

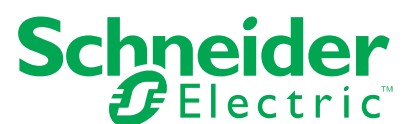


# Smart Space

Energy Savings with Smart Space solutions



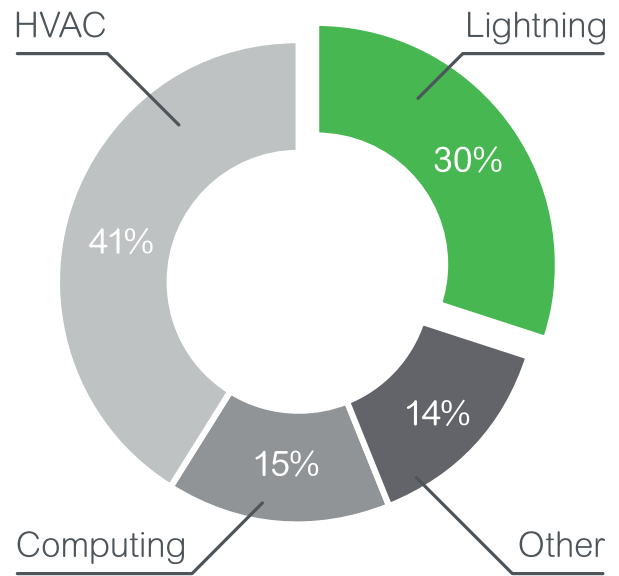
Life Is On



# Lighting technologies

LED Luminaries are on average between 25% to 30% more efficient than Fluorescent lamps with a lifecycle of 50.000 hours per luminaire, the low temperature emissions of this technology adds even more energy savings per year.

Multiple studies reveal that Lighting constitutes an average of 30% of the electrical energy consumption in office buildings.



Source: Average of multiple global studies.

## KNX-DALI Lighting control system

Climate change and ever-depleting resources mean that efficient energy use is a key social issue. Because they account for 40% of total energy consumption, buildings represent considerable energy-saving potential.

KNX meets the requirements of the top Energy Performance Class for building automation as per EN 15232. This means that KNX is ideally suited to fully the tightened energy consumption requirements for buildings.

With a well-designed KNX lighting control solution used instead of conventional control, up to 60% of the energy that would normally be consumed could be saved.

## Potential energy savings comparisons

Control Strategy / Technology	Average Lighting Energy Savings Potential
LED Luminaries	Up to 25% to 30%
Dimming	Up to 35%
Room Occupancy	Up to 28%
Daylight Harvesting	Up to 39%

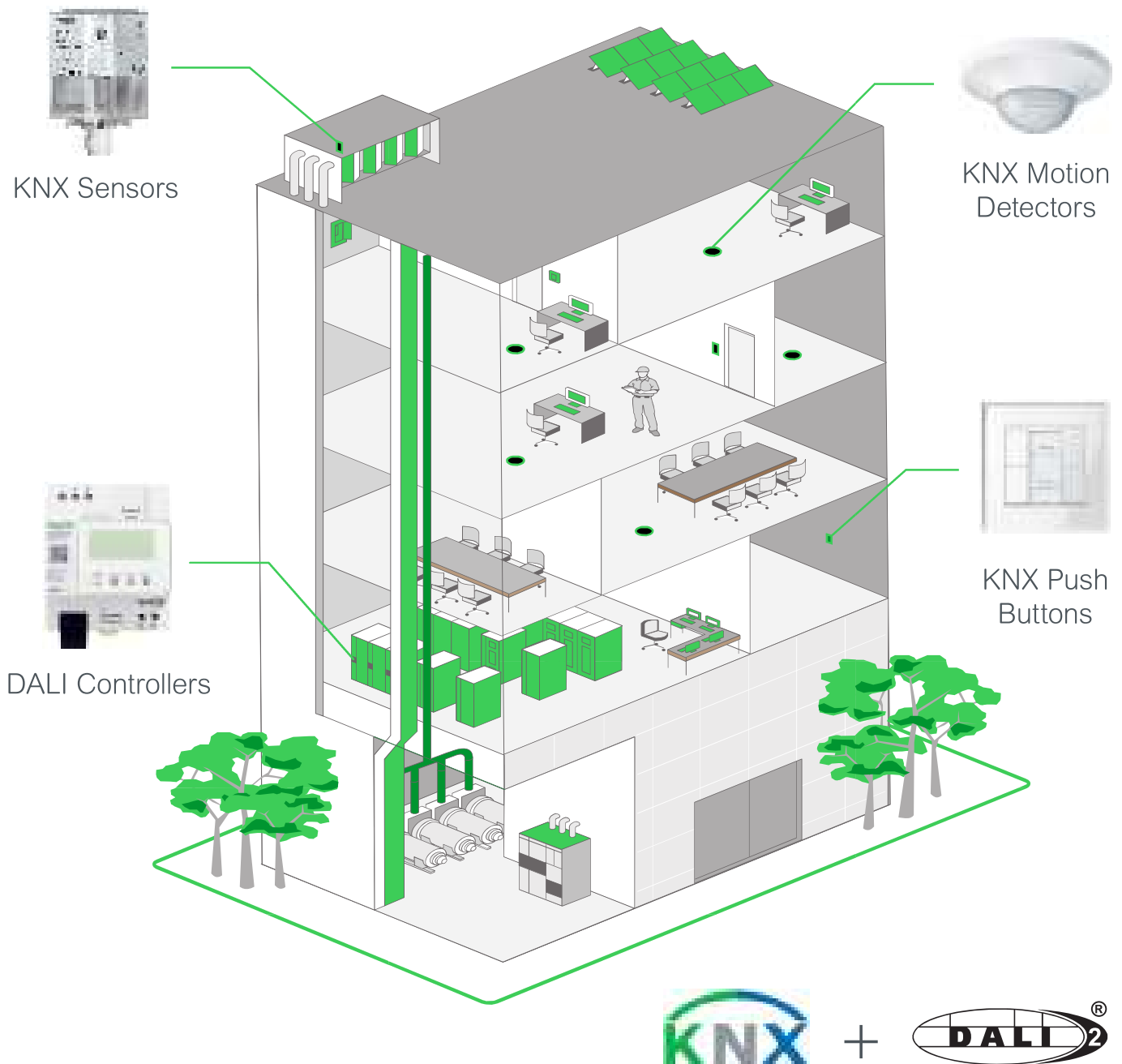
LED Luminaries are compared with their Fluorescent counterparts.  
Control Strategies are compared with buildings without lighting control.

