

**TOSHIBA**

# SHRM

SUPER HEAT RECOVERY MULTI  
ADVANCE

Inspired VRF  
technologies



 **Better Air Solutions**



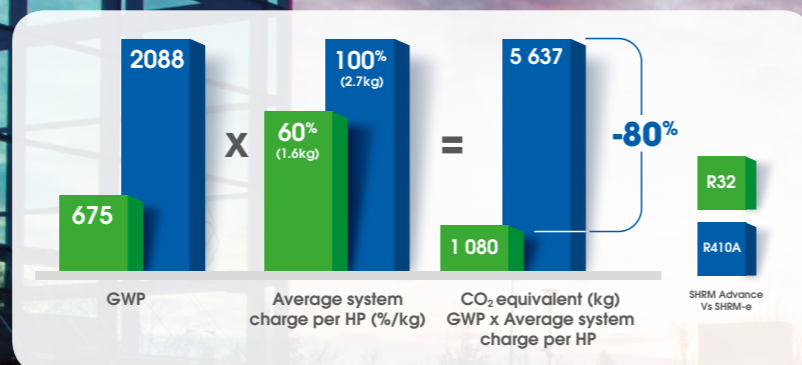
# THE WORLD IS TARGETING ZERO EMISSION

Today the process of cooling and heating buildings, is not the sole challenge. Global warming is an issue that effects us all and Toshiba Air Conditioning are prioritising the decarbonisation of buildings as a top priority. The SHRM Advance system, with its new and inspired R32 VRF technologies, will help to achieve this goal, whilst also preserving comfort and cost effectiveness.



## Inspired technologies to support building decarbonization

R32 low GWP, combined with SHRM Advance 40% reduction of refrigerant charge, allow to reduce the total equivalent CO<sub>2</sub> by 80% of the system, in comparison with R410A legacy model.



## The right choice to make for the benefit of all

Environmental oriented refrigerant, top-class efficiencies, heat recovery function and much more to the benefit of all stakeholders.



### Investors

Support decarbonization of buildings.  
Make true energy savings.  
Boost your investments.



### Consultants

Secure your specifications.  
Ensure premium comfort.  
Ease buildings labelling.



### Installers

Differentiate yourself from competitors, choose the expert of inspired R32 technologies since 2014.



### Our planet

Always consider the impact.  
Go further than just products, create safe low GWP solutions to friendly interact with the planet.

# SHRM ADVANCE FORWARD-THINKING SOLUTION

The new SHRM Advance is the leading solution to provide heating, cooling and hot water for commercial applications with a limited impact on the environment.

**Premium comfort**  
Rely on the Intelligent VRF Control technology for accurate refrigerant flow management

**Super-efficiency**  
Up to +23% heat exchanger surface versus legacy model\*

**Strong adaptability**  
3-pipe or 2-pipe operation ready

**Installation flexibility**  
Up to 80pa available static pressure

**Heat recovery**  
Seamless energy transfer between cooled and heated zones

**Maintenance facilitated**  
Access system data using the NFC technology

\*SHRM Advance is available in single model lineup only.



## Your best ally

### Toshiba Twin Rotary compressor with new liquid injection technology

Centre piece of the system, the Toshiba super efficient Twin rotary compressor has been engineered to perfectly fit R32 constraints.



- Large capacity
- Low noise
- Wide operating range
- DLC treatment
- Less refrigerant needed
- Liquid injection technology

# UNLIMITED COMFORT

With climate changes, preserving comfort in buildings is becoming essential. Rely on simultaneous heating and cooling operations to make users satisfied and increase productivity all year round. In winter, optimized defrost will also participate to overall comfort.



