

How to save

86%

of energy?



What to do to adapt a facility to the applicable changes and reduce energy costs?

Rising energy prices and the excessive emission of greenhouse gases are the two basic aspects that encourage investors to seek economic and ecological solutions.

According to calculations, e.g. about 50% of energy consumption in offices in the European Union is generated by lighting. This is a significant percentage that can be greatly reduced.

Our suggestions:

1. Switch to 100% LED lighting
2. Use a control system

Top 6 Benefits:

1. Reduce energy consumption and much lower electricity bills
2. Increased safety
3. Increased comfort of work and rest
4. Caring for your health
5. Caring for the environment
6. Reduced installation and maintenance costs



2050

Emission neutrality

Challenge and responsibility

Achieving climate neutrality, also known as emissions, carbon or zero emissions, has become a strategic global goal. This is to bring global temperatures back to safe levels and prevent further progression of climate change, the effects of which are a huge threat to us all.

In many cities, in villages, on roads, as well as in various facilities and buildings, we still have to deal with lighting which unnecessarily consumes large amounts of energy and

contributes to unnecessary CO₂ emissions into the atmosphere. It is time to change it! We encourage all decision makers, mayors of cities and villages, and business owners to learn about the benefits of the latest LED technology and intelligent lighting management systems.

Our decisions matter a lot. Together we can take care of a better world.





Independently from the sector, **you benefit!**

By focusing on energy-efficient lighting, additionally supported by modern control systems, you will get measurable benefits in the form of lower electricity bills, reduction of CO₂ **emission and return on investment even within a year!**

86%

lower electricity bills

Savings in 6 main segments:

1. Industry and storage – 58%
2. Public utility – 58%
3. Streets, roads and parking lots – 58%
4. Offices – 58%
5. Residential construction – 58%
6. Shops and commercial facilities – 58%

The photo shows the implementation of a comprehensive lighting system in the nursery „Zakątek Malucha” in Łochów.



Change the lighting to more ECO!

What you will gain:



01 / 05

Energy-saving LED lighting

50 to 80% lower electricity consumption

LED lighting is much more efficient than traditional lighting and can deliver up to 180 lm/W. This has an impact not only on lower power consumption, but also on the possibility of reducing the number of lighting points (less wiring, switches, lower installation and service costs).



02 / 05

Significant reduction of CO2 emissions

Care for the environment

Classic fluorescent lamps contain gases harmful to the environment, which makes them a highly non-ecological source of lighting. The use of energy-efficient LED lighting will cut carbon dioxide emissions by at least 55% by 2030. Global carbon emissions are rising at an unprecedented rate and energy prices in the world are reaching historic highs.



03 / 05

Light spectrum control

Lighting control, thanks to which the light is adapted to current needs – delivered in the optimal amount, time and place.

The control system enables programming of many light scenes depending on the needs and individual preferences of the investor.

It can also illuminate selected areas simultaneously, manage the lighting time between the detection of successive objects, the rate of dimming and the desired brightness in the selected area. Each scene can be controlled individually and its activation can depend on factors such as date and time, level of illumination or detected movement.

By setting the required level of illumination, you can use natural light from the sun. LED light and sunlight will mix in the right proportions to permanently maintain the required brightness level.



04 / 05

Durability and quality of lighting

Lower re-purchase and service costs.

Traditional light bulbs ensured 2,000 to 3,000 hours of operation. The more modern LEDs will light to a maximum of 15,000 hours. **Modern LED lighting guarantees durability of up to 100,000 hours of operation.** Our luminaires meet these parameters.

The operation time of luminaires with integrated LED modules has a direct impact on the operating costs of the facilities in which they are used. **There is no need to constantly replace** blown light bulbs or fluorescent lamps, which is often associated with additional service costs.



05 / 05

Health and well-being

Light that is friendly to the eyes and regulates the natural human biorhythm.

Fluorescent lamps, along with their operation time, tend to flicker, which can significantly affect the well-being and efficiency of employees. **LED lighting eliminates this type of problem entirely.**

Uniform illumination of rooms, which meets the standards, is also very important for health reasons – people working in a well-lit room see better and their eyes are less tired, which reduces the feeling of general fatigue and **has a positive effect on the efficiency and ergonomics of work, as well as on the employees' well-being.**

LED lighting ensures appropriate colour temperature, reflecting the natural light, the colour of which changes throughout the day.



