



# School Lighting Replacement

LUXIONA

EN

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# Improving lighting in schools

**Luxiona has crafted a dedicated offering designed for school environments, aimed at optimizing student health conditions and reduce operational costs of lighting. We strive to enhance learning environments and support student development. Good lighting boosts reading speed and improves concentration. In addition to higher lighting quality, schools become more energy-efficient. Our lighting systems offer optimal brightness and color temperature while significantly reducing energy consumption.**

Creating optimal lighting conditions in educational environments is essential for enhancing visual comfort, promoting student well-being, and improving students performance. Effective lighting design in schools should prioritise a low UGR value ( $\leq 19$ ) to minimize discomfort and eye strain, ensuring that students can focus without the distraction of glare. Uniform lighting distribution with appropriate luminance levels depending on the activity (including a required level of 500 lux in the school classes) supports various tasks such

as reading, writing, and work in front of a laptop or other screen.

Additionally, a high Colour Rendering Index ( $CRI \geq 90$ ) ensures accurate colour perception, which is particularly important in subjects like art and science. By focusing on these key aspects: low glare, appropriate illuminance, together with energy-efficiency and sustainability - educational institutions can create conducive learning environments that support children's health, comfort, and educational success.

Up to

5\*  
W/m<sup>2</sup>

\* Value at an average, required illuminance in classrooms of 500 lux according to EN 12464-1:2021.

## Energy-efficient lighting for best performance

**Students spend many hours daily in their classrooms, demanding sustained concentration. Standards require a minimum light intensity of 500 lx in the classes.**

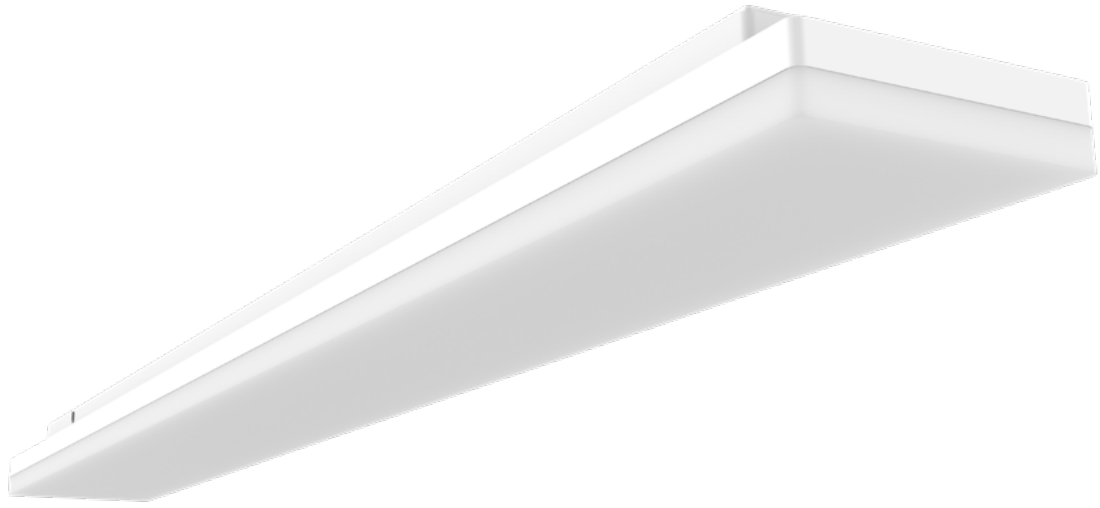
Luxiona has developed dedicated lighting solutions to meet the specific requirements of blackboard areas in classrooms. These systems ensure medium light intensity while minimizing glare and reflections, thanks to carefully selected optics and surfaces, and low Unified Glare Rating (UGR) values.

Designed with energy efficiency in mind, our classroom lighting consumes as little as 5 W/m<sup>2</sup>, providing uniform, high-quality illumination that supports focus, comfort, and optimal learning conditions.

Implementing energy-efficient lighting solutions, such as LED luminaires with high luminous efficacy and long lifespan exceeding 100.000

hours contributes to sustainability goals by reducing energy consumption and operational costs. Integrating daylight with artificial lighting through smart controls and sensors can further enhance energy savings while maintaining optimal illumination levels.

Such integrated systems adjust lighting based on occupancy and available daylight, ensuring consistent visual comfort throughout the day. Moreover, sustainable lighting design in schools involves the use of environmentally friendly materials and technologies that minimize ecological impact.



