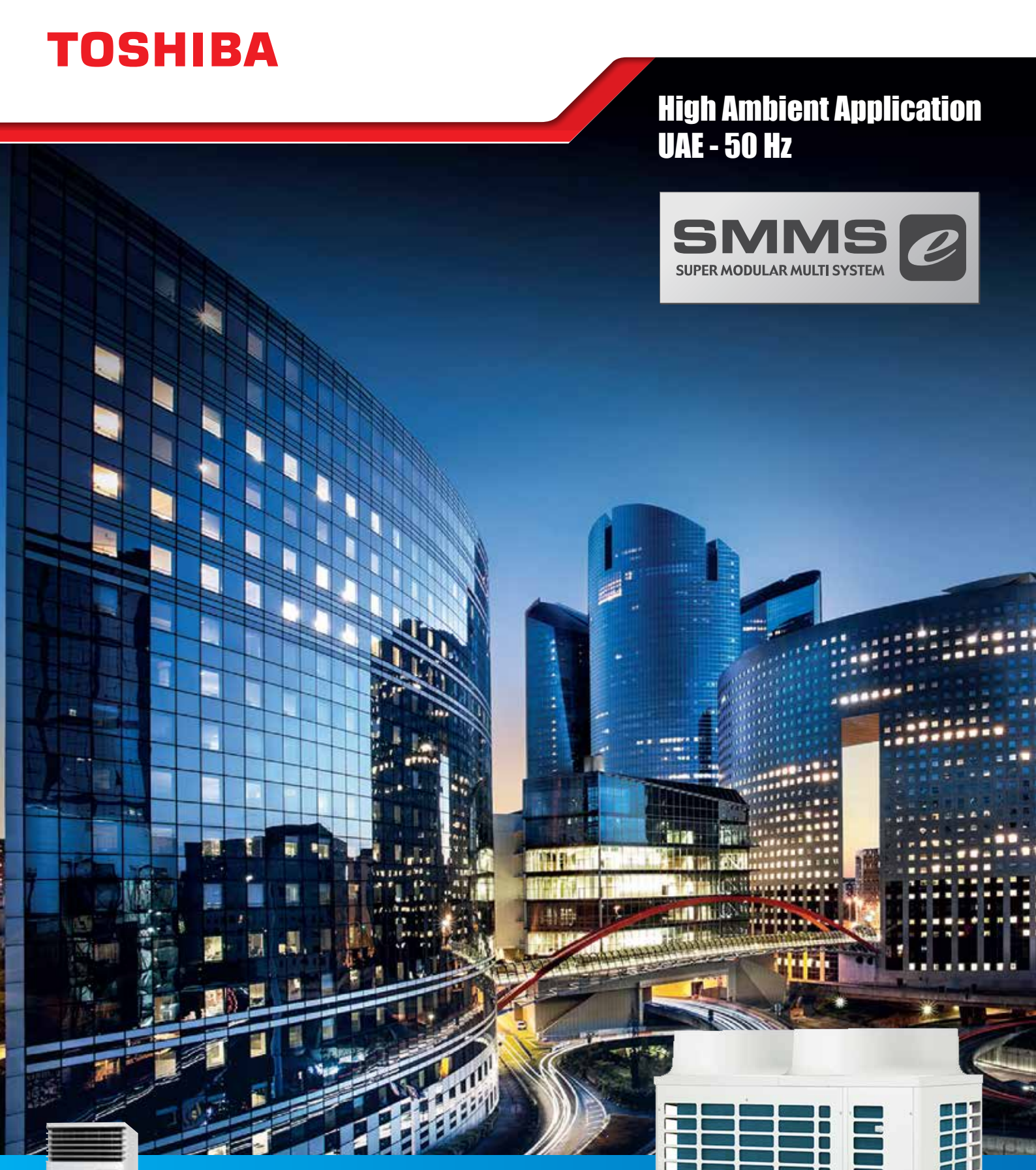
TOSHIBA

High Ambient Application
UAE - 50 Hz

SMMS e
SUPER MODULAR MULTI SYSTEM



INDEX

EXPERIENCE
THE FUTURE

Toshiba Airconditioning
Absolute comfort

Toshiba's commitment to world-class efficiency, versatile scalability and trusted quality results in cutting-edge technology that gives our customers industry leading solutions for their needs. Toshiba Air Conditioning is a global provider of a comprehensive range of innovative air conditioning solutions with trusted, world class reliability. With several "World's Firsts" to its credit, Toshiba Air Conditioning has been the reliable source of next generation, energy efficient products and solutions for over 30 years.

Toshiba's commitment to people drives attention to detail at every stage of the development process, from design to user field tests. As a result, Toshiba products and systems feature higher standard of indoor air quality, low sound levels, energy savings and unrivaled comfort along with environmental sustainability.

A Global Innovation
Network

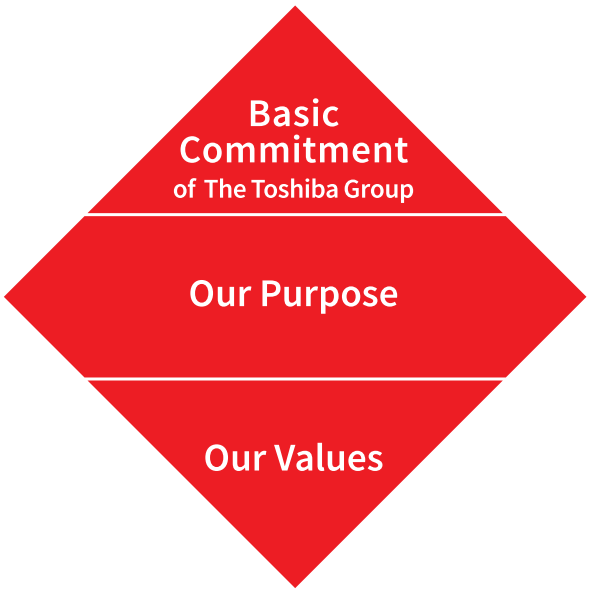
Toshiba Air Conditioning has research and development centers across Japan, Europe, Thailand and China. Its global research activities are managed and integrated to ensure all research sites collaborate to provide innovative solutions to customers across the world. The Toshiba brand holds more than 1200 patents in Japan and abroad, an outstanding number for any company.

Each year since 1994, Toshiba Air Conditioning has received prestigious awards for its significant achievements in air conditioning and in November 2020 the world's-first inverter split air conditioner that Toshiba developed and mass produced for commercial and residential applications in 1980 and 1981, respectively, was recognized by the Institute of Electrical and Electronics Engineers (IEEE) as an IEEE milestone for the historic significance of the achievement in electrical and electronics industry.

This demonstrates Toshiba's innovative spirit and a relentless drive to improve its products and systems.

THE ESSENCE OF TOSHIBA

Basic Commitment of the Toshiba Group



Committed to People,
Committed to the Future.

At Toshiba, we commit to raising the quality of life for people around the world, ensuring progress that is in harmony with our planet.

ALWAYS ONE STEP AHEAD

1981 First inverter-based air conditioner

1986 Super Multi, multi air conditioner for buildings

1993 Digital twin rotary air conditioner

2000 First Toshiba VRF (MMS), modular system up to 40 HP

2001 Super Power Eco using DC inverter rotary compressor & R410A

2003 First digital inverter control

2006 Toshiba's first mini VRF (MiNi SMMS)

2010 VRF (SMMS-i)

2015 VRF (SMMS-e) with NFC service tool

Our Purpose

We are Toshiba. We have an unwavering drive to make and do things that lead to a better world.

A planet that's safer and cleaner. A society that's both sustainable and dynamic. A life as comfortable as it is exciting. That's the future we believe in. We see its possibilities, and work every day to deliver answers that will bring a brilliant new day, every day.

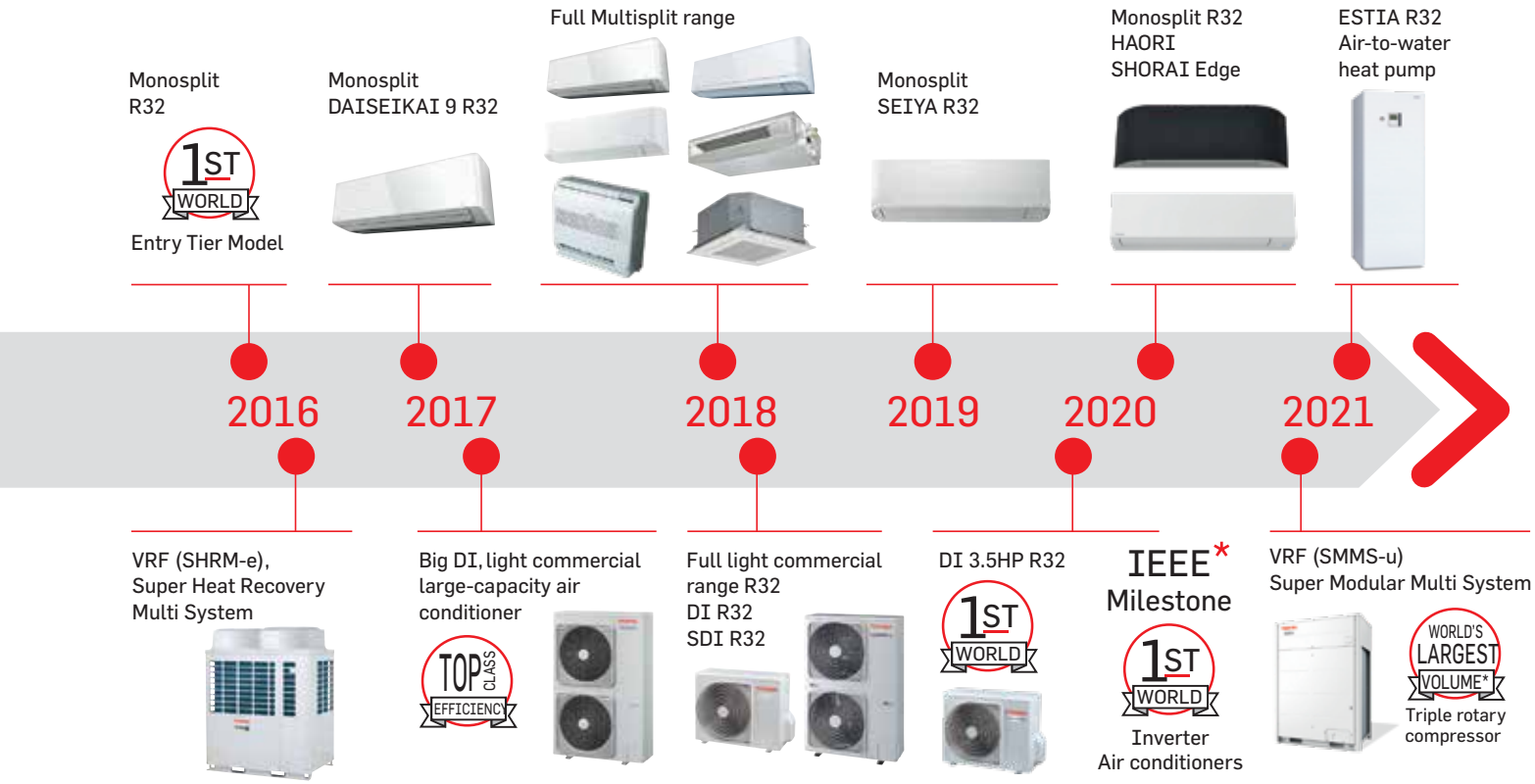
By combining the power of invention with our expertise and desire for a better world, we imagine things that have never been – and make them a reality.