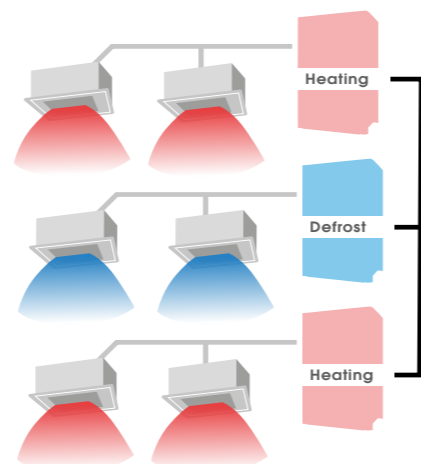
## Advanced defrost system

**Stable indoor temperatures even under the harshest conditions.**

**Frost detection**  
Continuous heating up to 5 hours.



**Ren-Kei**  
Utilising defrost rotation control between independent systems, results in continuous heating operation.



# MAXIMIZED EFFICIENCY

Leading efficiency is part of Toshiba DNA. SHRM Advance is no exception with strong energy savings for indirect carbon reduction.

Embedded technologies such as liquid injection, twin rotary compressor, large heat exchanger, new sub cool plate heat exchanger and intelligent VRF Control contribute to reach unparalleled seasonal efficiencies.

<b>HEATING</b>	<b>SCOP</b>	UP TO <b>4.6</b>
	<b>EthasH</b>	UP TO <b>183%</b>
<b>COOLING</b>	<b>SEER</b>	UP TO <b>8.9</b>
	<b>EthasC</b>	UP TO <b>353%</b>