We have two modern and efficient LED module production lines.

Lena Lighting luminaires are 100% Polish products.

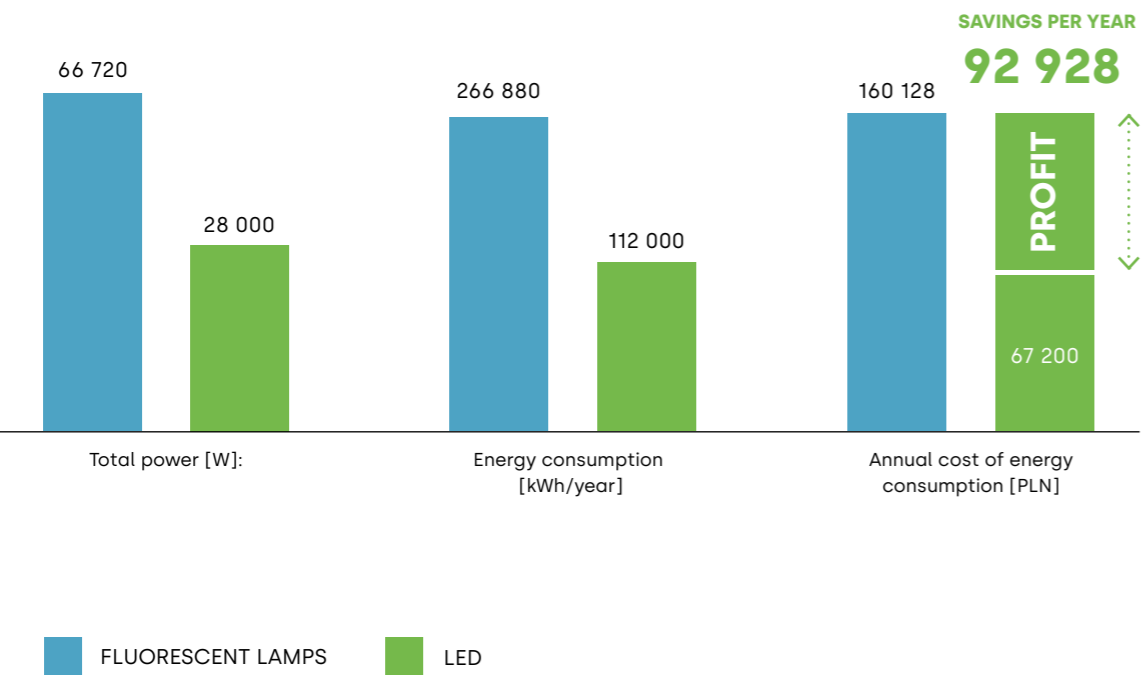
14 We produce
million
LED components per month

Case study

Industrial lighting - Fortaco Sp. z o.o.

The main benefits of modernization:

- 1. Several times lower energy consumption.
- 2. 58% lower electricity bills.
- 3. Lower lighting service and maintenance costs.
- 4. Appropriate illumination level of workplaces, required by the standard.
- 5. Workplace ergonomics – satisfaction of employees.
- 6. Work safety.
- 7. Return on investment during one year.



We evaluate the designed lighting system at five.

„The main goals of the project involved meeting the lighting standards for production halls. The project included the modernisation of four production aisles. There were over 200 luminaires to be mounted. The designed Lena Lighting lighting system is a truly A-grade investment. The system exceeded our expectations. Luminous flux efficiency and the satisfaction of the employees have proved that we hit the jackpot. We assumed the investment would return in several years, but it paid back within just one year. Annual costs of energy consumption have decreased. I recommend Lena Lighting as a good Business Partner, providing high quality lighting solutions.”

Krzysztof Czajkowski
Maintenance and Infrastructure Manager
Fortaco Sp. z o.o.

58%
lower electricity bills



Fortaco Janów Lubelski decided to modernise their lighting. A total of over 200 luminaires were installed. Although it might have seemed that the decision to modernise the space would be an investment amortised over the next few years, it turned out that the financial outlays have paid off after the first year of use and have been compensated by lower electricity bills. The following years will bring further savings on energy costs.