That is our potential. Working together, we inspire a belief in each other and in our customers, that no challenge is too great, and there's no promise we can't fulfill.

We turn on the promise of a new day.

Our Values

Do the right thing Look for a better way	We act with integrity, honesty and openness, doing what's right - not what's easy. We continually strive to find new and better ways, embracing change as a means of progress.
Always consider the impact	We think about how what we do will change the world for the better, both today and for generations to come.
Create together	We collaborate with each other and our customers, so that we can grow together.



* In 2020, the Institute of Electrical and Electronics Engineers awarded Toshiba for the invention of the Inverter Air Conditioner and the significant contribution made by the Toshiba Inverter to the advancement of society and industry.

Note: Selected models are available as per local regulations.

TOSHIBA
AIR CONDITIONING - VISION

CHOOSE THE EXPERT OF INSPIRED TECHNOLOGIES

Toshiba Air Conditioning's philosophy is based on profound respect for our global environment and the desire to improve our customers' quality of life worldwide.

In 1981, Toshiba developed inverter technology for residential air conditioners which after 30 years is now employed by most leading air conditioning brands..

Inverter enables the unit to continuously regulate its cooling and heating capacity by altering the speed of the compressor using a variable-frequency drive to control the speed of the motor. This innovation ensures outstanding comfort and efficiency levels.

World's 1st 1981 — Inverter Driven Compressor

World's 1st 1988 — Twin Rotary Residential Use

World's 1st 1993 — DC Twin Rotary

World's 1st 1998 — R410A Residential Use

World's 1st 2004 — Dual Stage Compressor

World's Largest Volume* 2020 — Triple Rotary Compressor

* (as of Dec. 2020)

Our commitment to world-class efficiency, versatile scalability and leading quality means we create cutting-edge technologies to find the most forward-thinking solutions possible for your world. Toshiba Air Conditioning is an innovative provider of comprehensive air conditioning solutions with world-class reliability.

Top-class energy efficiency

- The world's largest Triple Rotary compressor (1)
- Twin rotary compressors
- All temperatures from -30°C (Daiseikai 9) to 54°C (MiNi SMMS-e Middle East range)
- Environmentally-friendly refrigerants
- Optimal temperature control solutions for increased precision

Entirely scalable solutions

Toshiba Air Conditioning develops cuttingedge technologies and advances that benefit people everywhere by offering the ideal combination of comfort and ecologically-superior products for residential, light commercial and large building applications.

Superior manufacturing quality

Toshiba Air Conditioning's innovations ensure comprehensive building air conditioning solutions which as subjected to strict evaluation testing to guarantee world-class reliability.

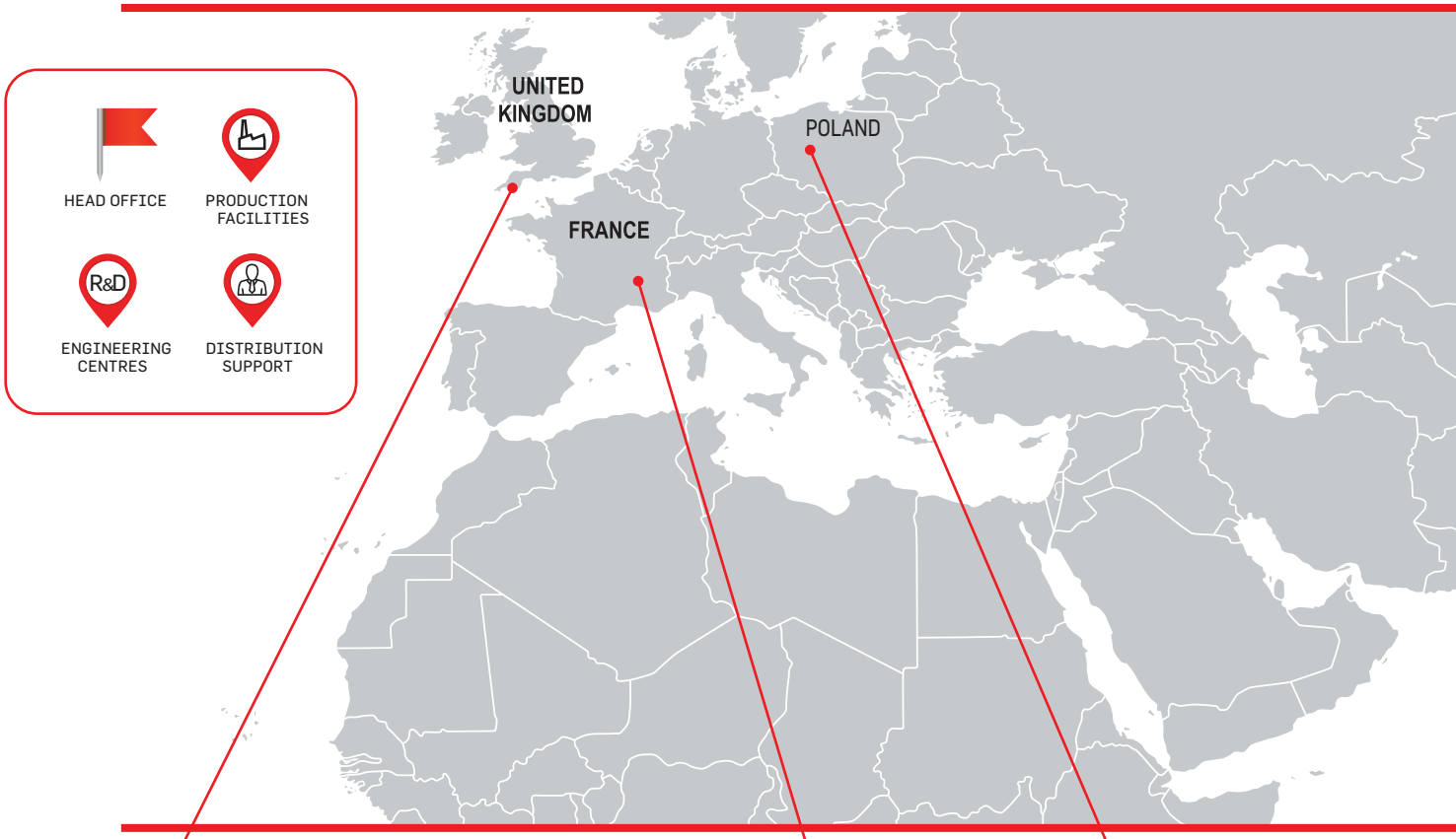
The quality, safety and performance of our solutions is further guaranteed by third party certifications including (TÜV, Eurovent, WEEE, RoHS, REACH, Intertek and Keymark among others).

ISO 9001 | ISO 14001 | OHSAS

(1) Source: Toshiba Carrier Corporation
(as of December 21, 2020)

TAILORED TO MEET CHALLENGES

Toshiba Air Conditioning, with heat pump technology at its core, aims to be an environmentally creative company which contributes to society and to the global environment. A commitment to growth on a global scale by offering products of the highest quality and services based on heat pump application solutions which respond to all of our customers' needs.



