



Performance is not a question  
of consumption.

The Schindler E<sup>3</sup> approach on energy,  
efficiency and ecology for escalators  
and moving walks.



# E<sup>3</sup> – One objective and three ways to increase energy efficiency

## Responsibility & Sustainability

At Schindler, we design products which are as energy-efficient as possible, contain no harmful substances and are highly recyclable. Reduced power consumption means lower utility bills and less environmental impact associated with power plant greenhouse gas emissions. We are an ecologically aware company oriented to ensuring a better, greener future.



## Lowering the impact

Around 85% of the greenhouse gas emissions associated with the life cycle of an escalator are emitted during the escalator's lifetime (the power plant that supplies electricity for the escalator's drive unit, control unit and lighting produces greenhouse gases). Using efficient drive systems, intelligent power management systems and low-power components helps minimize power consumption and thus greenhouse gas emissions.

## Sustainable Materials

We place particular emphasis on using environmentally friendly materials in the manufacture of our escalators. The components and materials used in our escalators do not contain any hazardous materials. Schindler escalators are mainly made of ferrous metals (steel and cast iron) and nonferrous metals (mainly aluminum and copper). Once an escalator reaches the end of its service life, about 90% of these metals can be recycled.

## Use the power when its needed

There are three ways to reduce the power consumption of escalators and moving walks: Use more efficient drive systems, use components that require less power, and use intelligent power management software. Schindler employs all three of these methods to reduce power consumption.



## E<sup>3</sup> – The energy-saving approach

From production, to using efficient technology and smarter operating modes in daily operation. Schindler's E<sup>3</sup> is a holistic approach that saves energy and lowers environmental impact.

## E1 – Efficient drive system

Our escalator drive system is efficient at maximizing energy-use. It lowers consumption and costs, and delivers improved performance.

## E2 – ECOLINE power management

ECOLINE options are "energy smart". They can reduce overall energy-use by up to 36% during operation.

## E3 – Ecological design

Schindler can make your building greener by design. Our products use lighter components so less energy is needed to move them. They are more efficient and don't waste electricity.

# E1 – Total drive efficiency within all details



While some competitors address the challenge of gearbox efficiency only, Schindler focuses on total drive efficiency, namely efficiency in the gearbox as well as the motor.

### Choose our Premium Power Package for optimized environmental performance

By opting for our Premium Power Package, you'll be able to lower your utility bills. And by consuming less power, you'll also reduce the environmental impact (greenhouse gas emissions) of the power plants which generate your power.

### Maintenance by Schindler

Choose Schindler to service and maintain your escalator using Schindler-manufactured spare parts, and you can be confident it will stay in excellent working order.



