

經濟部工業局 函

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241

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受文者：台灣區照明燈具輸出業同業公會

發文日期：中華民國102年8月12日

發文字號：工電字第10200697430號

速別：速件

密等及解密條件或保密期限：

附件：如文

主旨：檢送駐波蘭代表處經濟組函轉波蘭LARS LED公司尋找我商投資合作案，敬請 貴會協助轉知會員廠商。

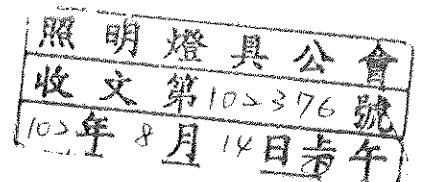
說明：依據本部投資業務處102年8月7日經投三字第10203215050號函辦理。

正本：台灣光電半導體產業協會、台灣區照明燈具輸出業同業公會、台灣區電機電子工業同業公會

副本：本局電子資訊組

局長 沈榮津

依照分層負責規定授權單位主管決行



駐波蘭代表處經濟組 函

機關地址：30th Floor, ul. Emilii
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受文者：經濟部投資業務處
發文日期：中華民國102年8月1日
發文字號：波經發字第10200002630號
速別：速件
密等及解密條件或保密期限：普通
附件：如文

主旨：有關波蘭LARS LED公司頃尋找我商投資合作案，請查照。

說明：

- 一、本組頃於本(102)年7月30日受邀拜會該公司，該公司董事長 Krzystof Lagulko及總經理Slawomir Rozycki在座，L董事長表示，該公司係波蘭LED燈具協會會員之一，該工廠有SMT及產品測試機等生產線，公司去(101)年營業額達1065萬波幣(約332萬美元)，獲利僅6萬2603美元，主要係前2年該公司開發新產品模具，致使獲利下降，目前該公司研發新型專利產品，主要使用在倉儲(Warehouse)，該項產品將可降低電費達20倍以上，目前已在波蘭市場販售，並擬在中國大陸市場銷售，惟目前該公司遭遇資金短絀現象，公司合夥人不願增資，該公司擬尋覓投資合夥者，並願出售60%股份予我方(約1000萬美元)。
- 二、渠另表示，目前經由波蘭波蘭燈具產業協會(Polish Association of Lighting Industry)會長Marek Orlowski引介認識本組，盼本組協助尋找投資合夥者，並提供該公司簡介資料1份如附(因檔案大小超過傳輸容量，將以電子郵件方式送投資處承辦人處)，另稱，本案如有意願投資合夥者可與R總經理聯繫，email為s.rozycki@larsco.com.pl，手機係



48-516-788-442。

正本：經濟部投資業務處

副本：經濟部國際合作處、經濟部國際貿易局

2013/08/02

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駐波蘭代表處經濟組



經濟部投資業務處 函

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受文者：經濟部工業局

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密等及解密條件或保密期限：

附件：如文(JCS410203215050 JCS510203215050)

主旨：檢送駐波蘭代表處經濟組函報波蘭LARS LED公司頃尋找
我商投資合作案(如附件)，請轉知 貴會員廠商參考。

說明：依據駐波蘭代表處經濟組102年8月1日波經發字第
10200002630號函辦理。

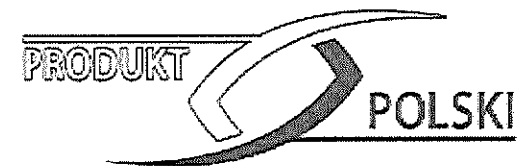
正本：經濟部工業局、經濟部能源局、台灣LED照明產業聯盟

副本：

電子公文交換章

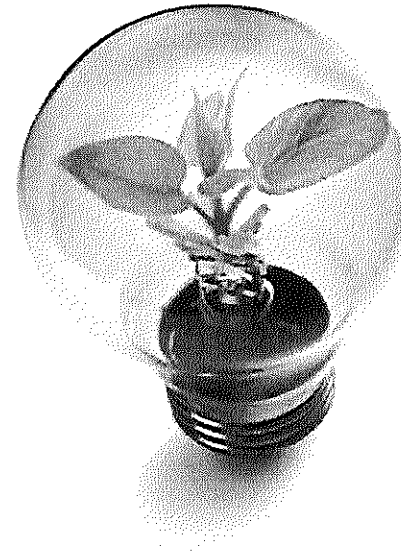
INTELLIGENT LED LIGHTING

Innovative lighting system



Company profile

- Design and manufacture of LED lighting
- Contract electronics assembly
- Design and manufacture of devices for specialized industries: medicine, computing, automotive, telecommunications



Mission, vision

mission

exceeding customer expectations

assurance of satisfaction

strengthening and development of
innovative technological solutions

vision

setting new trends

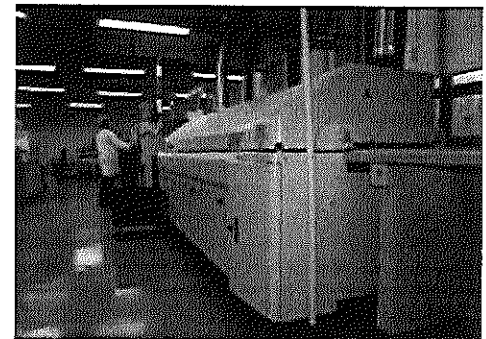
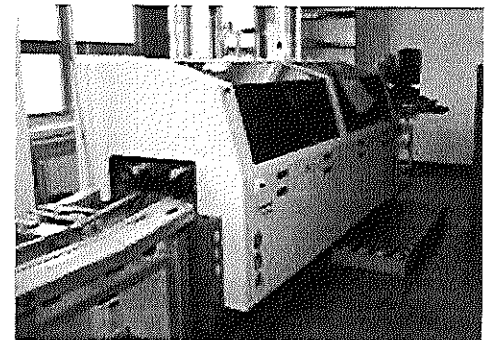
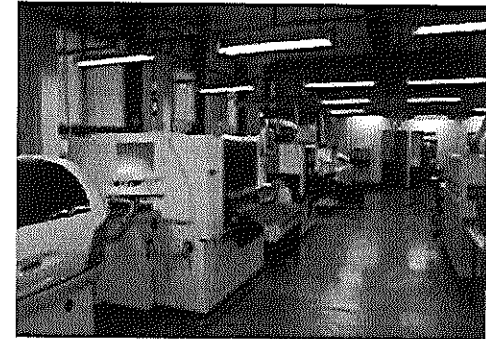
anticipating market requirements

strengthen its position in the
segment of consumer electronics
and LED lighting contract in Poland
and Europe

Factory

Beginning of activity in 1983 r.

- The company is 100% of Polish capital
- Production in the SMT and THT
- Modern machinery
- Automatic line for optical control of assembled components
- Complete diagnostic test of final products
- Quality- Automotive Standards
- Certificate IQ-Net
- Certificate ISO 9001:2009





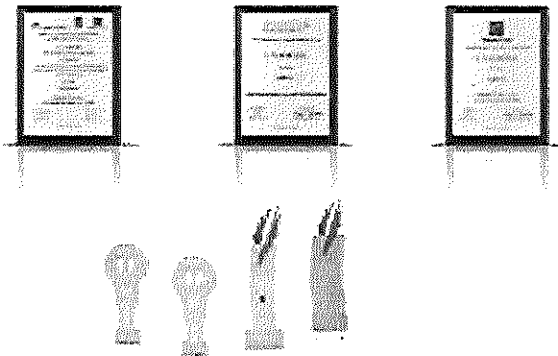
Company as a member of PZPO supports Actively Polish industry in the domestic and international markets



Company brand products are consistent with the guidelines for lighting in LEED and BREEAM certified buildings



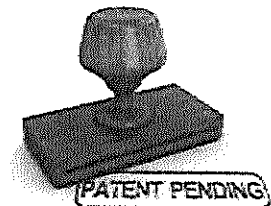
Company as a member of environmental responsibility programme "Nature Friendly Company," at every stage of its activity promotes the idea of sustainable development



Company for its many achievements in the field of lighting has been awarded many prizes

UE grants and protection by copyright and industrial property

- The project "Development and implementation of the production series of intelligent LED street lamps," received funding from the EU for the implementation of the Operational Program Innovative Economy, 2007-2013, Activity 4.2 "Stimulating R & D activities of enterprises and support in the field of industrial design,,
- Given the high degree of innovation and uniqueness in the world used in products solutions, the company uses the 5.4.1 sub-allocated to "Support to obtain / implement the protection of industrial property,,
- Products are protected by copyright and industrial property



Why invests in modern lighting?

