, gas	in	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"
Connecting pipe, liquid	in	1/4"	1/4"	3/8"	3/8"	3/8"	3/8"	3/8"
Drain port diameter	mm	20	20	20	20	20	20	20
Power supply	V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50	220/240-1-50

FLOOR STANDING MODEL

CONSOLE TYPE UNIT

MMF-AP_4H



INDOOR UNITS

OUTDOOR UNITS

LOCAL CONTROLS

MMF-AP0154H-E
MMF-AP0184H-E
MMF-AP0244H-E
MMF-AP0274H-E
MMF-AP0364H-E
MMF-AP0484H-E
MMF-AP0564H-E

SMMS-i

Matching with all indoor units range

SHRM

Matching with all indoor units range

MiniSMMS

Matching with all indoor units range, except MMF-AP0564H-E

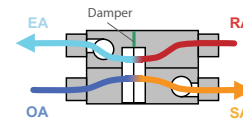
Infra-red remote kit - RBC-AX32UW/WS-E
Lite vision control - RBC-AMS51E-EN(ES)
Main wired control - RBC-AMT32E
Schedule timer - RBC-AMS41E
Simplified wired control - RBC-AS21E2

Clean and healthy indoor environment

A constant flow of fresh air is mandatory in an indoor environment where a large number of people are present in the same rooms for extended periods of times. In these conditions, the saturated air should be exhausted and effectively replaced by new fresh air to keep the correct oxygen levels and remove most pollutants.

In buildings where different premises have different ventilation needs (kitchen, hospitals, laboratories etc.) it is important to create the right balance of air flow in order to prevent diffusion of unwanted odours and humidity.

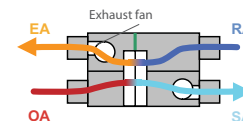
The ventilation in air-tight insulated buildings may cause the unwanted loss of heat whenever the exhaust air is rejected outdoors. The use of an air-to-air heat exchanger, to complete both functions of stale air exhaust and fresh air intake, limits this heat dispersion and consequently reduces the load on the air conditioning equipment



Air to air heat exchanger fresh air process patterns

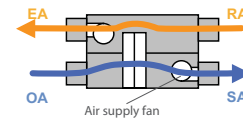
Heating mode

Outdoor cold air and saturated hot air pass through the exchanger element. The unit blows fresh clean air inside the ducts.



Cooling mode

Outdoor hot air and saturated cold air pass through the exchanger element. The unit blows warm clean air inside the ducts.



Free cooling mode

Outdoor fresh air passes through the filter element and enters without treatment.



AIR-TO-AIR HEAT EXCHANGERS



FRESH AIR INTAKE



AIR HANDLING UNIT INTEGRATION

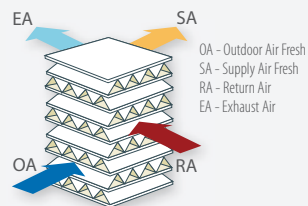
B u s i n e s s

INDOOR UNITS

AIR TREATMENT SOLUTIONS



Heat exchanger operating principle



The heat exchanger element recovers indoor heat up to 75% and humidity and transfers them to the outdoor fresh air.

They use exhaust air to pre-condition the incoming air, thus reducing the cooling or heating load and the overall size of the required air conditioning system.

9 models available with air flow ranges from 150 to 2000 m³/h.

Air conditioners and heat exchangers are controlled with same main bus system (TCC-LINK).

Automatic changeover to efficient operation mode: Units automatically switches to the heat exchange mode and normal ventilation based on operating conditions.

Free cooling – Provides fresh outdoor cool air to reduce the indoor air temperature, when the outdoor temperature is lower than the indoor air conditioned temperature.

Air balance volume rate can be varied to suit the usage environment and location.

Easy to install and service. Unit is designed for either horizontal or upside down installations.

AIR-TO-AIR HEAT EXCHANGER

STANDARD



INDOOR UNITS

VN-M150HE
VN-M250HE
VN-M350HE
VN-M500HE
VN-M650HE
VN-M800HE
VN-M1000HE

VN-M1500HE
VN-M2000HE



CONTROLS

NRC-01HE

VN-M_H			Physical data						
Model			VN-M150HE	VN-M250HE	VN-M350HE	VN-M500HE	VN-M650HE	VN-M800HE	VN-M1000HE
Air volume	(EH/H/L)	m³/h	150/150/110	250/250/155	350/350/210	500/500/390	650/650/520	800/800/700	1000/1000/755
Temp. exchange efficiency	(EH/H/L)	%	81,5/81,5/83	78/78/81,5	74,5/74,5/79,5	76,5/76,5/78	75/75/76,5	76,5/76,5/77,5	73,5/73,5/77
Enthalpy exchange efficiency (Heating)	(EH/H/L)	%	74,5/74,5/76	70/70/74	65/65/71,5	72/72/73,5	69,5/69,5/71,5	71/71/71,5	68,5/68,5/71,5
Enthalpy exchange efficiency (Cooling)	(EH/H/L)	%	69,5/69,5/71	65/65/69	60,5/60,5/67	64,5/64,5/66,5	61,5/61,5/64	64/64/65,5	60,5/60,5/64,5
Sound pressure level*	EH	dB(A)	26-28	29,5-30	34-35	32,5-34	34-36	37-38,5	39,5-40,5
Sound pressure level*	H	dB(A)	24-25,5	25-27	30-32	29,5-31	33-34	35,5-37	38,5-40
Sound pressure level*	L	dB(A)	20-22	21-22	27-29	26-29	31-32,5	33,5-35	34-35,5
Power consumption**	EH	(W)	68-78	123-138	165-182	214-238	262-290	360-383	532-569
Power consumption**	H	(W)	59-67	99-111	135-145	176-192	240-258	339-353	494-538
Power consumption**	L	(W)	42-47	52-59	82-88	128-142	178-191	286-300	353-370
External static pressure**	EH	Pa	82-102	80-98	114-125	134-150	91-107	142-158	130-150
External static pressure**	H	Pa	52-78	34-65	56-83	69-99	58-82	102-132	97-122
External static pressure**	L	Pa	47-64	28-40	65-94	62-92	61-96	76-112	84-127
Dimensions (HxWxD)		mm	290x900x900	290x900x900	290x900x900	350x1140x1140	350x1140x1140	400x1189x1189	400x1189x1189
Weight		kg	36	36	38	53	53	70	70
Duct diameter		mm	100	150	150	200	200	250	250
Power supply		V-ph-Hz	220-240 - 1 - 50						
Operating range	Around unit		-100°C ÷ +40°C, RH ≤ 80%						
	Outdoor Air (OA)		-150°C ÷ +43°C, RH ≤ 80%						
	Return Air (RA)		+50°C ÷ +400°C, RH ≤ 80%						

VN-M_HE		Physical data		
Model		VN-M1500HE	VN-M2000HE	
Air volume	(EH/H/L)	m³/h	1500 /1500 /1200	2000 /2000 /1400
Temp. exchange efficiency	(EH/H/L)	%	76,5 /76,5 /79	73,5 /73,5 /77,5
Enthalpy exchange efficiency (Heating)	(EH/H/L)	%	71 /71 /73,5	68,5 /68,5 /72
Enthalpy exchange efficiency (Cooling)	(EH/H/L)	%	64 /64 /67	60,5 /60,5 /65,5
Sound pressure level*	EH	dB(A)	38-39	41-42,5
Sound pressure level**	H	dB(A)	36,5-37,5	39,5-41
Sound pressure level**	L	dB(A)	36-37,5	37-38
Power consumption**	EH	(W)	751-786	1084-1154
Power consumption**	H	(W)	708-784	1032-1080
Power consumption**	L	(W)	570-607	702-742
External static pressure**	EH	Pa	135-159	124-143
External static pressure**	H	Pa	103-129	92-116
External static pressure**	L	Pa	112-142	110-143
Dimensions (HxWxD)	mm	810x1189x1189	810x1189x1189	
Weight	kg	143	143	
Duct diameter	mm	250	250	
Power supply	V-ph-Hz			
Operating range	Around unit	-100°C ÷ +40°C, RH ≤80%		
	Outdoor Air (OA)	-150°C ÷ +43°C, RH ≤80%		
	Return Air (RA)	+50°C ÷ +400°C, RH ≤80%		

* Sound pressure level is measured 1.5m below the center of the unit.
** Sound power level, power consumption and external static pressure values at 220 - 240 V.

EH/H/L = extra-high/high/low

MMD-VN_HEXE			Physical data		
Model			MMD-VN502HEXE	MMD-VN802HEXE	MMD-VN1002HEXE
Fresh air conditioning capacity	CO	kW	1,3	2,06	2,32
	HP	kW	2,33	3,61	4,32
Air volume	(EH/H/L)	m³/h	500/500/440	800/800/640	950/950/820
Temperature exchange efficiency	(EH/H/L)	%	70,5/70,5/71,5	70/70/72,5	65,5/65,5/67,5
Enthalpy exchange efficiency (Heating)	(EH/H/L)	%	68,5/68,5/69	70/70/73	66/66/68,5
Enthalpy exchange efficiency (Cooling)	(EH/H/L)	%	56,5/56,5/57,5	56/56/59	52/52/54,5
Sound pressure level***	(EH/H/L)	dB(A)	37,5/36,5/34,5	41/40/38	43/42/40
Power consumption***	(EH/H/L)	W	300/280/235	505/465/335	550/545/485
External static pressure***	(EH/H/L)	Pa	120/105/115	120/100/105	135/120/105
Heat exchanger			Finned tube - R410A	Finned tube - R410A	Finned tube - R410A
Suction line diameter			3/8"	1/2"	1/2"
Liquid line diameter			1/4"	1/4"	1/4"
Drain port diameter	mm		25	25	25
Dimensions (HxWxD)	mm		430x1140x1690	430x1189x1739	430x1189x1739
Weight	kg		84	100	101
Duct diameter	indoor side	mm	200	250	250
Power supply		V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50
	Around unit		-10°C ÷ +40°C, RH ≤80%	-10°C ÷ +40°C, RH ≤80%	-10°C ÷ +40°C, RH ≤80%
	Outdoor Air (OA)		-15°C ÷ +43°C, RH ≤80%	-15°C ÷ +43°C, RH ≤80%	-15°C ÷ +43°C, RH ≤80%
	Return Air (RA)		+5°C ÷ +40°C, RH ≤80%	+5°C ÷ +40°C, RH ≤80%	+5°C ÷ +40°C, RH ≤80%

* Sound pressure level is measured 1.5m below the center of the unit.
** Humidification available during heating operation.
*** The water quality of the humidifiers supply water should meet public waterworks standards, and have a hardness less than 100mg/l. If the supply water does not meet these standards, use a deionizer.
*** Sound pressure level, power consumption and external static pressure values at 230V.