12_{month}
Return on investment

93_{thous.}
Your annual savings



When designing lighting in a facility such as at Fortaco Janów Lubelski (production halls), the main aspects taken under consideration included compliance with the lighting standards, efficiency of light sources, long-term warranty, failure-free and maintenance-free operation, and energy efficiency. The investor also wanted a reliable business partner offering comprehensive service.

These factors were decisive when choosing the Polish company Lena Lighting. Already at the design and installation stages, the representatives of Fortaco, as they emphasised in the interview, could see that the choice was right. They not only received a professional lighting project, but also were supported by professional knowledge at every stage.

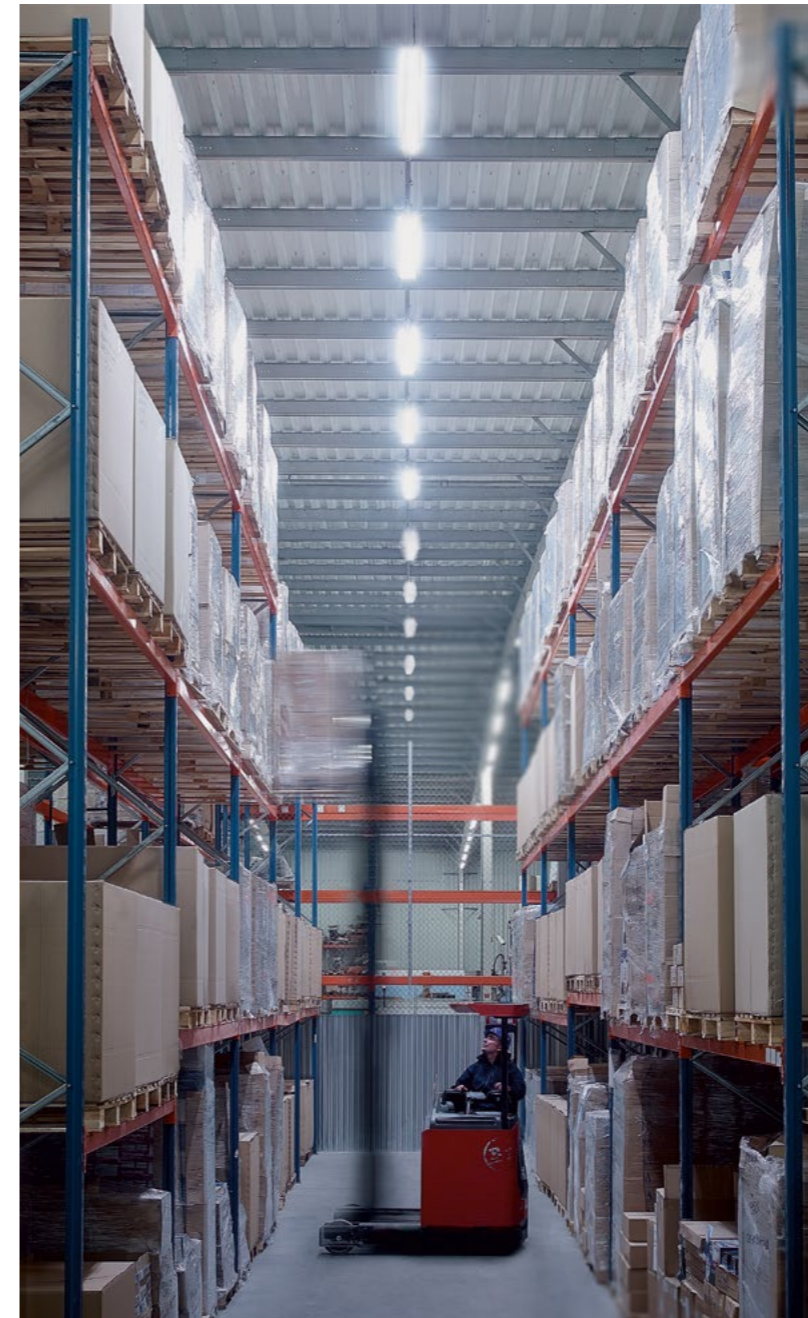
The change of lighting translated into improved ergonomics and working conditions, and thus the satisfaction of employees.



Visualization of the differences between fluorescent lighting and modern LED lamps
on the example of a high-bay warehouse.



BEFORE lighting modernization



AFTER lighting modernization

”

Improving the quality of lighting has a positive effect on working conditions and translates to performance and security.