- Electricity saving for lighting purposes :
30%-90%
- Total saving of energy consumed in the building :
5%-60%
- Minimizing maintenance costs of lighting systems
- Improving the quality of light
 - comfort
 - safety
 - efficiency
- Simplicity and speed of carrying out investment
(retrofit, no need to build additional infrastructure)

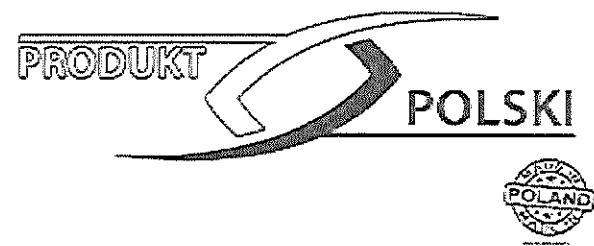
Why LED?

LED is the most advanced and fastest-growing technology

- Energy-efficiency
- Availability of colors from the entire spectrum visible light
- Long lifetime: up to 50 000 h
- Environmental safety, do not contain mercury
- Ease of operation and control
- Resistance to vibration and shock
- Reduced CO₂ emissions (environmental measures)



INTERIOR LIGHTING



Presented LED lighting solution

- Energy efficient and contemporary lighting
- Economical and reliable
- Constant light with no flicker effect
- No disruptive effect of glare
- Fusion of technology and functionality
- Comfort and safety of use
- High quality
- Environmentally friendly
 - Easy to recycle as electronic equipment
 - No emission of harmful radiation
- Consistent with the lighting standards

Adjust light intensity with an accuracy up to 1 lx
according with the lighting standards

Presented LED lighting solution

- LEDs
- Radar motion sensor
- Dusk sensor
- Emergency lighting module
- Light control system
- High efficient, intelligent power supplies
- Diffusion plate
- Aluminum profiles
- Durability up to **50 000 h**
- Radical reduction of the costs
- No flicker effect
- Smooth brightening and dimming
- Safe** to use
- Reducing CO₂ emissions**
- Instant start with even light
- Uniform distribution of light
- Panels are lightweight and

Minimizing energy consumption

ORIGINAL CONTROL SYSTEM DESIGN

Individual programming of the lighting system including the needs of the lighting and the maximum reduction in energy consumption

Innovative lighting system

Combining LED technology with motion radar sensors, twilight sensors, emergency lighting systems, and lighting control systems which allow the creation of an independent lighting system in which lights are working independently.

The lighting system allows you to minimize the time of burning, and thereby minimize energy consumption and maximize savings. system allows individual lamps illuminate a given area only when it is needed. This means that the lamp will light only when the person will be present in the detection range of the motion sensor

- Minimizing the time of burning of the lamp affects the real prolonged use of the device which generates additional benefits for user of the lighting system
- An important feature of the panels is possible to program the parameters. Fixtures allow the user to select with the remote one of the six functions.
- When person who is programming function can adjust light duration and intensity of the light to adjust lighting mode to given room and type of work
- Fixtures include also dusk sensor which control the light due to outdoor conditions.

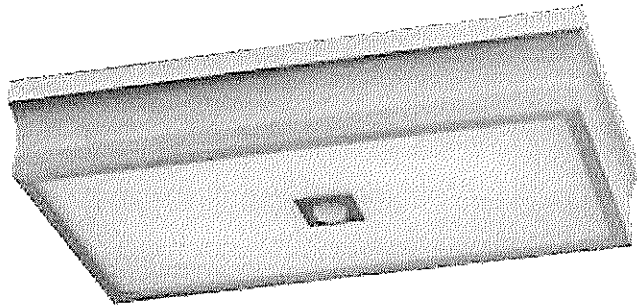
Presented products allow you to create a lighting management system that requires no additional software and infrastructure

QUALITY-TECHNOLOGY-SECURITY

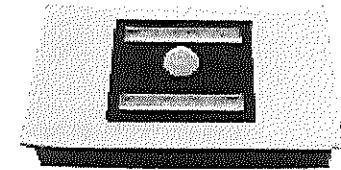


The use of the world leading LEDs manufacturer guarantee high quality and long liveness of the ESSE product

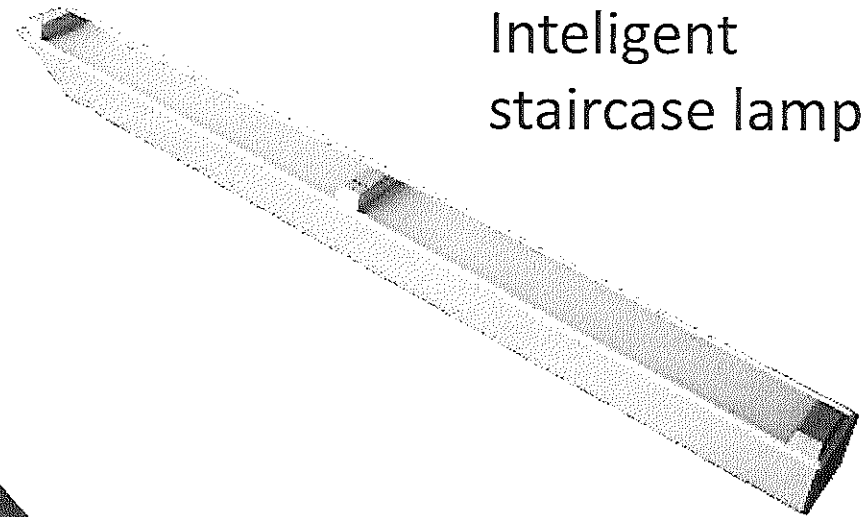
Intelligent LED lighting



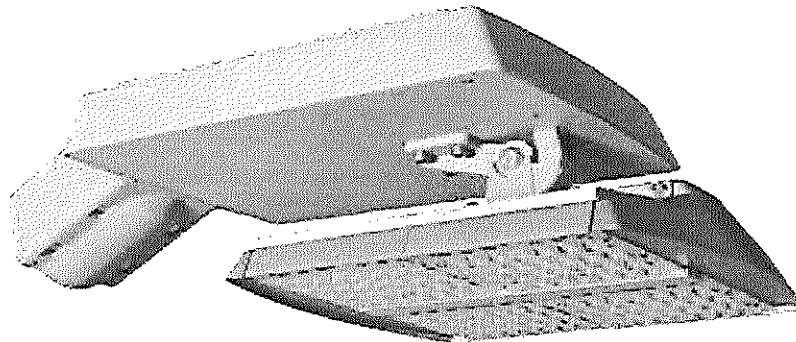
Intelligent LED Panels



Intelligent
staircase lamp

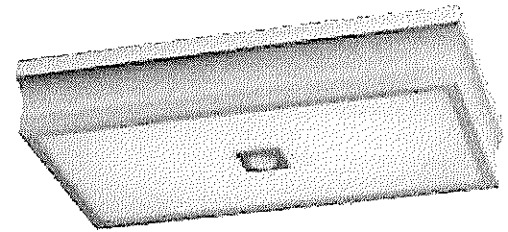


Linear LED Panel



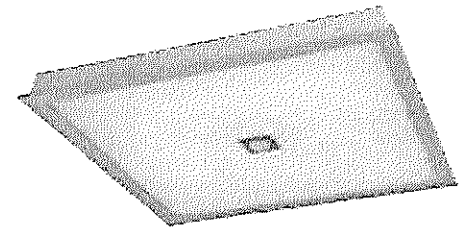
Street lamp

LED Panels



Types of Intelligent LED Panels

- Intelligent
- With emergency lighting modules
- Standard



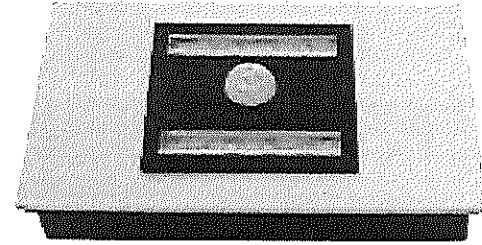
Mounting possibilities

- Recessed mounting (panel and coffered ceiling)
- Surface mounting

Excellent alternative to previously used technologies such as fluorescent lamps T8 fittings while providing more lighting efficiency