Cooling and heating capacities are based on the following conditions:
Cooling capacities are based on: indoor temperature: 27°CDB/19°CWB, Outdoor temperature: 35°CDB
Heating capacities are based on: indoor temperature: 20°CDB, Outdoor temperature: 7°CDB/6°CWB.

EH/H/L = extra-high/high/low
CO = cooling mode
HP = heating mode

MMD-VNK_HEXE			Physical data		
Model			MMD-VNK502HEXE	MMD-VNK802HEXE	MMD-VNK1002HEXE
Fresh air conditioning capacity	CO	kW	1,3	2,06	2,32
	HP	kW	2,33	3,61	4,32
Air volume	(EH/H/L)	m³/h	500/500/440	800/800/640	950/950/820
Temperature exchange efficiency	(EH/H/L)	%	70,5/70,5/71,5	70/70/72,5	65,5/65,5/67,5
Enthalpy exchange efficiency (Heating)	(EH/H/L)	%	68,5/68,5/69	70/70/73	66/66/68,5
Enthalpy exchange efficiency (Cooling)	(EH/H/L)	%	56,5/56,5/57,5	56/56/59	52/52/54,5
Sound pressure level***	(EH/H/L)	dB(A)	37,5/36,5/34,5	41/40/38	43/42/40
Power consumption***	(EH/H/L)	W	300/280/235	505/465/335	550/545/485
External static pressure***	(EH/H/L)	Pa	120/105/115	120/100/105	135/120/105
Heat exchanger			Finned tube - R410A	Finned tube - R410A	Finned tube - R410A
Suction line diameter			3/8"	1/2"	1/2"
Liquid line diameter			1/4"	1/4"	1/4"
Drain port diameter	mm		25	25	25
Humidifier** technology			Permeable film humidifier	Permeable film humidifier	Permeable film humidifier
Water pressure	Mpa		0,02 to 0,49	0,02 to 0,49	0,02 to 0,49
Water flow	kg/h		3	5	6
Water supply			1/2"	1/2"	1/2"
Dimensions (HxWxD)	mm		430x1140x1690	430x1189x1739	430x1189x1739
Weight	kg		84	100	101
Duct diameter	indoor side	mm	200	250	250
Power supply		V-ph-Hz	220/240-1-50	220/240-1-50	220/240-1-50
	Around unit		-10°C ÷ +40°C, RH =80%	-10°C ÷ +40°C, RH ≤80%	-10°C ÷ +40°C, RH ≤80%
	Outdoor Air (OA)		-15°C ÷ +43°C, RH ≤80%	-15°C ÷ +43°C, RH ≤80%	-15°C ÷ +43°C, RH ≤80%
	Return Air (RA)		+5°C ÷ +40°C, RH ≤80%	+5°C ÷ +40°C, RH ≤80%	+5°C ÷ +40°C, RH =80%

* Sound pressure level is measured 1.5m below the center of the unit.
** Humidification available during heating operation.
*** The water quality of the humidifiers supply water should meet public waterworks standards, and have a hardness less than 100mg/l. If the supply water does not meet these standards, use a deionizer.
*** Sound pressure level, power consumption and external static pressure values at 230 V.

Cooling and heating capacities are based on the following conditions:
Cooling capacities are based on: indoor temperature: 27°CDB/19°CWB, Outdoor temperature: 35°CDB
Heating capacities are based on: indoor temperature: 20°CDB, Outdoor temperature: 7°CDB/6°CWB.

EH/H/L = extra-high/high/low
CO = cooling mode
HP = heating mode

MMD - V N

AIR-TO-AIR HEAT EXCHANGER WITH DX COIL

MMD - V N K

AIR-TO-AIR HEAT EXCHANGER WITH DX COIL AND HUMIDIFIER



INDOOR UNITS

MMD-VN502HEXE
MMD-VN802HEXE
MMD-VN1002HEXE



OUTDOOR UNITS

SMMS-i



CONTROLS

NRC-01HE



INDOOR UNITS

MMD-VNK502HEXE
MMD-VNK802HEXE
MMD-VNK1002HEXE



OUTDOOR UNITS

SMMS-i

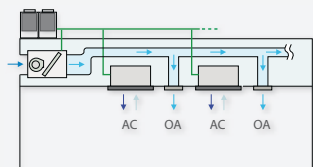


CONTROLS

NRC-01HE



Working principle



A fan takes the outside air, pass it through the filter, the coil and then enter in the ductwork to be distributed to different parts of the building.

This Toshiba indoor unit so called “fresh air intake” is frequently adopted to handle the fresh air to a certain condition before the fresh air will be distributed into the building.

It's the ideal solution for schools, hospitals, offices and all the buildings that require fresh air ventilation (in limited quantity), without any further exclusive system, where there is insufficient outdoor space to install a large air handling unit or whenever zoning of a building with different independent small tenant areas are clearly defined.

External static pressure available up to 230 Pa.

Pre-heat, pre-cool functions (discharge temperature setting range from 16°C to 27°C).

TCC-Link control connection.

Standard and High-performance filters available as an option.

Compatible with DX coil.

MMD-AP_HFE		Performance data		
Indoor unit	MMD-	AP0481HFE	AP0721HFE	AP0961HFE
Cooling capacity	kW	14,0	22,4	28,0
Heating capacity	kW	8,9	13,9	17,4
Power input	kW	0,28	0,45	0,52
Power factor	%	85	78	83
Running current	A	1,43	2,52	2,73
Starting current	A	3,5	7,0	7,0

MMD-AP_HFE		Physical data Indoor units		
Indoor unit	MMD-	AP0481HFE	AP0721HFE	AP0961HFE
Air Flow (h)	m³/h	1080	1680	2100
Sound pressure level (h/m/l)	dB(A)	45/43/41	46/45/44	46/45/44
Sound power level (h/m/l)	dB(A)	60/58/56	61/60/59	61/60/59
Dimensions (HxWxD)	mm	492x892x1262	492x1392x1262	492x1392x1262
Weight	kg	93	144	144
Connecting pipe, gas		5/8"	7/8"	7/8"
Connecting pipe, liquid		3/8"	1/2"	1/2"
Drain port diameter	mm	25	25	25
Operating range - Cooling	°C	5÷43	5÷43	5÷43
Operating range - Heating	°C	-5÷43	-5÷43	-5÷43
Power supply	V-ph-Hz	220/240-1-50		
Air filter		Option or field supply		
External static pressure (l/m/h)	Pa	170(Min)/210 (Factory setting)/230(Max)	140(Min)/165 (Factory setting)/180(Max)	160(Min)/190 (Factory setting)/205(Max)

MMD-APHFE

FRESH AIR INTAKE



INDOOR UNITS

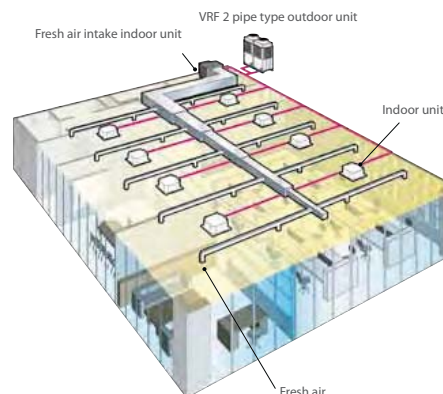
MMD-AP0481HFE
MMD-AP0721HFE
MMD-AP0961HFE



OUTDOOR UNITS

SMMS-i

Matching with all indoor units range





Controller

Sick Building Syndrome

Fresh air intake is now widely recommended to improve working environments, and avoid "Sick Building Syndrome". Trends in European and local legislations are moving towards recommending a minimum limits on fresh air intake per person per hour.

Currently, fresh air intake is normally achieved using be-spoked stand-alone air handling units. These third party AHU's pre-condition the ambient fresh air to roughly match that of the conditioned space.

The Direct Expansion Coil Interface (DX) enables the connection of a TOSHIBA Outdoor unit to a third party Air Handling Unit (AHU) for fresh air intake.

It is composed of two parts: Controller, Valve Kit (Three sizes)

Control achieved using a standard Toshiba remote controller (RBC-AMT32E).

Compatible with Toshiba control accessories.

External ON/OFF input.

Safety cut out input to detect fan failure.

Air temperature control achieved using TA sensor positioned in return air stream (set with remote controller).