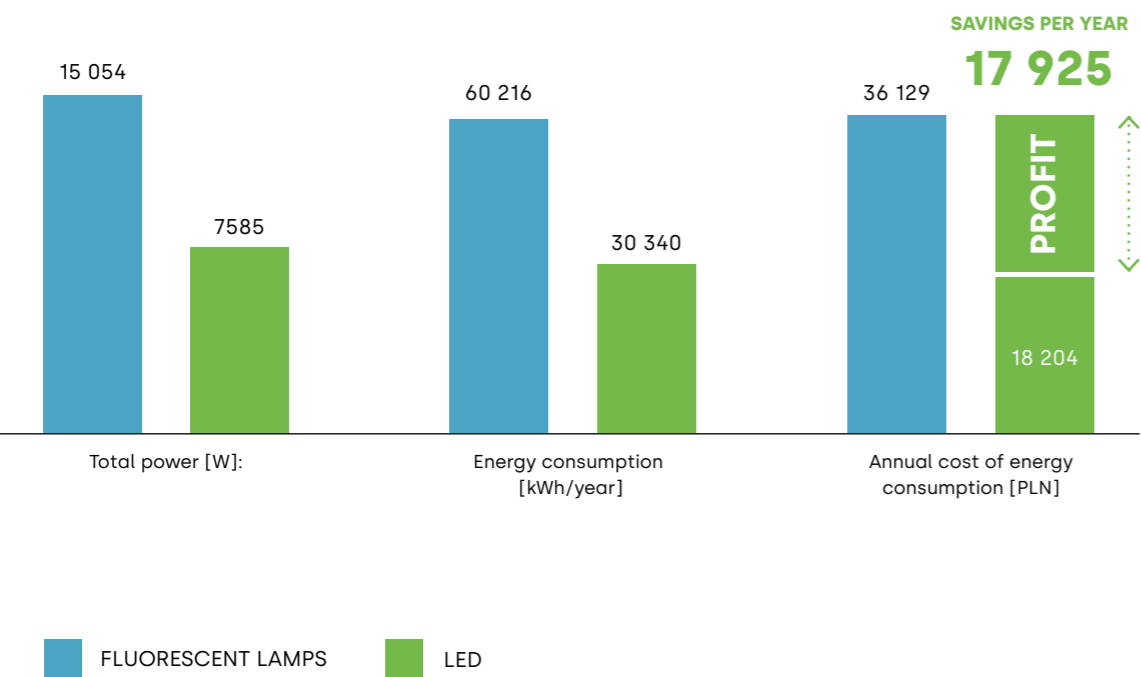


Case study

Public utility facilities lighting - "Dębinka" School Complex

The main benefits of modernization:

- 1. 50% reduction in energy consumption.
- 2. Lower electricity bills.
- 3. Environmental education of children in practice – lower CO₂ emission – a model of environmental attitude.
- 4. Lower lighting service and maintenance costs.
- 5. Comfort of learning – atmosphere allowing better concentration.
- 6. Eye-friendly light for students and teachers (no flickering and no glare).



The decision was made after analysing the economic aspects

„The purpose of replacing the lighting at "Dębinka" from fluorescent to LED luminaires was to improve its quality while achieving energy savings and reducing the operating costs. Thanks to the new lighting, the surface is evenly illuminated by soft light which does not produce glare. We have no more problems with dusty, flickering fluorescent lamps, glowing in different colours and requiring constant replacement. And most importantly, we have significantly reduced the operating costs. Electricity bills have been cut by half! Now, we consider the not-an-easy decision to modernise our facility a bull's eye!"

Adam Grabus

Administrative Director of "Dębinka" Social Primary School No. 3 and "Dębinka" Social Middle School

50%
lower electricity bills



The decision to modernise the “Dębinka” School Complex in Poznań (Social Primary School No. 3 and Social Middle School) was made after an analysis of economic aspects. While modernising the school, the investor decided to replace the lighting (in some of the classrooms, corridors and toilets, as well as in gyms and the lecture hall) from EVG fluorescent lamps to modern energy-saving LEDs.

