DAISEIKAI VOiCE NDR Series Room Air Conditioners

Toshiba Home Appliances Corporation has released the DAISEIKAI VOiCE NDR series with the world's first(*1) function making it possible for an air conditioner to be operated by the user's voice.

The voice controller of the NDR series is a newly developed wireless remote controller incorporating a speech recognition function to improve the user interface. When a voice command such as "stop," "heat," etc. preregistered in the voice controller is issued to it, it recognizes the command and sends the appropriate signal to turn the air conditioner on or off, change the preset temperature, and so on. Users can easily operate the air conditioner using this voice controller even when the room is dark or they are busy with housework or other tasks.

In addition, users can easily activate power-saving operation directly by the voice controller to improve energy-saving performance. When the energy-saving mode is activated, the air conditioner operates at the industry's minimum(*2) power consumption of 45 W. In order to remarkably improve the energy-saving performance, we developed a dual-stage compressor in which leakage loss and sliding loss were reduced by flattening the cylinder and suction loss was reduced by using only one suction opening.

(*1) As of September 2011 (as researched by Toshiba Home Appliances Corporation)

(*2) As of February 2012 (as researched by Toshiba Home Appliances Corporation)

Indoor unit

Remote controller

Outdoor unit

Voice controller

RAS-402NDR/NADR DAISEIKAI VOiCE room air conditioner

TORNEO™ mini VC-C11 Lightweight and Compact Centrifugal Vacuum Cleaner

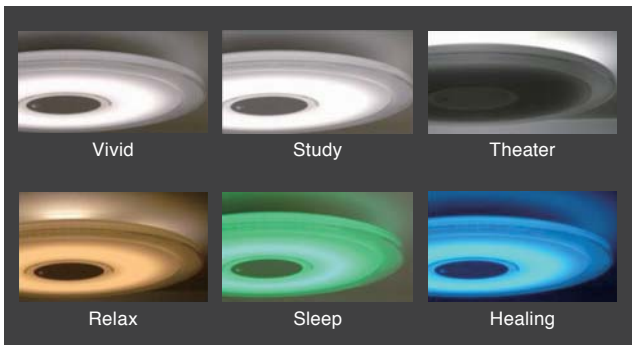
Toshiba Home Appliances Corporation has introduced the TORNEO™ mini VC-C11 lightweight and compact centrifugal vacuum cleaner that is lighter in weight by approximately 36% compared with our conventional model.

The main features of this new model are as follows:

- The newly developed compact, lightweight, and highly efficient motor, lightweight power cord, and streamlined body design achieve a weight of only 2.5 kg.
- The "Dual Tornado System" with two different centrifuge speed zones maintains suction power and compresses dust, allowing easy disposal.
- In "ECO" mode, the suction head is suspended to stop the rotation of the brush and the suction power is automatically decreased, reducing power consumption by approximately 38% compared with the "Power" mode.

TORNEO™ mini VC-C11 centrifugal vacuum cleaner

E-CORE™ Multicolor LED Ceiling Light Fixture



Six lighting modes for various scenes

Toshiba Lighting & Technology Corporation has developed a new light-emitting diode (LED) ceiling light fixture, which offers illuminated spaces with characteristics that have never before been realized by our conventional models.

The E-CORE™ multicolor LED ceiling light fixture is equipped with LEDs in the three primary colors (red, green, and blue) in addition to white LEDs (daylight and warm white), and provides indirect lighting by illuminating the ceiling and walls. By means of these LEDs, it offers the choice of six specific lighting modes to suit various scenes in users' lives: "Vivid," "Study (improved concentration)," "Theater," "Healing," "Sleep," and "Relax." These colors have been introduced according to the results of our experiments.

This fixture also offers 364 basic white light patterns of various color temperatures and brightnesses, with output levels selectable in up to 20 steps. Furthermore, the user can choose any mixed color in the RGB color-adjustable mode.

By embodying innovative concepts of LED arrangement and cover design, the new lighting fixture realizes a clear light-emitting surface and colors with the minimum number of LEDs. It has a luminous flux of 5 130 lm and achieves the industry's best(*) color rendering: Ra = 90. This product is a home light fixture suited to the new era of lighting that takes full advantage of the characteristics of LEDs. It also has functions such as an energy-saving mode with automatic brightness control by means of a luminance sensor, an on/off timer, and a night light that can be controlled in six levels.