LEDSENA

LED lamp is equipped with motion and dusk sensors



OBTAIN A 40-TIMES ENERGY SAVING IN REDUCED POWER MODE,
COMPARED TO TRADITIONAL INCANDESCENT LIGHT

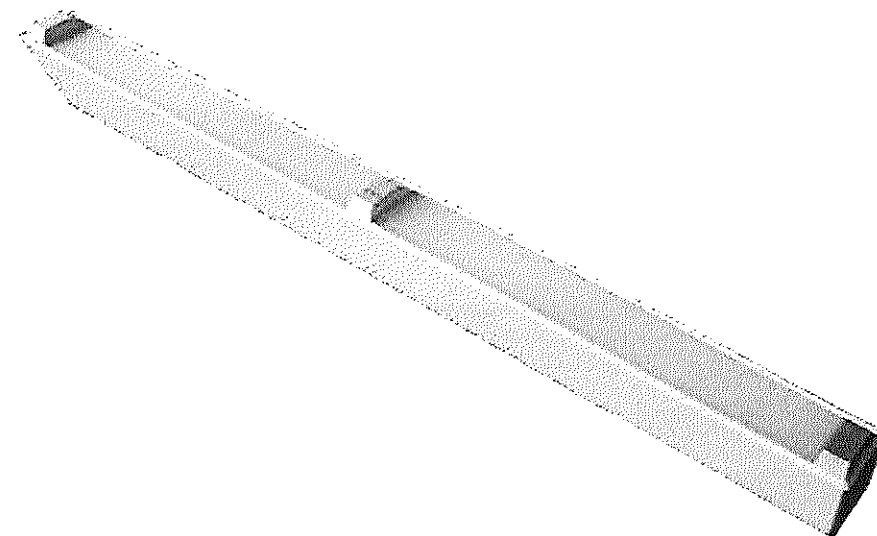
Easy to install

Linear LED Panel

Energy-efficient LED lamp system
for building light lines

Areas of application:

- Supermarkets and shopping centers
- Offices
- Industry
- Warehouses and production facilities

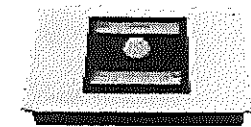
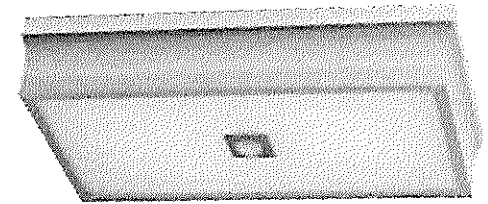


ESSE Linear LED panels creates lighting systems
that can be manage and controlled

Linear LED panels are used to replace conventional
fluorescent lighting

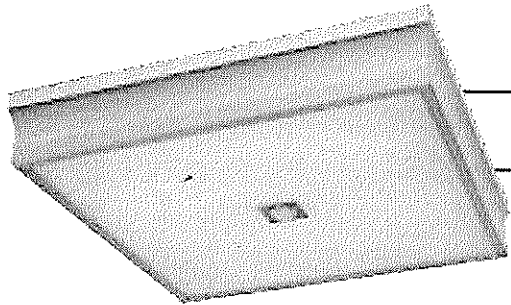
Lamps with emergency lighting modules

- Lamps can be operated in each of the six possible variants
- No need to install additional emergency lighting points – lamps function as general and emergency lighting
- Guaranteed 3 hours work at the time of power failure from the network
- Automated test functions:
 - 18- minutes required every month and 180 minutes required once a year
 - The test is carried out with the remote control so it doesn't require direct access to the lamp



SERVE AS EMERGENCY LIGHTING

Application of innovative lighting system



Office building

Warehouse

Production halls

Schools, Univesites

Hospitals

Courts

Shooping malls

Hotels

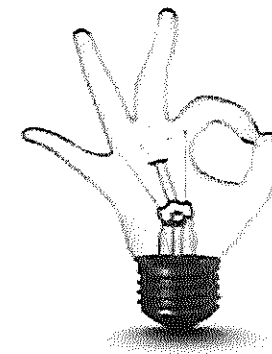
Garages

Other buildings of public utility

Wherever required energy savings

CASE STUDIES

How to save money and energy?

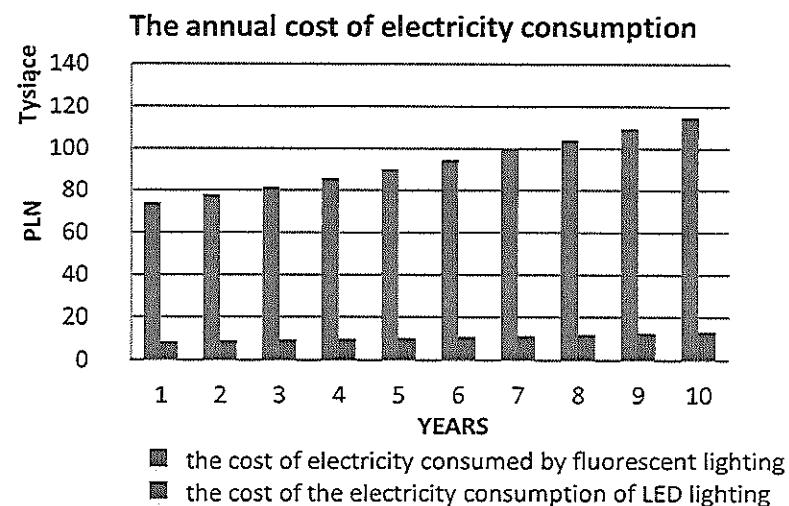
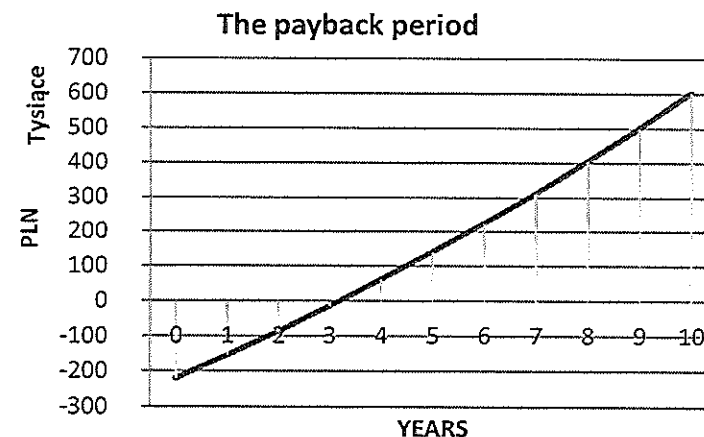


Example: the savings in the communication

Institute of Oncology in Warsaw

	Before modernization	After modernization
Type of lighting	Fluorescent lighting 2x36W	Intelligent LED panels
Power consumption	86W	40W
Control system for light intensity and time	-	✓
Motion sensor, dusk sensor	-	✓
Number of fixtures	240 pieces	240 pieces
Length of lighting in a year	5 840 h	5 840 h
Consumption of electricity in a year	120 538 kWh	14 016 kWh
% reduce electricity costs		88 %