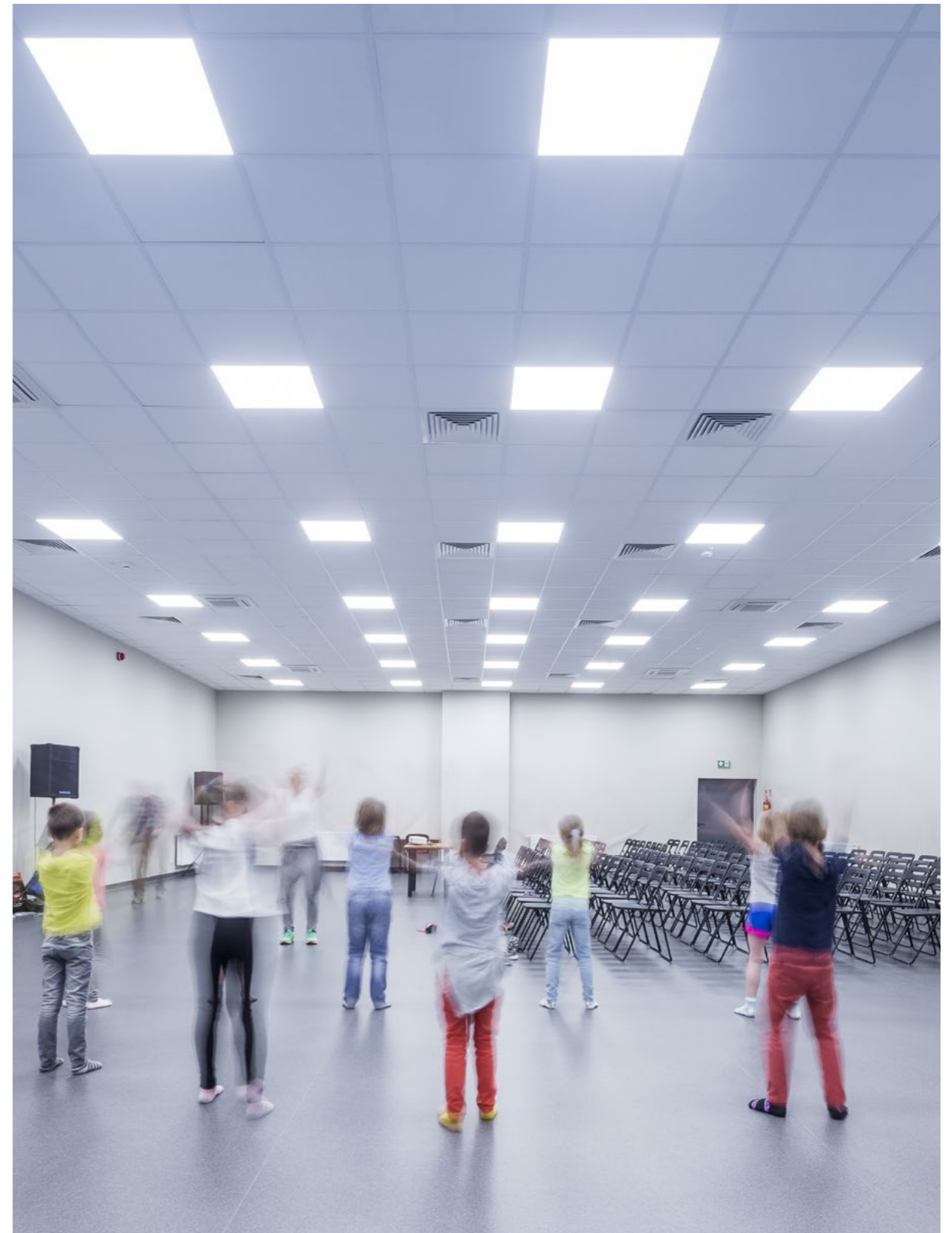
19_{month}
Return on investment

18_{thous.}
Your annual savings



The comparative analysis has shown multiple benefits resulting from using LED luminaires. The calculations proved, above all, that the total yearly electricity consumption is 50% lower for LED luminaires than in the case of traditional fluorescent technology. In this case, this effect was achieved thanks to the lower unit power consumption of LEDs.

With all purchase and installation costs included, the estimated period of return on investment has been set at 2 years of operation. After that period, the investor will experience a constant and dynamic increase in profits due to the use of LED luminaires. The comparison of both variants of lighting (before and after modernisation) showed a significant advantage of LED lighting over traditional lighting. From the investor's point of view, LED lighting will not require periodic maintenance. After the modernisation, the school managed to make over 50% savings in energy consumption, thanks to which the operating costs were also reduced by more than half.

