

# TOSHIBA

## Air Conditioning for Light Commercial



Better Air Solutions





**Committed to People  
Committed to the Future**

#### **TOSHIBA AIR CONDITIONING SINGAPORE**

Founded in 1999, Toshiba Carrier Corporation (TCC) is a global joint venture between two established and innovative companies whose legacy of pioneering technologies serves as the foundation for business today. Hisashige Tanaka and Ichisuke Fujioka are Toshiba's founders and renowned inventors in Japanese history while Willis Carrier, the founder of Carrier, invented modern air conditioning in 1902. Through this alliance, TCC is able to leverage on Toshiba's technological and manufacturing expertise of inverter-based products, while Carrier leverages its global reach to distribute these products outside of Japan.

Toshiba Carrier has been a dominant player in Japan's technological innovations, and continues to invent and introduce groundbreaking products and services into the global market. Toshiba was the first company to incorporate inverter technology into commercial and residential air conditioning systems in 1981, and continues to have major influences as the world's leading manufacturer and marketer of air-conditioning equipment and services today. Toshiba delivers innovative solutions that contribute towards a sustainable future for generations to come.

Committed to people, committed to the future; we make and do things that lead to a better world. A planet that is safer and cleaner. A society that is both sustainable and dynamic. A life that is comfortable as it is exciting. That is the future we believe in. We see its possibilities, and work every day to deliver answers that will bring on a brilliant new 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.

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 milestone:**

- 1961 World's First Split Type Air Conditioning.
- 1968 Japan's First Rotary Compressor.
- 1978 World's First Microprocessor Controlled Air Conditioners.
- 1980 World's First Inverter Custom Air Conditioning.
- 1981 World's First Residential Inverter Room Air Conditioning.
- 1988 World's First Twin Rotary Compressor.
- 1993 World's First Digital Twin Rotary Air Conditioning and Compressor.
- 1998 Japan's First R410A (eco-friendly) non-ozone depleting refrigerant based residential air conditioners.
- 1999 Launch of Split-system Units with environmentally friendly non-ozone depleting refrigerants.
- 2000 First air conditioning control system with Internet access.
- 2001 World's first R410a (eco-friendly) non-ozone depleting refrigerant based Light Commercial air conditioners.
- 2003 Launch of high-efficiency split with indoor air purification system into the European market.
- 2011 World's first voice controlled air conditioner in Japanese market.
- 2018 Launched Super Modular Multi System-7 in Southeast Asian market.
- 2019 Singapore's First 5-tick R32 low global warming potential Inverter Multi-Split Air Conditioner.



Better Air Solutions



4-Way cassette type      Ceiling type      Standard duct type      High-wall type