MM-DXC	Performance data							
DX Controller unit	MM-	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010
DX valve unit	MM-	DXV080	DXV080	DXV080	DXV140	DXV140	DXV280	DXV280
Cooling capacity	kW	5,6	7,1	8,0	11,2	14,0	22,4	28,0
Heating capacity	kW	6,3	8,0	9,0	12,5	16,0	25,0	31,5
Power code	HP	2	2,5	3,0	4,0	5,0	8,0	10,0

MM-DXC	Physical data Indoor units							
DX Controller unit	MM-	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010	DXC010
Minimum Air Flow rate	m ³ /h	720	1060	1060	1280	1680	2880	3360
Maximum Air Flow rate	m ³ /h	1080	1580	1580	1920	2520	4320	5040
Dimensions (HxWxD)	mm	400x300x150	400x300x150	400x300x150	400x300x150	400x300x150	400x300x150	400x300x150
Weight	kg	12	12	12	12	12	12	12
Operating range - Cooling coil "Air on" temp	°C	15°CWB~24°CWB	15°CWB~24°CWB	15°CWB~24°CWB	15°CWB~24°CWB	15°CWB~24°CWB	15°CWB~24°CWB	15°CWB~24°CWB
Operating range - Heating coil "Air on" temp	°C	15°CDB~28°CDB	15°CDB~28°CDB	15°CDB~28°CDB	15°CDB~28°CDB	15°CDB~28°CDB	15°CDB~28°CDB	15°CDB~28°CDB
Power supply	V-ph-Hz	220/240-1-50						

CONNECTION KIT

TO AIR HANDLING UNIT



INDOOR UNITS

MM-DXC010

Valve

MM-DXV080
MM-DXV140
MM-DXV280



OUTDOOR UNITS

SMMS-i

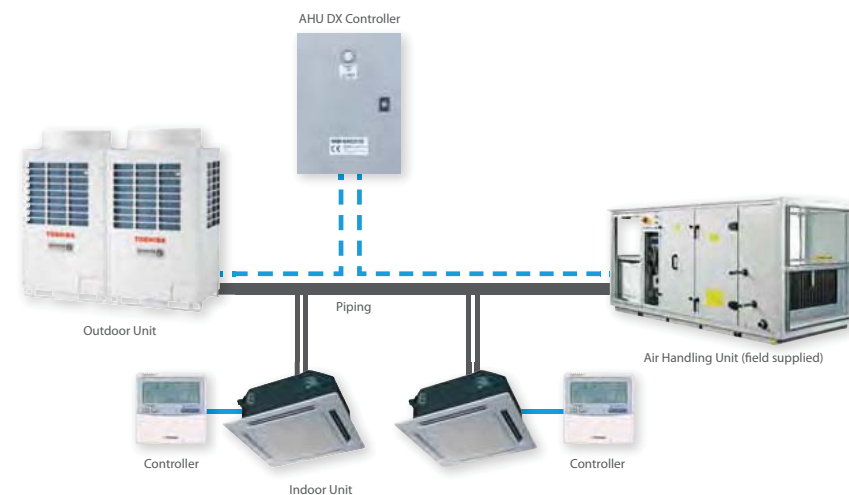


SHRM



MiniSMMS

cannot be connected to MM-DXV280



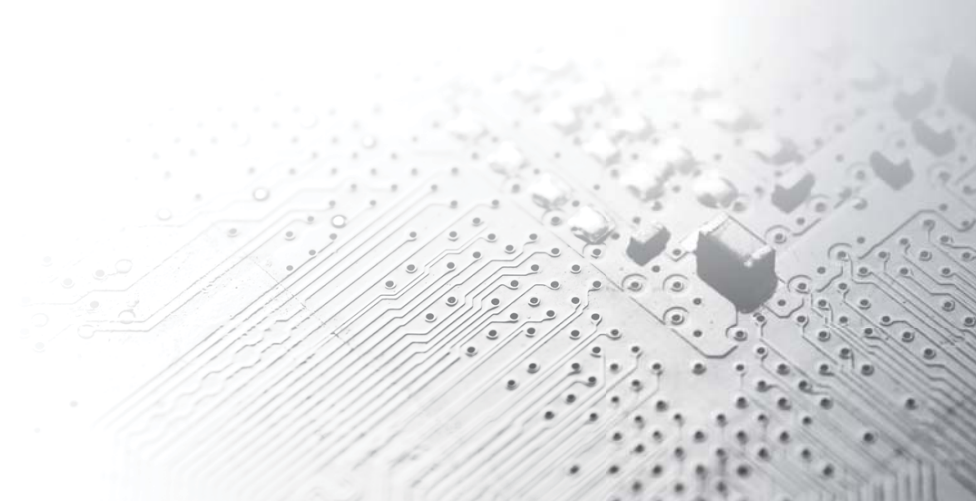
TOSHIBA offer different control solution to meet users and designer expectations.

From local individual control and settings to computer based TCC link network, all indoor units can be programmed and set to suit the operational needs.

Remote control systems offer a wide range of features including schedule timers, diagnostic functions, power meter, input output signal only to name a few.

Toshiba VRF units are compatible with the industry standard and are connectable to the major Building Management software systems in use.

TCC-link is the Toshiba's dedicated Central Control Network which can be used with the VRF units and the Light commercial units either directly or by means by specially designed network adapters.



Controls

THE CONTROL RANGE

REGULATE AND MONITOR THE
SYSTEM OPERATIONS

TCC
LINK

TOSHIBA offer a number of Local Control products that can be used to control a single Indoor Unit, or group of up to 8 Indoor Units, from a position adjacent to that Indoor Unit or group.

It is possible to install these Local Controllers up to 500m* from the connected Indoor Unit which allows greater flexibility when designing the installation. This also provides the opportunity to install the Local Controller in an area removed from the connected Indoor Unit, for example, common use areas where the Indoor Unit operation should not be changed by local users but may need to be monitored by a site engineer from a Control Room.

There are two different types of Local Remote Controller currently available from Toshiba, these are:
The Wired Remote Controller which is the standard local control device suitable for most applications, and the Wireless Remote Controller which consists of a universal Handset that can be purchased with a choice of 4 different Wireless Receiver Units that are specifically designed to suit different Indoor Unit model types.

The Local network

There are three different methods that can be used to connect the Local Control Device to the Indoor Unit, or group of Indoor Units

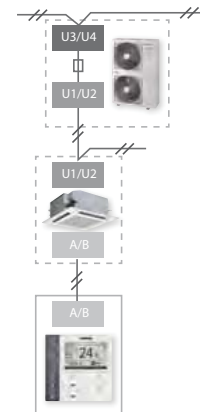
1 to 1 connection - This method is for the connection of a single Wired Remote Controller, or Wireless Receiver Unit, to a single Indoor Unit.

Group connection - This method enables the connection of up to 8 Indoor Units to a single Wired Remote Controller, or Wireless Receiver Unit. In this configuration, up to 8 Indoor Units can be controlled simultaneously (all Indoor Units follow the same setting parameters) from a single Local Control Device.

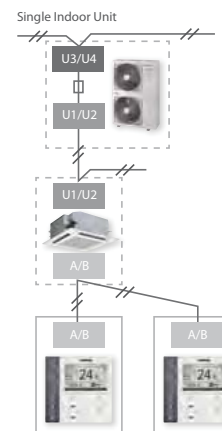
Multiple controller connection - This method enables the connection of up to 2 Local Control Devices (Wireless Receiver Unit or Wired Controller) to a single Indoor Unit, or a group of up to 8 Indoor Units. In this configuration, Main/Sub settings must be configured for each of the connected Local Control Devices.



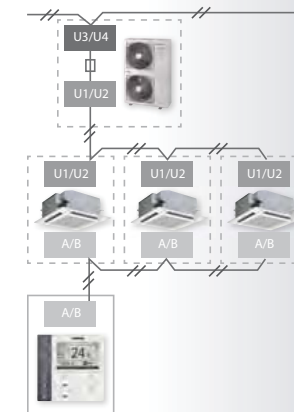
1 To 1 connection



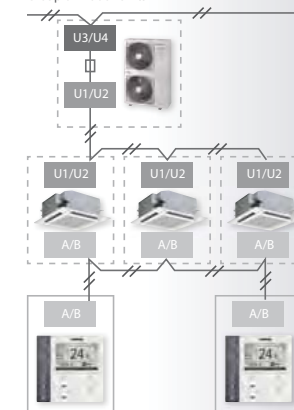
Multiple controller connection



Group connection



Group of Indoor Units



Controls

LOCAL CONTROLS

INDIVIDUAL SETTINGS



IR Remote Control

The wireless controller is available with a series of receiver unit designs. These receivers are specially designed to fit into different Indoor Unit models to provide a high standard of finish.

The wireless controller features an easy to use and compact button layout, standard control buttons immediately available and display screen to show all the main operating parameters.

Hi power mode

The high power operation mode automatically controls room temperature, airflow and operation mode so that the room is quickly cooled in summer and warmed in winter.

Quiet mode

The QUIET mode provides quiet operating status by automatically setting the fan speed to the lowest speed. It can be activated by a simple touch of the dedicated button and during operation an icon appear on the display.

Comfort sleep mode

This function is an OFF timer operation with automatic temperature and fan speed adjustment to gradually decrease the temperature during the night. It is possible the selection of 1, 3, 5 or 9 hours for the OFF timer operation

WIRELESS REMOTE CONTROLLER



Wall or ceiling mountable receiver.
To be used with: all the indoor units, more specifically targeted to ducted units.

TCB-AX32E2

STAND ALONE RECEIVER



Mountable on the corner pocket of the cassette unit.
To be used with: new 4-Way cassette units.
W model is for white cassette panels
WS model is for white/grey cassette panels

RBC-AX32U(W)-E
RBC-AX32U(WS)-E

PANEL CORNER RECEIVER



Receiver mountable in the frame of the front panel.
To be used with: Ceiling units, 1-way cassette units.

RBC-AX32CE2

FRONT PANEL RECEIVER



Receiver mountable in the frame of the front panel.
To be used with: new 2-way cassette units.

RBC-AX23UW(W)-E

WIRELESS CONTROL KIT





Lite-Vision plus Remote Controller

This is the new local remote controller with a built in 7-Day Timer-featuring a new multi-language LCD display with backlight, Energy Saving Options and a Return back function.

Possibility to set and display the room name to easily set-up and monitor the working parameters.

New Modern and desirable controller design with menu driven display.

Save mode by schedule timer to optimize energy consumption.

Room temperature display always available.

Two "Hot Keys" (F1, F2) for easy operation of air conditioner functions.

Easy to read layout including display of Indoor Unit Model Name and serial number.

New temperature display that can show the Indoor Unit settings in increments of 0.5°C.

Built-in backup power. Settings are kept in memories up to 48 hours in case of power failure.

Remote TA sensor available in controller.

Can be connected to a single Indoor Unit or a group of up to 8 Indoor Units.

RMC-AMS51E-EN
RMC-AMS51E-ES

WIRED REMOTE CONTROLLER



RBC-AMT32E

CLASSIC CONTROL

The standard remote controller can control an individual indoor unit or a group of 8 indoor units. The remote control allows the operating parameters to be set for the indoor unit. It also allows faults to be displayed and unit configurations to be set up. The weekly timer can be fitted to this remote control.