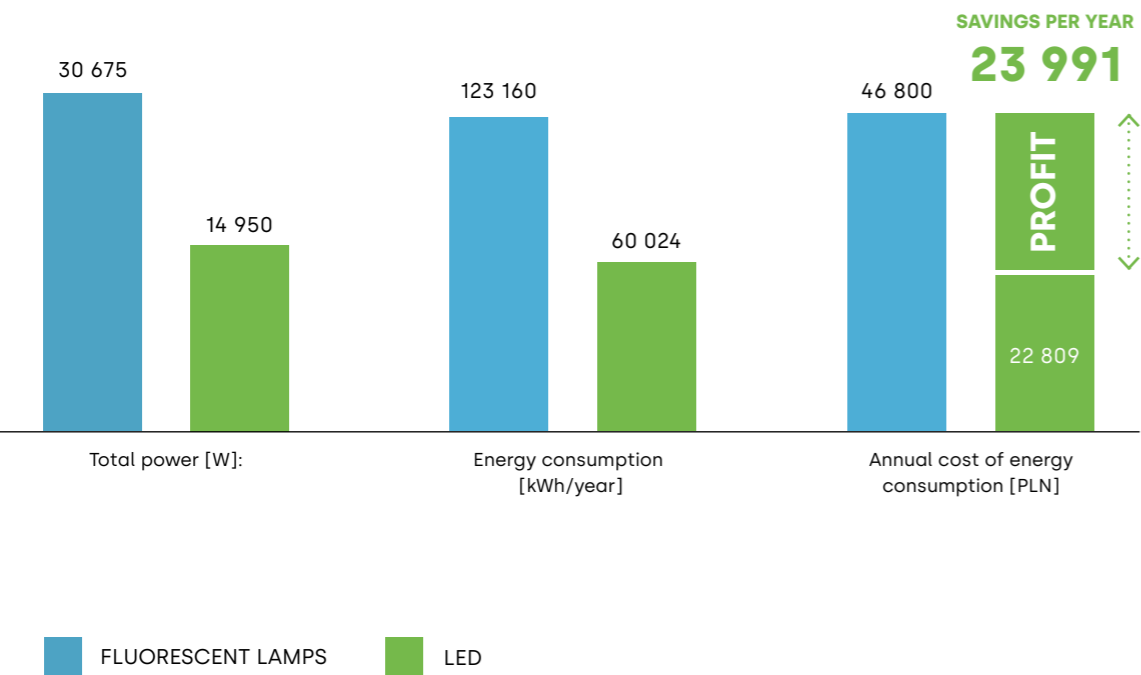


Studium przypadku

Street and road lighting - an investment infrastructure in Środa Wielkopolska

The main benefits of modernization:

- 1. 62% reduction in energy consumption – real savings
- 2. Possibility to install a power reduction system which can be used during hours of reduced road traffic.
- 3. Possibility to control lighting via an intelligent network management system.
- 4. Financing the investment from savings obtained during the term of contract.
- 5. Reduction of lighting maintenance costs.
- 6. Modernisation performed without the need for budgetary corrections on the part of the commune in the ESCO formula.



We want to develop networks of intelligent lighting

We came to the conclusion that we must invest with modern lighting in Środa Wielkopolska. It is a hybrid set, i.e. luminaires and controls. I think that the residents will be satisfied with this investment, at least for aesthetic reasons, as it is not sodium-vapour lighting, which we have dealt with in previous years – but LED technology. Firstly, it is efficient, secondly, it gives a very nice, friendly light, and thirdly, it gives measurable savings. We have to look at it in the perspective of several or a dozen of years, and these are very measurable savings, reaching hundreds of thousands or even millions of Polish zlotys.

Piotr Mieloch
Mayor of Środa Wielkopolska

62%
lower electricity bills



The new, energy-saving LED lighting has replaced the less efficient sodium-vapour lighting on seven arterial roads in Środa Wielkopolska. Thanks to the investment made by the commune authorities, the CLUE CiTY system – consisting of over 170 modern Tiara LED road luminaires and an integrated, technologically advanced management system – has been implemented.