RAV-GE1801AP-SG

RAV-GE1801UP

RAV-GE1801CP

RAV-GE1801BP

RAV-GE1801KRP



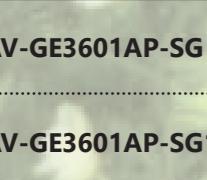
RAV-GE2501AP-SG

RAV-GE2501UP

RAV-GE2501CP

RAV-GE2501BP

RAV-GE2501KRP



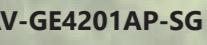
RAV-GE3601AP-SG

RAV-GE3601UP

RAV-GE3601CP

RAV-GE3601BP

RAV-GE3601KRP



RAV-GE4201AP-SG

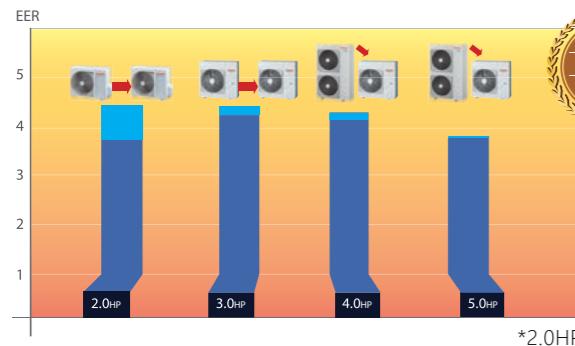
RAV-GE4201UP

RAV-GE4201CP

RAV-GE4201BP



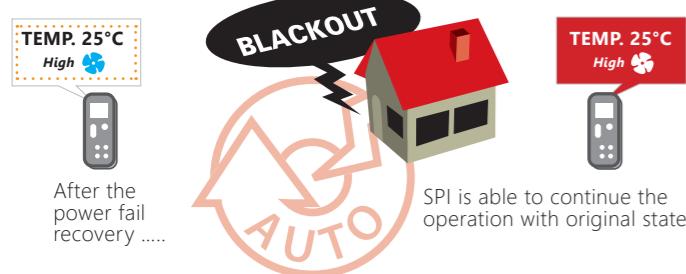
## Energy saving



### Top class EER 4.46\*

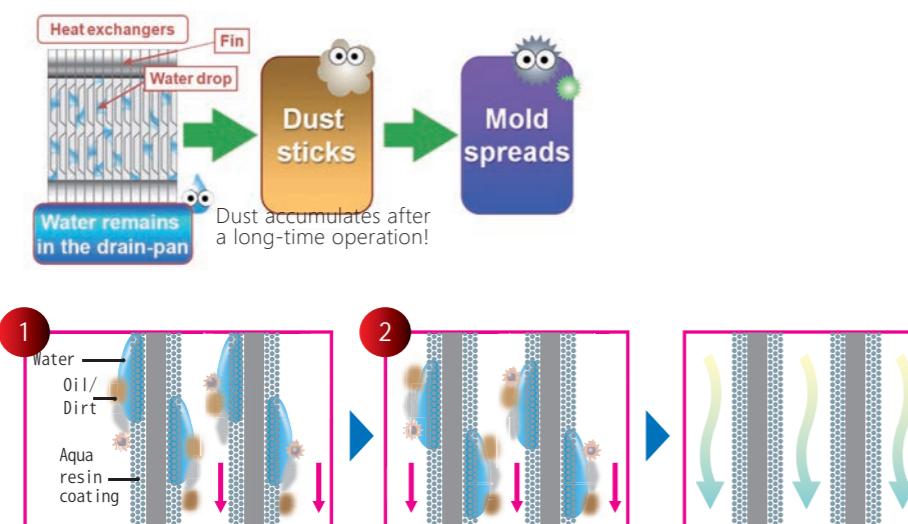
Thanks to Toshiba's unique energy saving technologies, the new SPI model can achieve 18% improved.

## Auto restart function



## Self-clean operation with Aqua-resin coated coil

The mechanism of the wash-off by aqua-resin coated indoor unit's fins.



- The "Aqua-resin" prevents dirt and oil from sticking on the fins.
- The dew condensation water flush out dirt and oil.
- A drying operation inhibits the propagation of mold after washing.

## Outside temperature

SPI has wide operation range which satisfy user needs.



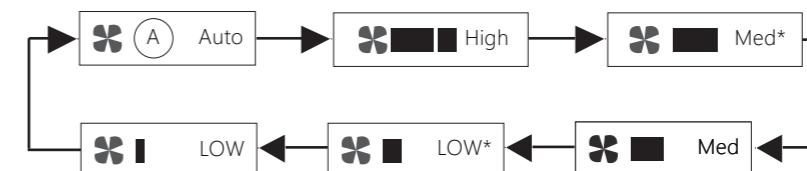
## Compact & Light-weight



- Easy to install outdoor unit on the wall by rack or an angle.
- Easy to carry and transportation.
- Easy installation and not different from current SPI (R410A)
  - >>> Working pressure for R410A and R32 are similar
  - >>> R32 can be easily charged in both liquid and gas state
  - >>> Safety commissioning instructions are similar to R410A

## Air-flow control

Indoor units can provide 5-step fine control of air volume, the wind strength can be controlled with higher accuracy.



\*The function is available with wireless remote controller and wired remote controller model RBC-AMS55E-ES/EN only.



## Durability

### Aluminum alloy

In general, the density of aluminum is one-third lighter of copper!



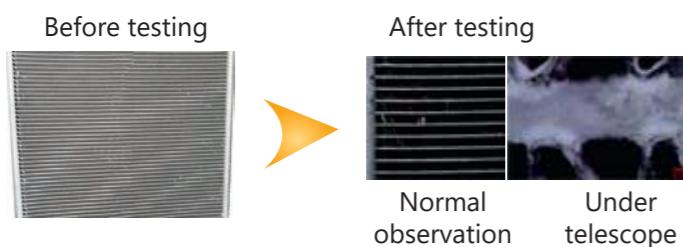
Specialized aluminum alloy adapted heat exchanger to prevent corrosion!



### Anti-Corrosion

With a new resistance corrosion aluminium alloy, the heat exchanger becomes highly durable. A salt spray test has been conducted to demonstrate the corrosion-resistant capability of our products in corrosive environments for a certain period of time.