SAVING 8-times

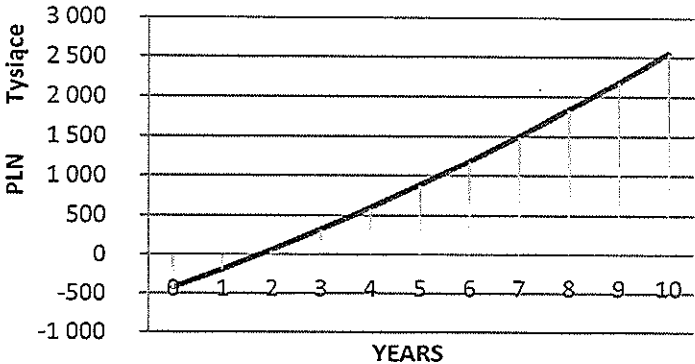


Example: the savings in warehouse

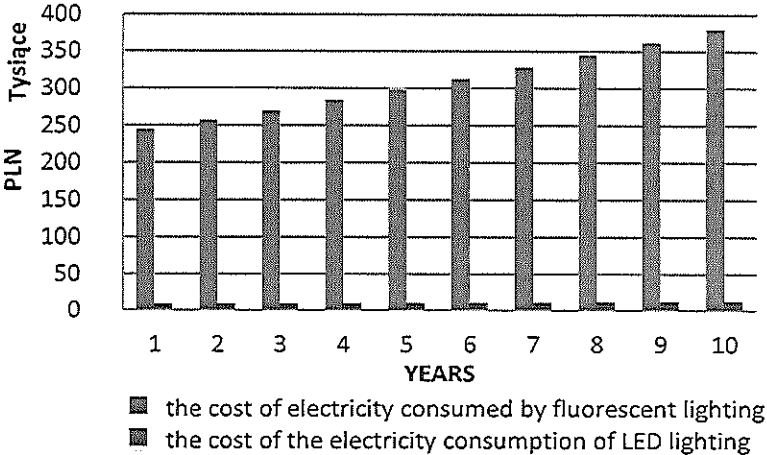
	Before modernization	After modernization
Type of lighting	Fluorescent lighting 2x58W	Intelligent LED panels
Power consumption	130W	80W
Control system for light intensity and time	-	✓
Motion sensor, dusk sensor	-	✓
Number of fixtures	350 pieces	350 pieces
Length of lighting in a year	8 760 h	8 760 h
Consumption of electricity in a year	398 580 kWh	13 627 kWh
% reduce electricity costs		97 %

SAVING 29-times

The payback period



The annual cost of electricity consumption



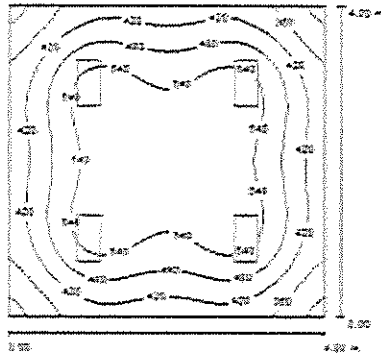
Generated savings example, various rooms

type of room	% savings	payback
passageways	90%	3 years
classroom	67%	5,5 years
open space	65%	4 years
the production hall	60%	2 years
warehouse	70%	2 years
toilets and staff rooms	95%	2 years

Comparison of "quality of light"

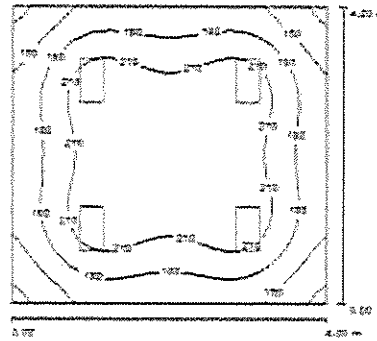
Option I

4x led solution
100% POWER



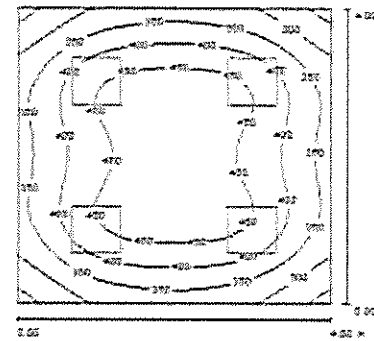
Option II

4x led solution
40% POWER



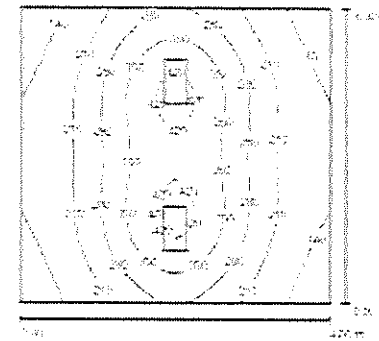
Option III

4x fluorescent fixture



Option IV

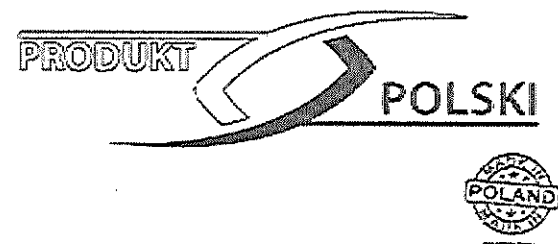
2x led solution
100% POWER



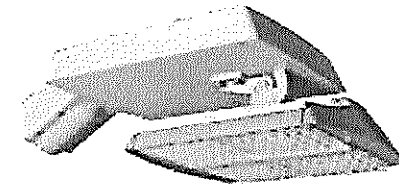
	Option I	Option II	Option III	Option IV
power consumption/ 1 pc	55W	22W	80W	55W
total power consumption	220W	88W	320W	110W
work plane E m[lx]	479	202	395	257
work plane E max[lx]	581	298	481	440
Uniformity	0,605	0,605	0,598	0,452

OUTDOOR LIGHTING

The system of street lighting
with control based on radio communications
and GSM



LED Street Lighting



Energy-efficient and environmentally friendly

- The light source of life to 50 000 hours and generating up to 80% energy savings compared to conventional light sources consumption
- Reducing CO₂ emissions
- Does not contain harmful chemicals
- It does not emit negative IR and UV radiation

Full modularity emitting elements and power supply units

- If the breakdown of the power supply modules occur, it does not interfere with lamp's work, faulty unit needs to be replaced

Optimal construction and modern design

- New standards in terms of aesthetics
- Extremely easy installation and removal of modules without removing the luminaire, this can reduce lamp's operating costs
- The use of modern lamp mounting bracket guarantees the freedom of adjustment the angle of incidence of light on the illuminated surface
- The integration of all modules in the lamp STREETSENA, eliminating the need for creating additional infrastructure

LED Street Lighting

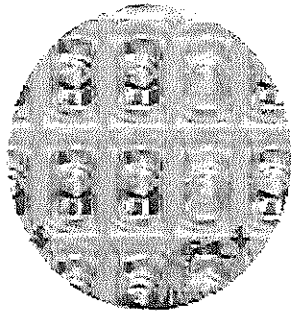
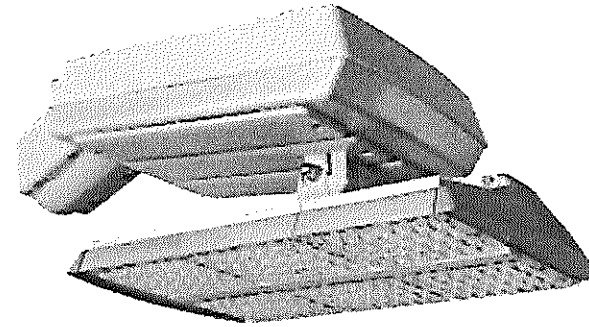
Selection of lighting power to the individual needs

Presented street light ensure a smooth and optimal adjustment of the instantaneous power level of light to the rated power the lamp, so that we can for the first time allow designers to have free selection of parameters to the specificity of the illuminated area

Better visibility and road safety

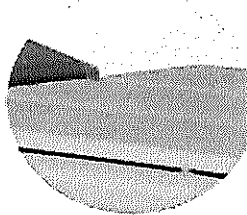
Due to its high light efficiency and color faithful rendering, ESSE STREET LIGHT provides road users with comfort and better visibility of people and objects on the road

STREETSENA



The optical system

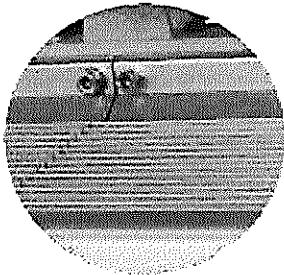
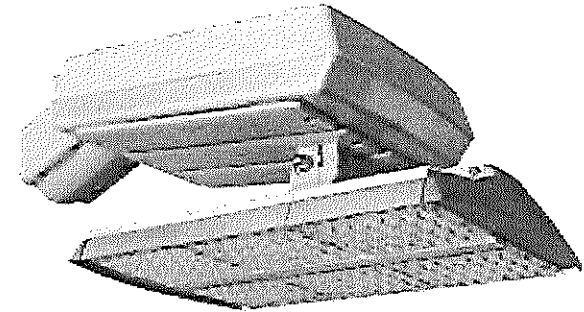
- The lamp is made of modules that contain high-power LEDs
- Modern lens light distribution system ensures even distribution of light intensity on the road



Power system

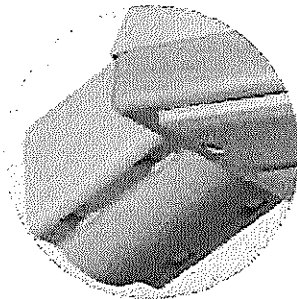
- Lamp equipped with high-efficiency power supplies
 - one to two units of light, ensuring long life components
- Modular control of individual light elements ensure reliable operation of the whole lamp.