(*) As of October 2011, in the case of "Vivid" mode setting of the multicolor LED ceiling light (as researched by Toshiba Lighting & Technology Corporation)

E-CORE™ 10.6 W-Class LED Lamps

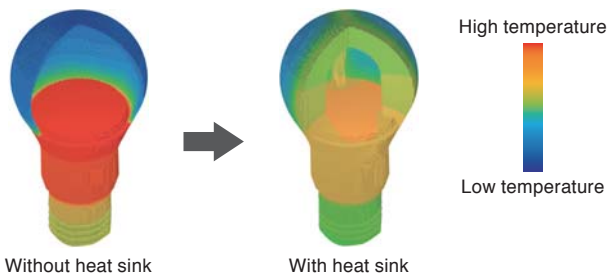
Toshiba Lighting & Technology Corporation has commercialized the E-CORE™ 10.6 W-class LED lamps, the industry's highest(*) brightness LED replacement lamps for 810 lm-class (warm white) standard incandescent lamps (LW100V54W55) or 1 000 lm-class (white) LED lamps, as well as for compatible CFLi (EFA15EL/12-R) fluorescent lamps. These new lamps also have a wider light distribution close to that of incandescent lamps, thanks to a multi-diffusion globe with high diffusivity and dramatically increased cooling capacity achieved by a "triple arch radiator plate" heat sink inside the globe.

The main features are as follows:

- The new lamps provide a spread of light similar to that of incandescent lamps and compact fluorescent lamps.
- They achieve the industry's highest brightness of light distribution in a wide type.

(*) As of October 2011 (as researched by Toshiba Lighting & Technology Corporation)

(a) 10.6 W-class LED Lamps



(b) Comparison of simulated temperature distribution with and without heat sink

E-CORE™ 10.6 W-class LED lamps

SMMS-i™ Multi-Split Air-Conditioning System for North American Market

SMMS-i™ outdoor unit

Toshiba Carrier Corporation has released the SMMS-i™ multi-split air-conditioning system for buildings in the North American market. The SMMS-i™ is known for its high energy efficiency, versatility for various applications, and ability to ensure precise control over temperature on a room-by-room basis. The SMMS-i™ product for North America, in particular, caters to the needs of that market where central air-conditioning systems serve as the mainstream, and responds to the growing demand for highly energy-efficient systems.

The SMMS-i™ complies with the energy efficiency standard of the U.S. Department of Energy (ASHRAE 90.1), and its integrated energy efficiency ratio (IEER), a measure of partial-load cooling efficiency, ranks in the top class(*) thanks to the adoption of DC twin-rotary compressors designed for high efficiency in the medium-capacity range, vector-controlled inverters to adjust the rotation speed in 0.1 Hz steps, large radial fans, and high-volume DC fan motors. This new product is available in two different power source voltages (230 V and 460 V) to accommodate different voltages according to the age of the building. Our refrigerant flow distribution control system, called the “Intelligent VRF Control System” allows a maximum piping length of up to 220 meters and height differences of up to 40 meters between indoor units to ensure industry-leading flexibility for piping and layout design.

We are developing the North American market based on such technologies to provide eco-friendly and comfortable living space solutions.

(*) As of June 2011 (as researched by Toshiba Carrier Corporation)

VRF: variable refrigerant flow

MiNi-SMMS™ Highly Energy-Efficient Side-Blow Outdoor Unit for Multi-Split Air-Conditioning Systems in Emerging Countries

MiNi-SMMS™ side-blow outdoor unit for multi-split air-conditioning systems

Toshiba Carrier Corporation has developed the MiNi-SMMS™ highly energy-efficient side-blow outdoor unit for multi-split air-conditioning systems targeting luxury condominium projects in emerging countries, and launched the newly developed product in July 2011.

Developed as a local-fit (region-oriented) product, the MiNi-SMMS™ achieves a reduced the footprint while improving energy efficiency. The adoption of a new twin-rotary compressor with improved efficiency in the medium-load range for this product has contributed to an integrated part load value (IPLV) rating of 5.3, the best(*) among side-blow systems in the industry as certified by the China Energy Label of the China National Institute of Standardization, as well as significantly reducing the running cost.

For easier installation, the footprint of the unit has been reduced by 62% compared with conventional top-blow systems so that it can be easily fitted on the balcony of each floor of a condominium, and its weight is also reduced by 50% compared with conventional top-blow systems.

(*) As of July 2011 (as searched by Toshiba Carrier Corporation)