PLYMOUTH, UNITED KINGDOM

TCEU - DISTRIBUTION SUPPORT
and
TCEU - ENGINEERING CENTRE

MONTLUEL, FRANCE

TCEU - ENGINEERING CENTRE
and
TOSHIBA EMEA

GNIEZNO, POLAND

TCAE - PRODUCTION FACILITIES

TSUYAMA-CITY, JAPAN

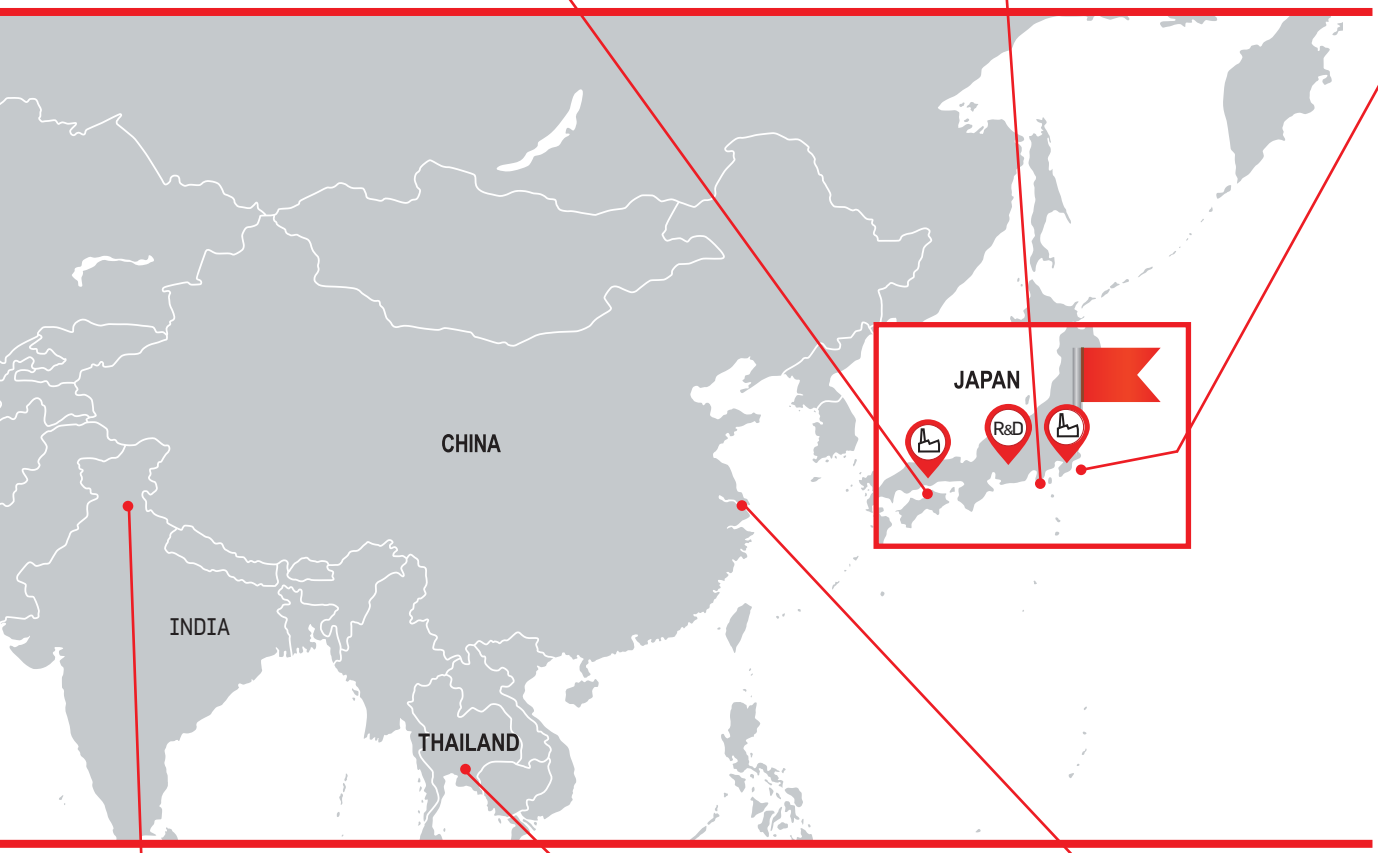
TCC - PRODUCTION FACILITIES

FUJI-CITY, JAPAN

TCC - PRODUCTION FACILITIES
and TCC - ENGINEERING CENTRE

KAWASAKI-CITY, JAPAN

TCC - HEAD OFFICE



HARYANA, INDIA

TCAI – PRODUCTION FACILITIES

PATHUMTHANI, THAILAND

TCTC - ENGINEERING CENTRE

HANGZHOU, CHINA

TCAC - PRODUCTION FACILITIES

LEADING THE WAY TO EXCELLENCE

Toshiba Air Conditioning's strengths centre on in-house research, development of advanced technologies and core components. These marketing leading technologies, industry leading research and high quality components are then used to offer best in class products to our customers that ensure optimum comfort at reduced operating costs.

A global innovation network

Toshiba Air Conditioning has Research and Development (R&D) centres in Japan, Europe, Thailand and China. Its global research activities are managed and integrated to ensure all research sites collaborate to provide innovative solutions to customers across the world. The Toshiba brand proudly holds more than 1200 patents in Japan and abroad, an outstanding number for any company. Each year since 1994, Toshiba Air Conditioning has received a prestigious award for its significant achievements in air conditioning. This demonstrates Toshiba's innovative spirit with a relentless drive to improve its products and systems.

Products designed to perform, engineered to perfection

In 1981 Toshiba Air Conditioning was the first company to incorporate inverter technology into air conditioning systems and has maintained its technological advantage over its competitors ever since. 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 Air Conditioning, innovation also means strong commitment to international institutions that carefully evaluate the impact of new technologies on the environment.

Toshiba Air Conditioning combines technological development with consideration for future generations resulting in a range of extremely energy-efficient air conditioners, reducing greenhouse gas emissions at their source. Its continuous research into the development of inverter technology has provided remarkable results, both with regards to meeting the required comfort levels and continually reducing the system's energy consumption.

Quality production

Outdoor units production

Indoor units production

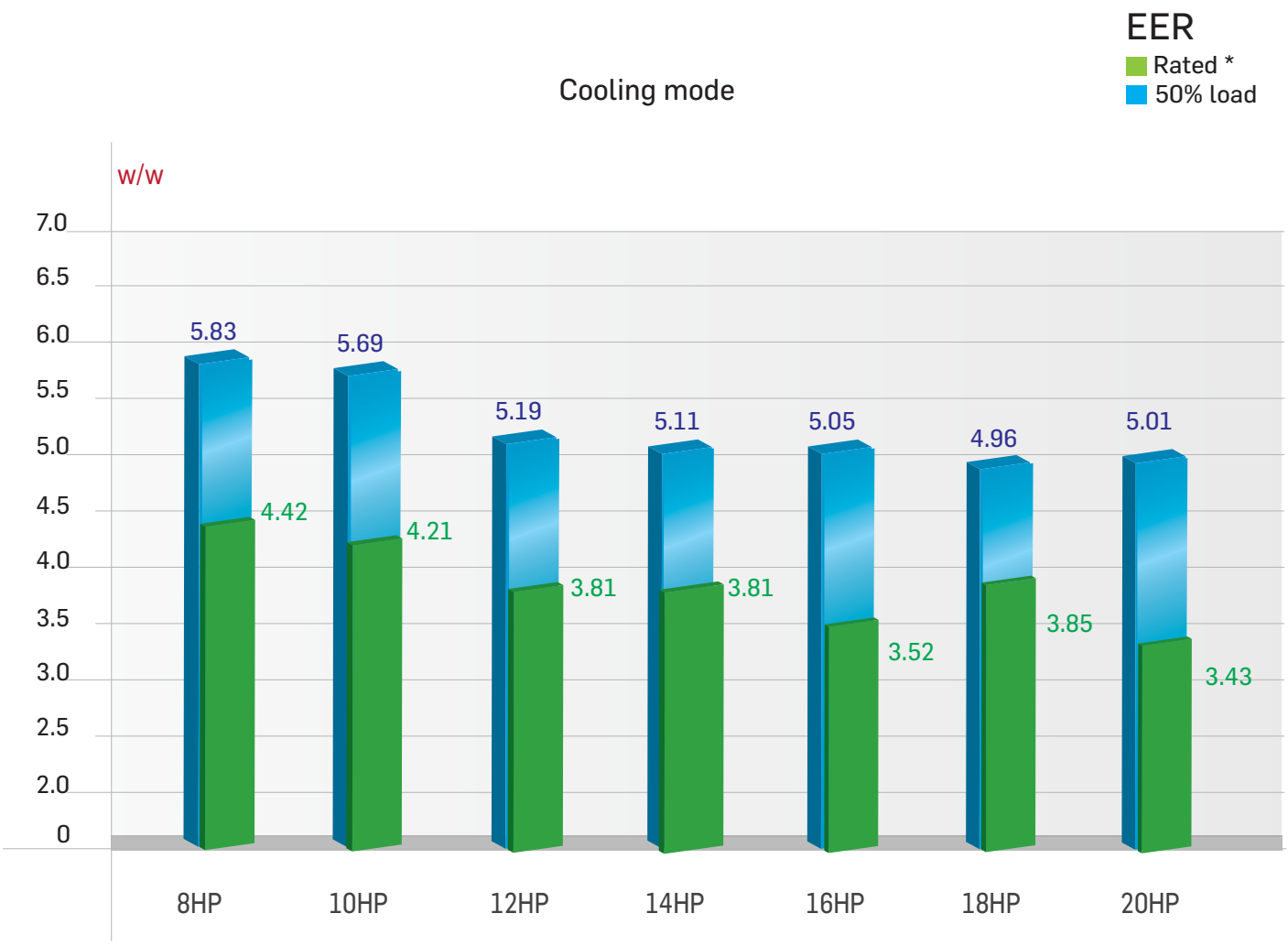
Committed to the Future

Going further than just products and beyond their basic functions, to create reliable and safe solutions that can interact with each other and with users.

Incorporating Toshiba's technical building management systems, the world is made simpler, clearer and more effective.

Energy saving

High efficiency performance



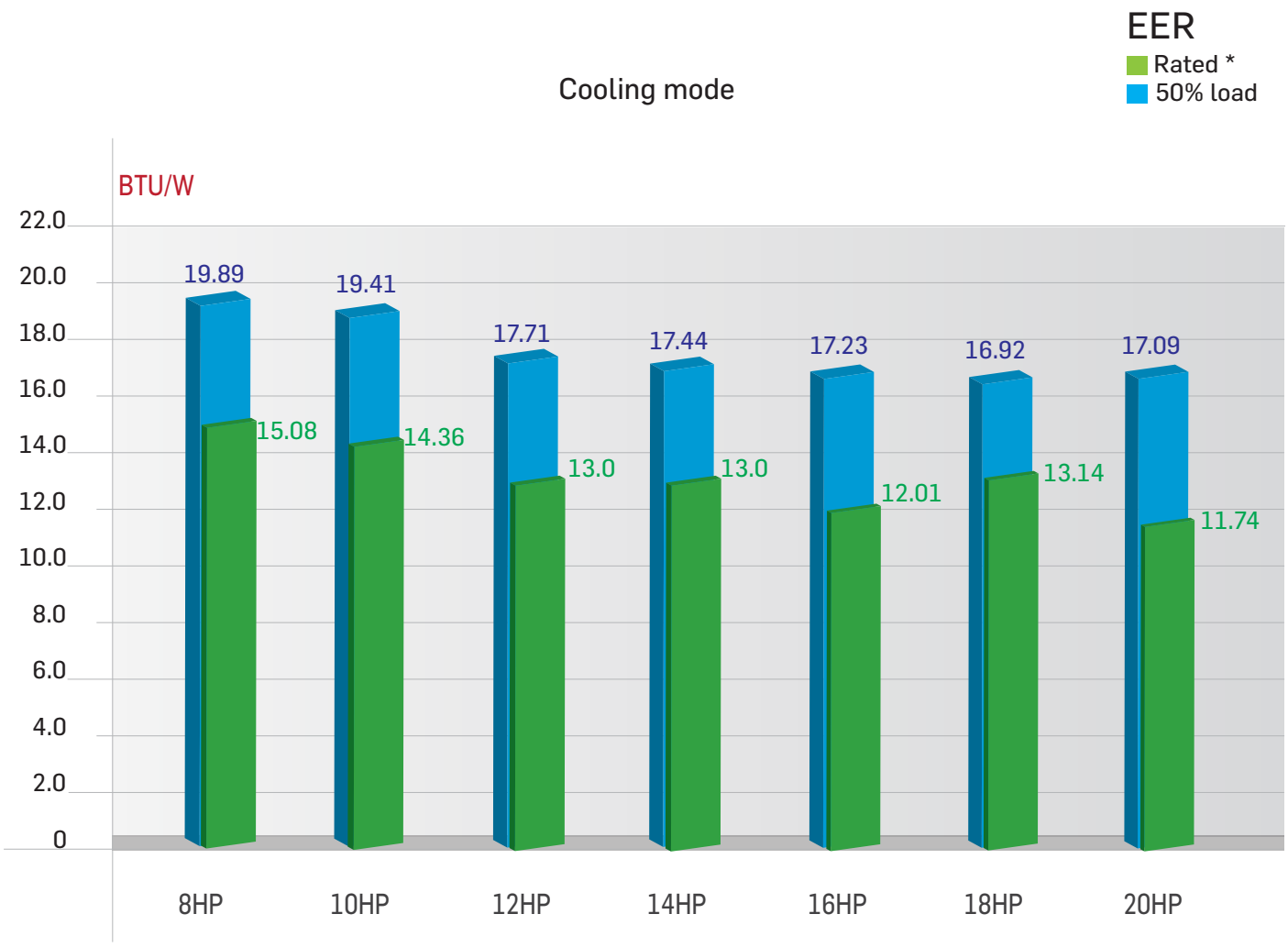
Note:

The source voltage must not fluctuate more than 10%.