STREETSENA



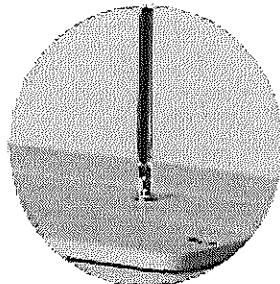
Heat removal system

- Original project of aluminum radiators allows efficient removal of the heat, this limits heat emission to a minimum and optimizes the parameters of the diode providing them with maximum durability and performance



Mounting system

- Compatible mounting brackets allow easy replacement of traditional lamps with LED lamps ESSE



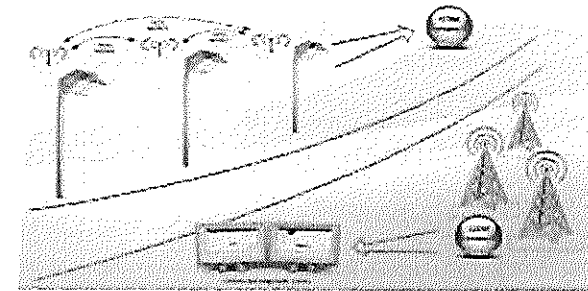
Control system

- Enables remote and wireless programming and configuring lamp by radio and GSM

The control system is designed for full control of street lighting

It combines three technologies :

1. LED lighting
2. Intelligent control functions
3. Connectivity with the lamps by wireless technologies such as radio communication and GSM



One of the main tasks is data collection about any failures and preparation reports to facilitate system maintenance and servicing

System Functionality

- complete diagnostic of parameters of the lamp
- remote monitoring of readings from the grid, with the function of immediate notification of deviations from the standards, enables rapid response to failures and to reduce traveling installation inspection
- continuous measurement of electricity consumption of the selected sector/district or city
- programming of individual settings for each location
- programmable option of reducing the lighting level at any time intervals, depending on the traffic of the each location
- optimization of lamp lighting time
- option to report on the current traffic in the selected area, sector or street
- instant transmission of information about the accident or disorder of the lamp giving its location and scope of repairs required
- automatically make a full energy audit and report generation
- automatic identification of lamps collaborating in the group
- 24 hour remote access allows viewing the current system parameters

Presented lighting solutions give possibility to build integrated innovative lighting system

Monitoring:

- Energy consumption monitoring of individual lamp, sector, district, etc.
- On-line monitoring of any damage of lamp – the information about the damage of the lamp with its localization and the necessary reparation, and identification of defective parts
- Monitoring lamps with emergency lighting module for battery level
- the ability to manage multiple installations in different locations from anywhere

Management:

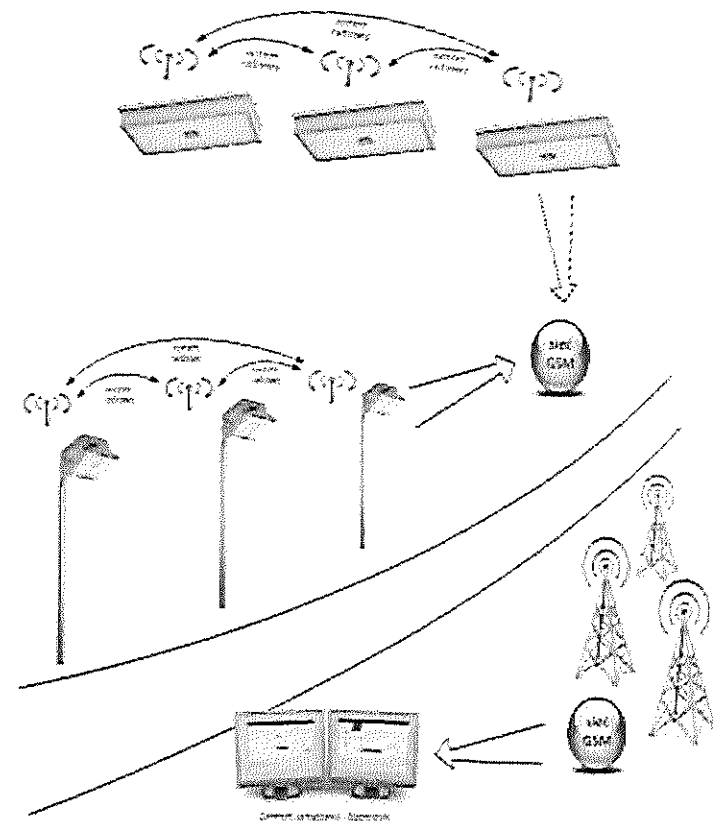
- Remote change of parameters of an individual lamp or a group of lamps such as:
 - Light intensity level in two modes (economical and maximum work)
 - lighting time in each mode
 - The threshold light sensor
 - The sensitivity of the occupancy or radar sensor
 - Controlling parameters based on real time clock
- Remote periodic tests of lamps with emergency lighting module

Communication:

- Two-way communication via the following types of communications:
 - Internet
 - GSM
 - Radio, short-range ZigBee
 - PLC (Programmable lighting Control via wiring)
 - Locally via remote control

Possible equipment of each lamp:

- Programmable twilight sensor
- Programmable occupancy or radar sensor
- PLC communication module
- INFRA RED communication module for remote control
- Electricity meter
- Real time clock



Economic effects resulting from the use of lighting control systems

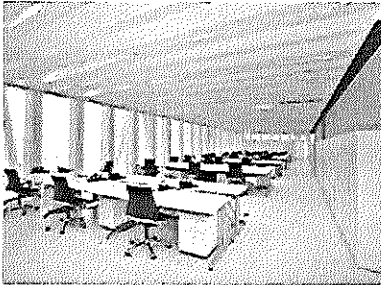
- reducing energy consumption
- longer operational time of fixture
- reduce maintenance costs of the system (reducing the amount of service)
- full control of service operations
- improved safety of the whole system



The market potential



- warehouse area in Poland is currently around 7 million m²
- 1 pc of sodium lamp 280W for an average of 30m²
- Installed are currently about 250,000 lamps
→ approximately 276,000 MWh per year



- office area in Poland is about 6 million m²
- the most widely used type of lighting is fluorescent lighting 86W
- 1 pc lamp is on average at the surface of 5m²
- installed is currently about 1.2 million lights
→ approximately 327,000 MWh per year