21_{month}
Return on investment

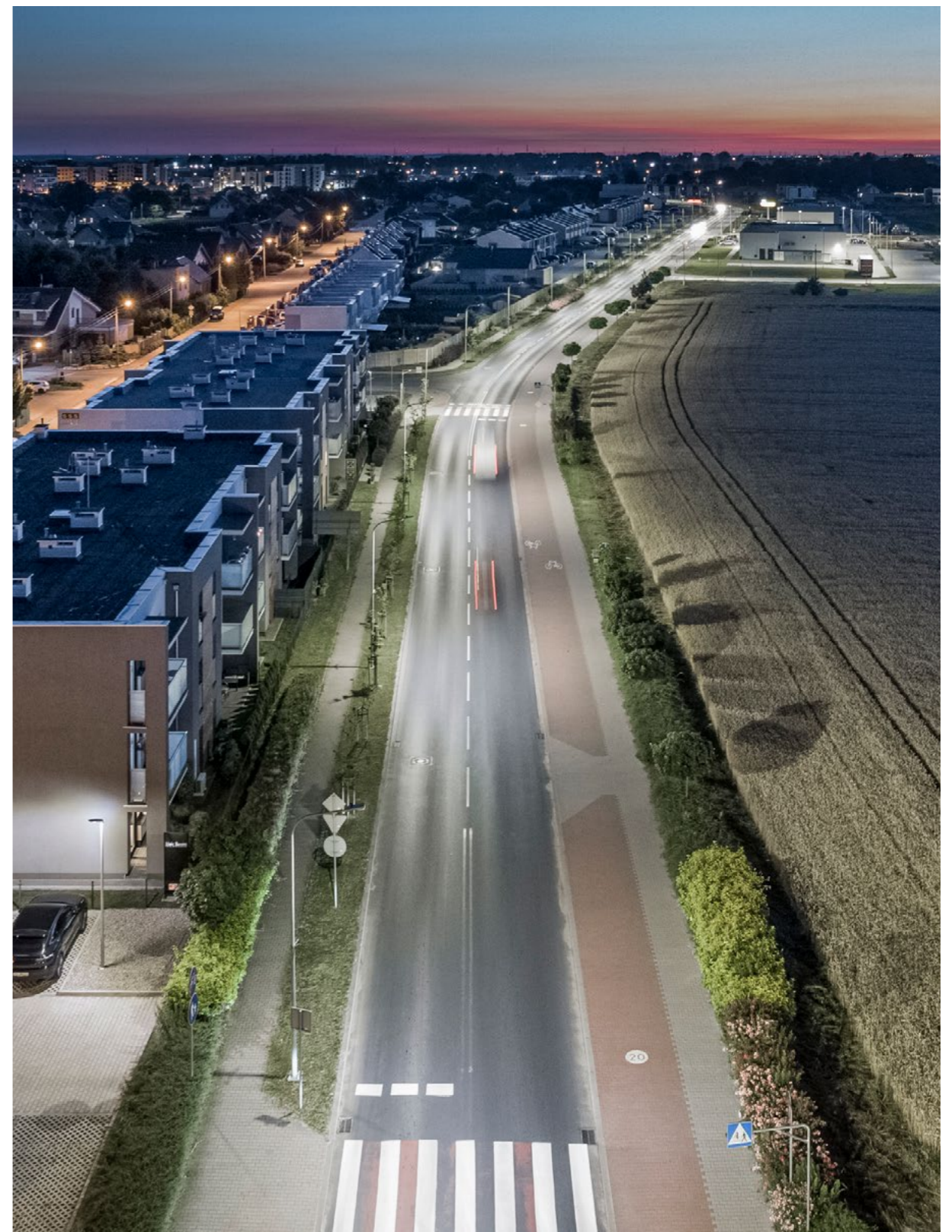
24_{thous.}
Your annual savings



The new luminaires have replaced the luminaires used so far – fitted with sodium, mercury or metal-halogen light sources – which, compared to today's technologies, are energy-consuming and characterised by low efficiency and short service life.

After the modernisation the light is delivered in optimal amount, only when it is needed. The beneficiaries of this investment are both the commune authorities and the residents themselves. While the residents profit from light that provides better visibility and supports the safety of road users and adjacent pavements. They can also be sure that the response time of service personnel is reduced to a minimum, as the intelligent system informs them on an ongoing basis about the need for any intervention.