RBC-AS21E2

CLASSIC CONTROL

This is a simplified version of the standard wired remote controller and can be connected to a single Indoor Unit, or group of up to 8 Indoor Units. The reduced function display and simplified button layout make this controller the ideal solution for hotel and office applications.



RBC-AMS41E

REMOTE CONTROLLER WITH WEEKLY TIMER
(7-DAY TIMER FUNCTION)

This controller is based on the standard wired controller but has the additional control provided by a built-in 7-day timer function making it an ideal solution for any light commercial or VRF application that requires schedule timer operations or Night set-back control.

The 7-Day timer function can set multiple Indoor Unit parameters and can control:
Operation ON/OFF, Operation Mode, Set Temperature, Energy Saving Function*, Frost Protection Function*, button restrictions. Restriction on button operation.

* Specific Unit Combinations only..



TCB-EXS21TLE

SCHEDULE TIMER

The Schedule Timer is an advanced control device that can be used to control Indoor Unit parameters based on a timed schedule, and has two possible modes of operation to choose from, these are:

Weekly Timer Mode

The timer is connected to an Indoor Unit via a local or central remote controller.

Schedule Timer Mode

The 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.

Toshiba offer a number of different central control solutions that can be used to control a large number of Indoor Units from a central location, such as a Reception Area, Engineering room or Office Space.

These Control devices are connected to the Air Conditioner side using Toshiba's dedicated Central Control Network, the TCC-Link, which can be used to directly connect SMMS, MiNi-SMMS, S-HRM, and SMMS-i equipment.

The TCC-Link also offers connection of Light Commercial split systems with the use of a specially designed low cost network adaptor (TCB-PCNT30TLE2)*.

* Excludes DI Flexi type Indoor Unit.

The Central Control network

The TCC-Link Central Control Network is used for communications from the Outdoor Unit to Indoor Units in VRF systems, and for connection of TOSHIBA's Central Control devices to the Air Conditioner product.

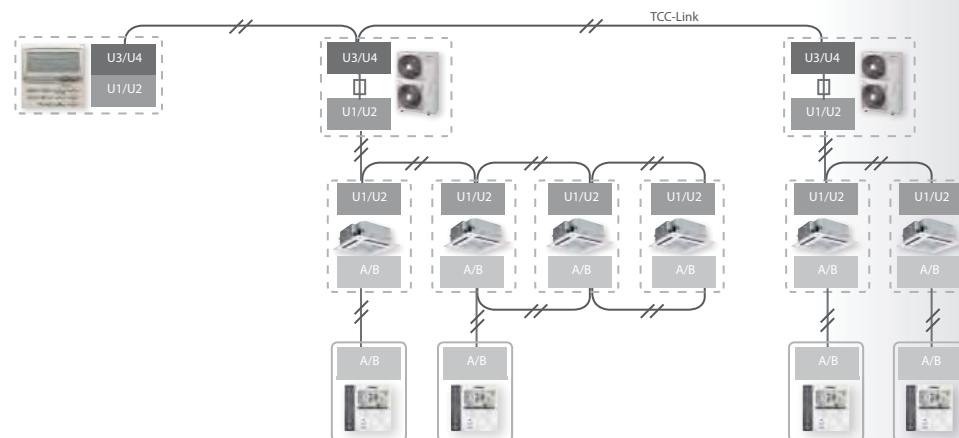
U1/U2 connection

This is used for Outdoor to Indoor Unit connection.

U3/U4 connection

This is used for Outdoor Unit to Outdoor Unit connection when multiple refrigerant circuits are connected to the same TCC-Link Network.

NOTE: Increased Installation Flexibility is achieved as the TCC-Link allows Central Control Devices to be connected to either the Indoor Unit side (U1/U2) or the Outdoor Unit side (U3/U4).



STANDARD CENTRAL CONTROL

ADVANCED CENTRAL CONTROL

Controls

CENTRAL CONTROL

GROUP SETTINGS



The TCB-SC642TLE2 64-Way central controller is TOSHIBA's standard central control solution and can be connected to up to 64 Indoor Units via the TCC-Link Central Control network. Indoor Units can be controlled in terms of: Individual Indoor Unit/Group, all Units in a Zone, and all Units connected. Additional features include 4-levels of remote controller permit/prohibit functions and the option of connecting an additional Schedule Timer.

TCB-SC642TLE2

CENTRAL CONTROLLER



The TCB-CC163TLE2 is a 16-Way ON/OFF controller for use with VRF, DI and SDI equipment (excludes DI Flexi Type). It is a simplified Central Control device that can be connected to up to 16 Indoor Units via the TCC-Link network to provide simple "1 touch" ON/OFF control and for all connected Indoor Units.

TCB-CC163TLE2

ON-OFF CONTROLLER



This Controller is an advanced Central Control device that can be connected to up to 128 Indoor Units (2 x 64 IDU TCC-Link Connections). The High-Spec model has the same hardware control function as the standard version, but also 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. This controller is ideal where advanced control, Energy Monitoring, advanced scheduling or access to individual air Conditioners is required from networked computer systems.

BMS-CM1280TLE

COMPLIANT MANAGER



The Smart Manager has the same hardware Control Function as the Compliant Manager, but also has the ability of control from a Local Area Network and, with the use of an additional Interface, is capable of Energy Monitoring and Report Creation Functions.

BMS-SM1280HTLE

STANDARD SMART MANAGER



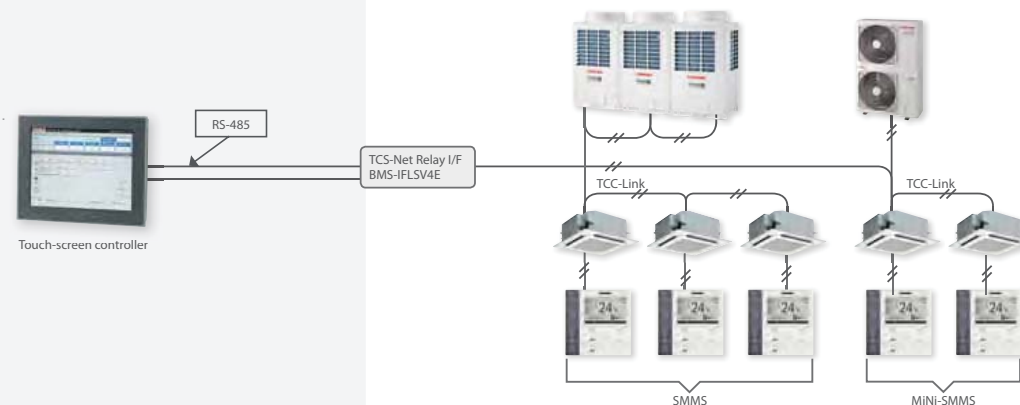
The Touch Screen Controller can be connected to 64 or 512 Indoor Units depending on model and offers Energy Monitoring* and schedule program functions.

This controller is ideally suited to any small or large installation where Energy monitoring functions are required, or where a professional and highly presentable finish is required.

It can control each of the individual indoor units and is capable of providing information from the indoor unit settings and malfunction check codes.

The Touch Screen is connected to the air conditioner control network directly by relay interfaces.

* Available with BMSTP***PWE Models only and requires an additional relay Interface.



B M S - T P

TOUCH SCREEN CONTROLLER



TOUCH SCREEN

BMS-TP0641ACE
BMS-TP5121ACE

BMS-TP0641PWE
BMS-TP5121PWE



The Smart Manager has the same hardware Control Function as the BMS-CM1280TLE Controller, but also has the ability of control from a Local Area Network and, with the use of an additional Interface, is capable of Energy Monitoring and Report Creation Functions.

This controller is ideal where advanced control, Energy Monitoring, advanced scheduling or access to individual Air Conditioners is required from networked computer systems.

Same Hardware control features as the BMS-CM1280TLE Controller.

Can be connected to a single PC or LAN to allow advanced control functions from a Multi-Language Web Browser Display Screen.*

Energy Monitoring and report creation functions available.

Advanced operation & master schedules can be set on a calendar.

Additional Digital I/O Device Available.

Thin profile controller and separate power supply unit enables easy installation.

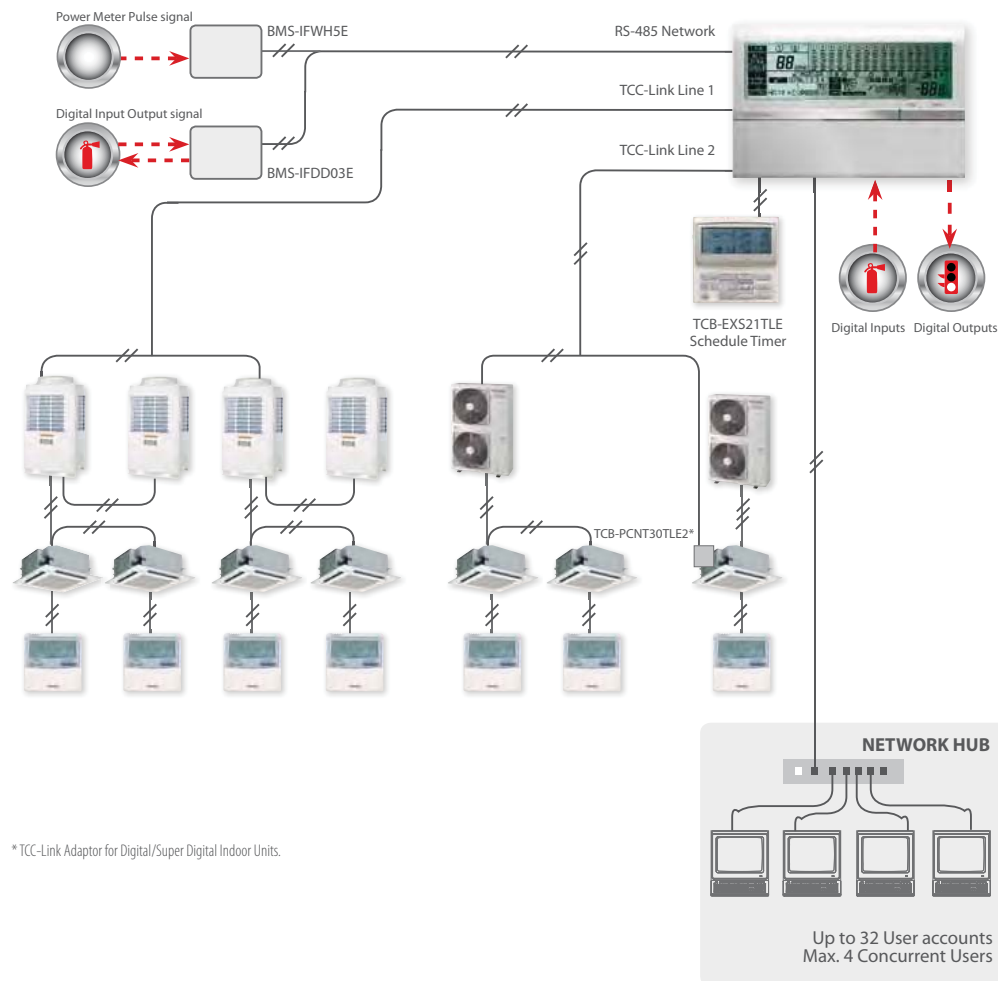


Data analyzer

On a connected local supplied personal computer is possible to view data analysis and energy monitoring.