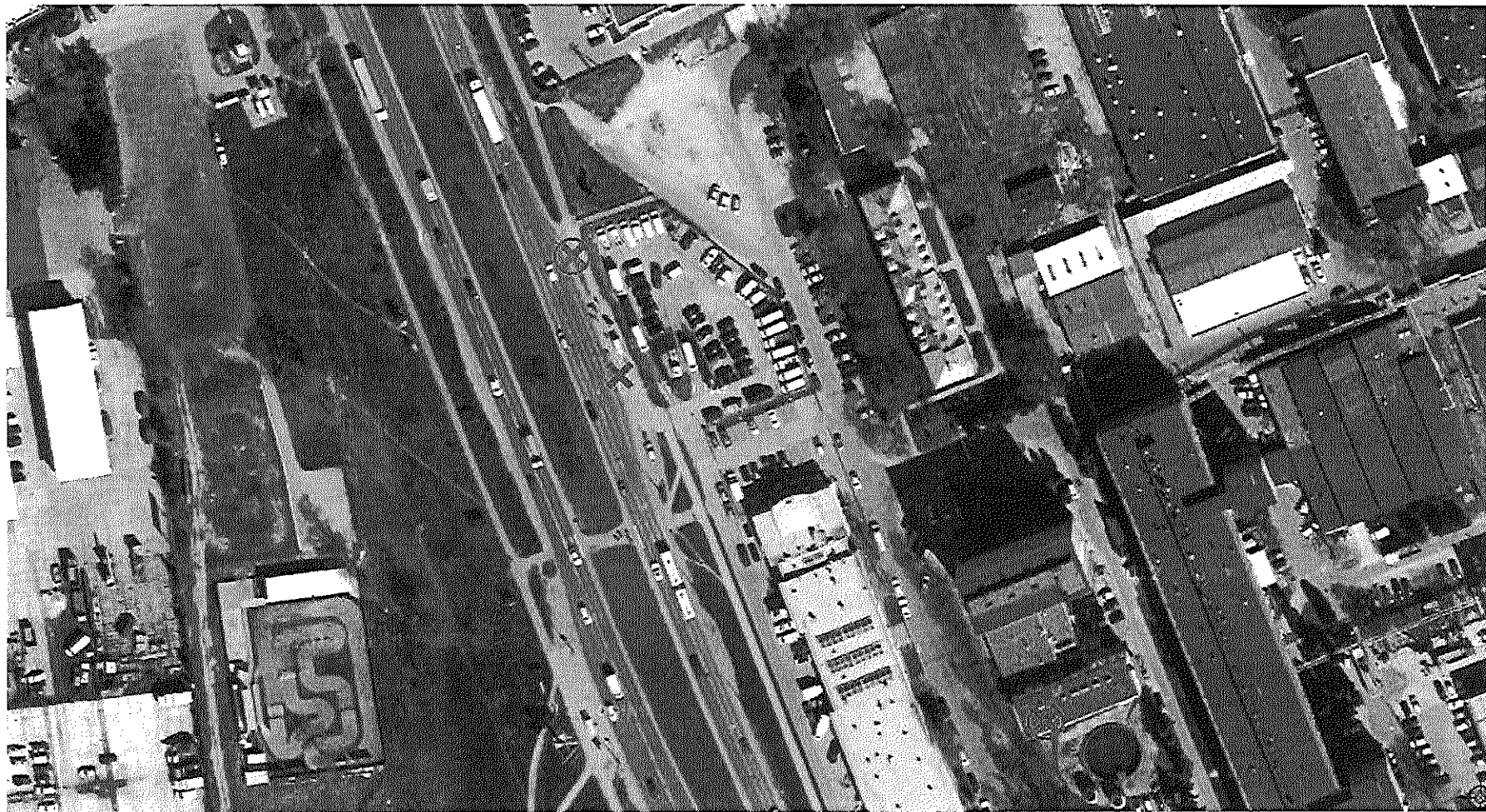
By upgrading lighting systems using **Intelligent Lighting** In warehouses and offices in Poland assuming full market penetration is possible

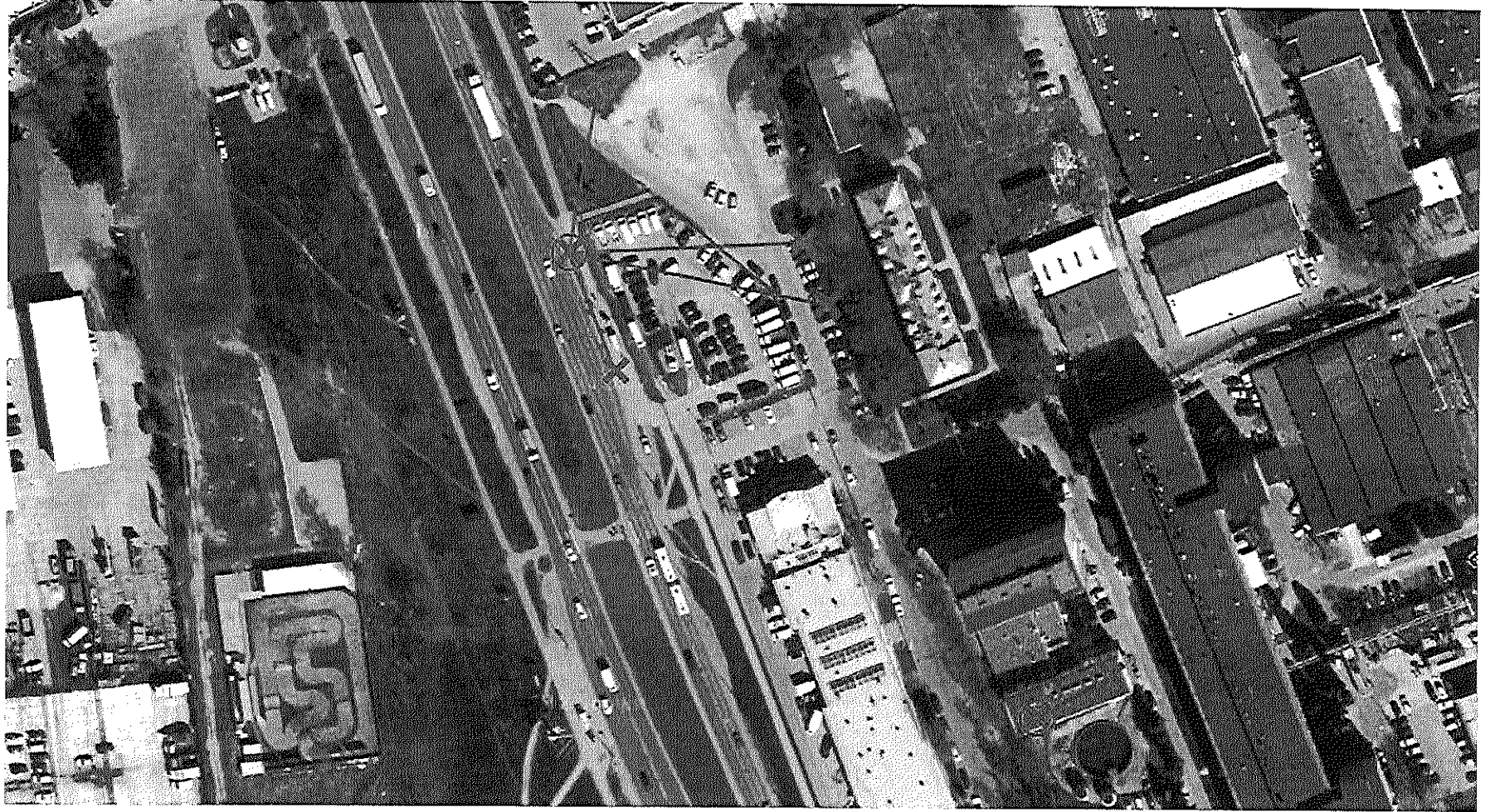
- electricity consumption reduction 420,000 MWh per year
- CO₂ emission reduction by 373,000 tons per year

The areas in which the system will be fully exercised are:
Industry, public, commercial and service facilities
Multiplying electricity consumption reduction, and therefore CO₂ reduction

This will reduce the need for electric power from the power grid at the level of 139 MW

- ✓ savings for infrastructure investments
- ✓ reducing power consumption of the utility grid
- ✓ increase the stability of the power grid in Poland







awski J.
ktronik

Syrenki

Jajowska
Pulawska

22

22

Pulawska

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Pulawska

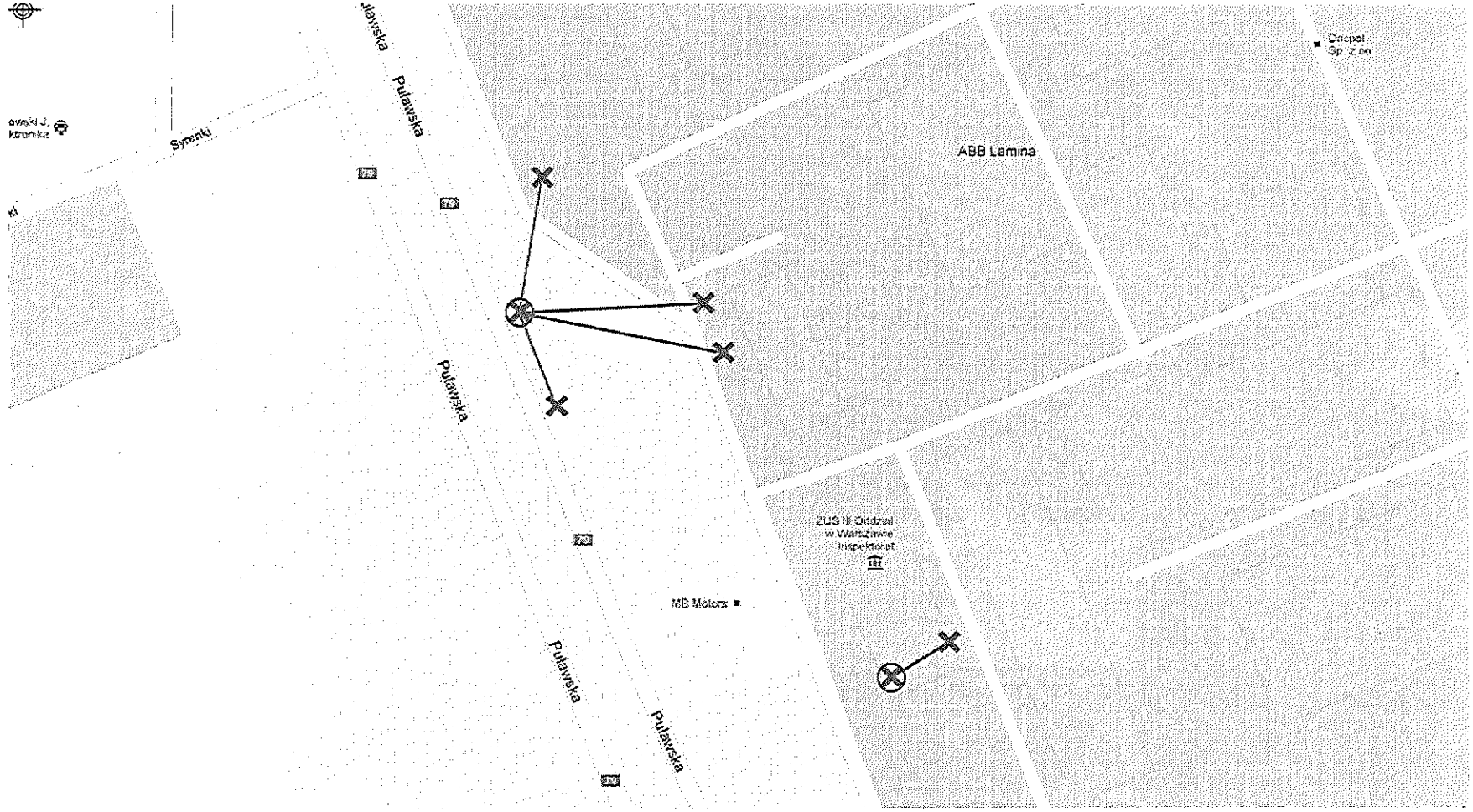
Pulawska

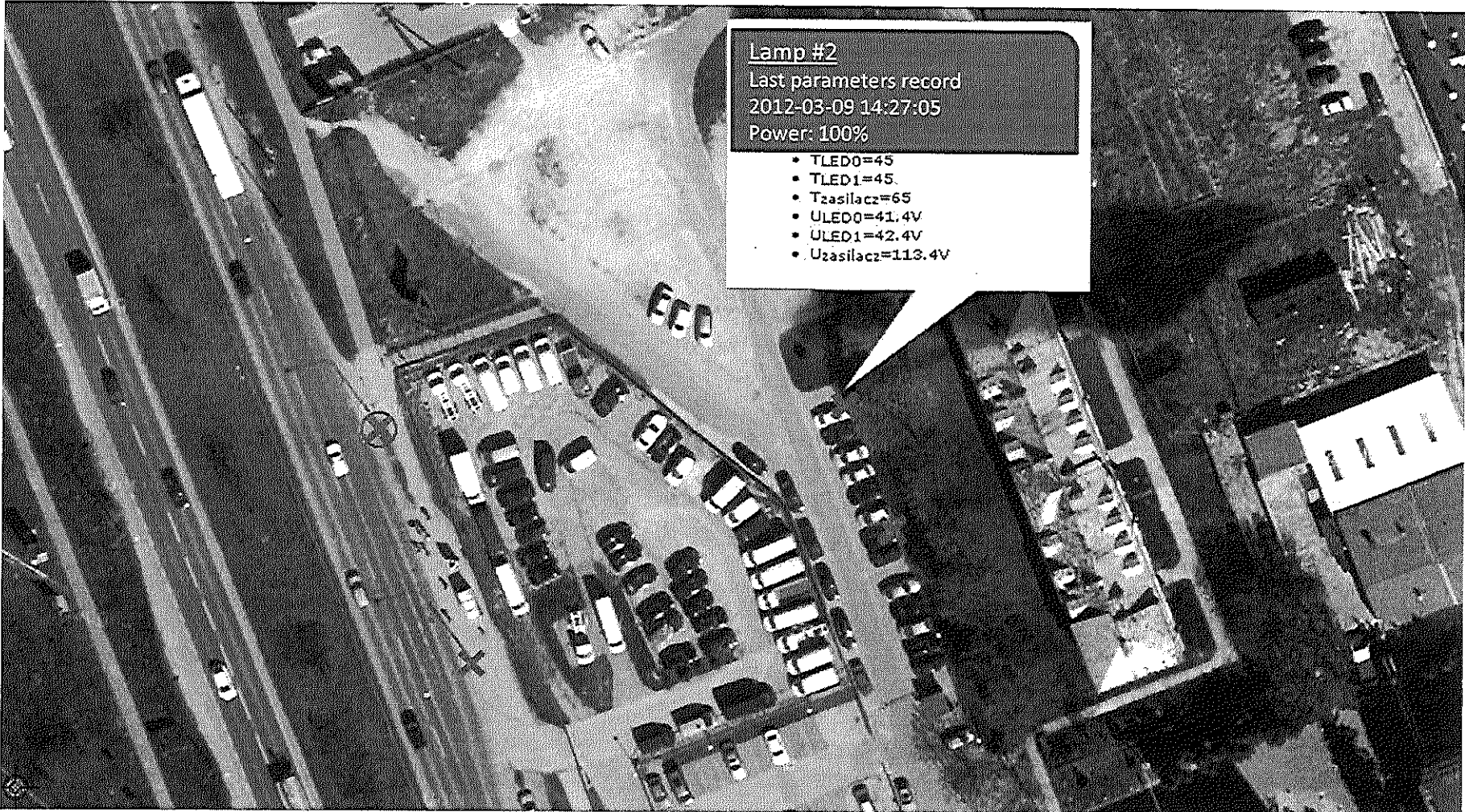
ABB Motors

ZUG II Oddział
w Warszawie
Inspektorat

ABB Lamina

Ortopol
Sp. z o.o.