Testing standard: JIS Z2371

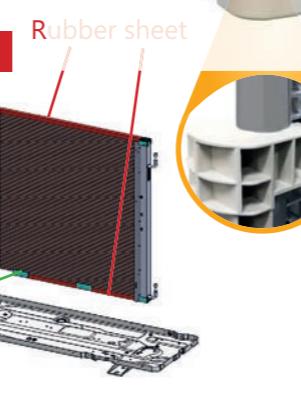


No evidence of corrosion was observed

After undergoing an intensive test, the heat exchanger is able to maintain its shape without corrosion, which strongly confirms its durability in a highly corrosive environment.

### Fin guard installed

Strengthen safety by installing fin guard for additional protection heat exchanger fin directly contact to installer or user.

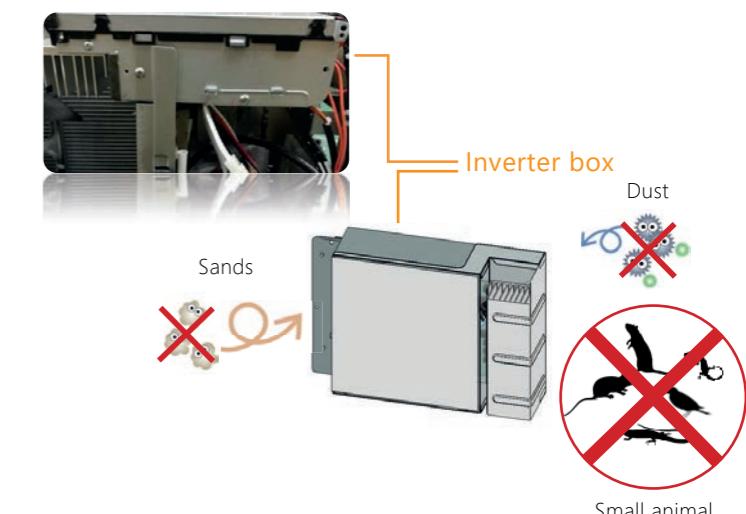


### Plastic joint cover and rubber sheet installed

Longer life time operation by installing plastic joint cover and rubber sheet between aluminum heat exchanger and steel part in outdoor unit to reduce the corrosion.

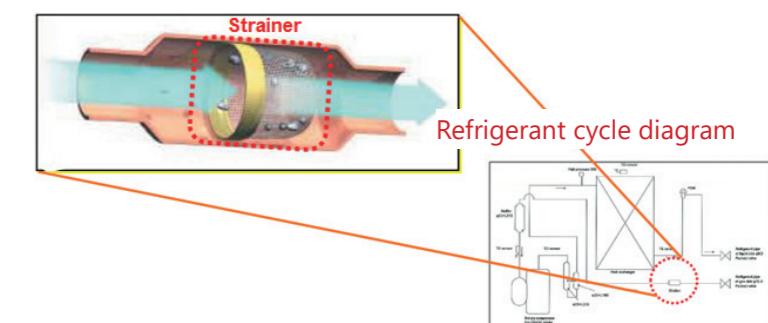
### Sealed up inverter box

Inverter box of SPI is fully sealed up in order to avoid malfunction due to sands, dust and small animal.



### Strainer in gas pipe

SPI has the strainer in the gas pipe to remove the dust and metal-abrasion powder.



### Twin rotary compressor

Toshiba's unique combination of twin rotary compressor and all inverter driven control remain unchanged with new R32 refrigerant, contribute to guaranteed accuracy and expertise of flawless Japanese quality.





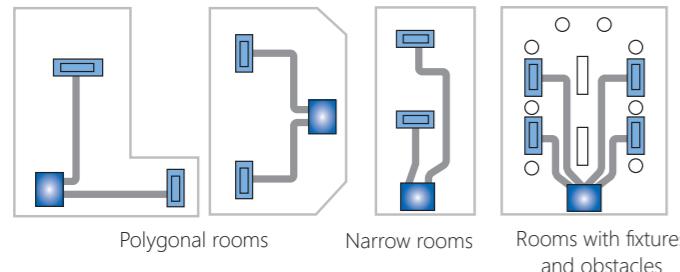


**Standard Duct type  
RAV-GE\*\*\*1BP**

### Adaptability

Flexible design, allows the inlet air configuration to be configured between the standard rear inlet design or as an alternative, from the underside of the unit. There is also a provision for a fresh air intake supply via a pre-punched knockout hole. Compact and thin chassis with measuring just 275mm. in height.