# E2 – Smart power management with clever eco-options



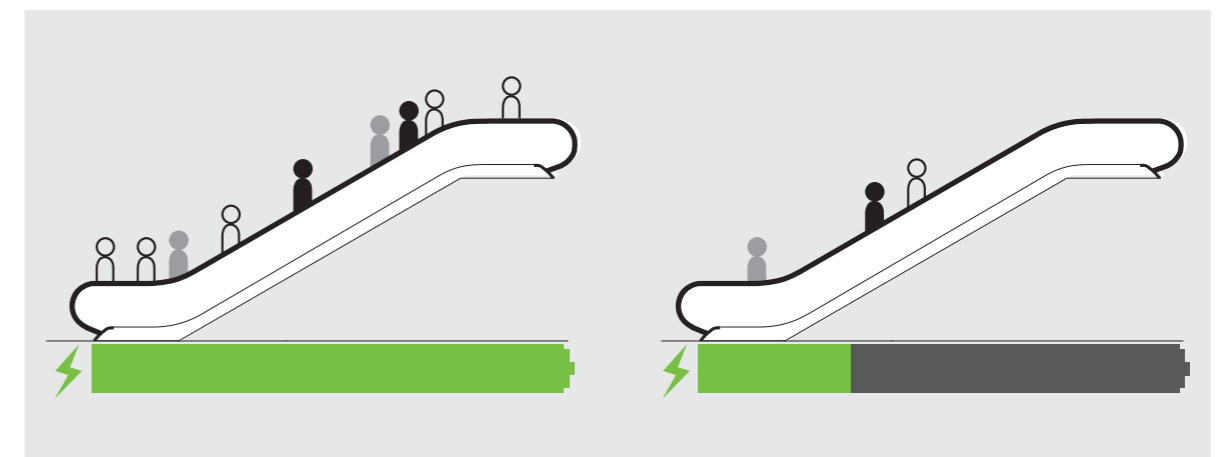
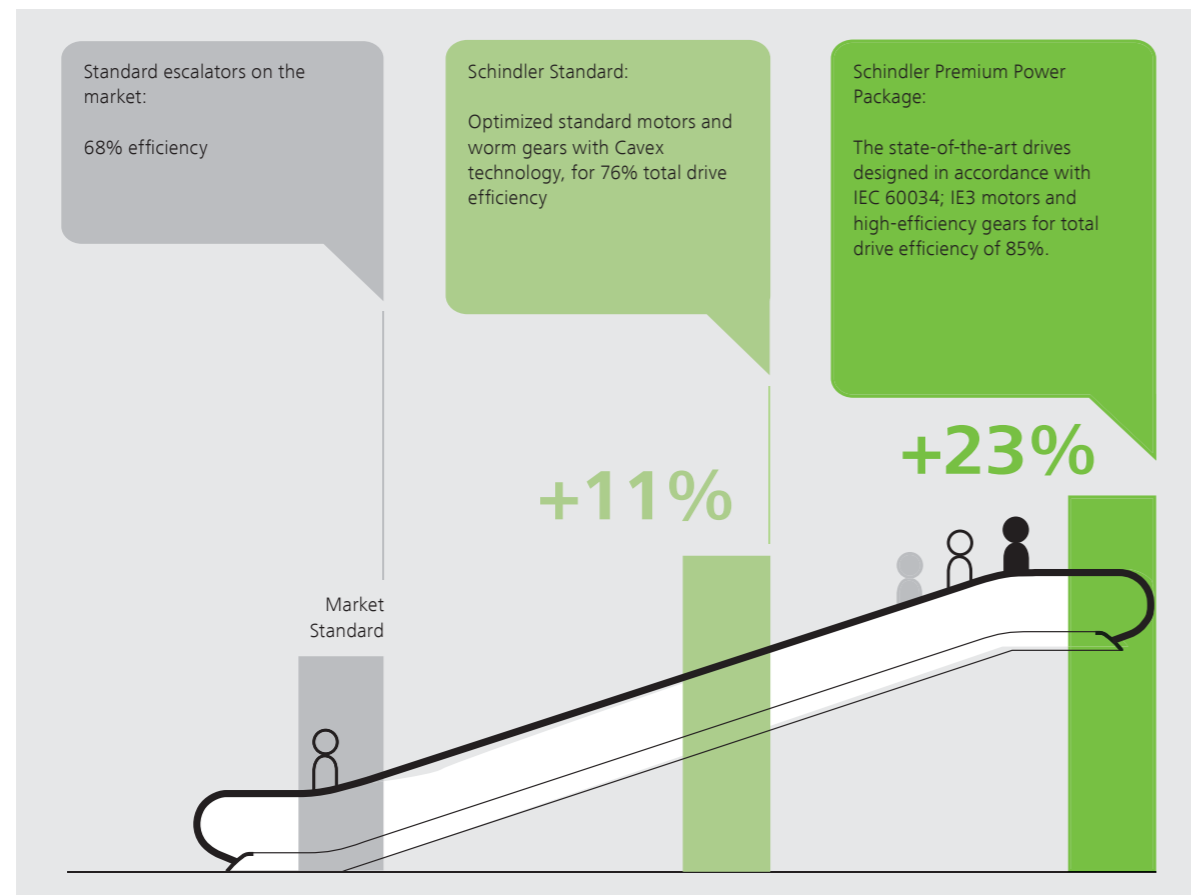
In commercial applications such as shopping malls, periods with low or no passenger traffic are common.