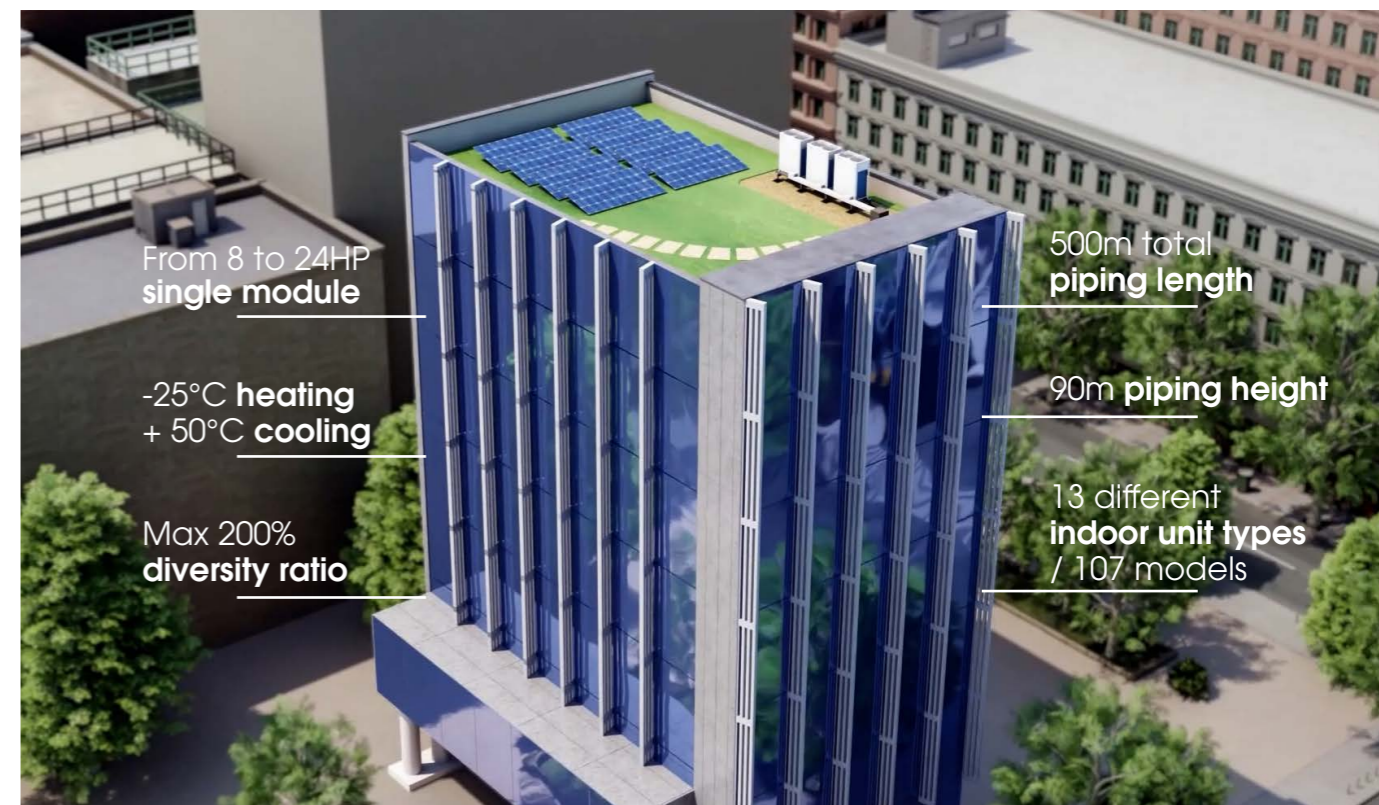


Heat recovery transfer energy function from indoor unit in cooling mode to indoor in heating mode contributes to premium global energy efficiency.

# EXTENDED PROJECT COVERAGE

## Advanced connectivity

At Toshiba Air Conditioning, low carbon footprint products go hand-in-hand with high specification standards. SHRM Advance has been designed to enhance system flexibility and maximize project coverage.



## Large flow selector units

Increased flexibility at project design stage & simplified installation process.

1 TO 12 ports

max 10 INDOOR UNIT per port

Up to 18 KW per port

PMV technology

<300mm height

50m farthest piping length

Embedded SHUT OFF VALVE

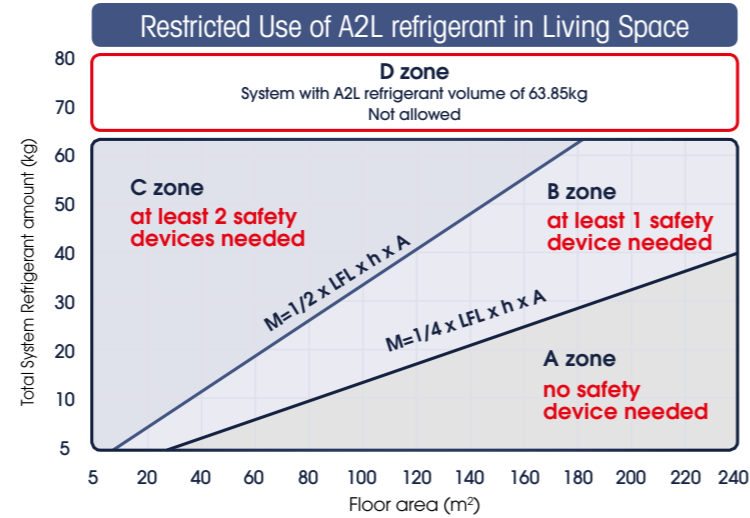
**ADVANCED** indoor units group control

## R32 CHALLENGING BY NATURE

Moving to R32 is a great opportunity for the environment. Nevertheless as classified A2L/mid flammable, precautions need to be taken. Toshiba Air Conditioning has thought of everything for your peace of mind.

Following IEC 60335-2-40 edition 6.0, depending upon the room surface and the total refrigerant amount, system needs to be equipped with safety devices.

R32 LFL = 0.301 kg/m<sup>3</sup> - H = indoor unit position 2.2m - A= room surface in square metre  
Please refer to IM and Toshiba Selection Software for toxicity



### Toshiba Solutions Manage safety requirements\*

<b>TCB-LD1UPE</b> R32 leak detector (audible and visual alarm)	<b>RBM-Y_1FUxPE</b> Shut-off valve included into Flow selector unit for 3-pipe SHRM Advance operations	<b>RBM-SV_1HUPE</b> Shut-off valve for 2 pipe SHRM Advance operations	<b>TCB-BT1UPE</b> Battery kit to secure Shut-off valve operations in case of power failure (required by IEC603353-2-40 standard)

\*Toshiba safety concept certified by 3<sup>rd</sup> party certification institution following IEC60335-2-40 (Ed.6) regulation

## Meet buildings constraints

Select the appropriate answer

For buildings with large spaces

✓ Only one flow selector unit is needed

In case of leak detection:

- Audible and visible alarm on concerned leak detector
- Refrigerant Pump down
- Fault code on remotes



SYSTEM IS TURNED OFF IN CASE OF LEAK DETECTION

For buildings with many individual rooms

✓ Multiple flow selector units are needed

In case of leak detection:

- Audible and visible alarm on concerned leak detector
- Fault code on remotes
- Individual shut down



SYSTEM CONTINUES TO RUN, ONLY CONCERNED AREA IS TURNED OFF



### Rely on Toshiba Selection Software



Toshiba Selection software has been fully designed with a user-friendly interface allowing novice and expert users alike to create simple, yet detailed VRF system schematics. It is highly versatile to tailor the level of details to customers' expectations. In line with R32 safety regulation, the software identify the rooms to be equipped with safety devices. Final detailed reports can then be produced and sent to customers in a PDF format that summaries all the information needed to ensure proper installation, good system operation and customer satisfaction.