### Flexible duct is accessible, Allows complete design flexibility



### Easy to install

- Built-in high-lift drain pump.
- PC board panel easily accessible from the side of the unit.
- Optional air discharge spigot.



### Technical specification

Equivalent	HP	2.0	3.0	4.0	5.0
Model Name	Indoor unit	RAV-GE1801BP	RAV-GE2501BP	RAV-GE3601BP	RAV-GE4201BP
	Outdoor unit	RAV-GE1801AP-SG1	RAV-GE2501AP-SG	RAV-GE3601AP-SG1	RAV-GE4201AP-SG
Power supply (Outdoor unit)					
Cooling capacity (Min-Rate-Max)	kW	1.2-5.0-5.6	2.0-7.4-8.5	4.0-10.6-11.2	4.0-12.5-13.2
Power consumption (Rate)	kW	1.48	1.965	3.40	3.62
EER		3.38	3.77	3.12	3.45
Running Current	A	6.55 – 7.15	8.70 – 9.60	14.90 – 16.30	15.90 – 17.30
Recommended Isolator	A	20	20	32	32
Airflow (H/M+/M/L+L)	m³/h	900/840/710/620/540	1440/1260/1110/1000/960	1440/1260/1180/1060/960	2100/1900/1650/1470/1260
External static pressure	Factory setting Pa	30	30	30	50
Indoor unit	Upper-Lower Pa	120-30	120-30	120-30	120-30
Sound pressure level (H/M+/M/L+L)	dB(A)	35/34/33/30/28	41/40/38/35/34	43/42/41/40/38	44/43/42/41/39
Dimensions (HxWxD)	mm	275x700x750	275x1000x750	275x1000x750	275x1400x750
Weight	kg	23	30	30	40
Outdoor unit	Compressor Type	Twin Rotary	Twin Rotary	Twin Rotary	Twin Rotary
	Motor output W	750	750	3000	3750
Refrigerant charge (R32)	kg	1.0	1.0	1.2	1.4
Sound pressure level	dB(A)	52	57	59	60
Dimensions (HxWxD)	mm	630x800x300	890x900x320	890x900x320	890x900x320
Weight	kg	37	51	59	61
Piping connections	Liquid side mm	9.5	9.5	9.5	9.5
	Gas side mm	15.9	15.9	15.9	15.9
Max. pipe total length	m	50	50	50	50
Max. height difference	m	30	30	30	30
Operation range	°C	15 ~ 46	15 ~ 46	15 ~ 46	15 ~ 46

Note: The cooling capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.  
Indoor air temperature 27.0°C DB / 19.0°C WB, outdoor air temperature 35.0°C DB

The sound level are measured in an anechoic chamber in accordance with JIS B 8616

### Wireless & Wired controller

Wireless remote controller kit



\*\*Available as an option.

11 : SPI INVERTER R32 SYSTEM



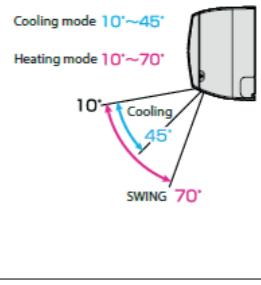
**High-wall type  
RAV-GE\*\*\*1KRP**

### Slim-line design

With its attractive, slim-line design, the unit can easily blend in with any room interior. The filtration system further improves the indoor air quality benefits of this high wall unit.

### Optimum air distribution

70° directional Auto-swing louvre mode allows optimum air distribution throughout the room. Total comfort is granted, thanks also to Automatic air volume control and Automatic cooling/heating.



### Technical specification

Equivalent	HP	2.0	3.0	4.0
Model Name	Indoor unit	RAV-GE1801KRP	RAV-GE2501KRP	RAV-GE3601KRP
	Outdoor unit	RAV-GE1801AP-SG1	RAV-GE2501AP-SG	RAV-GE3601AP-SG1
Power supply (Outdoor unit)				
Cooling capacity (Min-Rate-Max)	kW	1.2-5.0-5.6	2.0-6.1-8.5	4.0-8.3-11.2
Power consumption (Rate)	kW	1.32	1.42	2.19
EER		3.79	4.29	3.78
Running Current	A	5.85 – 6.40	6.30 – 6.85	9.65 – 10.50
Recommended Isolator	A	20	20	32
Indoor unit	Airflow (H/M+/M/L+L)	m³/h	960/880/830/720/680	1040/970/910/796/680
	Sound pressure level (H/M+/M/L+L)	dB(A)	42/41/39/36/35	45/43/41/36/35
	Dimensions (HxWxD)	mm	320x1050x250	348x1200x280
	Weight	kg	14	19
Outdoor unit	Compressor Type		Twin Rotary	Twin Rotary
	Motor output W		750	3000
Refrigerant charge (R32)	kg	0.9	1.0	1.2
Sound pressure level	dB(A)	52	57	59
Dimensions (HxWxD)	mm	630x800x300	890x900x320	890x900x320
Weight	kg	37	51	59
Piping connections	Liquid side mm	6.4	9.5	9.5
	Gas side mm	12.7	15.9	15.9
Max. pipe total length	m	50	50	50
Max. height difference	m	30	30	30
Operation range	°C	15 ~ 46	15 ~ 46	15 ~ 46