Matrix Essential

# Modernise and save with lighting replacement

**Every educational space deserves lighting that supports comfort, focus, and performance. High-quality LED solutions create optimal conditions for learning by reducing eye strain and improving visual comfort for students and teachers alike.**

**Modern lighting systems combine efficiency, sustainability, and reliable performance with outstanding energy savings.**



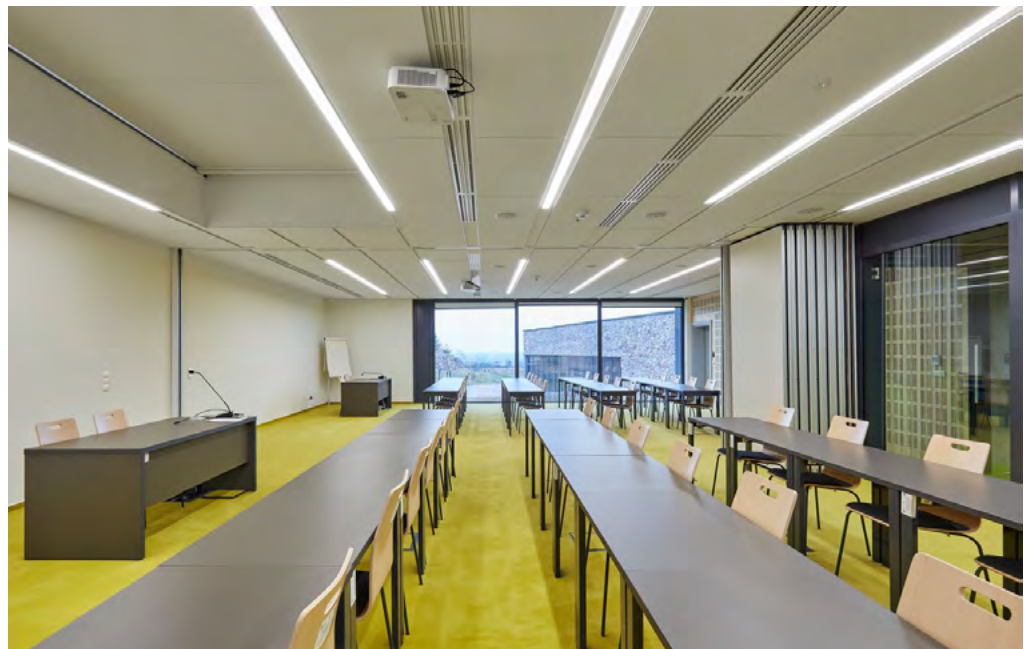
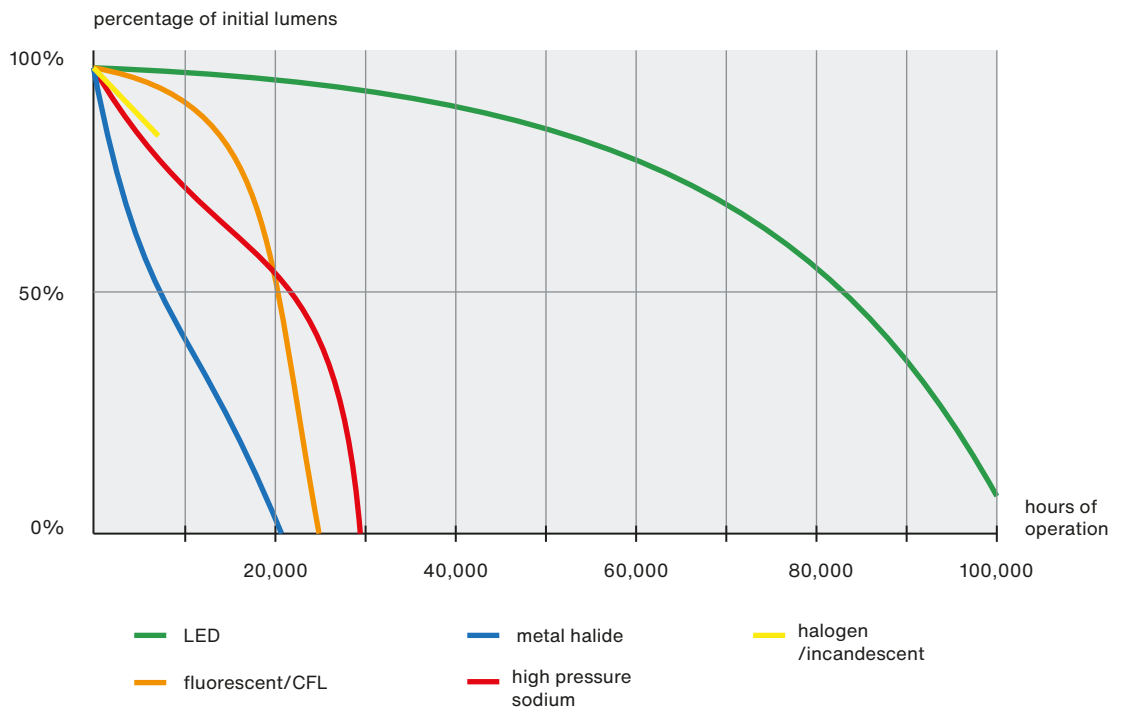
## Longer lifetime for led sources