Advanced operations and settings can be managed with this tool: Set temperature restrictions, save operation modes, peak cut controls on condensing unit.

A set of graphs and detailed reports will help to easily monitor the performance of the system.



*TCC-Link Adaptor for Digital/Super Digital Indoor Units.

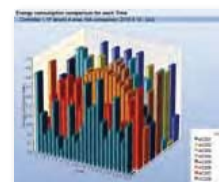
SMART MANAGER

WEB BROWSER CONTROL SOFTWARE

BMS-SM1280ETLE



Energy consumption history (days)



Energy consumption comparison



Alarm list



Energy consumption history (hours)

Toshiba offer a range of control Interfaces that can be used to Integrate the control of our Air Conditioner products in to local Building Management Systems.

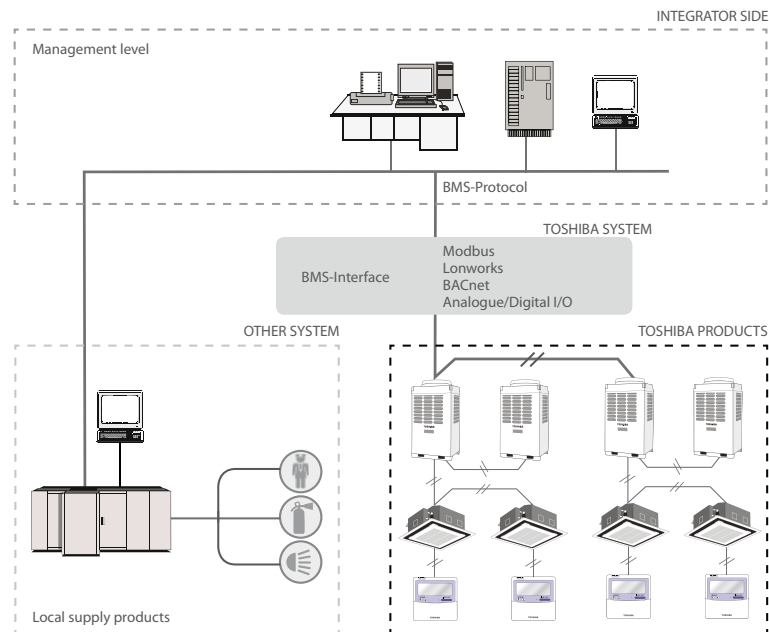
Our Building Management controls currently offer easy integration with the following protocols:

- Lonworks ®.
- Modbus.
- BACnet ®.
- Open Ended system using Digital Analogue Inputs & Outputs.

Building Management Systems

A Building Management System (BMS) is a computer based control system that is installed in buildings to control and monitor mechanical and electrical equipment, such as ventilation, lighting, power systems, fire systems and security for that building.

The core function of most BMS systems is to manage the environment within the building and can be used to control heating and cooling equipment and manage the systems that distribute treated air throughout the building.



BMS interface products are not compatible with each other across protocols, only one protocol can be used per installation.



BACNET® GATEWAY



LONWORKS® INTERFACE



ANALOGUE INTERFACE

Controls

CENTRAL CONTROLS

BUILDING MANAGEMENT
SYSTEMS



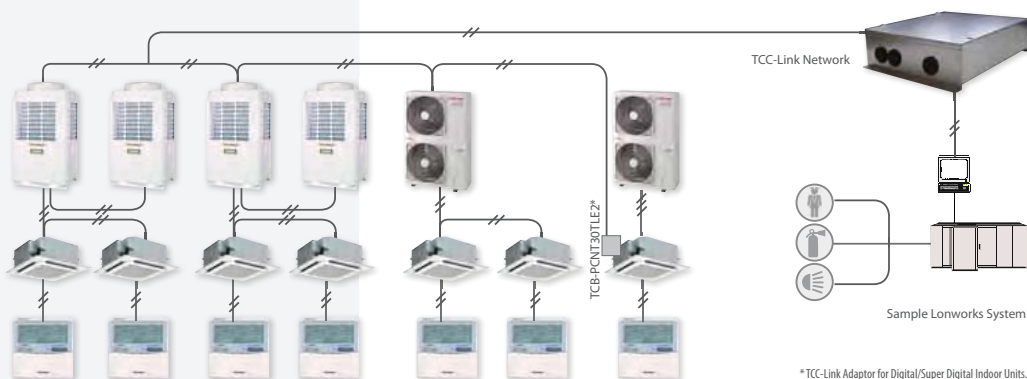
TCB-IFLN642TLE

The Toshiba Lonworks interface 100% LonMark Compliant and is designed to connect the Toshiba Air Conditioning system to a Lonworks Building Management Control System.

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 depending on preference.

The Interface is then connected to the Lonworks Building Management Control system where it provides 28 Network variables for the sending of Control Commands and receiving unit information.

Multiple Toshiba Lonworks Interfaces can be connected to a single TCC-Link Network and addressed using simple switches provided on the device. This is to enable ease of installation, especially in buildings with separate areas where 1 Interface may be used for each area/floor.



TCB-IFLN642TLE

LONWORKS INTERFACE

Lonworks is a control system platform built on the LonTalk Communications Protocol created by the Echelon Corporation, and is used for the networking of equipment over media such as Twisted Pair, Power lines, fibre optics and Radio Frequency. The Lonworks platform has been adopted as the basis for product and service offers in many different industries including the Building industry where it is widely used for control of Lighting and HVAC systems.



TCB-IFMB640TLE

The Toshiba Modbus® interface is designed to connect the Toshiba Air Conditioning system to a Modbus Building Management System.

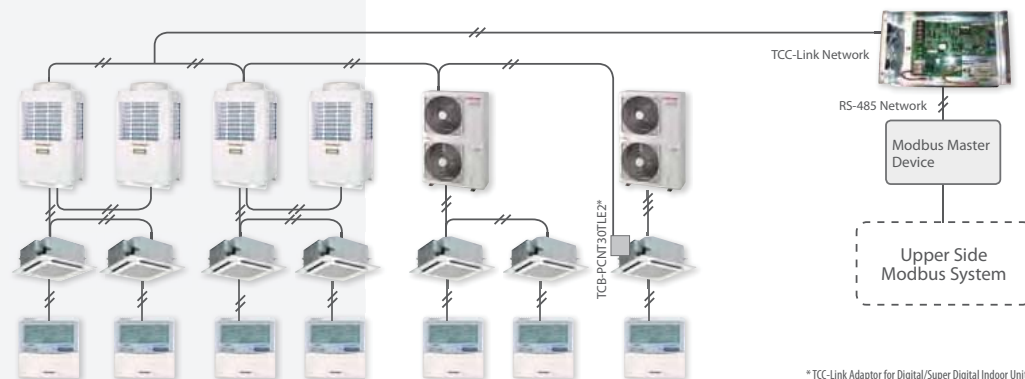
The Toshiba Interface connects directly to the Toshiba TCC-Link Central Control Network on the Air Conditioner and can be wired on the Indoor or outdoor side depending on preference.

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 and allows control of all connected Toshiba Air Conditioner equipment from that BMS control system.

Multiple Toshiba Modbus Interfaces can be connected to a single TCC-Link Network and addressed using simple switches provided on the device.

This is to enable ease of installation, especially in buildings with separate areas where 1 Interface may be used for each area/floor.



TCB-IFMB640TLE

MODBUS INTERFACE

Modbus is a serial Communications protocol that was first published in 1979 for use with programmable logic controllers, and has now become the most commonly available means of connecting industrial electronic devices to a computer control system. There are many different versions of Modbus currently used in building management systems including Modbus RTU, Modbus ASCII and Modbus TCP.

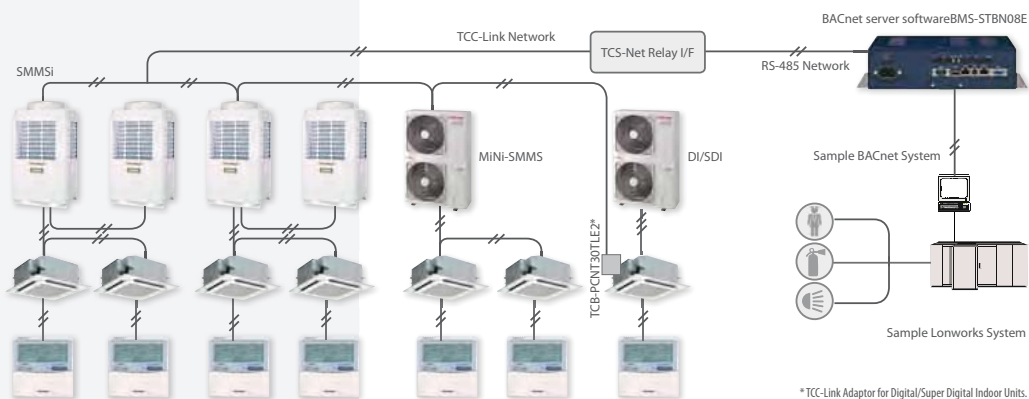


BMS-LSV6E

A Building Management System (BMS) is a computer based control system that is installed in buildings to control and monitor mechanical and electrical equipment, such as Ventilation, lighting, power systems, fire systems and security for that building.

