TOSHIBA
AIR CONDITIONING

Inventor of the Inverter

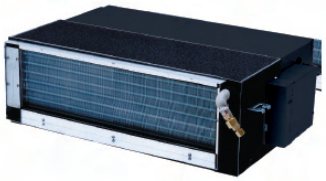
Flexible Technology

RESIDENTIAL MULTI INVERTER SYSTEM

MULTI

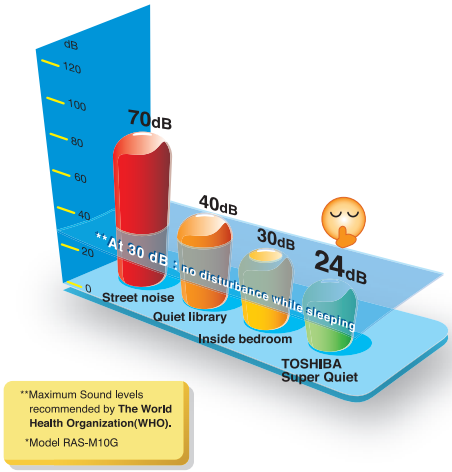
Residential

A step beyond well-being



Innovative technologies, ingenious characteristics Toshiba raises the standard!

This is represented strongly in Toshiba's residential systems, where attention to the individual is paramount and Toshiba recognises and respects the desire for improved well-being.
Thanks to Toshiba's continuous dedication, research and development, modern technologies are applied to its systems.
Toshiba's objective is continuous innovation, constantly reaching out to reduce the impact on the world around us and increase our personal comfort and well-being.



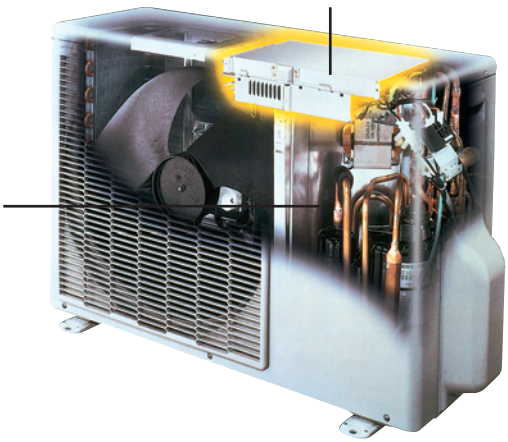
DC Hybrid Inverter Technology

It's true: Toshiba was the first air conditioning manufacturer to utilise inverter technology within air conditioning systems in 1981. Being first to develop and utilise innovative technology is a passion for Toshiba.
Inverter technology immediately demonstrated its advantages: precisely matching the cooling or heating requirement, energy efficiency, and accurate temperature control.

The development of the new DC Hybrid Inverter has again confirmed this innovative capability and leadership position in technology in a fast and growing air conditioning market.

DC Twin Rotary Compressor
- High reliability
- High efficiency
- Low noise

DC Hybrid Inverter
- High energy saving control
- High power factor control



The mission? Improved Indoor Air Quality

Comfort in the home means much more than just controlling the temperature. Because of this, Toshiba is an excellent investment for the enhanced well-being of the family environment.
One of Toshiba's research objectives is the continuous introduction of new ways to eliminate air pollutants in the residential air conditioning sector.

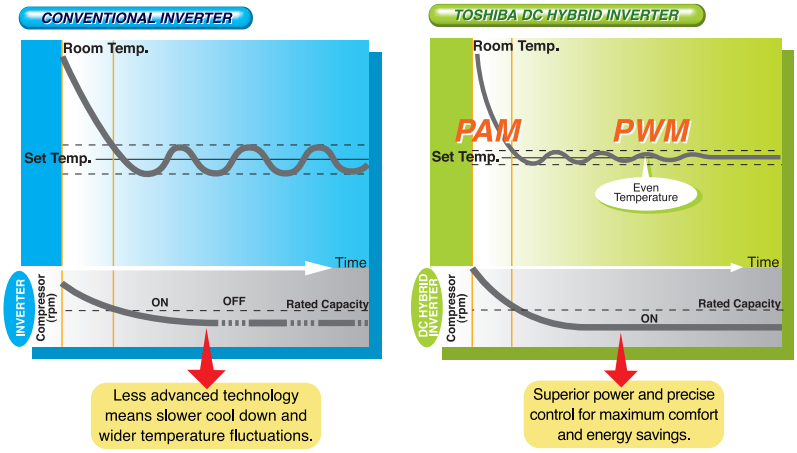
Care for users

The benefits of Toshiba's refined designs include flexibility in application, low operating sound levels, improved indoor air quality and all-around comfort. This comfort is a result of precise temperature control thanks to inverter technology. The inverter ensures that the required temperature of the occupant is reached quickly and is maintained – eliminating temperature fluctuations often experienced with non-inverter systems.

