

KONE ECO-EFFICIENT™ SOLUTION

ESCALATORS

KONE is the pioneer of eco-efficiency in the elevator and escalator industry. For several decades, KONE has led the way in creating innovative solutions that help to significantly cut the energy consumption of buildings.

Lifecycle assessments of KONE escalators show that the greatest environmental impact of an escalator stems from the electricity used in the operation of the equipment. Therefore, the key focus area for KONE is to systematically reduce the energy consumption of its escalator features with each new product release.

Escalators consist mostly of metals and about 80% of this material can be recycled.

Supporting green building through energy measurements and calculations

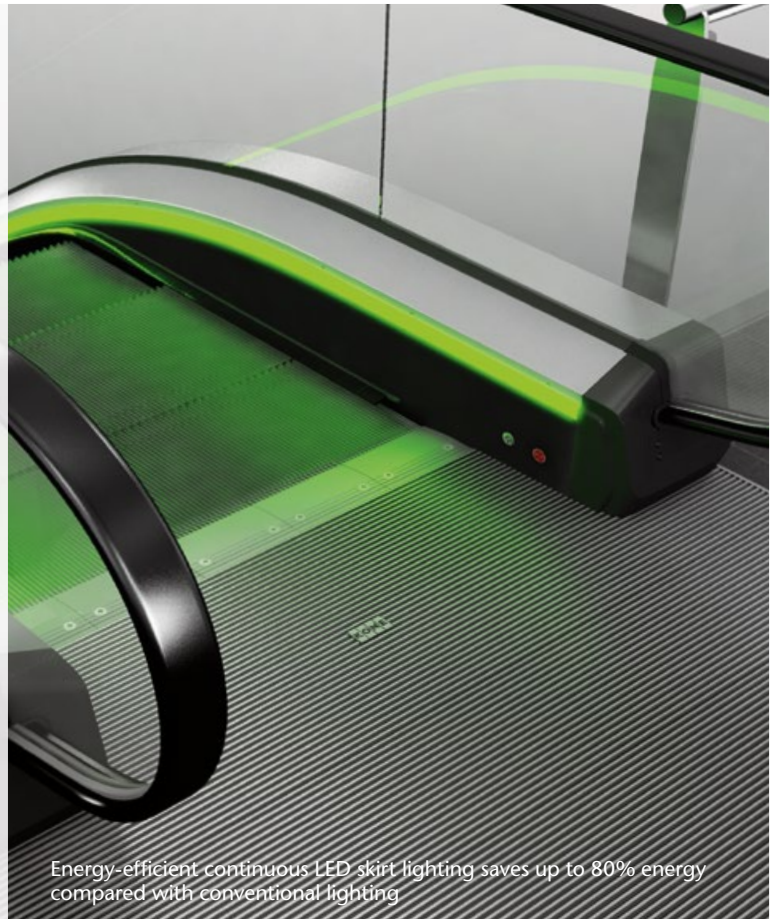
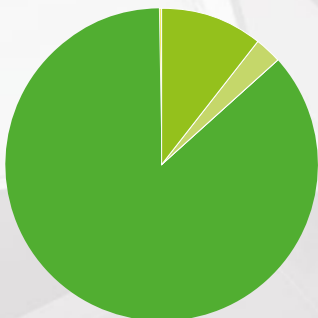
KONE has developed tools to estimate the energy consumption of customer-specific solutions in the design phase of each project. These tools are especially helpful for customers working on green building certified (e.g. LEED, BREEAM) projects.

KONE follows the latest green building trends through its involvement in green building associations around the world.

KONE ESCALATOR LIFECYCLE ASSESSMENT

The stage of the life cycle EI99 value-%

<input checked="" type="checkbox"/> Material production	7.1
<input checked="" type="checkbox"/> Component manufacturing	2.7
<input type="checkbox"/> Delivery	0.004
<input type="checkbox"/> Installation	0.02
<input checked="" type="checkbox"/> Use	89.9
<input checked="" type="checkbox"/> Maintenance	0.07
<input type="checkbox"/> End-of-life treatment	0.1



* The Life Cycle Assessment is based on an estimated lifetime of 15 years for the reference escalator TravelMaster™ 110 operating 14 hours /day, 6 days/week and 52 weeks/year with an equivalent step load of 25 kg.

FIVE WAYS TO MAKE AN ESCALATOR ECO-EFFICIENT

The eco-efficiency of an escalator can be improved by utilizing eco-efficient technologies and by operating the escalator in a more efficient way.

1 LUBRICATION-FREE STEP CHAIN

- Permanent greased and sealed chain links do not require extra lubrication with oil
- Reduced wear of chain links and bushings
- Reduced fire risk
- No oil consumption; the truss stays oil-free

2 REGENERATIVE SOLUTION

- Solutions for regeneration of power from the downward running of the passenger loaded escalator are available where an inverter is installed.
- Replaces brake resistors, which generate heat
- Technology for extensively used escalators

3 ECO-EFFICIENT OPERATION

STOP & GO OPERATION

- The escalator stops running when not in use, almost no power consumption when escalator is stopped
- Can be combined with Star/Delta energy saving
- Recommended for low traffic or with long intervals of no passengers

STAND-BY SPEED (BY INVERTER CONTROL)

- Escalator runs at reduced speed with no passengers on the step band (changing from a nominal speed of 0.5 m/s to a stand-by speed of 0.2 m/s)
- Recommended for medium traffic or several peak and non-peak intervals
- Can be combined with Stop & Go, which provides additional energy savings

STAR/DELTA ENERGY SAVING

- A conventional energy saving feature as basic option
- When there is low escalator traffic the motor is switched to Star-operation increasing the efficiency of the motor when no or few passengers are using the escalator. When the number of passengers increases the escalator the motor reverts to Delta-operation
- Recommended for low load situations

TRAFFIC DEPENDENT OPERATION

- The escalator is able to run automatically in the direction from where the first passenger is approaching
- When not in use the escalator is stopped
- Recommended for traffic conditions with low traffic or long intervals of no passengers
- The installation of a second escalator is not necessary as the solution enables automatic dual operation

4 LED LIGHTING

- Extended service life: last up to 10 times longer than fluorescent lighting
- Energy savings: up to 80% more energy efficient than fluorescent lighting

5 REDUCED OPERATIONAL SPEED – 0.4 M/S WITH AN INVERTER

- Safer entry to the step band, safer ride due to reduced speed
- Increased time the passenger is exposed to advertising
- Insignificant extension of the transportation time for passengers



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