* Indoor temperature: 26.7°C DB/19.4°CWB, outdoor temperature: 35°C DB (AHRI 1230 standard), power input of indoor units included.

Energy saving

The overall capacity range and the highest EER of 4.42 (15.08)
The SMMS-e has truly excellence as the industry's top class in energy saving.



Note:

The source voltage must not fluctuate more than 10%.

* Indoor temperature: 26.7°C DB/19.4°CWB, outdoor temperature: 35°C DB (AHRI 1230 standard), power input of indoor units included.

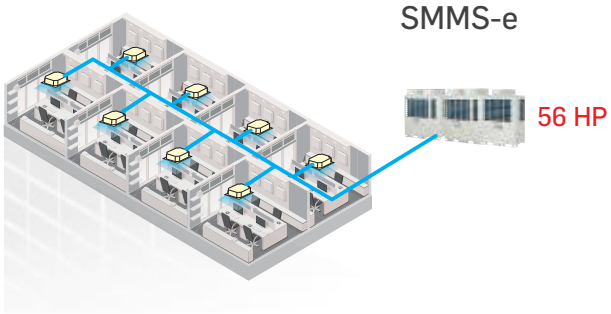
Capacity range

Single unit capacity expanded

SMMS-e comes with 3 new larger capacity units, producing up to 20HP on a single module platform.

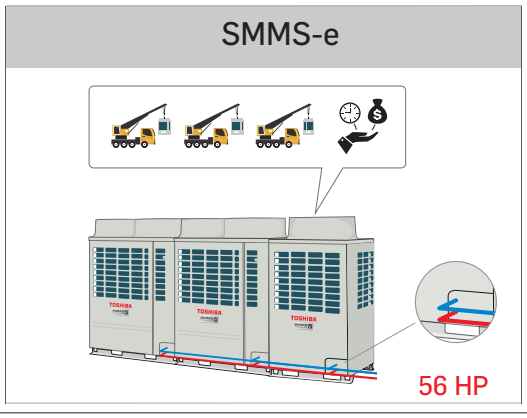
System capacity expanded

With the SMMS-e, it is now possible to connect up to 56HP in one system.



Installation flexibility

While expanding the maximum combination from 48 to 56HP in one system. This helps save more time and expense on additional unit system required in the previous model. The new compact unit design also increases more flexibility on installation with less foot print.



SMMS-e is capable of covering up to 20HP with a single module. Reducing pipe work and overall installation time.

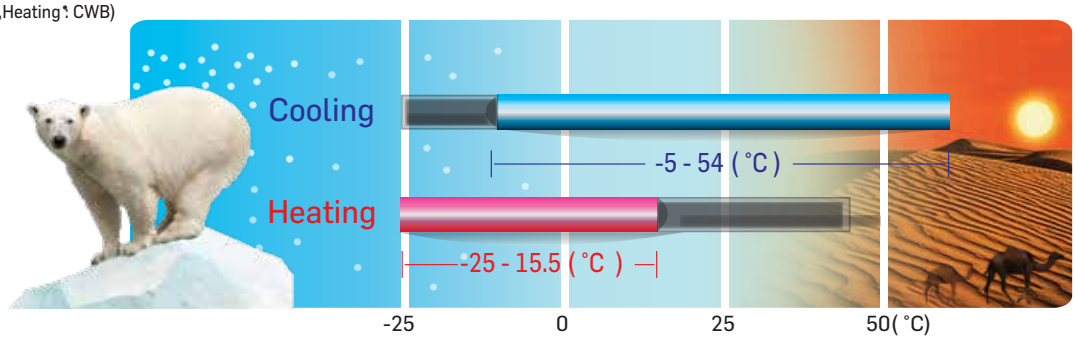
Operating temperature range

Outdoor temperature range

Utilizing the newly designed compressor, SMMS-e can operate under the wider range of outdoor ambience with the expansion of cooling and heating temperature from -25°C to 54°C.

Operation ambient temperature expansion

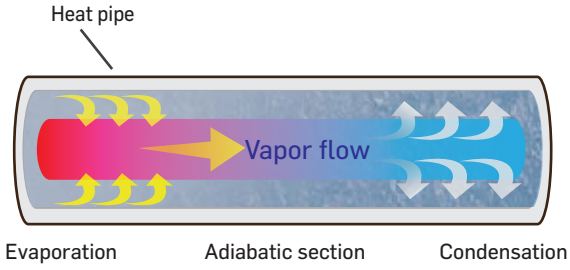
(Cooling : CDB,Heating : CWB)

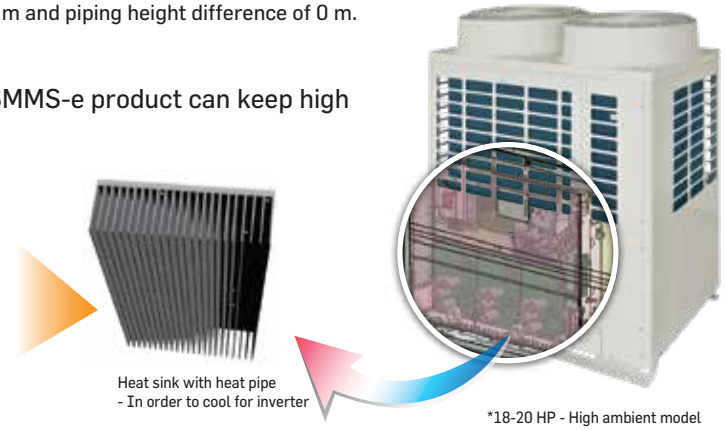


Note : Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

Heat pipe technology*

Thank to excellent heat sink with heat pipe technology, SMMS-e product can keep high reliability at high ambient temperature.

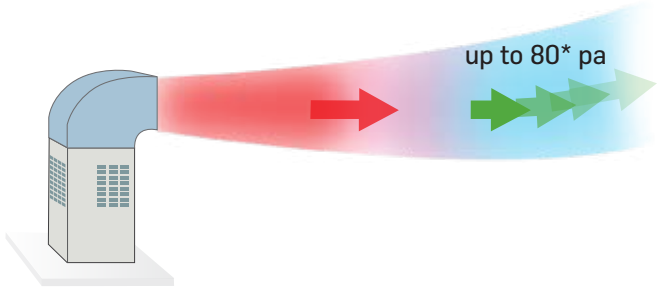




*18-20 HP - High ambient model

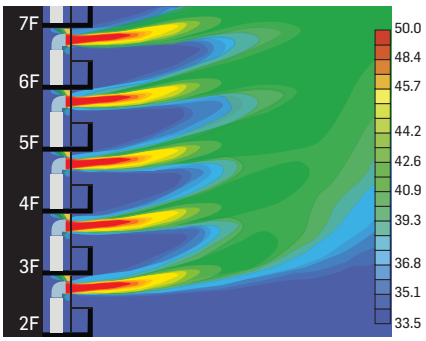
The external static pressure

The SMMS-e units are suitable for challenging installations where high external static pressure performance



Note: For ESP consult to local sales person.

Air flow simulation diagram



Note : This result is analytical simulation, that does not guarantee actual temperatures.