DC Hybrid Inverter

Toshiba: the inverter company

The efficiency of an inverter air conditioner is determined by the efficiency of each component: the control electronics, the motor, and the compressor. Toshiba has focused its attention on all of these components.



Control electronics

Toshiba's deep understanding of the functional characteristics of inverters has allowed it to refine the idea of energy savings along with continuous improvements in key areas, such as the power factor.

Power Factor

The power factor of an electrical load, such as a motor, is its power output compared to the energy it consumes, both measured in watts. Ideally, the electrical current and voltage are "in phase", and the power factor is 100%.

Actual operating conditions cause an inverter system to deviate from this ideal.

Toshiba has combined two technologies, creating the "DC Hybrid Inverter", that automatically chooses the better of the two control methods based on the actual conditions at the time.

This solution provides high capacity when it is necessary. On very cold winter days, or hot summer days the Toshiba DC Inverter uses the PAM method, and for very low energy consumption, when conditions are less severe uses the PWM method.

Given that maximum capacity is not often required, and that high efficiency is always desirable, the result is a greatly reduced annual energy consumption.

The driver of technology

The motor that drives the revolutions of the air conditioner is a concentration of mechanical technology and electromagnetic engineering.

The most advanced methods of modelling were used to determine the best configuration of the permanent magnets in the DC motor.

A perfect choice of the shape and materials for the permanent magnets allows for the best synchronisation with the frequency of the voltage applied by the control circuit.

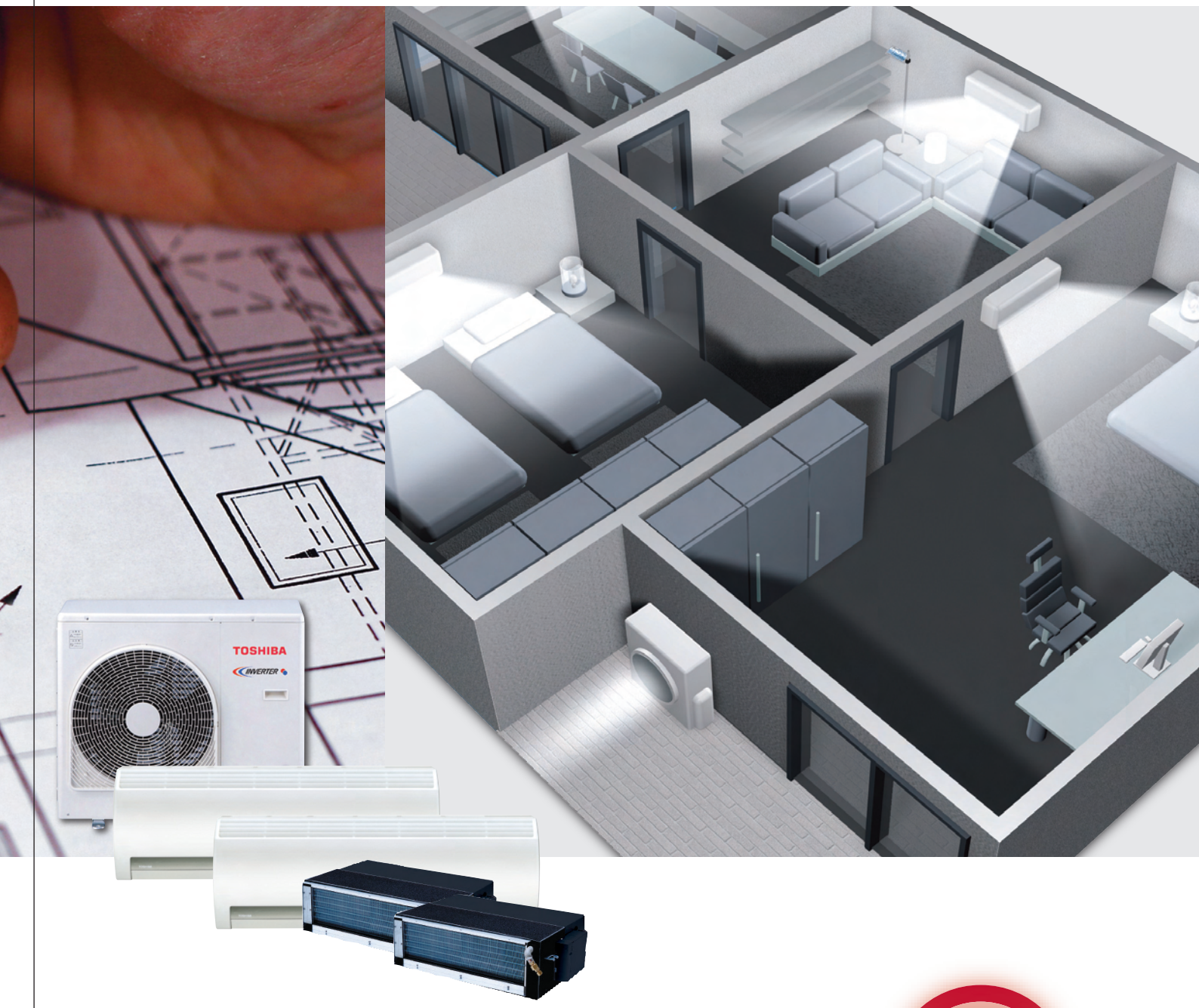
The rpm is therefore precisely selected to match the ambient conditions.