## MAKE YOUR SELECTION

### Outdoor Units

Picture	Model	kW	22.4	28	33.5	40	45	50.4	56	61.5	67
		HP	8	10	12	14	16	18	20	22	24
	MMY-SUGxx01MT8P-E	Decarbonize buildings: R32 refrigerant. Make your choice: 2-pipe heat pump or 3-pipe simultaneous heating & cooling with heat recovery function. Simplify the maintenance: Wave tool advance and link adapter.									

### Indoor Units

Picture	Model	IAQ filter**	kW	0.9	1.7	2.2	2.8	3.6	4.5	5.6	7.1	8	9	11.2	14	16	22.4	28	
			HP	0.3	0.6	0.8	1	1.25	1.7	2	2.5	3	3.2	4	5	6	8	10	
	MMU-UP_H-E																		
	MMU-UP_HP-E	Ionizer + PM2.5																	
	MMU-UP_MH-E																		
	MMU-UP_WH-E																		
	MMU-UP_YHP-E	Plasma																	
	MMD-UP_SPHY-E																		
	MMD-UP_BHP-E																		
	MMD-UP_HP-E1																		
	MMK-UP_HP-E MMK-UP_HPL-E	Ultra pure filter																	
	MMC-UP_HP-E																		
	Mid temp. hot water module MMW-UP_LQ-E																		
	Fresh air intake duct MMD-UP_HFP-E(1)																		

\*\*available as an option

### Flow Selector Units

Picture	Model	Specification	Number of ports
	RBM-Y1121FUPE	Flow Selector unit Single-port type	1
	RBM-Y1801FUPE		1
	RBM-Y2801FUPE		1
	RBM-Y1801FU4PE	Flow Selector unit Multi-port type	4
	RBM-Y1801FU8PE		8
	RBM-Y1801FU12PE		12

### Safety Devices

Picture	Model	When required?	
		2-Pipe	3-Pipe
	Leak detector TCB-LD1UPE	Stand alone. Powered by the indoor unit. 10-year sensor lifetime. Required for zone B & C (as 1 <sup>st</sup> safety device)	Required for zone B & C (as 1 <sup>st</sup> safety device)
	Shut-off valve RBM-SV_1HUPE	To separate leaking indoor units from main refrigerant circuit. Only needed in 2-pipe operation as flow selectors include shut-off valve. Required for zone C (as 2 <sup>nd</sup> safety device)	Embedded into flow selector unit
	Battery kit TCB-BT1UPE	Keep shut-off valve operation in case of power shutdown. 5-year lifetime. To be positioned inside FS box/shut-off valve. Required for zone C (to be installed into shut-off valve unit)	Required for zone C (to be installed into flow selector unit)

### Controls

Wired remote	Central remote	Gateways
Standard remote RBC-ASCU11-E	64 central remote TCB-SC640U-E	BACnet® gateway BMS-IFBN1280U-E
Advance remote RBC-AMSU51-ES/EN	Touch screen BMS-CT2560U-E	Modbus® gateway BMS-IFMB1280U-E

