

VEGETA™ GR-D62F/D55F/D50F/D47F Refrigerators



VEGETA™ GR-D55F refrigerator

Toshiba Home Appliances Corporation has released the VEGETA™ GR-D62F/D55F/D50F/D47F refrigerators, which enhance energy saving and improvement of freshness preservation.

The main features of this lineup are as follows:

- Maintenance-free operation has been realized by automating the water supply required to discharge Picoion™.
- Freshness preservation is significantly improved by the discharge of approximately three times the volume of Picoion™ with a newly developed discharge pin and expansion of the extent of sterilization.
- Heat leakage has been reduced by redesigning the mechanical compartment and expanding the surface area of vacuum-insulated panels. In addition, power consumption is reduced by optimal control of decompression and refrigerant flow rates using a pulse motor valve (PMV) that adjusts the refrigerant flow rate.

ZABOON™ TW-Z9100/Z8100 Drum-Type Washer-Dryers



ZABOON™ TW-Z9100/Z8100 drum-type washer-dryers with heat pump

Toshiba Home Appliances Corporation has released the ZABOON™ TW-Z9100/Z8100 heat-pump drum-type washer-dryers, which achieve high detergency and drying performance as well as shorter washing time with an active control system.

The main features are as follows:

- By employing the world's first active suspension system^(*1), which varies the damping force of the damper that absorbs drum vibrations, and the active control system that optimizes control of the active S-DD motor, high detergency and drying performance are attained with low-vibration operation.
- With centrifugal washing, which applies a high-pressure double shower to all of the clothes spread out by speeding up the rotation with the active control system, the clothes are fully soaked in detergent and wash unevenness is reduced, resulting in the fastest washing time of 35 minutes (9 kg of clothes) in the industry^(*2).
- Thanks to the adoption of an enhanced heat-pump dehumidification drying engine, the overall power consumption is 730 Wh (standard washing-drying cycle for 6 kg of clothes), realizing the highest level of energy saving in the industry^(*2).

(*1) As of September 2010, for practical application of active suspension to washers (as researched by Toshiba Home Appliances Corporation)

(*2) As of September 2010 (as researched by Toshiba Home Appliances Corporation)

SMMS-i Series Variable-Refrigerant-Flow Outdoor Units for Air-Conditioning Systems

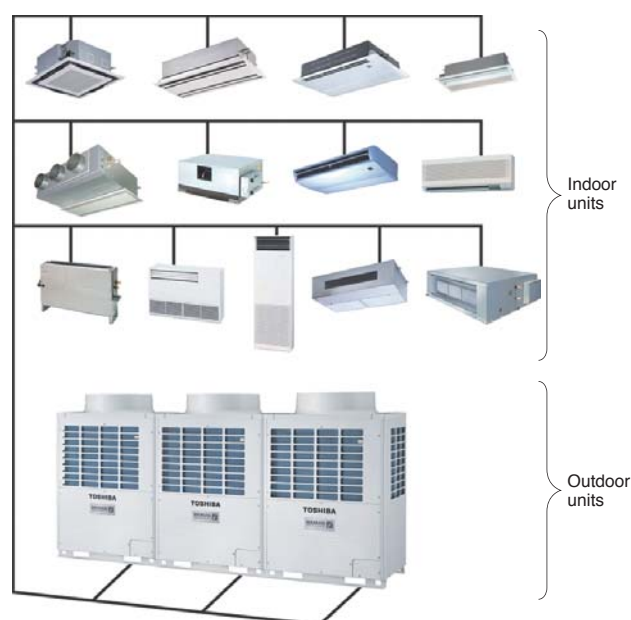
Toshiba Carrier Corporation developed the SMMS-i series high-energy-saving variable-refrigerant-flow (VRF) outdoor units for air-conditioning systems, targeted at the global market, in October 2010.

With the addition of outdoor units having a large capacity of 14 horsepower (HP) and 16 HP to the series, standard type and high-efficiency type systems of up to 48 HP are available by selecting the combination of outdoor units.

The SMMS-i series utilizes a newly designed DC twin-rotary compressor that achieves efficiency improvement in the middle load range. Furthermore, our two unique technologies—fine-step speed control of compressors and optimal control of the refrigerant flow rate—make it possible to minimize energy loss and provide significant energy savings.

The 14 HP and 16 HP outdoor units are equipped with three inverter-driven compressors, each of which operates by rotation to reduce the start-up load and equalize operating time, attaining higher reliability and durability.

The highly compact design of the machine room of the outdoor units realizes a dramatic 40% reduction in installation space and 36% reduction in weight compared with the conventional models.



