

Green Concept Escalator

Features

◆ Main use:

An escalator to be installed mainly in commercial facilities, office buildings, hotels and hospitals

◆ High energy efficiency:

Energy consumption has been reduced by a maximum of 45 % compared with the conventional models with various modes of inverter-controlled energy saving operation* and use of LED lighting.

* Energy saving operations for Japan market model

- Energy saving operation

A sensor counts passengers. When passengers are rather few, its operation speed will be reduced (from 30 m/min to 25 m/min.) and the power consumption will be reduced.

- Low-speed stand-by operation

When no one has used the escalator for a certain period of time, it will be operated in the “low-speed stand-by operation” at a reduced speed of 10 m/min. Further reduction in the power consumption will be achieved with this change in the operation.

- Low-speed Stationary Stand-by operation

When no one has used the escalator in the low-speed stand-by operation for a certain period of time, it will be operated in the “low-speed stationary stand-by operation” with its operation suspended.

Significant power reduction in the power consumption will be achieved with this change in the operation.

◆ Reduction of environmental load

Even though an inverter is installed in the machine room, the size of the room is the same as the previous models. The amount of steel components in the machine room has been reduced compared with the previous models.

◆ Reduction in the use of toxic substances

The use of LED as a lighting source has eliminated the use of mercury. Lead-free solder is used on the circuit boards.

Basic Concept or Summary

Figure shows design for Japan

Operation mode

- Energy saving operation (Only for domestic models)
- Low-speed stand-by operation
- Low-speed stationary stand-by operation

<Three aspects of environmental friendly products>

- Prevention of global warming
- Efficient use of resources
- Control of chemical substances

● Safety functions

Upper machine room

- Reduction in the amount of steel materials in the room with the reduction of the horizontal projected area by 35 % (with an inverter installed, compared with the previous models)

Alleviation of injury to a passenger when s/he stumbles down

- A step with a cushioning strip on the edge

Fall prevention

- Slow stopping (Only for domestic models)

Truss frames and metal sheets

- Reduction in the xylene content in the thinner for the paint on structural materials
- No use of hexavalent chromium (excluding outdoor specifications for overseas use)

Lighting

- LED
- Mercury-free

Control circuit

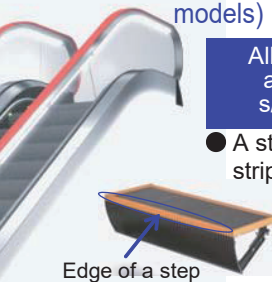
- Lead-free

Circuit boards in the display

- Lead-free



- Proximity sensor
It detects an approaching hand or foot and sounds a warning buzzer. (Only for domestic models)



An experiment in which a glass was dropped from 0.5 m above the step: The cushioning absorbs the impact.

Catch prevention functions

- A brushy catch prevention guard



- ◆ Improved energy efficiency
Power consumption has been reduced from 1,121 kWh/month to 613 kWh/month (equivalent to a reduction in the CO₂ emissions of 2.4 t/year).
(for a model on the Japan market, S1000, with 4.3 m floor height)
- ◆ Improved safety functions (of the Japan market models)
In addition to the measures to improve the performance for energy saving, measures to improve the performance for safety mentioned below have been taken.
 - The safety functions have been improved as has been the case with the energy efficiency.
A “slow-stopping function” has been installed on the escalator. The safety apparatus of this function stops the escalator at a safe deceleration speed in the unlikely event of emergency stopping to prevent secondary fall accidents to the passengers.
 - A cushioning material of demarkation has reduced the probability for passengers who have fallen on the escalator to suffer mild head injury*2 by approx. 50 % compared with conventional escalators. (Data from a study conducted by Toshiba)
 - Brushy guards have also been installed at the inlets of the handrail belts to prevent hands and feet from being caught in those parts. The escalator has been equipped with a function at the inlets which detects approaching hands and feet and sounds a warning buzzer.

*2 Mild head injury: Trauma without loss of consciousness, including broken teeth and nose, trauma on face

Installation in Practice or Schedule

Domestic On the market since October 2012
(Escalators with the cushioning on market since September 2013)

Overseas On the market since April 2015
(Excluding steps with the slow-stopping function and energy saving operation)
(Escalators with the cushioning on market since January 2019)

Contact: Toshiba Elevator and Building Systems Corporation, Corporate Communications Office
Tel: +81-44-331-7001 Fax : +81-44-548-9593
<http://www.toshiba-elevator.co.jp/elv/new/escalator/kindmover/index.html>