The core function of most BMS systems is to manage the environment within the building and can be used to control heating and cooling equipment and manage the systems that distribute the treated air throughout the building.

The Toshiba BACnet® control system consists the BMS-LSV6E Intelligent server and the BMS-STBN08E BACnet server software, and can be connected to the TCC-Link Central Control Network via a TCS-Net Relay Interface to enable control of up to 128 Indoor Units from a BACnet® building management system.



*TCC-Link Adaptor for Digital/Super Digital Indoor Units.

BMS-LSV6E

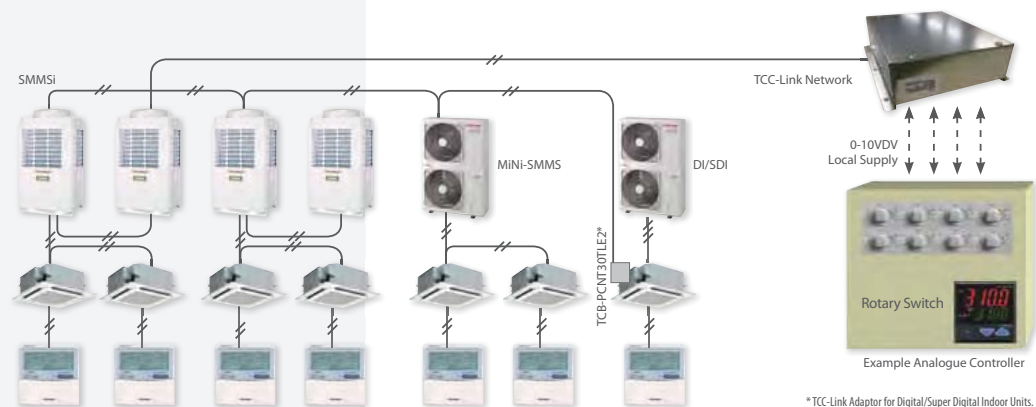
BACNET GATEWAY



TCB-IFCB640TLE

That Analogue Relay Interface is a device that can be connected directly to the TCC-Link Central Control network to provide Analogue & Digital Inputs & Outputs for control over Toshiba Air Conditioner products from non-Toshiba Control systems.

This Interface is ideal for Integrating the Toshiba Air Conditioner product into basic or PLC BMS control systems, such as may be found in older controls systems.



*TCC-Link Adaptor for Digital/Super Digital Indoor Units.

TCB-IFCB640TLE

ANALOGUE INTERFACE

BACnet® was designed to allow communication of building automation and control systems for applications such as heating, ventilation air-conditioning control, lighting control, access control, and fire detection systems and their associated equipment. The BACnet® protocol provides mechanisms for computerized building automation devices to exchange information, regardless of the particular building service they perform.

Please note that Lonworks® and BACnet® are registered trademarks, however these symbols have been omitted in the text.

The Interactive Intelligence software tool is a Building Management control software designed for use on the Lonworks Network protocol and can not only be used to control Toshiba Air Conditioner systems, but also any building systems (i.e. Lighting, security, etc. . .)

Can connect up to 1024 Indoor Units.

3 levels of control schematic automatically created during commissioning.

Advanced scheduling and alarm retransmission via Email.

Remote access available with RBC-1K1-PE Add-On.

Schematics can be fully customised to suit the site (building schematics from AutoCAD can be used).

Energy Monitoring and report creation functions available.

Can also be used to integrate other site equipment using RBC-DI1-PE Digital I/O Device.



RBC-WP1-PE

INTERACTIVE INTELLIGENCE

The TCB-IFGSM1E Interface is a device that allows control of the Toshiba Air Conditioner Equipment from a remote location using standard GSM (Global system for Mobile communications) Mobile phone SMS text messages.



TCB-IFGSM1E

GSM INTERFACE

Device connects to CN61 on DI/SDI & VRF Indoor Units (excludes DI Flexi Type).

Daiseikai Residential & DI Flexi units can be connected via HA connector on Indoor Unit.

Control Functions vary depending on HA/CN61 Connection used.

The General Purpose Relay Interface is a device that can be connected directly to the TCC-Link Central Control Network and addressed on the TCC-Link Network in order to provide control of non-Toshiba equipment from a Toshiba control system, and control of the Toshiba Air Conditioner from digital & Analogue Inputs.

TCB-IFCG11LE is given a Central Control address (similar to an Indoor Unit) and can then be controlled from a central control device.

Only On/Off Input/Output available from Central Controllers.

Full Control Available From Modbus Interface Only

Can be used to allow On/Off control and monitoring of Residential Indoor Units from TCC-Link Central Control devices (selected models only).



TCB-IFCG11LE

GENERAL PURPOSE RELAY INTERFACE

Controls

Model number	Reference	Description	Used with
RBC-AMT32E	Wired Remote Controller	Main wired remote controller	VRF, DI, SDI indoor units (except DI flexi and VRF Air-to-air heat exchangers with DX coil)
RBC-AS21E2	SimplifiedWired Remote Controller	As above but designed for hotel and domestic applications	VRF, DI, SDI indoor units (except DI flexi and VRF Air-to-air heat exchangers with DX coil)
NRC-01HE	Wired Remote Controller	Air-to-air heat exchanger remote controller, including with DX coil and humidifiers models	Air-to-air heat exchangers and Air-to-air heat exchangers with DX coil
HWS-AMS11E	Room temperature remote controller	Wired Estia Room temperature remote controller including schedule timer	Estia
TCB-EXS211LE	Schedule timer	Operating in weekly timer mode or schedule timer mode	VRF, DI, SDI indoor units (except DI flexi and VRF Air-to-air heat exchangers with DX coil)
RBC-AMS41E	Remote controller with schedule timer	Indoor unit operation with schedule timer (7-days) allowing to program 8 functions/day + clock display	VRF, DI, SDI indoor units (except DI flexi and VRF Air-to-air heat exchangers with DX coil)
RBC-AMSS1E-EN RBC-AMSS1E-ES	Design remote Controller with schedule timer	Multi-Language LCD display, a built-in 7-Day timer, Energy Saving options and return back function. EN = English, Italian, Polish, Greek, Russian, Turkish. ES = English, Spanish, Portuguese, French, Dutch, German	VRF, DI, SDI indoor units (except DI flexi and VRF Air-to-air heat exchangers with DX coil)
RBC-AX32CE2	Infra-red Remote Kit	Wireless remote controller	All ceiling units and one-way cassettes (SH series)
TCB-AX32E2	Infra-red Remote Kit	Wireless remote controller	All other units (including compact 4-way cassette, except for DI Flexi type)
RBC-AX32UW(W)-E	Wireless remote unit kit	Wireless remote unit kit for 2-way cassette	2-way-cassette MMU-AP***2WH
RBC-AX32UW(W)-E	Wireless remote unit kit	Wireless remote unit kit for 4-way cassette	RAV-SM***4UT-E with RBC-U31PG(W)-E & RBC-U31PGS(W)-E panels
RBC-AX32UW(S)-E	Wireless remote unit kit	Wireless remote unit kit for 4-way cassette	RAV-SM***4UT-E with RBC-U31PGS(W)-E panels
WH-H2UE	Infra-red Remote Controller	Wireless remote unit kit for Flexi units	DI Flexi
TCB-TC21LE2	Remote temperature sensor	Remote temperature sensor for cassette & duct	DI, SDI, VRF
TCB-SC6421LE2	Central Remote Controller	Enables the control of up to 64 individual units	VRF, 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
TCB-CC1631LE2	On / Off Controller	Enables On/Off control (Max. 16 units)	VRF, 1:1 model connection interface required for DI/SDI (Excluding high-wall type)
TCB-IFCB-4E2	Remote location On/Off Control Box	Enables remote location On/Off control	All indoor units (Excluding DI Flexi type)
TCB-IFCBS-PE	Window Switch & Remote on/off	Ensure the indoor unit not operate when outside window is open or for Door Entry systems	RAS, RAV & VRF (RAS units must have HA connection and is not compatible with GDV duct)
TCB-PX100-PE	Enclosure for the Window Switch / Remote On/Off	For use when the Window Switch / Remote On/Off Accessory cannot fit within the AC unit, eg. High Walls	For use with TCB-IFCBS-PE and TCB-PCNT301LE2
BMS-CM1280TLE	Compliant Manager	Enables full control of up to 128 indoor units	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-SM1280HTLE	Smart Manager	Enables full control of up to 128 indoor units with Energy Monitoring and Advanced Control Options.	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-SM1280ETLE	Smart Manager with data analyzer	Enables full control of up to 128 indoor units with Energy Monitoring and Advanced Control Options.	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TP0641ACE	Touch Screen Controller	Enables full control of up to 64 indoor units, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TPS121ACE	Touch Screen Controller	Enables full control of up to 512 indoor units, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TP0641PWE	Touch Screen Controller	Enables full control of up to 64 indoor units with electric billing, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-TPS121PWE	Touch Screen Controller	Enables full control of up to 512 indoor units with electric billing, ML	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
BMS-IFLSV4E	TCS-Net Relay Interface	Relay for integration to TCS-Net	Bacnet gateway, Touch-screens & Web based controller
BMS-IFVHSE	Energy monitoring relay interface	Energy monitoring relay interface	Touch screen controller, Compliant manager, Web based controller, Smart Manager
BMS-IFDO03E2	Digital I/O relay interface	Digital I/O relay interface	Touch screen controller, Compliant manager, Web based controller, Smart Manager
BMS-LSV6E	Intelligent Server	Bacnet Gateway	Requires software BMS-STBN08E & Interface BMS-IFLSV3E
BMS-STBN08E	BACnet	Server Software	Enables integration with BACnet
BMS-STCC06E	Intelligent Server Software	Software package for the intelligent server	
TCB-IFLNG42TLE	Lonworks® Gateway	Allows control of 64 indoor units from a Lonworks based BMS	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
TCB-IFMB640TLE	Modbus® Gateway	Connect the system to a Modbus Building Management System.	network 1:1 model connection interface required for DI/SDI (Excluding high-wall type) DI Flexi type cannot be connected.
TCB-IFCG11LE	General purpose interface	enables control of A/C by the DI/DD and AU/AO	DI, SDI. Combination with TCB-IFCB640TLE
TCB-IFCB640TLE	Analog interface	Control & monitoring up to 64 IU on TCC-link	Combination with TCB-IFCG11LE
TCB-IFGSM1E	GSM control interface	Allows ON/OFF control, operation status monitoring & alarm monitoring of A/C	DI, SDI (using CN61)
NRB-1HE	Remote ON/OFF adapter	Allows ON/OFF control	All Air-to-air heat exchangers
TCB-PCNT301LE2	1:1 model connection interface	Integration with DI, SDI, AHU DX Kits	Allows DI/SDI indoor units & AHU DX kits to be connected to TCC link network (except for DI Flexi type)
TCB-PX30MUE	Terminal box	Terminal box to connect to	TCB-PCNT301LE2
TCB-PCOS1E2	Application control kit	Enables night operation control, demand control, operation monitoring	DI / SDI Compact 4way cassette with All DI 3 outdoor unit, SDI(RAV-SP404/454/564AT-E)
TCB-KB051E	Optional connector kit	Connector kit	SDI 4 outdoor units (Except for SDI (RAV-SP404/454/564AT-E))
TCB-PCM03E	Output Signal PC Board	Boiler operation, alarm, defrost and compressor operation output signal	Estia
TCB-PCIN3E	Input Signal PC Board	Room thermostat, Emergency stop input signal	Estia
TCB-PCDM4E	Application Control PC Board	Power Peak Cut Control	SMMS, SMMS-1, SHRM and Mini-SMMS Outdoor Units
TCB-PCM04E	Application Control PC Board	External Master On/Off Control Board	SMMS, SMMS-1, SHRM and Mini-SMMS Outdoor Units
TCB-PCIN4E	Application Control PC Board	Error/Individual compressor Operation Output Control Board	SMMS, SMMS-1, SHRM and Mini-SMMS Outdoor Units
TCB-KBCN32VEE	Connectors	For CN32	VRF, DI, SDI, except Flexi DI
TCB-KBCN600PE		For CN60	VRF, DI, SDI, except Flexi DI
TCB-KBCN61HAE		For CN61	VRF, DI, SDI, except Flexi DI
TCB-KBCN700AE		For CN70	VRF, DI, SDI, except Flexi DI
TCB-KBCN730EE		For CN73	VRF, DI, SDI, except Flexi DI
TCB-KBCN80EXE		For CN80	VRF, DI, SDI, except Flexi DI