System chart of SMMS-i series VRF outdoor units for building

Universal Smart X Heat-Pump Chilling Unit Offering High Efficiency and Large Capacity



Product outline (in the case of 12 modules connected)

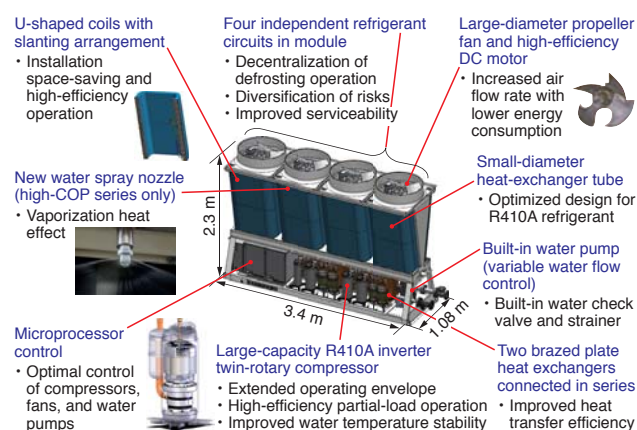
Toshiba Carrier Corporation has developed the Universal Smart X high-efficiency, large-capacity, heat-pump chilling unit as an air-cooled heat-pump system that meets requirements for wider cooling and heating loads and is suited to various forms of usage in industrial settings.

The Universal Smart X achieves high-efficiency cooling with a coefficient of performance (COP) of 6.30^{(*)1} by adopting an inverter type twin-rotary compressor with the world's largest capacity^{(*)2}, equivalent to up to 12.5 HP, thereby reducing both carbon dioxide (CO₂) emissions and energy costs. It also provides accurate temperature control by employing a newly developed group control system, in which two or more modules that incorporate the inverter control of all compressors and built-in water pumps and fans are optimally controlled.

As a result, the Universal Smart X can be used not only for energy-saving air conditioning in various buildings but also for temperature control of equipment in data server centers, production processes in factories, and so on, contributing to solutions for productivity improvement, quality stability, and other issues in the industrial field.

(*)1 30 HP high-COP model

(*)2 As of October 2010 (as researched by Toshiba Carrier Corporation)



Component technologies of Universal Smart X heat-pump system to realize high efficiency and functionality

E-CORE™ LED Light Engine



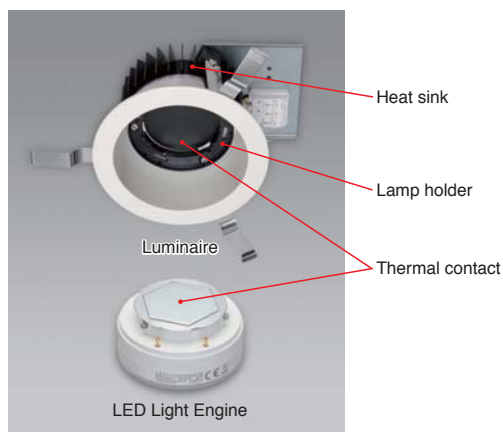
E-CORE™ LED Light Engine

Toshiba Lighting & Technology Corporation has commercialized the E-CORE™ LED Light Engine light-emitting diode (LED) lamp, which realizes compact size and high lumen output by the adoption of a new lamp holder system with a structure that dissipates heat to the outside.

The GH76p lamp holder system was jointly developed by BJB GmbH & Co. KG (Germany), a global socket manufacturer, and Toshiba Lighting & Technology. In the lamp holder system, the LED lamp is strongly attached to the heat sink of the luminaire by springs built into the lamp holder, allowing heat to be efficiently transferred from the LED lamp to the heat sink.

The main features of the LED Light Engine are as follows:

- Compact size
Outside diameter of 90 mm and height of 42 mm
- High lumen output
Lineup of 1 100 lumen type and 1 600 lumen type
- Two types of beam angle
Middle beam angle of 45° and wide beam angle of 85°.



Luminaire with heat dissipation structure

E-CORE™ Square-Shaped Ceiling Luminaire with LEDs



E-CORE™ square-shaped ceiling luminaire with LEDs

Toshiba Lighting & Technology Corporation has developed the E-CORE™ square-shaped ceiling luminaire with LEDs.

This product designed for home use has a stylish flat form, achieved by employing a light guide panel technology. It also provides high uniformity of light distribution. The amount and color of light can be varied by making use of the possibilities of LEDs. The luminaire is also equipped with a sensor that automatically dims the light for energy saving.

The main features of this product are as follows:

- A newly designed light guide panel that realizes a highly uniform distribution of emitted light
- Color changeability allowing users to enjoy a variety of scenes by mixing the colors of the LEDs
- A light sensor that automatically regulates the amount of light according to the brightness of the room
- A stylish form with a flat profile of only 44 mm in thickness.