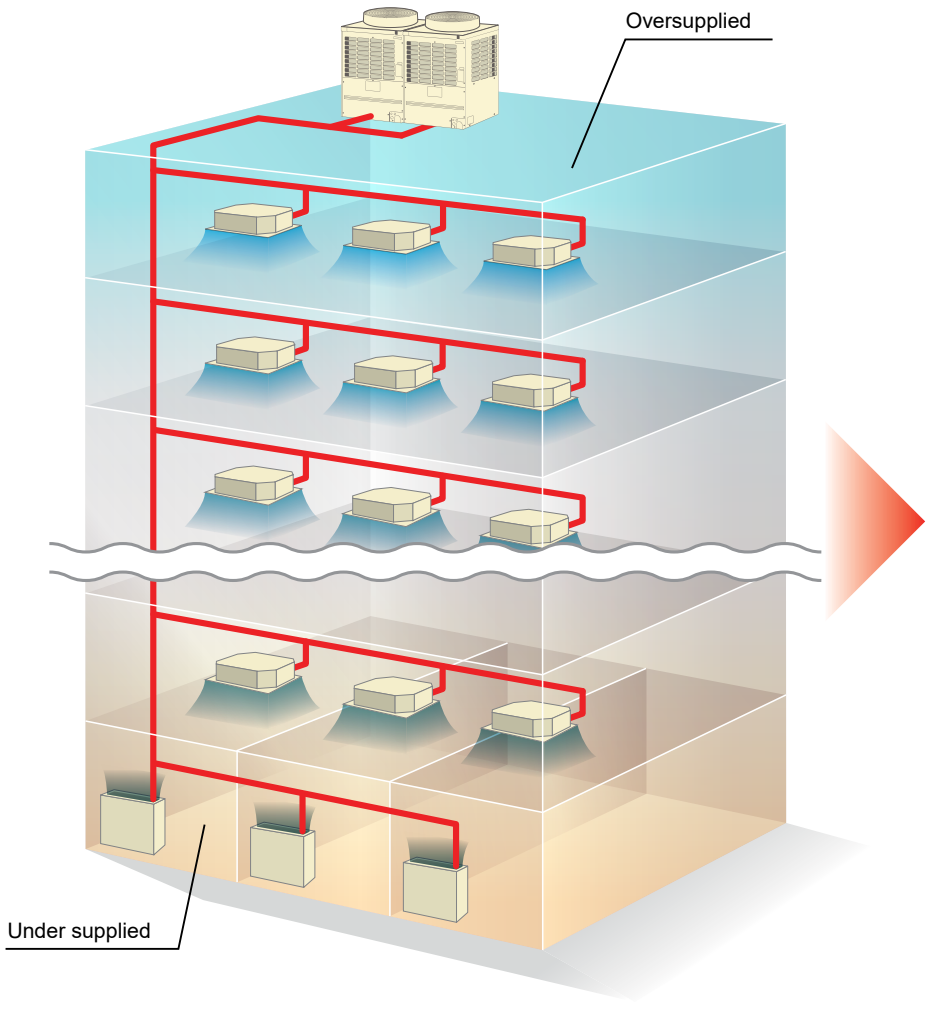
Enhanced Comfort

New intelligent VRF control

Toshiba systems with intelligent VRF control provide levels of comfort other systems simply cannot match. That's because differing pipe lengths in commercial buildings result in inconsistent levels of performance, especially when several indoor units are connected to a system. This imbalance is caused by pressure loss and thermal leaks that inhibit the optimum refrigerant flow to each indoor unit.

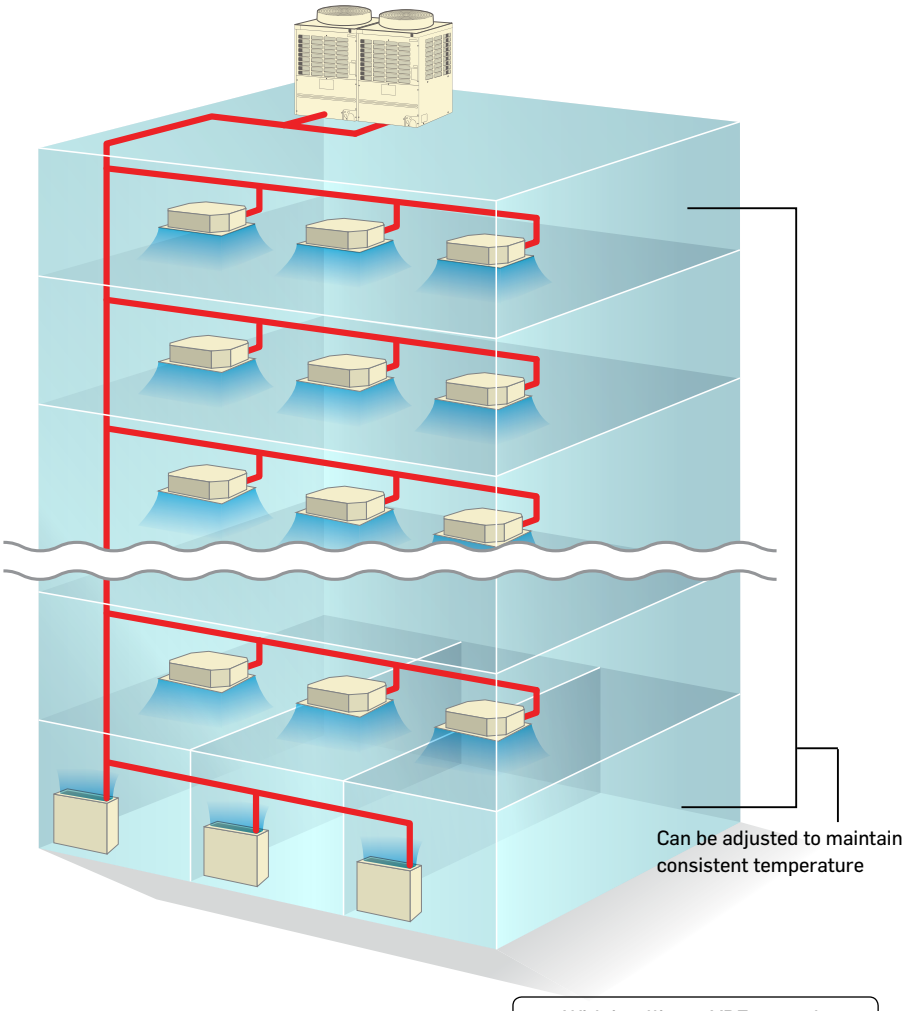
For example, without intelligent control, upper floor indoor units within VRF systems place loads on the refrigerant supply. This causes a delay before enough refrigerant reaches the lower floors to deliver efficient levels of operation.

Without intelligent VRF control, refrigerant flows unevenly throughout the structure, typically oversupplying areas closer to the outdoor unit and undersupplying areas that are farther away.



Without intelligent VRF control

Total system control



With intelligent VRF control

Total system control and consistent room-to-room temperature

The Toshiba intelligent VRF control overcomes these issues by providing precise control of indoor units with just electrical wiring and copper refrigerant tubing. It's intelligent because it sends more refrigerant to areas that need it, and supplies less refrigerant to areas that don't. Comfort is distributed evenly regardless of line length. As a result, occupants enjoy greater overall comfort whether they are closest to the outdoor unit or farthest away.

Additionally, Toshiba SMMS-e systems monitor the flow of refrigerant to each indoor unit while tracking the model number of each indoor unit, pipe length between each indoor unit and the outdoor unit, as well as data on operating conditions. The system computes the amount of refrigerant required by each indoor unit and controls the unit's pulse motor valve to ensure optimal supply across the system with height difference between outdoor unit and indoor unit of up to 90 meter.

With intelligent VRF control, Toshiba delivers consistent, room to room comfort across several floors of a commercial structure.

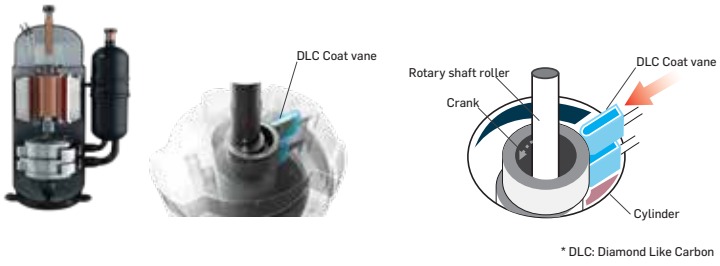
DC twin rotary compressor

Wide range compressor

More powerful and efficient with the cutting-edge technology of compressor – DC Twin-Rotary operates in wider range of rotation speed.

DLC coated vane

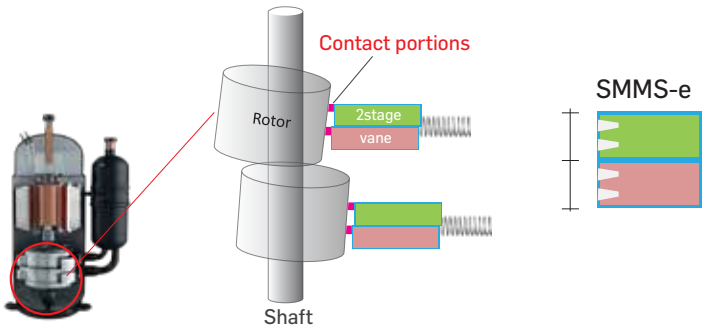
Increased hardness of the DLC coated vane reduces friction and increase both reliability and performance.



* DLC: Diamond Like Carbon

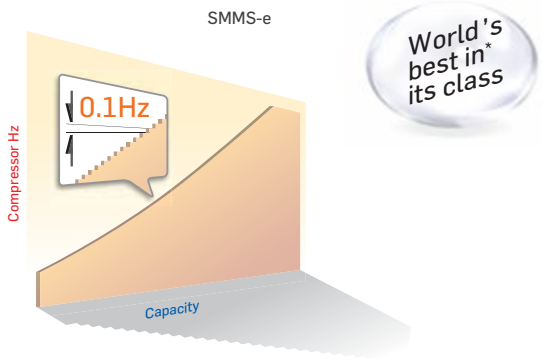
2-stage vane

With 2-stage vane innovatively designed to reduce friction while increasing hardness and enhancing performance at its best.



Infinity variable control

Infinity variable control adjusts compressor rotation speed in near-seamless 0.1 Hz steps. Responding precisely to the capacity needs of the moment, this fine control minimizes energy loss when changing frequencies, and also creates a comfortable environment subject to minimal temperature variations.



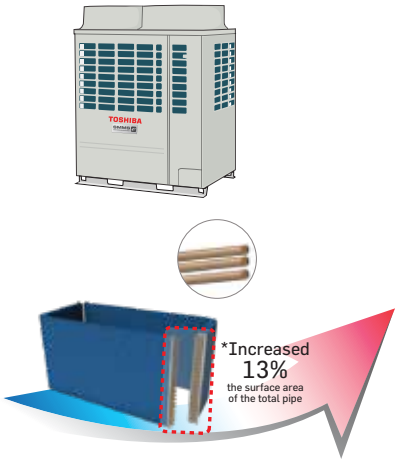
Ultra-precise 0.1 Hz control over compressor rotation speed

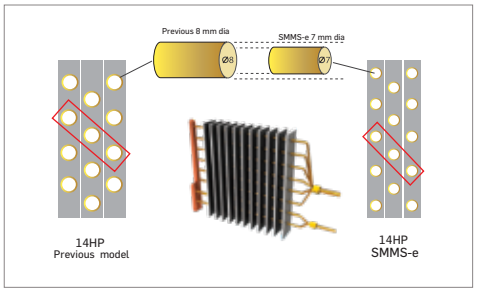
Heat exchanger

New heat exchanger

New heat exchanger of SMMS-e increases from 2 to 3 rows, providing even more surface area of the total pipe up to 13%.