Due to his semiconductor nature, provides longer lifetimes when compared with fluorescent, incandescent or halogen based lamps.

## Additional eco-achievements

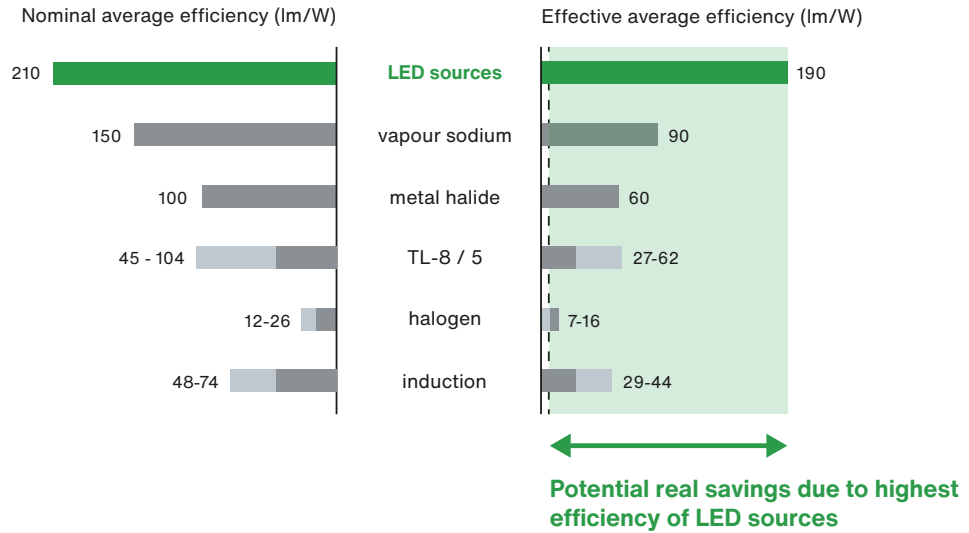
As a consequence to the achieved savings for lighting retrofitting, carbon footprint and climate change fight are also in the frame of lighting design, making available on top of a more enviromental conscience, a powerful set of certifications as Bream or Leed. Last, but not least, the use of led lighting makes posible the cosumption reduction of hazardous and toxic components used in classical lighting.

Lumen maintenance curves  
LED vs traditional light sources



## Cutting costs with led sources

LED technologies evolution offers nowadays lighting solutions bringing higher benefits, highest efficiencies whilst affordable investments. Energy efficiency puts on the hands of lighting designers, engineers, architects and owners a very powerful tool to cut operational costs thanks to upgrading outdated luminaires by modern and efficient led ones.



Lighting efficiency is not only about lumen output, but also about how effectively light is directed where it is needed. Traditional light sources such as fluorescent and incandescent lamps emit light in all directions, requiring reflectors that inevitably cause light losses.

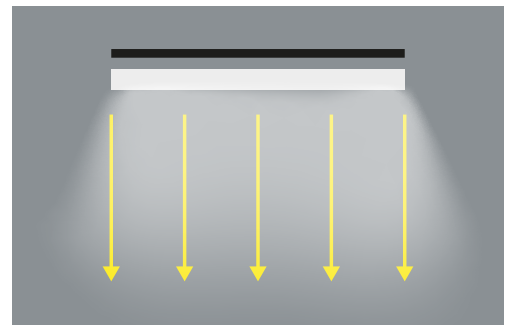
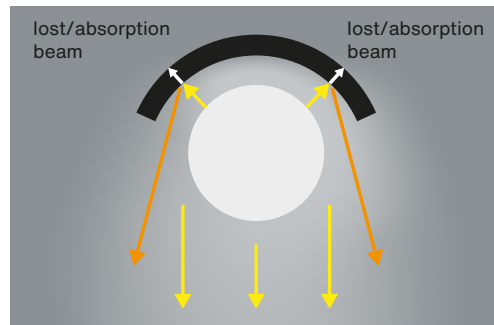
LED technology is naturally directional, allowing most of the generated light to be used efficiently with minimal optical losses. This results in higher real efficiency, better light distribution, and lower energy consumption.