With Toshiba everything is easier

Toshiba's commitment to the development of technological and innovative products with improved performances is complemented by a responsibility to supply more sophisticated and functional tools for the design, installation and control of these systems.

Everything at the click of a button

Sophisticated system software has been developed for the Light commercial and VRF ranges and are a useful and irreplaceable support tool for engineers, architects, installers and, in general, for anyone who wants to apply innovative Toshiba solutions.

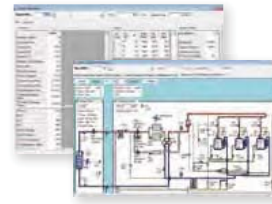
With Toshiba software, the user can create a complete systems, estimate in advance energy consumptions or perform diagnostic checks of the systems.



Selection software

With this software, the user can create a complete VRF system by simply clicking on the icons for the indoor units and the other connection components. It is also possible to define, in advance, relevant parameters such as outside and inside temperatures, fan speed, pipe system length and routing etc. The software automatically manages all the parameters entered, and the actual system capacity for the conditions required can be quickly calculated and simulated during the design stage.

Using this software, the design of VRF systems is guaranteed for the project at the given conditions. The software constantly monitors possible design errors and warns the user, when it reaches the system limits.



Diagnostic software

The correct operation of sophisticated systems such as VRF is important to the long-term reliability of the system.

In order to assist with the correct commissioning of all VRF systems, Toshiba has developed a diagnostic software programme - a valuable tool for the commissioning and service engineer.

The engineer can connect to the VRF system using a dedicated interface - enabling the download of all operating parameters and providing the engineer with detailed information for instant analysis or record.

Diagnostic software (Dyna-Doctor) is distributed exclusively by the Toshiba EMEA RLC Technical Department.

Software

DEDICATED SOFTWARE

SYSTEM SELECTION AND
DIAGNOSTIC



Accessories

WIDE RANGE OF OPTIONS

FACTORY OR FIELD INSTALLED
SOLUTIONS



Residential Accessories				
Code	Description		Compatible with	
	Indoor unit type	Parts name	Residential units	
RB-A607DE	High wall	Zeolite filter	Super Daisekai	
RB-A608DE		Zeolite 3G filter	Super Daisekai	
RB-A614DE		Active Carbon Catechin	7SKV-E, 7SKV-E2	
			SKVR-E, SKV-E, SKV-E2, M-SKV-E	
RB-A620DE	Flexi type	Toshiba New IAQ filter	M-SKV-E, 13SKVR-E2, SKV(R)-ND	
			SKP-ES, SKHP-ES, 18/24SK(H)P-EG, GK(H)P-ES2	
			GFHP-ES2, GFP-ES2	
RBC-SH-A11E2	Duct type	Wired remote controller kit	M-GDV-E	
RB-F81E2		Drain pump		

Light Commercial Refrigerant connection kits			
Model Name	Description		Capacities
RBC-TWP30E	Twin branch kit for DI & SDI		1.5 HP + 1.5 HP
RBC-TWP30E	Twin branch kit for DI & SDI		2 HP + 2 HP
RBC-TWP50E	Twin branch kit for DI & SDI		3 HP + 3 HP
RBC-TWP101E	Twin branch kit for Big DI		4 HP + 4 HP
RBC-TWP101E	Twin branch kit for Big DI		5 HP + 5 HP
RBC-TRP100E	Triple branch kit for DI & big DI		2 HP + 2 HP + 2 HP
RBC-TRP100E	Triple branch kit for DI & big DI		3 HP + 3 HP + 3 HP
RBC-DTWP101E	Double-twin branch kit for big DI		2 HP + 2 HP + 2 HP + 2 HP
RBC-DTWP101E	Double-twin branch kit for big DI		3 HP + 3 HP + 3 HP + 3 HP

Light Commercial Accessories				
Code	Description		Compatible with	
	Indoor unit type	Parts name	DI, SDI	
RB-A620DE	High wall and Flexi type	Toshiba IAQ filter	RAV-SM**4KRT-E, SM_**2XT-E	
RBC-UM11PG(W)E	Compact 4-way cassette type	Decoration panel	RAV-SM**4MUT-E	
RBC-U31PG(W)-E	4-way Air Discharge cassette type	Standard panel	RAV-SM**4UT-E	
RBC-U31PGS(W)-E	4-way Air Discharge cassette type	MTO straight, white color panel	RAV-SM**4UT-E	
RBC-U31PGS(W)-E	4-way Air Discharge cassette type	MTO straight, grey pane	RAV-SM**4UT-E	
TCB-GFC1602UE	4-way Air Discharge cassette type	Fresh air and filter chamber	RAV-SM**4UT-E	
TCB-GB1602UE	4-way Air Discharge cassette type	Fresh air inlet box	RAV-SM**4UT-E	
TCB-FF101URE2	4-way Air Discharge cassette type	Auxiliary fresh air flange	RAV-SM**4UT-E	
TCB-SP1602UE	4-way Air Discharge cassette type	Spacer for height adjustment	RAV-SM**4UT-E	
TCB-BC1602UE	4-way Air Discharge cassette type	Air discharge direction kit	RAV-SM**4UT-E	
TCB-DP32DE	High static duct type	Drain pump kit	RAV-SM**2DT-E	
TCB-PF3DE	High static duct type	Long life pre-filter	RAV-SM**2DT-E	
TCB-UFM3DE	High static duct type	High efficiency filter 6S	RAV-SM**2DT-E	
TCB-UFM7DE	High static duct type	High efficiency filter 90	RAV-SM**2DT-E	
TCB-FCY100DE	High static duct type	Filter chamber	RAV-SM**2DT-E	
TCB-DP22CE2	Ceiling-suspended type	Drain pump kit	RAV-SM**4CT-E	
TCB-KP12CE2	Ceiling-suspended type	Elbow Piping Kit	RAV-SM564CT-E	
TCB-KP22CE2	Ceiling-suspended type	Elbow Piping Kit	RAV-SM804/1104/1404CT-E	