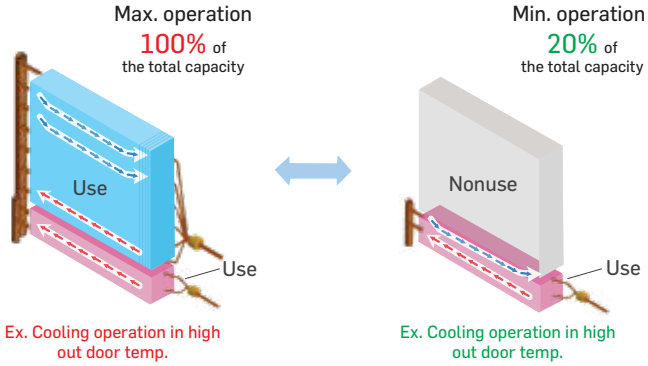
SMMS-e
new heat exchanger





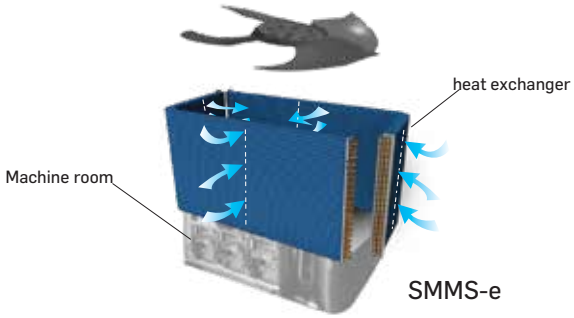
Variable heat exchanger

New system controls allows the outdoor unit to select the most efficient heat exchanger size, which matches the capacity load in order to provide higher energy savings.



4-way heat exchanger can realize balanced airflow

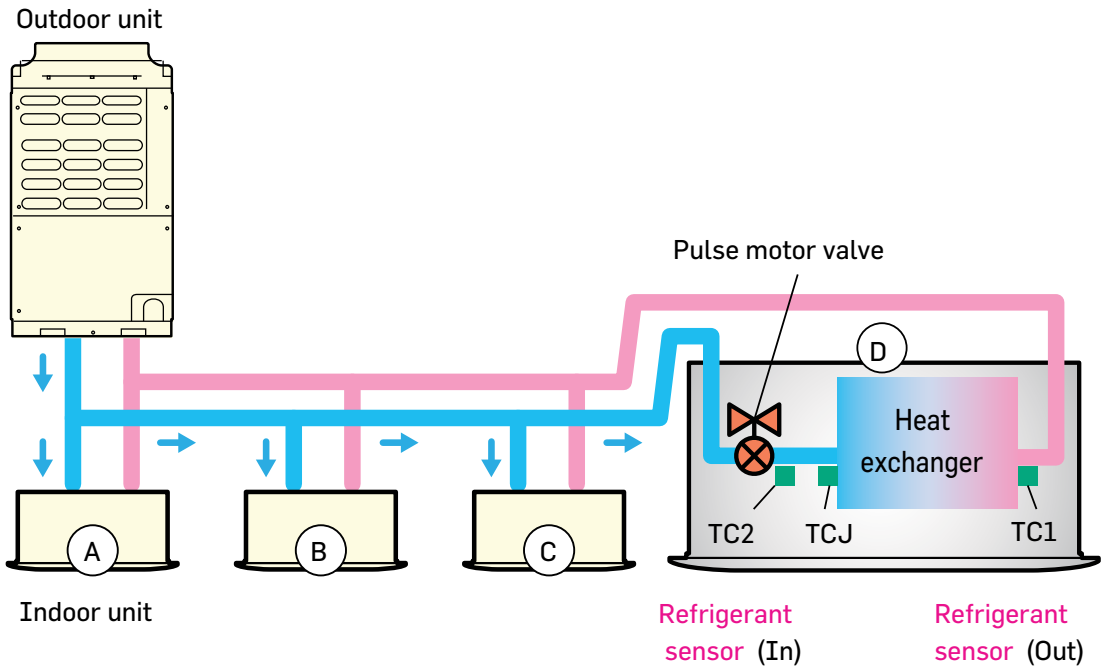
Heat exchangers are located on all four sides of the outdoor unit, ensuring air flow is equal in all directions.

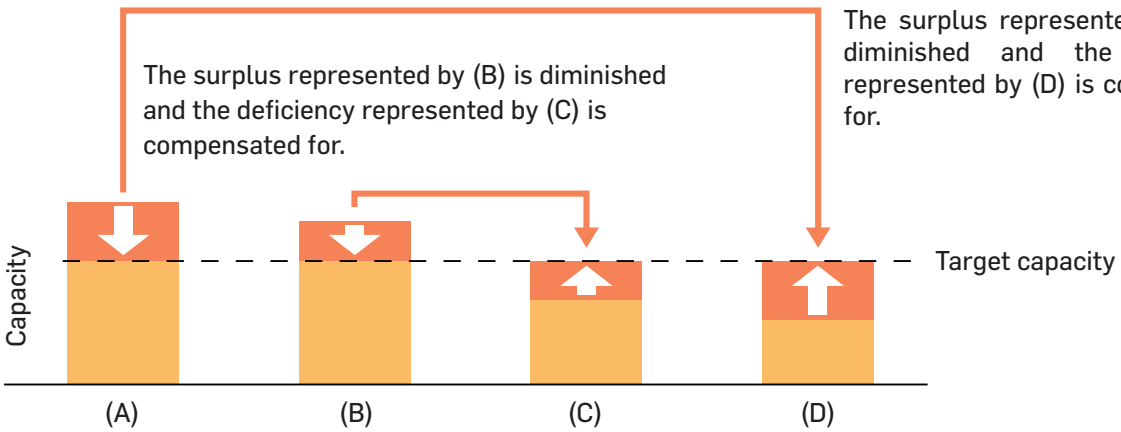


* For higher capacity model.

Precise refrigerant flow

One of the keys to delivering precision refrigerant flow and enhanced comfort is the Toshiba pulse motor valve (PMV) control. The PMV control prevents refrigerant from flowing to indoor units that are not operating. The system reduces bypass loss and achieves tighter control over the compressor capacity of the outdoor unit.

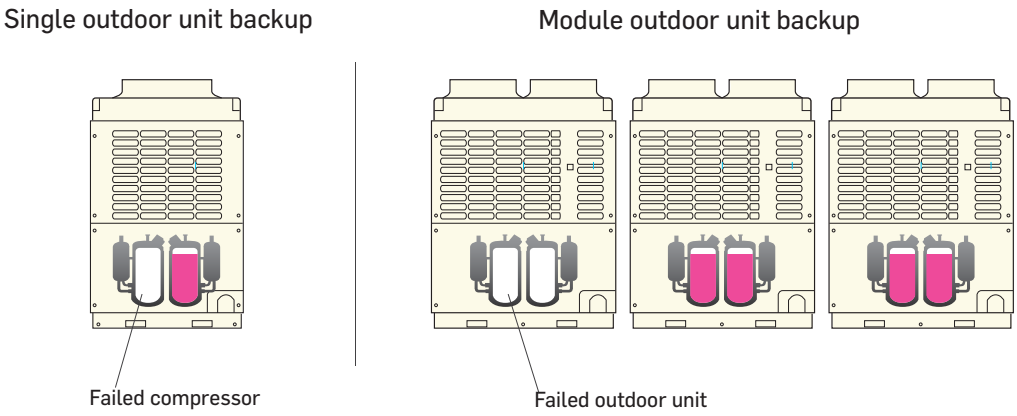




Reliability

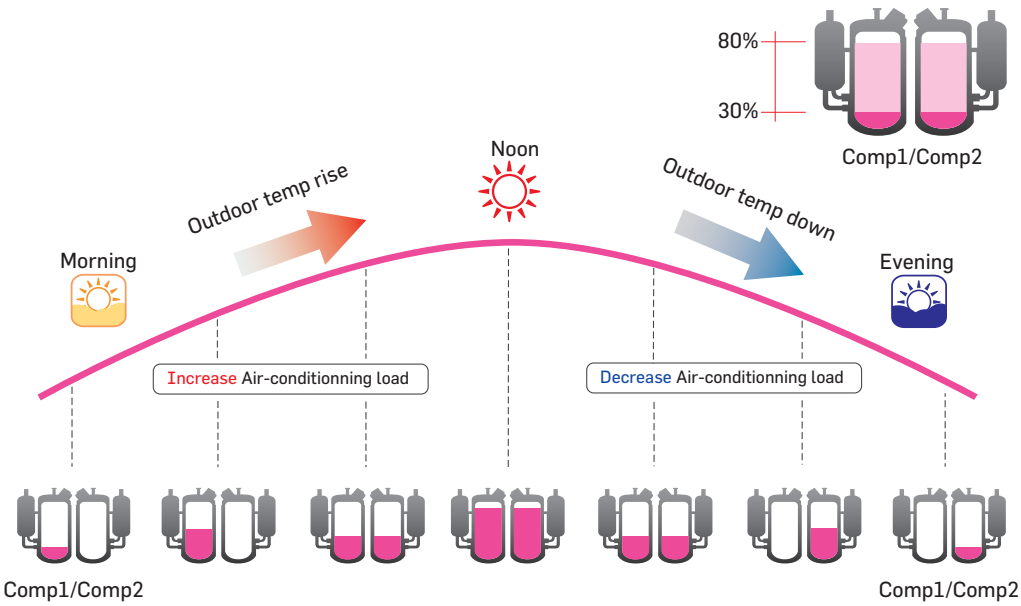
Backup operation

In case of a compressor failure, SMMS-e can keep working with the backup operation under All Inverter Control to compensate a failed compressor or header unit. This backup operation is available in both a single system or as a module.



Reliability rotational control

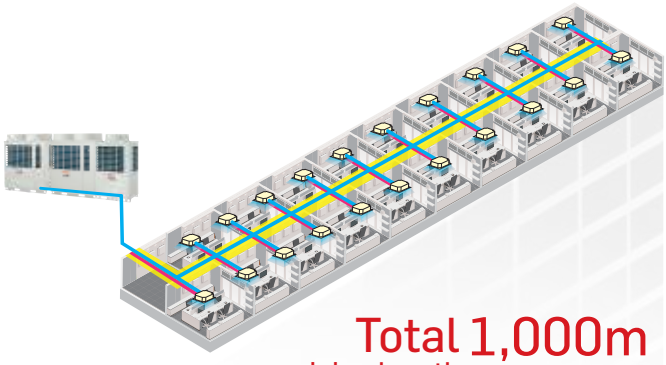
The rotational control in SMMS-e is designed to improve system reliability by controlling the operation of each compressor to work equally under variable conditions.