Old-fashioned sources

$$LOR_{\text{radial emission}} \approx 60 \div 75\% \text{ nominal flux}$$

LED sources

$$LOR_{\text{direct emission}} \approx 100\% \text{ nominal flux}$$



- direct beam
- reflected beam
- lost/absorption beam

- direct beam

## By upgrading your lighting, you gain:



### Lower energy and operating costs

Rising energy costs call for thoughtful investment decisions. The combination of high-efficiency LED luminaires and lighting controls results in noticeably lower electricity bills. Energy-efficient solutions are supported by a well thought-out installation system that significantly reduces the costs of operation and maintenance costs.



### Greater comfort and safety

Nothing is more important than comfort and safety in the schools and educational spaces. By implementing the Human Centric Lighting approach to our lighting solutions and combining them with intelligent control systems, we support the body's natural biorhythm. By doing so, we help children to be more productive and focused, or calm and relaxed, exactly when they need it. By eliminating glare and precisely adjusting the lighting parameters of our luminaires to suit specific tasks and needs, we create comfortable conditions and a friendly environment and promote safety and well-being in school.



### High standard of facility and return on investment

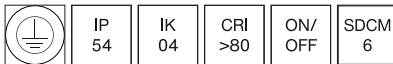
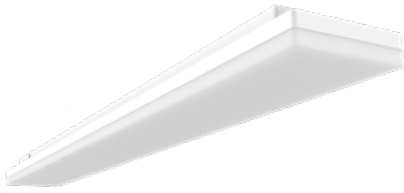
Replacing lighting is an investment that pays off exceptionally well. The money spent on modernisation pays off surprisingly quickly, and modern lighting systems raise the standard and prestige of the property itself. LED lighting, ensures trouble-free, durable and low-cost use of the facility for many years. This is an important asset of the investment, which increases the value and prestige of the educational building.



### Reduced environmental impact

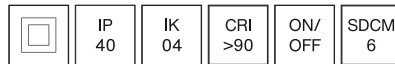
Lower energy consumption, thanks to more efficient LED sources, is an extremely environmentally friendly solution. It reduces the carbon footprint created by the use of illuminated spaces. Reliability, the absence of hazardous materials in the LED sources and the long service life of LUXIONA luminaires also contribute to the production of less waste. Our almost 100 years of experience as a manufacturer of lighting solutions also allows us to continuously improve our production process and implement technologies that reduce our environmental impact. Sustainability is one of our core values, which is why we strive for the highest standards of environmental performance.

# Lighting solutions



## Matrix Essential

A high-efficiency LED luminaire designed for schools, public buildings, and commercial spaces. With efficiency up to 142 lm/W, integrated DIP switch control, and selectable colour temperatures of 3000 K, 4000 K, or 6500 K, it provides flexible, energy-saving lighting tailored to different environments. Additional power adjustment options allow lumen output reduction to 85% or 70% without replacing the luminaire.



## X-Line Concept

High lighting quality, minimalist design, and outstanding efficiency in a compact aluminium profile of just 70 × 50 mm. Designed for modern schools and office environments, it delivers up to 135 lm/W while ensuring excellent visual comfort for users. Surface-mounted installation and quick assembly without opening the luminaire make it a practical and efficient solution for professional lighting projects.



## Neo

This 3-proof LED luminaire is designed for technical environments where reliability and durability are essential. Its robust extruded polycarbonate housing ensures excellent resistance against moisture, dust, and corrosion, with protection rated at IP65 and IK06. Equipped with high-output LEDs, it provides efficient, high-quality illumination for everyday operation. The luminaire is available in a through-wiring version as standard, enabling faster and more convenient installation.

2x36 W  
T8 PC 840 → Matrix  
Essential

### Common Parameters:

Driver	on/off
Colour temperature	4000 K
Colour Rendering Index	CRI>80

### Improvement after modernisation:

lifetime  
**4 times longer duration**  
energy consumption (W)  
**56% reduction**  
luminaire efficiency  
**1,5 times better**

2x36 W  
T8 PC 840 → X-Line  
Concept

### Common Parameters:

Driver	on/off
Colour temperature	4000 K
Colour Rendering Index	CRI>80

### Improvement after modernisation:

lifetime  
**4 times longer duration**  
energy consumption (W)  
**54% reduction**  
luminaire efficiency  
**1,5 times better**

# LUXIONA

## LUXIONA worldwide

**Commercial offices:**  
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