The twin rotary compressor

The compressor is the third extra-thermodynamic element which Toshiba has continuously improved, finally arriving at the solution called the "DC Twin Rotary Compressor". It is a double cam rotary compressor which has several features that increase its performance and reliability. The opposed, double blade design yields mechanical stability and less vibration that could cause stress on other components. In fact, being able to reduce the rpm without causing instability enables improved temperature control when less capacity is required.

An added benefit offered by the DC Twin Rotary Compressor is its low noise level compared to normal rotary compressors, and with refrigerant R410A, it is more efficient than scroll compressors.

Technology
Multi-split systems



When it is necessary to air condition more than just one room, the line-up of Toshiba's multi-split systems can be a perfect solution.

One outdoor unit is capable of operating 2, 3 or 4 indoor units of your choice, indoor styles are designed to compliment the interior of many homes.

The multi-split systems have several capacity steps and electronic capacity control that provides user comfort and ease of control.

Toshiba Mult-split systems offer a wide range of possibilities to create a comfort and style desired by many.

The full range of internal units including ducted ceiling units and hi-wall models that incorporate advanced filtration and air cleaning characteristics to improve indoor air quality.

5 Year Warranty† *Parts & Labour*
RESIDENTIAL APPLICATIONS

†Warranty
Toshiba have a reputation for product quality, and one way to demonstrate our confidence in Toshiba Air Conditioning is our 5 year parts and labour warranty from date of installation for products used in residential applications. For comprehensive warranty information, please contact our service department.

Toshiba Remote Controls

- **One-touch preset**
  The one-touch Preset memory allows the user to store their preferred comfort settings, and restore all of them at the simple touch of a button.

- **One-touch auto mode**
  Press the auto button to set the system into fully automatic mode. Your air conditioner will automatically choose the best settings to quickly achieve and maintain your desired temperature.

- **Five selectable fan speeds plus Auto**
  Choose your desired airflow from the five fan speeds or select the Auto Fan Speed mode and let the air-conditioner select it for you.

- **Operating Modes**
  Select the Operating Mode: Cooling, Dry Mode (Dehumidification), Fan only, Heating (only for heat pump model) or Auto Change over.

- **Quiet Mode**
  By pressing the “Quiet” button on the remote control, the indoor unit will only operate at super low fan speed, reducing the sound of the indoor unit by 3db.

- **Auto swing or fixed louver position**
  Select your preferred airflow distribution: “Fix” to choose any one of the 12 louver positions that you prefer or “Swing”, to move smoothly between all positions for a comfortable air flow.

- **Real Time - On/Off Timer - Repeat Timer**
  The real time On/Off timer provides easy-to-set on and off operating times. The repeat timer allows for automatic repetition of the timer settings every 24 hours.

- **Auto Diagnosis**
  The unit is equipped with a 36 Code Auto Diagnosis system that constantly monitors all main functions and components of the system to enable maintenance scheduling.