Piping design flexibility

Total piping length

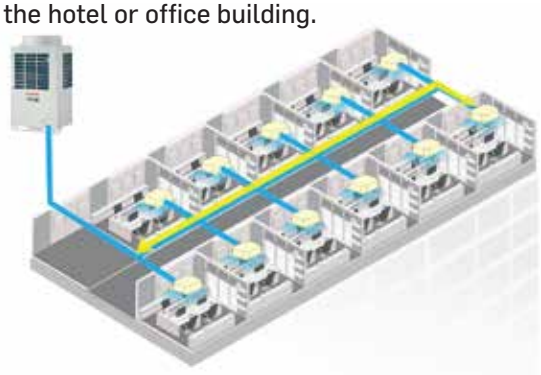
Applied with Toshiba's unique and greatly improved technology, SMMS-e can reach up to 1,000 meters maximum piping length.



Total 1,000m
piping length SMMS-e Max. total length

Farthest pipe from 1st branch

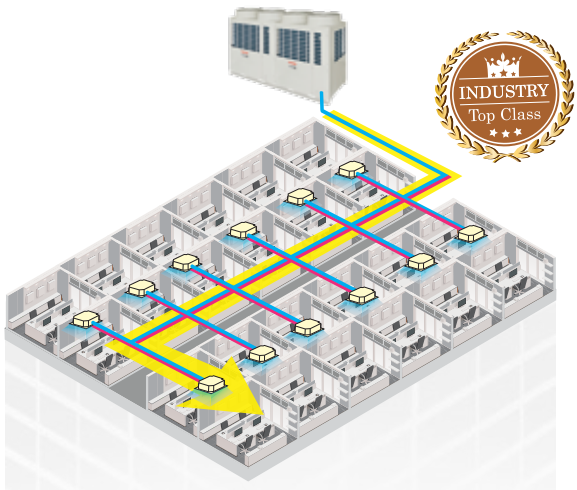
Even more convenient with the piping distance from the first branch to the furthest indoor unit at 90 meters, increasing the flexibility of the installation within the hotel or office building.



Farthest pipe
from 1st branch 90m

Farthest equivalent length

The maximum equivalent distance between outdoor unit and farthest indoor unit tops at 235 meters, which tops the industry class.



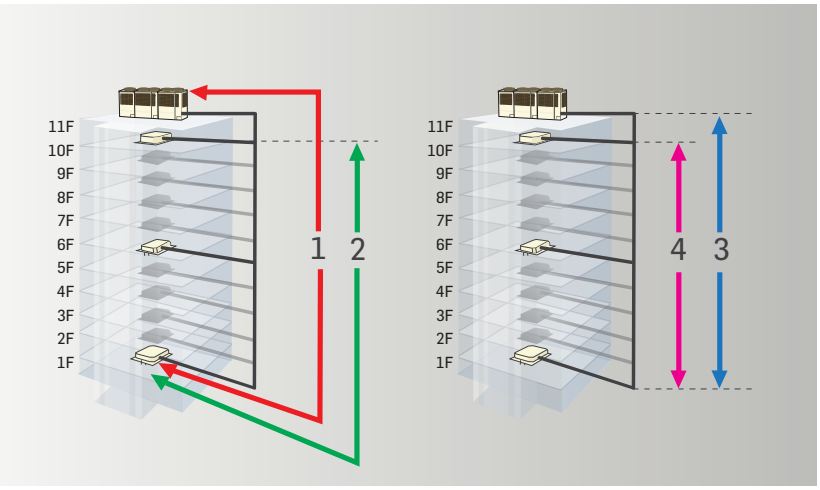
Farthest
equivalent length 235m

Height between indoor units

Another industry's top class is a maximum vertical distance between indoor units which reaches up to 40 meters, equal to an entire 11-storied building. SMMS-e's enhanced piping capabilities result in more benefits for the system design, installation flexibility, as well as the less installation cost.

Piping capabilities summary

Piping capability can provide more benefits for the system design, the installation flexibility, and the installation cost.



Total length	1,000m*
1. Farthest equivalent length	235m
2. Farthest pipe from 1st branch	90m**
3. Height between outdoor unit - indoor unit (outdoor unit above/below)	90m***/40m
4. Height between indoor unit - indoor unit	40m

* : 34HP combination or more

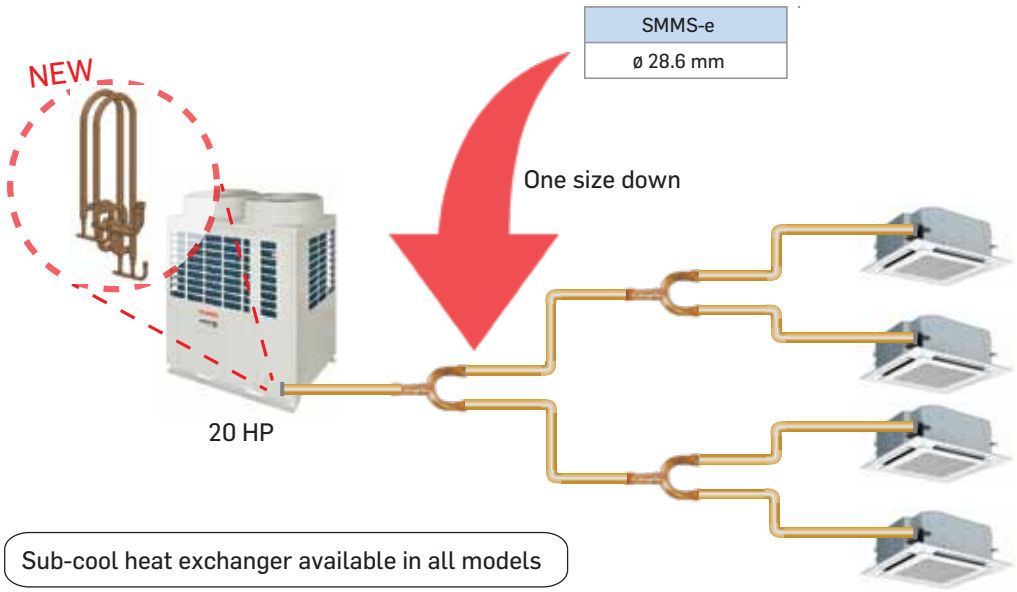
** : 65m if the height piping length between outdoor unit and indoor unit is more than 3m

*** : Be sure to refer to local sales person for details of these conditions and requirements.

Slimmer pipe size

Piping saving costs

With the sub-cool heat exchanger less refrigerant is needed therefore now it is possible to use smaller pipes and save in installation costs.

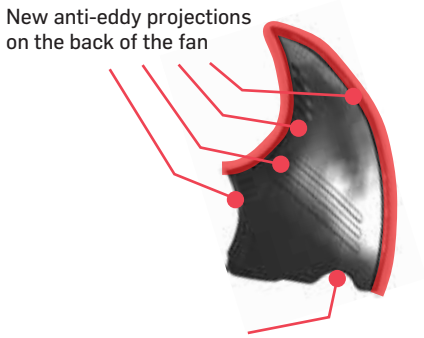


Sub-cool heat exchanger available in all models

Propeller fan

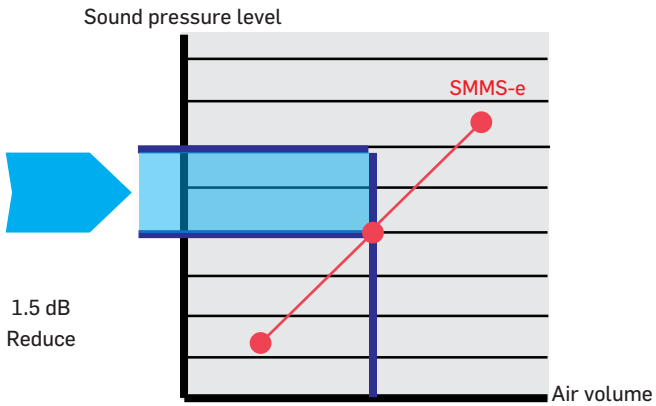
New advanced blade shapes for a better air flow management

Every single blade is designed with a unique profile, a solution that guarantees a smoother air flow without turbulences. The new propeller deliver the same amount of air with less sound pressure level.

Each blade has a unique profile	Design improvements
	

More quiet in comparison with the previous fan

In the same working condition the new design of the propeller ensure a reduction of 1.5 dB compared to the previous models.



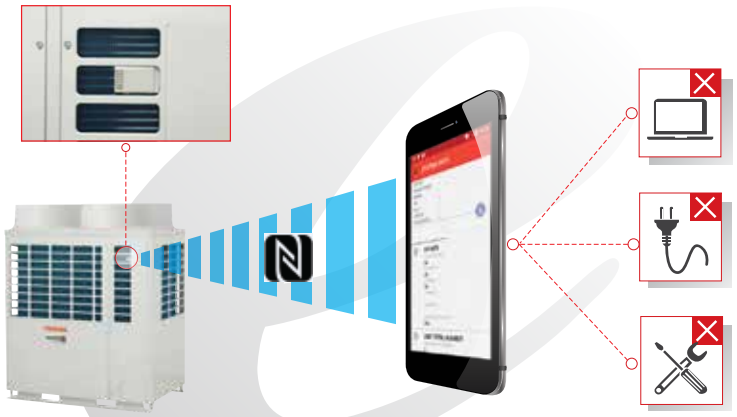
Connectable no. of indoor unit

Indoor line-up

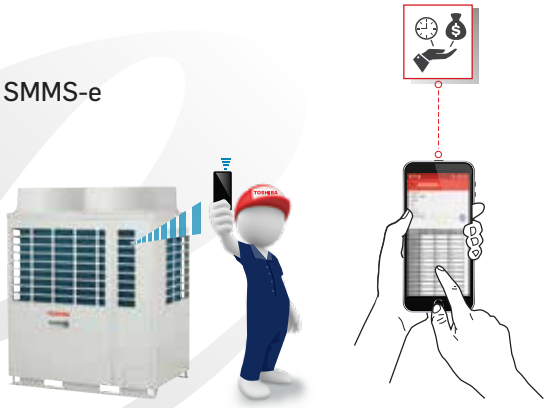
Type	kW / HP	Cooling capacity												
		1.7 / 0.6	2.2 / 0.8	2.8 / 1.0	3.6 / 1.25	4.5 / 1.7	5.6 / 2.0	7.1 / 2.5	8.0 / 3.0	9.0 / 3.2	11.2 / 4.0	14.0 / 5.0	16.0 / 6.0	22.4 / 8.0	28.0 / 10.0
4-way cassette type															
Compact 4-way cassette type 620 x 620															
2-way cassette type															
1-way cassette type															
Standard duct type															
High static pressure type															
Slim duct type															
Ceiling type															
Hi wall type - upto 10kw															
Floor standing type															
Fresh air intake indoor unit type															
Console type															
Floor standing cabinet type															
Floor standing concealed console type															

SMMSe wave tool

With SMMSe wave Tool, you can read and write data from outdoor unit directly on your smart phone without the needs of connecting PC or opening cabinet.