Note: The cooling capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.  
Indoor air temperature 27.0°C DB / 19.0°C WB, outdoor air temperature 35.0°C DB

The sound level are measured in an anechoic chamber in accordance with JIS B 8616

### Wireless & Wired controller

Standard supply\*



\*Included with indoor unit.  
\*\*Available as an option.

AIR CONDITIONING FOR LIGHT COMMERCIAL : 12

**Wired remote controller**
**RBC-AMS55E-EN  
RBC-AMS55E-ES**

- 7-day time function.
- Multi-language available.
- Possibility to set and display the room name to easily set-up and monitor the working parameter.
- New modern and desirable controller design with menu driven display.
- Save mode by schedule timer to optimise 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.
- Built-in backup power. Settings are kept in memory up to 72 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.

**Remote controller with weekly timer**
**RBC-AMS41E**

- Clock display.
  - Schedule timer:
  - Possible to program schedule timer (7-day timer) function. Possible to program 8 functions for each day of the week.
- \*The following items can be set in program:  
Operation time, Operation start/stop, Operation mode, Temperature setting, restriction on button operation.

**Schedule timer**
**TCB-EXS21TLE**

- Schedule timer mode:
- 6 programmings per day.
  - Enabling 8 groups to be programmed.
  - A maximum of 64 indoor units can be controlled.
  - A maximum of 100 hours back-up power supply.
- Weekly timer mode:
- 7 types of weekly schedule and 3 programmings per day.

**Standard remote controller**
**RBC-AMT32E**

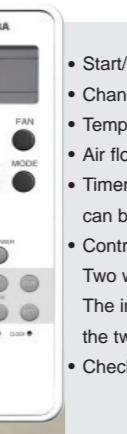
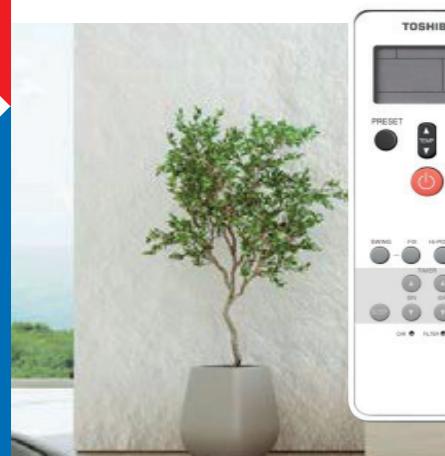
- Standard wired remote controller can be connected a single indoor unit or a group of up to 8 indoor units. Power save operation limits the greatest current value. The remote controller allows error to be displayed while the protective device works or a error occurs.

**Simple wired remote controller**
**RBC-AS41E**

- Can be connected to a single indoor unit or a group of up to 8 indoor units.
- Start/Stop
  - Temperature setting
  - Air flow changing
  - Check code display

**Wired remote controller (RBC-ASC11E)**

- Compact size H86mm x W86mm x D16mm
- Stylish design with big screen and backlight
- Time off
- Available by 0.5°C

**Wireless remote controller**
**Integral receiver  
(For Ceiling type)  
RBC-ACX33CE1**

**Stand alone receiver  
TCB-ACX32E2  
(For Standard duct type)**

- Start/Stop
  - Changing mode
  - Temperature setting
  - Air flow changing
  - Timer function Either "ON" time or "OFF" time or "CYCLIC" can be set how many 30 min. later ON or OFF is operated.
  - Control by 2 remote controllers is available.
- Two wireless remote controllers can operate one indoor unit. The indoor unit can then be operated separately from the two different locations.
- Check code display

**Installation and the use of refrigerants not specified by Toshiba Carrier Corporation**

Toshiba refrigeration and air-conditioning units are designed and manufactured on the assumption that the product is used with a specific refrigerant suitable for each unit.