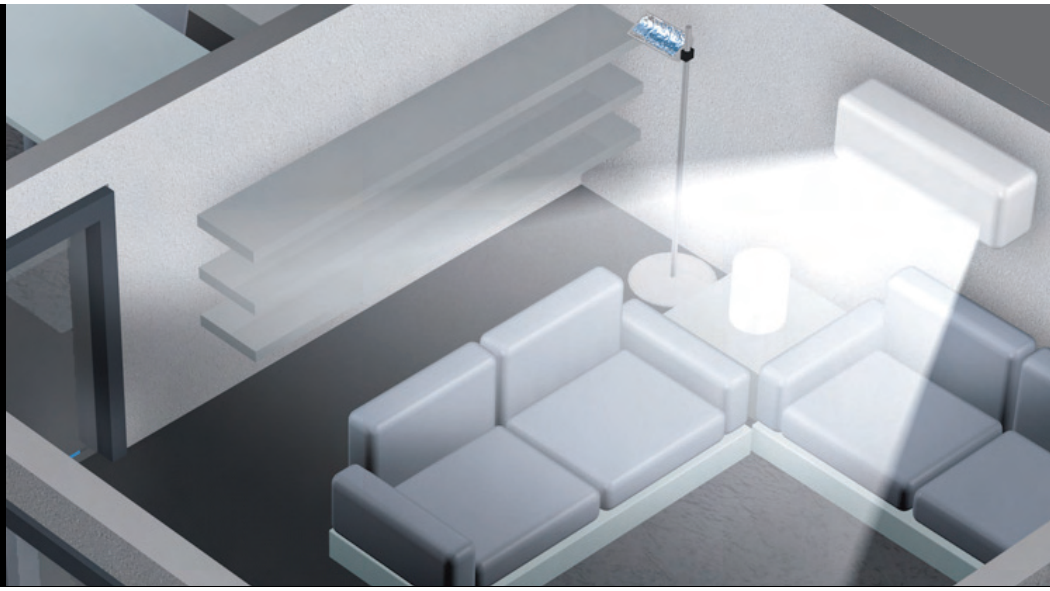
- **Eco-logic**
  The Eco-logic mode achieves energy savings of up to 25% compared to the standard operation mode, whilst improving your comfort by automatically increasing the temperature setting.

- **Hi-Power**
  Select “Hi-Power” for extra airflow, to cool you faster than standard operation.

- **Comfort Sleep**
  The temperature during the night is normally cooler than during the day. By pressing the “Comfort Sleep” button (in cooling mode) the room temperature will be allowed to rise by one degree per hour for two or three hours, providing you with improved comfort whilst asleep.

R410A

DC HYBRID INVERTER



Residential Multi-split Hi-wall Inverter

- Zeolite + Sasa filters
- Byo-Enzyme + Gingko filters
- Vitamin C
- One touch pre-set memory
- Hi-power
- Washable Front Panel
- 12 Step Louvre Positions
- One Touch Auto
- Quiet Mode
- Comfort Sleep
- Sleep Timer
- Eco Mode
- Real Time
- Auto Diagnostics

Features

Innovative technology, ingenious features and attractive design - Toshiba's GKV raises the standard of air conditioning yet again with a new level of comfort.

Comfort comes with the whisper-quiet operation and optimum airflow management system, whilst the new filtration system allows you to breathe cleaner air.

The units are available also as single split systems, with the multi-split system offering the increased flexibility of one outdoor unit serving up to four indoor units.

Key features

New enhanced aesthetic and slimline design.

New enhanced filtration system: Zeolite Plus + Sasa filter to deodorise, Bio-Enzyme filter + Gingko filter to purify and new anti-oxidant Vitamin C filter*.

Latest Digital hybrid inverter technology for increased energy efficiency, optimised comfort and superior reliability.

One touch pre-set memory: to recall your favourite settings.

Low noise level: operation at 24dB(A) in cooling only mode (size 10) ducted for comfortable nights.

Hi-power: lowers/raises temperature and increases fan speed to get to the desired temperature faster.

Indoor Unit

Technical specifications

Indoor Unit - Cool Only Model			RAS-10GKCV-E2	RAS-13GKCV-E2	RAS-16GKCV-E2
Indoor Unit - Reverse Cycle Model			RAS-10GKV-E2	RAS-13GKV-E	RAS-16GKV-E
Cooling Capacity	kW	CO	2.70	3.70	4.50
Heating Capacity		RC	4.00	5.00	5.50
Dimension (H x W X D)	mm		275 x 790 x 218	275 x 790 x 218	275 x 790 x 218
Weight	kg		9	9	9
Airflow	L/s	CO	158	164	180
		RC	169	172	183
Sound Pressure (h/l)	dB(A)	CO	36/28	40/28	42/33
		RC	36/28	39/28	42/33
Liquid pipe size	mm	CO/RC	6.35	6.35	6.35
Gas pipe size			9.52	9.52	12.70