### MICONIC F 5 power management system comes as standard

Schindler has been using microprocessor-controlled power management systems for over 20 years, significantly longer than some competitors. Our MICONIC F controller is now in its fifth generation and comes as a standard feature.

### ECOLINE power management packages, including customizable operating mode

Schindler's goal is to optimize energy efficiency without compromising passenger flow. Depending on the power management package, power consumption can be reduced by up to 36% relative to continuous operation.



Remarkable power-saving due to Schindler's smart power management

## E2 – Premium in efficiency for low cost in operation

ECOLINE Power Management Packages*				
ECOLINE	ECO	ECO Plus	ECO Premium	ECO Premium Plus
<b>Energy Consumption<sup>†</sup></b>	-3,001 kWh -25%	-4,273 kWh -36%	-3,888 kWh -32%	
<b>Operation Mode</b>	Continuous operation with ECO power feature: Motor power adjusts based on passenger load	Stop-&-go operation with ECO power feature: Escalator stops when no passengers are on it	Slow-speed operation with ECO power feature: Escalator slows down when no passengers are on it	Stop-&-go and slow-speed operation with ECO power feature: Escalator stops after an adjustable time running in slow speed.
<b>Application</b>	For continuous medium to heavy passenger traffic	Intermittent flow including periods of zero passenger flow Non-commercial applications	Intermittent flow including periods of zero passenger flow Commercial applications	Intermittent flow including periods of zero passenger flow Commercial and non-commercial applications
<b>Benefits</b>	- Maintains passenger flow - Power consumption reduced by up to 25% - Reduced power plant CO <sub>2</sub> emissions - Short amortization period	- Power consumption reduced by up to 36% - Reduced power plant CO <sub>2</sub> emissions - Increased escalator lifespan	- Passenger flow maintained, as escalator is in motion when passengers approach it - Power consumption reduced by up to 32% - Reduced power plant CO <sub>2</sub> emissions - Reduced wear & tear on components	- Passenger flow maintained, as escalator is in motion when passengers approach it - Power consumption reduced by up to 35% - Reduced power plant CO <sub>2</sub> emissions - Reduced wear & tear on components - Increased escalator lifespan
<b>CO<sub>2</sub> Footprint</b>	Minus 4,500 kg per year	Minus 6,410 kg per year	Minus 5,830 kg per year	Minus 6,290 kg per year
<b>Amortization<sup>‡</sup></b>	Less than 0.5 year	Less than 1.5 years	Less than 2 years	Less than 2 years

\*) Values based on theoretical calculations for one Schindler 9300AE-10 escalator. Average value for up and down operated escalator pair: 4.5 m. Step width: 1,000 mm. Speed: 0.5 m/s. Load profile: 11 hours per day, 365 days per year. 2.5 hrs – 0%. 7 hrs – 25%. 1 hr – 50%. 0.5 hrs – 75%. 0 hrs – 100%.

†) Standard operation mode: 11,967kWh, 100% continuous running

‡) Amortization depending on national energy cost.

## E3 – Low power components for increased environmental performance



### Schindler Aluminum Steps

At 10.5 kg, Schindler's aluminum steps are the lightest in the industry. Using aluminum steps results in a total weight reduction of 40% relative to steel steps, and an improvement of 5% in total escalator efficiency.

Aluminum steps have a longer lifetime than steel steps and a lower CO<sub>2</sub> footprint.

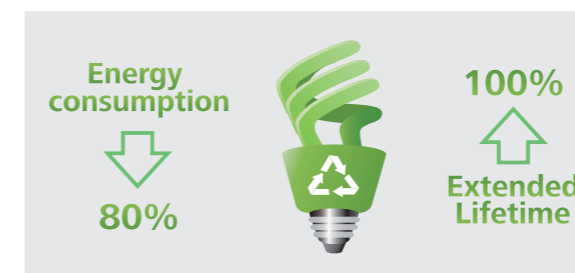
They also have a superior safety record, 2 times above the less economical sheet metal compound steps.



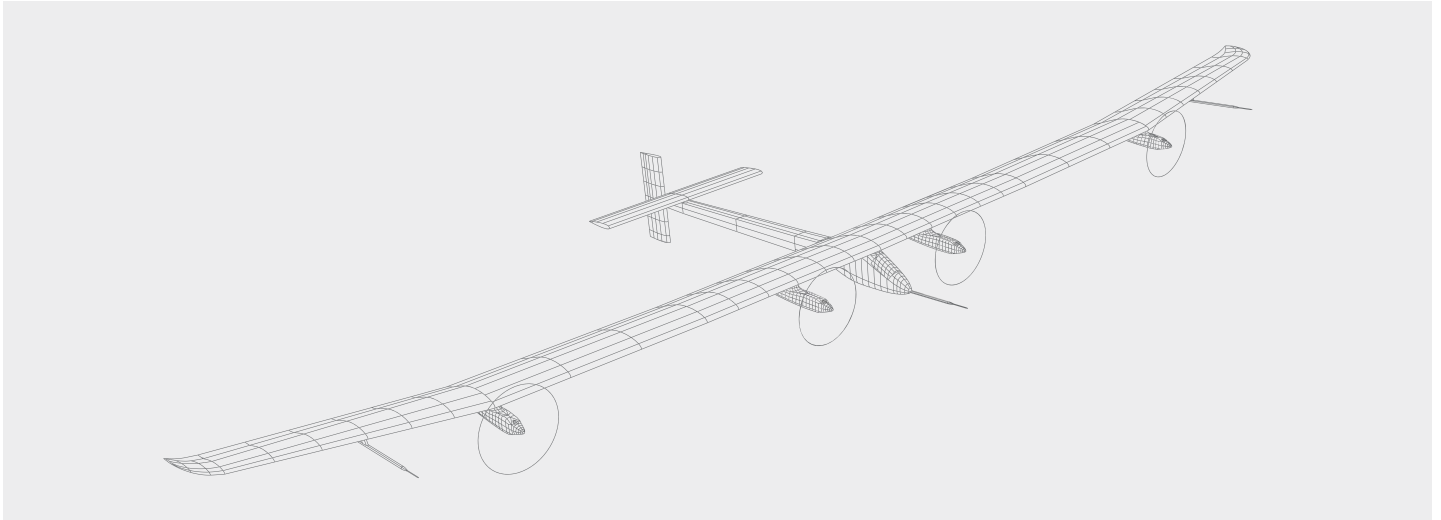
### Schindler LED lighting

Using LED lights reduces power consumption by up to 80% relative to conventional light sources. LED lights have up to 100% longer lives than conventional alternatives.

Schindler offers attractive LED design options for balustrade, skirt, comb, step and truss lighting.



# When vision meets discipline Schindler partners with Solar Impulse



Schindler has delivered many industry benchmarks in innovation, including a state of the art 2-channel safety circuit, short-pallet moving walks, and the very latest development, a comprehensive energy-efficiency concept for escalators and moving walks.

Schindler is supporting the Solar Impulse, a project to fly a zero-fuel airplane around the world propelled by solar energy only.

By embedding its engineers in this challenge, Schindler remains at the cutting edge of technology for clean and sustainable mobility.

**[www.solarimpulse.com](http://www.solarimpulse.com)**

Read more on Schindler's sustainability efforts:

**[www.schindler.com](http://www.schindler.com)**

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