By the new smart phone application, the testing and commissioning can be done without opening the cabinet.



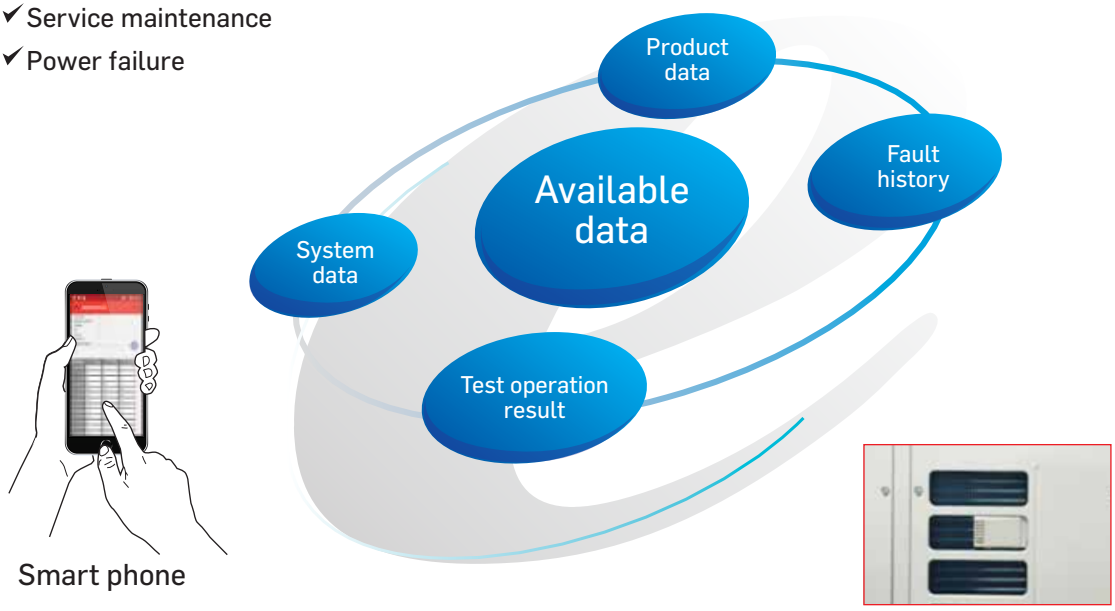
*For smartphone's specification refer technical manual.

Available data

Whether the product data, system data, fault history or testing and commissioning, all can be obtained easily even in case of under service maintenance or power failure. The data can be easily sent to the distant office via email. Possible to receive system data by e-mail without moving from your office and the operation conditions can be checked in the office.

In case of below situation

- ✔ Installation
- ✔ Service maintenance
- ✔ Power failure



Outdoor units

Standard model

							
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP
Model Name (MMY-) 50 Hz	MAP0806HT8P-ME	MAP1006HT8P-ME	MAP1206HT8P-ME	MAP1406HT8P-ME	MAP1606HT8P-ME	MAP1806HT8P-ME	MAP2006HT8P-ME
Cooling capacity* (kW)	22.4	28.0	33.5	40.0	45.0	50.4	56.0
Cooling capacity* (kW)	20.3	25.2	26.8	32.5	36.0	42.8	44.8
Heating capacity (kW)	25.0	31.5	37.5	45.0	50.0	56.0	63.0
No's of connectable Indoor units	13	16	20	23	27	30	33

							
Capacity	22HP	24HP	26HP	28HP	30HP	32HP	34HP
Model Name (MMY-) 50 Hz	AP2216HT8P-ME	AP2416HT8P-ME	AP2616HT8P-ME	AP2816HT8P-ME	AP3016HT8P-ME	AP3216HT8P-ME	AP3416HT8P-ME
Units in combination (MMY-MAP)	1206HT8P-ME 1006HT8P-ME	1206HT8P-ME 1206HT8P-ME	1406HT8P-ME 1206HT8P-ME	1406HT8P-ME 1406HT8P-ME	1606HT8P-ME 1406HT8P-ME	1606HT8P-ME 1606HT8P-ME	1806HT8P-ME 1606HT8P-ME
Cooling capacity* (kW)	61.5	67.0	73.5	80.0	85.0	90.0	95.4
Cooling capacity* (kW)	52.0	53.6	59.3	65.0	68.5	72.0	78.8
Heating capacity (kW)	69.0	75.0	82.5	90.0	95.0	100.0	106.0
No's of connectable Indoor units	37	40	43	47	50	54	57

							
Capacity	36HP	38HP	40HP	42HP	44HP	46HP	48HP
Model Name (MMY-) 50 Hz	AP3616HT8P-ME	AP3816HT8P-ME	AP4016HT8P-ME	AP4216HT8P-ME	AP4416HT8P-ME	AP4616HT8P-ME	AP4816HT8P-ME
Units in combination (MMY-MAP)	1806HT8P-ME 1806HT8P-ME	2006HT8P-ME 1806HT8P-ME	2006HT8P-ME 2006HT8P-ME	1406HT8P-ME 1406HT8P-ME 1406HT8P-ME	1606HT8P-ME 1406HT8P-ME 1406HT8P-ME	1606HT8P-ME 1606HT8P-ME 1406HT8P-ME	1606HT8P-ME 1606HT8P-ME 1606HT8P-ME
Cooling capacity* (kW)	100.8	106.4	112.0	120.0	125.0	130.0	135.0
Cooling capacity* (kW)	85.6	87.6	89.6	97.5	101.0	104.5	108.0
Heating capacity (kW)	112.0	119.0	126.0	135.0	140.0	145.0	150.0
No's of connectable Indoor units	60	64	64	64	64	64	64

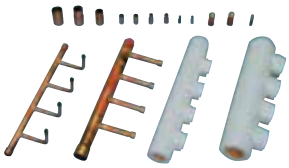
				
Capacity	50HP	52HP	54HP	56HP
Model Name (MMY-) 50 Hz	AP5016HT8P-ME	AP5216HT8P-ME	AP5416HT8P-ME	AP5616HT8P-ME
Units in combination (MMY-MAP)	1806HT8P-ME 1606HT8P-ME 1606HT8P-ME	1806HT8P-ME 1806HT8P-ME 1606HT8P-ME	2006HT8P-ME 2006HT8P-ME 1406HT8P-ME	2006HT8P-ME 2006HT8P-ME 1606HT8P-ME
Cooling capacity* (kW)	140.4	145.8	152.0	157.0
Cooling capacity* (kW)	114.8	121.6	122.1	125.6
Heating capacity (kW)	156.0	162.0	171.0	176.0
No's of connectable Indoor units	64	64	64	64

* Power: 3-phase 50 Hz 400V (380 - 415V)
* The source voltage must not fluctuate more than 10%.
* Rated conditions
  * Cooling: Indoor air temperature 26.7°C DB/19.4°C WB, outdoor air temperature 35°C DB (AHRI 1230 standard)
  * Cooling: Indoor air temperature 29°C DB/19°C WB, outdoor air temperature 46°C DB (ISO 15042 standard)
    Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

High efficiency model

				
Capacity	16HP	18HP	20HP	30HP
Model Name (MMY-) 50 Hz	AP1626HT8P-ME	AP1826HT8P-ME	AP2026HT8P-ME	AP3026HT8P-ME
Units in combination (MMY-)	MAP0806HT8P-ME MAP0806HT8P-ME	MAP1006HT8P-ME MAP0806HT8P-ME	MAP1006HT8P-ME MAP1006HT8P-ME	MAP1006HT8P-ME MAP1006HT8P-ME MAP1006HT8P-ME
Cooling capacity* (kW)	44.8	50.4	56.0	84.0
Cooling capacity* (kW)	40.6	45.5	50.4	75.6
Heating capacity (kW)	50.0	56.5	63.0	94.5
No's of connectable Indoor units	27	30	33	50

				
Capacity	32HP	34HP	38HP	40HP
Model Name (MMY-) 50 Hz	AP3226HT8P-ME	AP3426HT8P-ME	AP3826HT8P-ME	AP4026HT8P-ME
Units in combination (MMY-)	MAP1206HT8P-ME MAP1006HT8P-ME MAP1006HT8P-ME	MAP1206HT8P-ME MAP1206HT8P-ME MAP1006HT8P-ME	MAP1406HT8P-ME MAP1206HT8P-ME MAP1206HT8P-ME	MAP1406HT8P-ME MAP1406HT8P-ME MAP1206HT8P-ME
Cooling capacity* (kW)	89.5	95.0	107.0	113.5
Cooling capacity* (kW)	77.2	78.8	86.1	91.8
Heating capacity (kW)	100.5	106.5	120.0	127.5
No's of connectable Indoor units	54	57	64	64

	Y-shape branching joint				Branch headers				Outdoor unit connection piping kit	
Appearance					 (4-branch headers)					
Model name	RBM - BY55E	RBM - BY105E	RBM - BY205E	RBM - BY305E	RBM - HY1043E	RBM - HY2043E	RBM - HY1083E	RBM - HY2083E	RBM-BT14E	RBM-BT24E
Usage (Classification according to indoor unit capacity code)	Total below 6.4	Total 6.4 or more and below 14.2	Total 14.2 or more and below 25.2	Total 25.2 or more	Max.4 branche s		Max.8 branches		Total below 26.0	Total 26.0 or more
					Total below 14.2	Total 14.2 or more and below 25.2	Total below 14.2	Total 14.2 or more and below 25.2		

* Power: 3-phase 50 Hz 400V (380 - 415V)
* The source voltage must not fluctuate more than 10%.
* Rated conditions
  * Cooling: Indoor air temperature 26.7°C DB/19.4°C WB, outdoor air temperature 35°C DB (AHRI 1230 standard)
  * Cooling: Indoor air temperature 29°C DB/19°C WB, outdoor air temperature 46°C DB (ISO 15042 standard)
    Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB