Consumer Appliances

1 Big Drum washer-dryer (left), and Big Drum Slim washer-dryer (right) featuring heat recycling and Wind Iron

1 Big Drum Washer-dryer and Big Drum Slim Washer-dryer Featuring Heat Recycling and Wind Iron

Hitachi has released the Big Drum washer-dryer featuring heat recycling and Wind Iron, a large-volume drum washer-dryer fitted with a new-concept washing system that suppresses coarsening and darkening in laundry, removing most stains. The Big Drum Slim washer-dryer featuring heat recycling and Wind Iron, a large-volume washer-dryer with a liquid crystal display (LCD) touch panel and a 60-cm width body, has been also released.

The main features are as follows:

(1) The washing system incorporates a high-flow-rate pumping system with a maximum flow rate of approximately 60 L/min—three times that of conventional systems*1—supplying sufficient water to suppress coarsening and darkening, removing most stains.

(2) An Auto Self Clean function that spins the drum at high speed, spraying water from 16 different points to flush out dirt from even out-of-sight locations, eliminating bacteria*2 and suppressing black mold*3. A hose with a flat internal surface has been utilized to prevent drain water and dirt from adhering to the inside of the hose.

(3) A Wind Iron function that utilizes a high-speed air jet at approximately 300 km/h*4 to smooth out wrinkles in clothing. Additionally, these products feature a steam iron function that blows steam onto dried clothing, removing wrinkles and eliminating odor using a high-speed air jet.

(Hitachi Appliances, Inc.)

*1 Maximum flow rate of the 2012 model: approximately 20 L/min

*2 Test agency: Kitasato Research Center for Environmental Science, test method: measurement based on reduction in bacteria count on bacteria-infected plate attached to outer tub and drum, tested operation: the Auto Self Clean function, tested parts: outer tub and drum, result: 99% reduction in bacteria count

*3 Test agency: Kitasato Research Center for Environmental Science, test method: confirm suppression of mold growth on culture plates attached to outer tub and drum, tested operation: the Auto Self Clean function, tested parts: outer tub and drum, result: 99% reduction in mold

*4 Determined from flow rate divided by the area of the exhaust outlet.

2 Two-Stage Boost Cyclonic Cleaner

Hitachi has released two models of Two-Stage Boost cyclonic cleaners that are easier to use thanks to a new slim, lightweight suction head design, which can even suck up dust at the rear of the head when being pulled.

The main features are as follows:

(1) Use a double suction mechanism to efficiently suck up dust when pushing or pulling the suction head. At approximately 30 cm wide, the head enables quick and easy cleaning. The newly designed suction head is slim and lighter*1. These models have the lightweight and easy-to-maneuver hose and carbon-fiber-reinforced plastic suction head and pipe used in previous models.

(2) The higher-end model boasts a powerful 470 W of suction power while the operation noise has been reduced to an industry-leading level*2 of 52 dB. In addition, both models feature clean output, with a high filtering rate of 99.999%*3, confirmed by the method specified in the International Electrotechnical Commission (IEC) standard IEC 60312-1:2010(ed. 1).

(3) The suction power is sustained at 99%*4 or higher due to the

2 Two-Stage Boost cyclonic cleaner

unique Two-Stage Boost Cyclone technology, which improves the dust separation performance and the sustainability of a strong air flow rate.

(Hitachi Appliances, Inc.)

*1 Comparison between new model (head weight of approx. 495 g) and old model (2012, head weight of approx. 525 g).
*2 As of July 2013 among cyclonic cleaners.
*3 Result of third-party testing by German test agency SLG Prüf-und Zertifizierungs GmbH in accordance with IEC standard 60312-1:2010(ed. 1). The dust capture ratio (mean) for particle diameters between 0.3 and 10 µm was 99.999%.
*4 Confirmed using the "method for measuring the rate of sustained suction power of electric vacuum cleaners" standard of The Japan Electrical Manufacturers' Association. The air flow rate from when the filter and dust box were empty to when the full line was reached was kept at 99% or higher.

3 Stainless/Clean Room Air Conditioner

Hitachi has released a series of stainless/clean room air conditioners that provide comfortable air conditioning while quickly conserving energy by using two cameras with different functions to perform detailed monitoring of the room and the people in it.

The main features are as follows:

(1) Uses a system of two cameras with different functions that includes an image sensor to detect the number of people in the room, their active mass, location, taking account of the layout of the room, and a temperature sensor to detect the ambient temperature of the floor, walls, and around people in the room. This model provides comfortable air conditioning while quickly saving energy by carefully sensing the occupancy of the room and the room conditions to prevent wasted energy, such as overheating or overcooling of the occupied spaces.

(2) Uses stainless steel in the air ducts and filter that is effective in reducing bacteria and dust, and new large double louver is also applied with stainless steel. This provides a cleaner air conditioner interior.

(3) Features a new heated floor setting to warm the space at your feet in a way that can be felt similar to underfloor heating. It also comes with a warm air plus setting to constantly supply very warm air at 55°C for approximately 30 minutes and a quick heating setting, which starts blowing warm air in about 30 seconds.

(Hitachi Appliances, Inc.)

3 Stainless/clean room air conditioner

4 Home lighting fixture LED ceiling light and the supplied remote control

4 Home Lighting Fixtures LED Ceiling Light

Hitachi has released LED ceiling home lighting fixtures, which balance high energy efficiency (intrinsic energy consumption efficiency of 102.4–104.8 lm/W*1) with the ability to provide maximum brightness within the brightness standard for applicable room size*2.

The main features are as follows:

(1) Newly-devised arrangement of domed light-emitting diode (LED) units equipped with a unique lens function, as used in previous products*3, together with a large heat dissipation structure controls the heat generated from the LEDs, balancing maximum brightness for each applicable room size with high energy efficiency. This provides an approximately 16–18% reduction in energy consumption in comparison to previous products*4. The lens function diffuses light efficiently, allowing the entire room, including the ceilings and walls, to be lit brightly.

(2) Equipped with a light selection function that combines four different combinations of lighting colors and brightness to allow people to select suitable lighting for a scene of life.

(3) The high-end models automatically dim or switch off lighting when the room is lit sufficiently by natural light, lowering energy consumption by approximately 70%*5 in comparison to using full-strength lighting. Additionally, these products now feature a new brightness up button that will increase total brightness by a factor of 1.2 for 30 minutes at times when additional brightness is required, such as when doing detailed work.

(Hitachi Appliances, Inc.)

*1 The intrinsic energy consumption efficiency is equal to the rated luminous flux divided by rated power consumption.
*2 "Residential catalog applicable room size standards" (guide 121:2011) established by Japan Lighting Manufacturers Association.
*3 The models released in October 2012.
*4 Compared new models with previous models (released in October 2012) of the same type and applicable room size.
*5 According to Hitachi measurement conditions. Energy consumption results depend on changes in daylight hours due to region, location, weather, and season.

5 Large Capacity Refrigerators Featuring Vacuum Compartment

Hitachi has released large capacity refrigerators featuring "Vacuum* Compartment," which offer improved food preserva-

5 Large capacity refrigerators featuring Vacuum Compartment

tion together with an evolved version of the "Photocatalyst Preservation" function that has been offered on models from 2012 onwards. These new models use a new "Fresh Cassette" in the Vacuum Compartment (a unique Hitachi feature that uses vacuum to suppress oxidation in food and keep it fresh), which uses the effect of piquant flavor components to preserve the *umami* (pleasant savory taste) and texture of fish.

The main features are as follows:

(1) The fresh cassette releases piquant flavor components such as *wasabi* (Japanese horseradish) in the Vacuum Compartment to suppress the functions of enzymes of food and preserve the *umami* and texture of fish. Photocatalysts and the operation of an LED light source are used in "Photocatalyst Preservation," which preserves food as if it "sleeps." These models feature an increased number of LED light sources and other innovations that offer better food preservation and deodorization than previous models.

(2) Continued use of "Frost Recycle Cooling," which utilizes cold air from frost that builds up on the evaporator. These models are also equipped with a new dedicated fan in the upper area of the refrigerator compartment, acting in tandem with the existing fan to chill the refrigerator compartment quickly with lower energy loss.

(Hitachi Appliances, Inc.)

* Indicate a state when atmospheric pressure is low with the Vacuum Compartment deemed to be in a "vacuum" when it is at approximately 0.8 atmospheric pressure.

6 Superheated Steam Microwave Oven

Hitachi has released a superheated steam microwave oven. It is equipped with a unique Hitachi grill and steam function and a quick-baking function that allows bakers to bake a delicious loaf of bread, taking approximately 100 minutes to automatically complete the entire process from kneading and proofing the dough to baking it. Operation is easy, performed via an LCD touch panel.

The main features are as follows:

(1) Enhances kneading and adds processes of steaming and others during proofing to reduce the time required for cooking a loaf of bread to approximately 100 minutes, down from approximately 2 hours for previous products.

(2) Fitted with a grill and steam function that allows frying without oil as well as cooking of foods such as fried dumplings, for which it is difficult to control the heating temperature appropriately. Low-oxygen cooking is also possible, allowing the preparation of steamed vegetables with a lower reduction in vitamin C* than oven cooking.

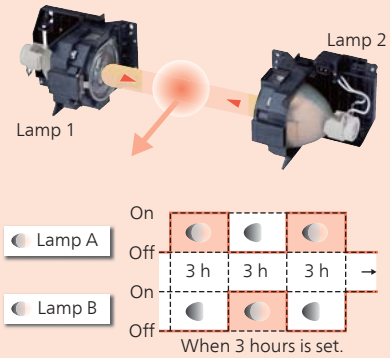
(3) LCD touch panel and voice guidance functionality allows easy operation of 483 automatic menus.

(Hitachi Appliances, Inc.)

* Vitamin C remaining per 100 g serving of broccoli after "grilled and steamed broccoli" (69.1 mg) compared to when just grilled (48.3 mg) (ascertained by Hitachi Appliances).

6 Superheated steam microwave oven

Projector



1 Edge blending image, dual lamp system, and alternative mode for 24-hour use (above) and CP-X9110 10,000-lm high-brightness projector (bottom)

1 CP-X9110 10,000-lm High-brightness Projector

CP-X9110 10,000-lm high-brightness projector is ideal for 24-hour use and capable of multi-projection using multiple projectors. Equipped with a dual lamp system that achieves a high brightness of 10,000 lm, the projector provides 24-hour continuous operation in alternative mode which alternates the use of the two lamps.

This projector is equipped with an edge blending function that achieves seamless projection using multiple projectors.
(Hitachi Maxell, Ltd.)

2 CP-WU8460 WUXGA Projector

Hitachi has released a projector with high-brightness (6,000-lm) and high-resolution [wide ultra extended graphics array (WUXGA): 1,920 × 1,200 dots] that is about 10% taller than full high definition. Part of the new Hitachi installation series, the projector provides ease of installation and ideal functionality for large venue applications.

The projector offers several groundbreaking features, including two High-Definition Multimedia Interface (HDMI)* inputs to address the increasing demand for digital connectivity. It features motorized focus, zoom, and lens shift for easy image adjustment, and a 360-degree vertical adjustment capability that makes it ideal for creative applications.
(Hitachi Maxell, Ltd.)

* See "Trademarks" on page 142.

2 CP-WU8460 WUXGA projector

Batteries

1 Lithium-ion energy storage system (1.4-kWh storage capacity)

1 Compact, Lightweight Energy Storage Systems for Apartment Complexes

Hitachi has developed an 800-W rated-output lithium-ion energy storage system with a 1.4-kWh storage capacity, intended for installation in individual apartments in apartment complexes. It was developed in cooperation with Mitsui Fudosan Residential Co., Ltd.

Equipped with small, high-capacity battery packs utilizing laminated lithium-ion rechargeable batteries and industry-leading compact inverters, these systems offer a high energy density of 43.6 Wh/L*1. As a result, they can now be fitted in the area above a refrigerator. Additionally, power supply can be switched over to battery output within 10 ms after the unit detects a power outage, allowing it to function as an uninterruptible power supply (UPS) in order to protect connected appliances for extended periods after power is cut off. Furthermore, since this energy storage system conforms to the ECHONET*2 Lite communications standard, it can also be linked to home energy management systems (HEMS), allowing energy management for electric power peak shifts and others. This product will be installed in Mitsui Fudosan Residential's "Park Tower Shin-kawasaki" (planned for completion in March 2015), and commercial sale is to start in spring 2014.

Hitachi will continue to expand the energy storage system lineup.

(Hitachi Maxell, Ltd.)

*1 As an ECHONET Lite compatible energy storage system. As of August 2013.
*2 See "Trademarks" on page 142.

2 Standby Energy Storage System Utilizing Flame Retardant Large-capacity Lithium-ion Batteries

The expanding and diversifying market for communications equipment has brought about a rapid increase in demand for both high-performance in emergency power systems, and for high reliability in energy storage systems. Since installation space for energy storage systems is particularly limited in urban centers, such equipment must be able to function in existing spaces.

This situation prompted Hitachi to develop a lithium-ion battery (LIB) system in cooperation with NTT Facilities, Inc. The resulting LIBs have a rated capacity of 100 Ah, and can produce a large current discharge up to 500 A. Additionally, they have a long life in standby state, which was problematic for previous LIBs. They can therefore be used efficiently for short-term backup, and allow highly reliable systems to be configured using small numbers of batteries. On the safety front, these batteries utilize electrolyte that has been rendered flame retardant, in order to suppress fire in the unlikely event of an accident. Furthermore, the systems developed monitor voltage and temperature constantly, and keep the voltage in each battery within certain range. They also have the ability to separate batteries from power sources and load devices when abnormal circumstances occur.

This system reduces installation area to approximately half that of a lead-acid storage battery, allowing existing spaces to be used effectively.

(Hitachi Chemical Co., Ltd., Shin-Kobe Electric Machinery Co., Ltd.)

2 Lithium-ion storage battery system (maximum continuous electrical discharge 500 A)