VRF indoor unit accessories					
Indoor unit type	Parts name	Model name	Comply with VRF FCU	Notes	Remarks
4-way Air Discharge cassette type	Standard panel	RBC-U31PG(W)-E	MMU-AP**2H	Required accessory	
	MTO straight, white color panel	RBC-U31PGS(W)-E			
	MTO straight, grey panel	RBC-U31PGS(W)-E			
	Fresh air and filter chamber	TCB-GFC1602UE	MMU-AP**2H	For fresh air inlet box For fresh air intake by using the knockout hole of Fresh air and filter chamber. (dia.=100 mm)	Use with TCB-GFC1602UE
	Fresh air inlet box	TCB-GB1602UE			
	Auxiliary fresh air flange	TCB-FF101URE2			
Compact 4-way cassette type	Spacer for height adjustment	TCB-SP1602UE	MMU-AP***2H, 1MH, 4MH-E, 2SH, 4SH-E, 1SPH, 4SPH-E	For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100mm)	
	Air discharge direction kit	TCB-BC1602UE			
	Decoration panel	RBC-UM11PG(W)E			
	Decoration panel	RBC-UW283PG(W)-E	MMU-AP007/20092/0122/0152WH	Required accessory	
		RBC-UW803PG(W)-E			
		RBC-UW1403PG(W)-E			
Compact 2-way cassette type	Auxiliary fresh air flange	TCB-FF151US-E	MMU-AP***2WH	For easy fresh air intake by using the knockout hole of indoor unit	
	Filter chamber	TCB-FC283UW-E			
		TCB-FC803UW-E			
		TCB-FC1403UW-E	MMU-AP0362/0484/0562WH	For use with filter chamber	Use with TCB-FC283UW-E Use with TCB-FC803UW-E Use with TCB-LF1403UW-E
		TCB-LF283UW-E			
	Super Long life filter	TCB-LF803UW-E			
1-way cassette type	Decoration panel	RBC-U3136PE	MMU-AP0362/0484/0562WH	Required accessory	
	Front air discharge unit	TCB-BUS21VHE			
	Auxiliary fresh air flange	TCB-FF101URE2			
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMU-AP***2H, 1MH, 4MH-E, 2SH, 4SH-E, 1SPH, 4SPH-E	For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100mm)	
	High efficiency filter 6S (for rear suction)	TCB-UFM11BFCE			
		TCB-UFM21BFCE			
Concealed duct type	High efficiency filter 90 (for rear suction)	TCB-UFH51BFCE	MMD-AP0241/0271/0301BH, 4BH-E (2 pcs.)	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FC281BE Use with TCB-FC801BE Use with TCB-FC1401BE
		TCB-UFH61BFCE			
		TCB-UFH71BFCE			
	Filter chamber (for rear suction)	TCB-FC281BE	MMD-AP0361/0481/0561BH, 4BH-E (2 pcs.)	For high efficiency filter	Use with TCB-FC281BE Use with TCB-FC801BE Use with TCB-FC1401BE
		TCB-FC501BE			
		TCB-FC801BE			
Concealed duct type	High efficiency filter 6S (For underside suction)	TCB-UFM11BE	MMD-AP0071/0091/0121BH, 4BH-E	Dust collecting effect: 65% (NBS Colorimetric method)	
		TCB-UFM31BE			
		TCB-UFM31BE			
	High efficiency filter 90 (For underside suction)	TCB-UFH51BE	MMD-AP0071/0091/0121BH, 4BH-E	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FC281BE Use with TCB-FC801BE Use with TCB-FC1401BE
		TCB-UFH61BE			
		TCB-UFH71BE			
Concealed duct type	Ceiling panel (Half panel for underside suction)	RBC-U0281PE(W)	MMD-AP0071/0091/0121BH, 4BH-E	Adjustment height of the suction canvas between 40 & 100mm	
		RBC-U0301PE(W)			
		RBC-U0801PE(W)			
		RBC-U0401PE(W)	MMD-AP0241/0271/0301BH, 4BH-E	Kit of underside prefilter & shielding plate of rear suction	
		RBC-U0401PE(W)			
		RBC-CA281BE			
Concealed duct type	Suction canvas (For underside suction)	TCB-CA501BE	MMD-AP0151/0181BH, 4BH-E	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY31DE Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-CA801BE			
		TCB-CA1401BE			
	Filter kit for underside (Kit of underside prefilter & shielding plate of rear suction)	TCB-FK281BE	MMD-AP0071/0091/0121BH, 4BH-E	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY31DE Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-FK501BE			
		TCB-FK801BE			
Concealed Duct high static pressure type and fresh air intake unit type	TCB-FK1401BE	TCB-FK1401BE	MMD-AP0361/0481/0561BH, 4BH-E	Dust collecting effect: 50% (NBS Colorimetric method)	Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-UFM10-1E			
		TCB-UFM20-1E			
	High efficiency filter 6S	TCB-UFM3DE	MMD-AP0721/0961H, 4H-E, 1HFE	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY31DE Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-UFM3DE-1E			
		TCB-UFH5D-1E			
Concealed Duct high static pressure type and fresh air intake unit type	High efficiency filter 90	TCB-UFH6D-1E	MMD-AP0481H, 4H-E (2 pcs.)	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY31DE Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-UFH7DE			
		TCB-UFH7DE			
	Long life pre-filter	TCB-PF10-1E	MMD-AP0481H, 4H-E (2 pcs.)	Dust collecting effect: 50% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY31DE Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-PF2D-1E			
		TCB-PF3DE			
Fresh air intake type	Filter chamber	TCB-FCY21DE	MMD-AP0181H, 4H-E	For high efficiency filter or long life prefilter	
		TCB-FCY31DE			
		TCB-FCY51DE			
		TCB-FCY51DE	MMD-AP0241/0271/0361H, 4H-E (2 pcs.)	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-FCY21DE Use with TCB-FCY31DE Use with TCB-FCY100DE or TCB-PF3DE (HFE)
		TCB-FCY100DE			
		TCB-FCY100DE			
Air-to-air heat exchanger with DX coil	Drain pump kit	TCB-DP31DE	MMD-AP0181H to AP0481H, 4H-E	Lift up to 330 mm	
		TCB-DP32DE			
		TCB-DP32DE			
	High efficiency filter 6S	TCB-UFM4D-1E	MMD-AP0481HFE	Dust collecting effect: 65% (NBS Colorimetric method)	Use with TCB-PF4D-1E
	High efficiency filter 90	TCB-UFH8D-1E			
	Long life filter	TCB-PF4D-1E			
Ceiling-suspended type	Filter chamber	TCB-FCY51DE	MMD-AP0481HFE	Dust collecting effect: 50% (NBS Colorimetric method)	Use with TCB-FCY51DE
	Drain pump kit	TCB-DP32DFE			
	Drain pump kit	TCB-DP31HEXE			
	Drain pump kit	TCB-DP22CE2	MMC-AP0151/0181H, 4H-E	Lift up to 600 mm	Use TCB-KP12CE2 Use TCB-KP22CE2
		TCB-KP12CE2			
	Elbow Piping Kit	TCB-KP22CE2			

Combination Pattern						
1) Accessory for 4-way air discharge cassette type: combination pattern						
1	Ceiling panel	1	2	3	4	5
2	Fresh air inlet box + Fresh air and filter chamber	OK	OK	OK	OK	OK
3	Fresh air and filter chamber	OK	OK	OK	OK	OK
4	Auxiliary fresh air flange	OK	OK	OK	OK	OK
5	Spacer for height adjustment	OK	—	OK	OK	OK
6	Air discharge direction kit	OK	OK	OK	OK	OK
2) Accessory for concealed duct type: combination pattern						
		1	2	3	4	5
		For rear suction		For underside suction		
1	High-efficiency filter 65 (for rear suction)	—	OK	—	—	—
2	High-efficiency filter 90 (for rear suction)	—	OK	—	—	—
3	Filter chamber (for rear suction)	OK	OK	—	—	—
4	High-efficiency filter 65 (for underside suction)	—	—	—	OK	OK
6	High-efficiency filter 90 (for underside suction)	—	—	—	OK	OK
7	Ceiling panel (half panel for underside suction)	—	—	OK	OK	OK
8	Suction canvas (for underside suction)	—	—	OK	OK	OK
9	Filter kit for underside*	—	—	OK	OK	OK
* In case of underside,Filter kit is required accessory						
3) Accessory for concealed duct high static pressure type/fresh air intake indoor unit type: combination pattern						
		1	2	3	4	5
1	High-efficiency filter 65	—	—	OK	OK	OK
2	High-efficiency filter 90	—	—	OK	OK	OK
7	Long life prefilter	OK	OK	—	OK	OK
8	Filter chamber	OK	OK	OK	—	OK
9	Drain pump kit	OK	OK	OK	OK	—

Refrigerant Accessories		
Model Name	Description	Total capacity codes
RBM-BV5SE	branching joint for SMMS, SMMS-i and MINI-SMMS	< 6,4 HP
RBM-BY10SE		< 6,4 - 14,2 HP
RBM-BY20SE	Branching joint for SMMS-i	< 14,2 - 25,2 HP
RBM-BY30SE		25,2 HP
RBM-BV5SE		< 6,4HP
RBM-BY10SE		< 6,4 - 14,2 HP
RBM-BY20SE	Branching joint for SHRM	< 14,2 - 25,2 HP
RBM-BY30SE		25,2 HP
RBM-HY1043E	four-way	< 14,2 HP
RBM-HY1083E	eight-way	< 14,2 HP
RBM-HY2043E	four-way	< 14,2 - 25,2 HP
RBM-HY2083E	eight-way	< 14,2 - 25,2 HP
RBM-HY1043FE	four-way	< 14,2 HP
RBM-HY1083FE	eight-way	< 14,2 HP
RBM-HY2043FE	four-way	>14,2 - 25,2 HP
RBM-HY2083FE	eight-way	>14,2 - 25,2 HP
RBM-Y1122FE		< 11,2 Kw indoor units
RBM-Y1802FE	Flow switch selector (three pipe SHRM)	> 11,2 - 18 Kw indoor units
RBM-Y2802FE		> 18 - 28 Kw indoor units
RBM-BT14E		< 26 HP system capacity
RBM-BT24E	For connection of outdoor units	>26 HP system capacity
RBM-BT13FE		T-joint for SHRM

SHRM-i refrigerant accessories not yet known at the time of printing this catalogue

Installation and the use of refrigerants not specified by TOSHIBA Carrier Corporation.

TOSHIBA refrigeration and air-conditioning products are designed and manufactured on the assumption tha each product is used with the specific refrigerant specified for that product.

Recently it has been noticed that, in some cases, the type of refrigerant used in a product is different from the one specified for that product. The use of incorrect refrigerant may cause mechanical defects, malfunctions or failures which, in some cases, could result in a serious safety issue. For this reason, TOSHIBA Carrier Corporation requires that ONLY the specified refrigerant for a product should be used.

The type of refrigerant specified for a product is stated in the accompanying owners manual for that product, or on the label attached to the product itself. Toshiba Carrier Corporation shall NOT assume any liability for failures, malfunctions or safety issues on any product if an incorrect refrigerant is used in that product.

The capacities in this catalogue are based on Eurovent conditions:

Cooling: Entering indoor air temperature: 27 °C db / 19 °C wb. Outdoor air temperature: 35 °C db / 24 °C wb.

Heating: Entering indoor air temperature: 20 °C db. Outdoor air temperature: 7 °C db / 6 °C wb.

The sound pressure level is given at 1 m distance from outdoor units, and 1,5 m distance from indoor units.

Energy class and annual consumption are determined according to 2002/31/EC Commission Directive.



Address

TOSHIBA

TOSHIBA AIRCONDITIONING

Advancing the **eco**-evolution

T_12_CT_GEN_EN

February 2012 – The manufacturer reserves the right to change the product specifications, data and images without notice.