## Performances

Outdoor unit		MMY-	SUG0801MT8P-E	SUG1001MT8P-E	SUG1201MT8P-E	SUG1401MT8P-E	SUG1601MT8P-E	SUG1801MT8P-E	SUG2001MT8P-E	SUG2201MT8P-E	SUG2401MT8P-E
		8 HP	10 HP	12 HP	14 HP	16 HP	18 HP	20 HP	22 HP	24HP	
<b>Cooling capacity</b>	kW	<b>22.4</b>	<b>28.0</b>	<b>33.5</b>	<b>40.0</b>	<b>45.0</b>	<b>50.4</b>	<b>56.0</b>	<b>61.5</b>	<b>67.0</b>	
Power input (rated)	kW C	5.13	6.83	8.88	12.0	12.2	14.8	15.5	18.2	24.3	
EER	W/W	4.37	4.10	3.77	3.32	3.70	3.41	3.62	3.38	2.76	
EthasC/SEER	W/W	353.0%/8.90	344.6%/8.69	326.2%/8.23	320.2%/8.08	342.6%/8.64	329.8%/8.32	328.6%/8.29	312.2%/7.88	263.4%/6.66	
Running current	A C	9.14	11.5	14.2	18.9	21.1	24.8	25.4	29.2	38.1	
<b>Heating capacity rated/max</b>	kW	<b>22.4</b>	<b>28.0</b>	<b>33.5</b>	<b>40.0</b>	<b>45.0</b>	<b>50.4</b>	<b>56.0</b>	<b>61.5</b>	<b>67.0</b>	
Power input (rated)	kW H	4.96	6.22	7.64	10.3	11.1	14.0	14.3	16.1	19.5	
COP	W/W	4.52	4.50	4.38	3.89	4.07	3.60	3.93	3.82	3.44	
EthasH/SCOP		174.6%/4.44	183.8%/4.67	181.8%/4.62	169%/4.30	183%/4.65	176.6%/4.49	168.6%/4.29	167.4%/4.26	158.6%/4.04	
Running current	A H	8.95	10.6	12.5	16.3	19.9	23.8	23.6	26.1	30.9	
Maximum overcurrent protection	A	20	32	32	40	40	50	50	63	80	

## Physical data

Outdoor unit		MMY-	SUG0801MT8P-E	SUG1001MT8P-E	SUG1201MT8P-E	SUG1401MT8P-E	SUG1601MT8P-E	SUG1801MT8P-E	SUG2001MT8P-E	SUG2201MT8P-E	SUG2401MT8P-E	
	m <sup>3</sup> /h		9900	10500	11700	11880	15300	16800	15900	16500	16800	
Sound power level	dB(A) H		77.0	78.0	82.0	84.0	87.0	89.0	89.0	90.0	91.0	
Sound pressure level	dB(A) H		56.0	58.0	62.0	63.0	64.0	67.0	67.0	67.0	69.0	
Sound power level	dB(A) C		74.0	75.0	79.0	79.0	83.0	84.0	85.0	86.0	86.0	
Sound pressure level	dB(A) C		53.0	55.0	58.0	58.0	60.0	61.0	63.0	64.0	64.0	
External static pressure available	Pa		80.0									
Dimensions (hxxxd)	mm		1690x990x780				1690x1290x780					
Weight	kg		232			329		361				
Compressor type			Hermetic Twin Rotary									
Refrigerant charge R32	kg		6.0				9.0					
	TCO <sub>2</sub> eq		4.1				6.1					
Gas line diameter	inch 2-pipe	3/4'	7/8'			1' 1/8						
Liquid line diameter (downsized diameter with limited length)	inch 2-pipe	1/2' (3/8')				5/8' (1/2')						
Suction line diameter	inch 3-pipe	3/4'	7/8'			1' 1/8						
LP/HP gas line diameter	inch 3-pipe	5/8'	3/4'			7/8'						
Liquid line diameter (downsized diameter with limited length)	inch 3-pipe	1/2' (3/8')				5/8' (1/2')						
Farthest piping equivalent length 2-pipe/3-pipe	m	215/190										
Farthest piping actual length for 2-pipe/3-pipe	m	190/165										
Maximum pipe length	m	500										
Maximum lift (indoor unit above/below)	m	40/90										
Operating range - db	°C C	-15 to 50										
Operating range - wb	°C H	-25 to 15.5										
Power supply	V-ph-Hz	380/415-3-50										

Connected indoor unit: MMU-UP\_1H-E  
C: cooling mode - H: heating mode



TOSHIBA Air Conditioning participates in the ECP program for Comfort Air Conditioners (AC).  
Check ongoing validity of certificate: [www.eurovent-certification.com](http://www.eurovent-certification.com)