Outdoor Unit

Technical specifications

Outdoor Unit - Cool Only Model			RAS-M18GACV-E	RAS-3M23GACV-E	RAS-3M26GAV-E	RAS-4M27GACV-E
- Reverse Cycle Model			RAS-M18GAV-E	(Cool Only Model)	(Reverse Cycle Model)	RAS-4M27GAV-E
Number of Indoor Units			2 Rooms	3 Rooms	3 Rooms	4 Rooms
Cooling Capacity - Rated (Min~Max)	kW	CO	5.20 (1.40 ~ 6.20)	6.70 (2.20 ~ 7.00)	7.50 (1.40 ~ 8.90)	8.00 (1.40 ~ 9.20)
Heating Capacity - Rated (Min~Max)		RC	6.70 (0.90 ~ 8.50)	-	9.00 (0.80 ~ 10.80)	9.00 (0.80 ~ 11.00)
Dimension (H x W X D)	mm	CO	550 x 780 x 290	695 x 900 x 320	795 x 900 x 320	795 x 900 x 320
		RC		-		
Weight	kg	CO	40	48	64	65
		RC		-		
COP	Rated	CO	3.02	3.12	3.53	3.20
		RC	3.62	-		4.00
Max Pipe Length	m	CO	30	40	50	70
		RC		-		
Max Pipe Per Unit	m	CO	20	20	25	25
		RC		-		
Chargeless Length	m	CO	20	40	50	70
		RC		-		-
Max Height Difference	m	CO	10	10	15	15
		RC		-		
Sound Pressure	dB(A)	CO	48 *	48 **	48 **	48 ***
		RC	50 *	-		
Refrigerant			R-410A	R-410A	R-410A	R-410A
Compressor Type Inverter			DC Twin Rotary	DC Twin Rotary	DC Twin Rotary	DC Twin Rotary
Operating Range	°C	CO	-10 ~ 24	-10 ~ 24	-10 ~ 24	-10 ~ 24
		RC	5 ~ 43	-	5 ~ 43	5 ~ 43
Power Supply	V/ph/Hz		240 / 1 / 50	240 / 1 / 50	240 / 1 / 50	240 / 1 / 50

Note: The capacity per indoor unit will vary in cases where the continuous and simultaneous operation of multiple indoor units is required. Care should be taken when sizing in these applications. Please consult your Toshiba specialist dealer for more detailed information.

Note:-
CO = Cooling Only Model
RC = Reverse (Heating and Cooling) Cycle Model
(*) Sound based on 2 Indoor units operating
(**) Sound based on 3 Indoor units operating
(***) Sound based on 4 Indoor units operating

- R410A
- DC HYBRID INVERTER

Residential ducted inverter

- Only 230mm high
- Flexible air return
- IR Remote Control or Wired Control
- Cooling Only
- Reverse Cycle
- Low Noise

*Only available on ducted range

Features

The ducted indoor unit allows discrete air conditioning where you want to get the benefit of a pleasing cooling and heating effect without the presence of visible indoor units.

Its slim design makes it suitable for easy installation into false ceiling spaces.

One outdoor unit can serve up to 4 indoor units and can be mixed and matched with the popular Hi-wall unit.

Key features

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

Low noise level: at the low fan speed mode, the unit operates at only 24dB(A).

Very slim design: only 230 mm in height, 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.

Technical specifications

Indoor Unit - Cool Only Model			RAS-10GDCV-E	RAS-13GDCV-E	RAS-16GDCV-E
Indoor Unit - Reverse Cycle Model			RAS-10GDV-E	RAS-13GDV-E	RAS-16GDV-E
Cooling Capacity	kw	CO	2.70	3.70	4.50
Heating Capacity		RC	4.00	5.00	5.50
Dimension (H x W x D)	mm		230 x 750 x 440	230 x 750 x 440	230 x 750 x 440
Weight	kg		19	19	19
Airflow *	L/s	CO	200	217	217
		RC			
Sound Pressure * (h/l)	dB(A)	CO	31/23	32/24	33/25
		RC	32/24	33/25	34/26
Liquid pipe size	mm	CO/RC	6.35	6.35	6.35
Gas pipe size			9.52	9.52	12.70

Refer to page 7 for outdoor unit

Note: The capacity per indoor unit will vary in cases where the continuous and simultaneous operation of multiple indoor units is required. Care should be taken when sizing in these applications. Please consult your Toshiba specialist dealer for more detailed information.

*Airflow * measured at standard static presssure*
*Sound Pressure * levels at standard static pressure by JIS B 8616 standard measurement*
Note:- CO = Cooling Only Model
RC = Reverse (Heating and Cooling) Cycle Model

TOSHIBA
AIR CONDITIONING
Inventor of the Inverter

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