We have recently seen some cases where the type of refrigerant used is different from the one originally installed in the product. Such actions may cause mechanical defects, malfunctions, failures and in some cases result in a serious safety issue. Therefore do not install any refrigerant other than the one specified by Toshiba Carrier Corporation for its respective products.

The type of the refrigerant used for each of our products is shown in the accompanying owners manual, or on the product label attached on the product itself.

Toshiba Carrier Corporation shall not assume any liability for failures, malfunctions or safety in its products if the refrigerant used is different from the one specified.

**Safety Precautions**
**For operation:**

Before use, read through the operating instructions to ensure proper use.

**Concerning the purpose for which the air conditioners are to be used**

- The air conditioners presented in this catalogue are air conditioning/heating units to be used solely by general consumers.
  - Do not use these air conditioners for special applications such as for the storage of food items, animals, plants, precision machines or works of art. Doing so may degrade the quality of the items.
  - Do not use these air conditioners for air-conditioning applications in vehicles or ships. Doing so may cause water and/or power leakages.

**Precautions for using Air conditioners****Concerning the automatic defrosting unit**

When the outdoor air temperature drops, frost may form on the heat exchanger of the outdoor unit. In such cases, the automatic defrosting unit will be activated, and it will take 5 to 8 minutes for the heating operation to be restored.

**Concerning the air conditioner's operating conditions and their selection.**

- (1) Avoid using the air conditioner in the following locations.
  - Locations with acidic or alkaline atmospheres (locations at which highly acidic or alkaline air is directly drawn in, such as in hot springs areas from which sulfur gases are given off, or where chemicals, vinegar, exhaust air from burners, etc., are given off) The heat exchangers and other parts may become corroded.
  - Locations with atmospheres filled with coolant or other machine oil or steam exhaust (such as at food preparation factories or machine plants). The heat exchangers may corrode; frost may form as a result of heat exchanger malfunction; air conditioner operating performance may be compromised or condensation may form as a result of clogged filters; plastic parts may incur damage; heat-insulation materials may become separated, etc.
- (2) Before using an air conditioner in any of the following locations, consult with your dealer or a qualified contractor.
  - Locations where vapors from edible oils are given off (such as in bakeries or kitchens and restaurants that use edible oils) ...

The air conditioner's operating performance may be compromised or condensation may form as a result of clogged filters, and the plastic parts may incur damage. In line with the prevailing conditions, take countermeasures such as tailoring the installation conditions in accordance with the conditions, using air conditioners designed for kitchens or oil guard filters, etc.

  - Locations with disinfectant-induced chlorine atmospheres (watertanks, etc.) The metal parts in the heat exchangers, motors, etc., may become corroded.
  - Locations with high salinity (coastal areas, etc.) Corrosion may occur so use outdoor units specifically designed to withstand exposure to salt.
  - Locations where power is supplied from independent power generators. The power line frequency and/or voltage may fluctuate, possibly causing the air conditioner to malfunction.
- (3) Concerning use in locations with high ceilings
  - In locations with high ceilings, use of circulators for improving the temperature distribution during heating is recommended.
- (4) Concerning use in high-humidity environments
  - When the ceiling-recessed type of indoor unit is installed in a location, such as those described below, and it is very hot and humid inside the ceiling, condensation may form on the external surfaces of the indoor unit and drip down. In such cases, add external heat-insulating materials.
  - Locations such as food preparation sites in which the areas above the ceilings are hot and humid
  - Locations in which outside air is drawn in and routed above the ceiling
  - Above ceilings with a slate roof or tiled roof overhead
- (5) Even when an air conditioner is shut down, it will still consume a small amount of power to protect the unit. If the air conditioner will not be used for a prolonged period, turn OFF the main switch (ground fault circuit breaker). However, before the unit is to be used again, turn ON the main switch (ground fault circuit breaker) for at least 12 hours in order to prevent trouble.



## Better Air Solutions

Through our commitment to world-class efficiency, versatile scalability and leading quality, Toshiba Air Conditioning advances leading-edge technologies to find the most forward-thinking solutions possible for your world. Toshiba Air Conditioning is an innovator and provider of comprehensive building air conditioning solutions with world-class reliability.

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📞 6569 9188

Notice: - Products listed in this leaflet/catalogue use HFCR32 refrigerant with a GWP of 675\*.

- Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements.  
All features and specifications are subject to change without prior notice.

\*The GWP value is calculated based on information provided in the EU F gas Regulation and IPCC Fourth Assessment Report.