Source: LBNL Study – A Meta-Analysis of Energy Savings from Lighting Controls in Commercial Buildings

The operation of many offices presents a particular environmental challenge due to the demands of the various occupiers, as well as the expectations of the building owner, which sometimes differs to that of the occupier. However, they also offer great potential for improvement.

Lighting plays a significant role in total electrical consumption. Globally, lighting contributes around 30% to office energy use. Lights in offices are often left 'on' when no one is in the room, or kept at maximum level, even when daylight streams through the windows. In all too many buildings, lighting control is restricted to being simply 'on' and 'off' at the whim of the occupant.

The implementation of Smart Space Lighting Control Solutions based on KNX-DALI open international standard technologies will help your building to achieve your most ambitious decarbonisation and efficiency goals.





## Lighting Control Efficiency Case Study

### 7 Storey Commercial Office Building

The following case study compares the energy consumption and potential energy savings of the lighting systems in a typical 7 floor commercial office building, by applying the latest technologies in lighting control systems offered by Schneider Electric Smart Space solutions.

➤ 7 floors

➤ 4,400 Luminaries

➤ 19,600 Square meters

➤ Typical office hours occupation



Fluorescent  
Lamps

vs



LED Lamps



Conventional  
Installation

vs



KNX-DALI Lighting  
Control System

# Case study

Energy consumption of the Lighting System in our commercial building with a conventional installation and fluorescent luminaries is approximately:

**218,415 KW/h/Year or 154 Metric Tones of Carbon Emissions/Year**

The average price of electricity for a building of this nature and magnitude is approximately £0.11 per KW/h in the United Kingdom. (Source: ukpower.co.uk)

Omitting any overheads and taxes for simplification, the operational cost of our lighting installation could be:

**218,415 KW/h/Year x £0.11KW/h = £24,025/Year or £2002/Month**

The replacement of Fluorescent luminaries by efficient LED technologies together with the implementation of a Smart Space KNX-DALI based lighting control solution can save a conservative 60% of the current energy consumption. The figures after the system is implemented are:

**Energy/Cost Savings:** 131,048 KW/h/Year x £0.11KW/h = £14,416/Year or £1,201/Month

**New Consumption/Cost:** 87,365 KW/h/Year x £0.11KW/h = £9,611/Year or £801/Month

**Carbon Emissions Savings:** 131,048 KW/h/Year or 92.7 Tones of Carbon Emissions/Year

For a better understanding of the positive impact the previous figures can have in our fragile environment, the abstract saving figures we have achieved are compared with more concrete terms that are more familiar to us in our day by day:

## Carbon emission savings equivalency

Greenhouse emissions of 20 passenger vehicles driven in one year.

A passenger cancelling 57 round trip flights from London to New York.

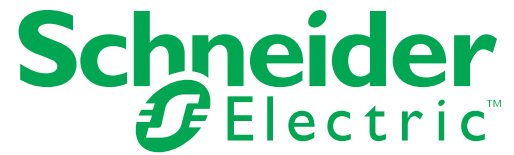
CO<sub>2</sub> Emissions of 15.7 homes electricity use in one year.

Carbon sequestered by 171 acres (692,000 sq/m) of forest in one year



Source: EPA [epa.gov](http://epa.gov) USA Environmental Protection Agency.

Smart Space solutions by



# Make the most of your energy!

Learn more about  
**Smart Space** solutions:

[schneider-electric.com](https://schneider-electric.com)

For all enquiries, please contact our dedicated  
e-mail or contact our Smart Space sales team:

[gb-lss-sales@se.com](mailto:gb-lss-sales@se.com)