Thanks to the use of ClueCity, it is possible to increase savings, provided that the lighting administrator reduces power in modernised luminaires at certain times with less traffic, e.g. from 11:00 p.m. to 5:00 a.m.





Road lighting under control

CLUE CITY is a technologically advanced system that remotely manages and controls road luminaires. Optimises energy efficiency and monitors the status of each luminaire.

Is intuitive, reliable and secure. Provides accurate real-time control of street lighting infrastructure. The cloud-based interface is available to the administrator 24/7 from any device connected to the Internet.

CLUE CITY enables:

- Remote luminaire management.
- Creating a luminaire working schedule and adjusting the preferred light level in selected hourly intervals.
- Creating groups of luminaires, which facilitates the management of lighting in selected areas.
- Geolocation and visualisation of street luminaires on the map.
- Accurate measurement of energy consumption and its recording and archiving.
- Monitoring the working conditions of the light source and the driver.
- Monitoring the wear of LED components. The obtained data will keep the system administrator informed about a possible need to replace a luminaire, which translates into lower maintenance costs and significantly shortens the response time.
- Multi-level management of system users.

See how it works!
lenalighting.com/cluecity-en



Interior lighting under control



Adapt the light to current needs, while optimising the use of energy.

This is one of the main goals
of the **CLUE iN** system

Properly selected light improves the comfort of life, efficiency and safety of employees, as well as the cognitive abilities of students. From work and education, through relaxation and fun.

System's scalability allows CLUEIN to be used regardless of the size of the facility. It will prove perfect in one room, as well as in the entire building complex.

There is no need for renovation, forging walls or through-wiring. Easy access from a smartphone app allows you to see the world in a better light.

CLUEIN can be used in both open space office areas and in individual offices. It will prove perfect in conference rooms, passageways, reception areas, lobbies and social rooms.

See how it works:
lenalighting.com/cluein-en



Even more savings thanks to the automation of industrial lighting.

CLUE INDUSTRIAL



CLUE INDUSTRIAL enables:

- Illuminating an aisle or selected area
- Controlling the lighting time between the detection of successive objects, the rate of dimming and the desired brightness in the selected area
- Individual control of light scenes
- Lighting activation dependent on factors such as date and time, illumination level or detected movement
- Using sunlight to maintain the required level of brightness
- The control system can be based on wired and wireless infrastructure
- In case of hard-to-reach places, we can also implement a mixed infrastructure.

The most important benefits of implementing CLUE INDUSTRIAL:

- Savings in energy consumption up to 56%
- Savings in lamp consumption, lower operating temperature
- Safety and comfort of work
- Facilitating the management of lighting and its service (extended systems indicate a failure, count the working time and the upcoming maintenance)

The installation of the intelligent, integrated Clue Industrial lighting control system allows the use of multiple functions that directly translate into the comfort and prestige of a facility, while maximizing measurable savings in electricity consumption. In addition to the modernisation of lighting, there is also an aspect concerning its intelligence that should be taken into account.

Luminaires do not have to work constantly at the highest illumination level. Even the most frequently used warehouse or production hall has areas which are less frequented. Maximum light intensity in these places, if they are unoccupied, unnecessarily generates electricity consumption and exploits the luminaires, resulting in their faster wear.



See how it works!

youtube.com/watch?v=bVRNP3NTYIY



100%

Made in Poland

We are a lighting manufacturer with 30 years of presence on the market, which is why we know everything about luminaires and lighting systems: we design, comprehensively test and manufacture them. We combine practice with modernity.

Lena Lighting S.A. has for 33 years been one of the lighting market leaders in Poland. Based on 100% Polish capital, the company designs, constructs and manufactures professional lighting solutions. It is one of the largest companies and one of the most recognised brands in the region of Greater Poland, where its headquarters and production facilities are located.

The company has been listed on the main market of the Warsaw Stock Exchange since 2005. By developing exports to 70 countries around the world, it has achieved the position of an undisputed leader of professional luminaire exporters among Polish manufacturers.

33+

years of experience



**We are responsible
for the highest quality of lighting**

Our company was born out of fascination with light.





Lena Lighting S.A.
ul. Kórnicka 52, 63-000 Środa Wielkopolska
tel. +48 (61) 28 60 300, e-mail: hello@lenalighting.pl

www.lenalighting.com