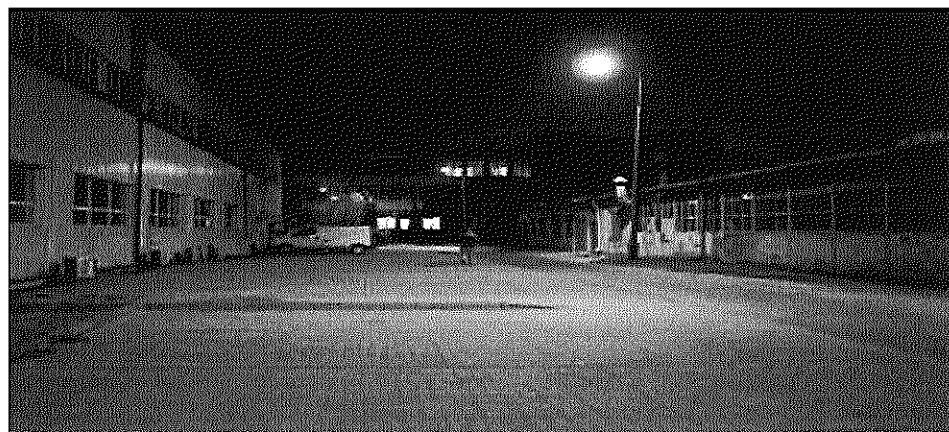
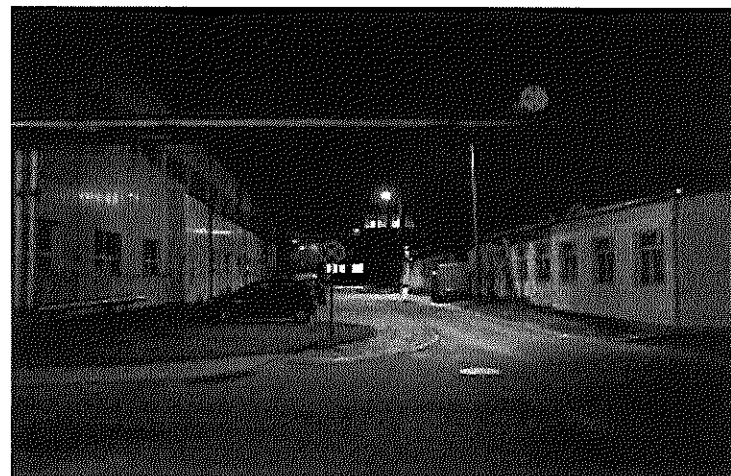
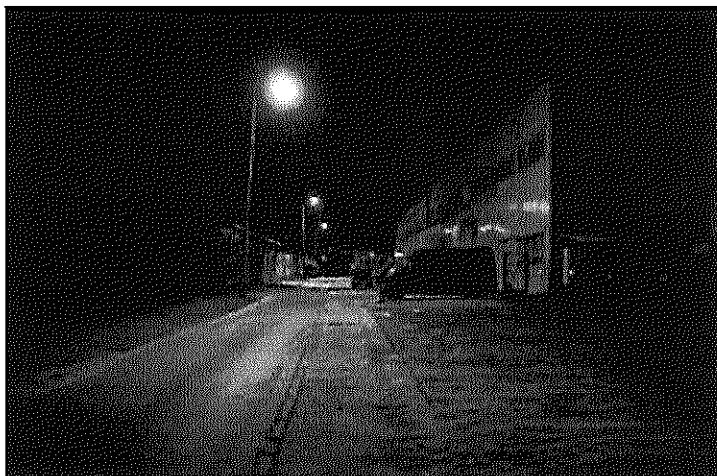


Lamp #2
Last parameters record
2012-03-09 14:27:05
Power: 100%

- TLED0=45
- TLED1=45
- Tzasilacz=65
- ULED0=41.4V
- ULED1=42.4V
- Uzasilacz=113.4V

Outdoor lighting

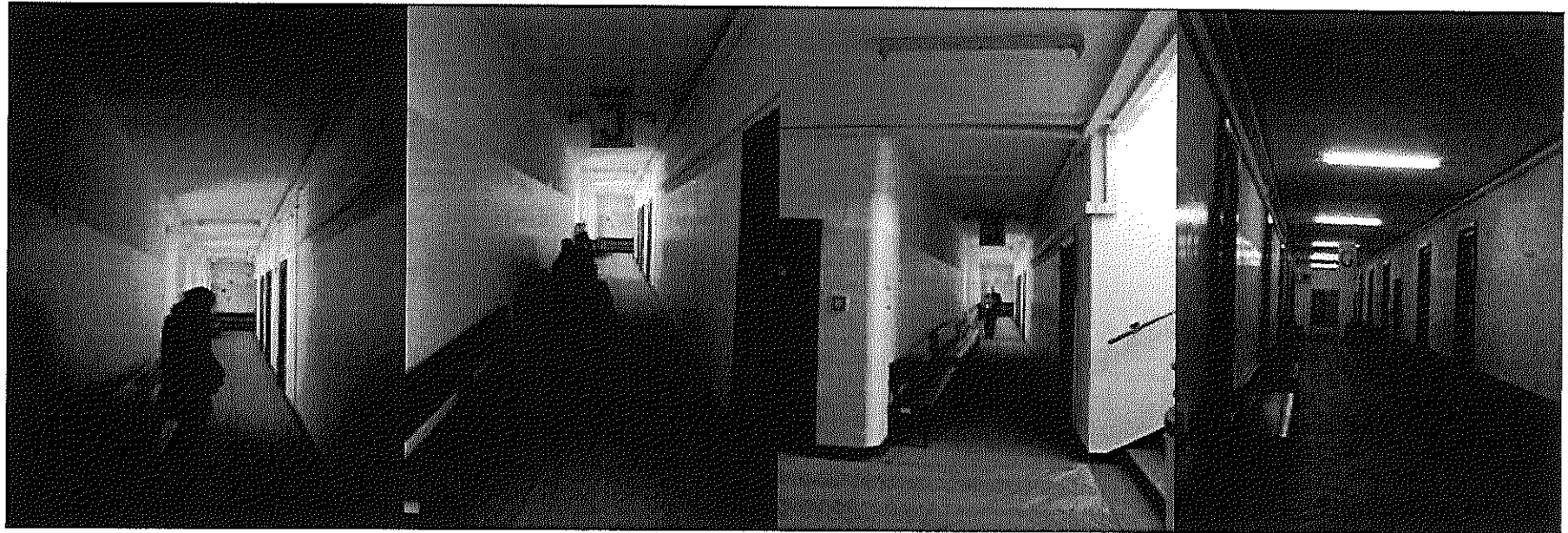
Portfolio



Interior Lighting

Portfolio

Condition before modernization



Interior Lighting

Portfolio

Condition after modernization



Interior Lighting

Portfolio

Projects: principles of operation



Interior Lighting

Portfolio

Project: combination of modernity and tradition



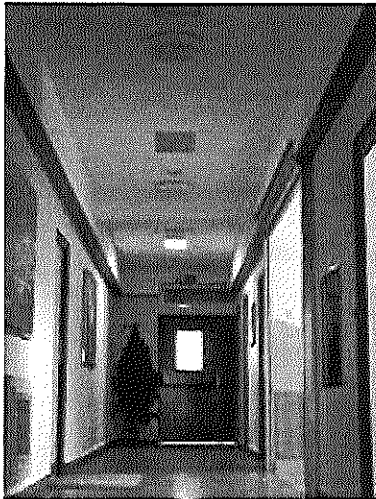
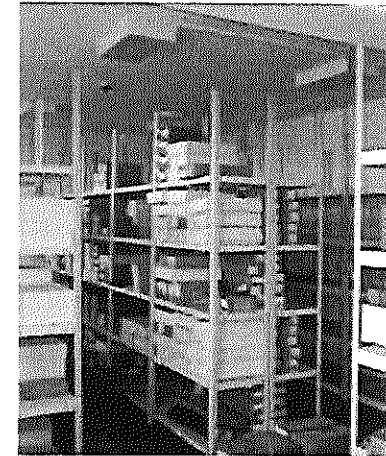
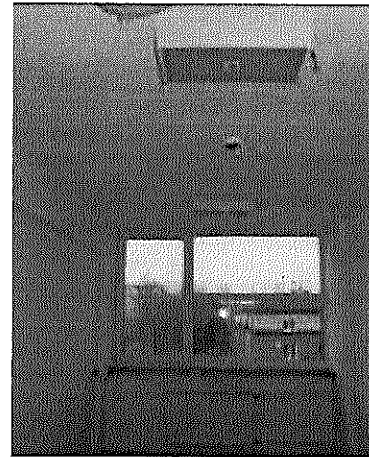
Interior Lighting

Portfolio

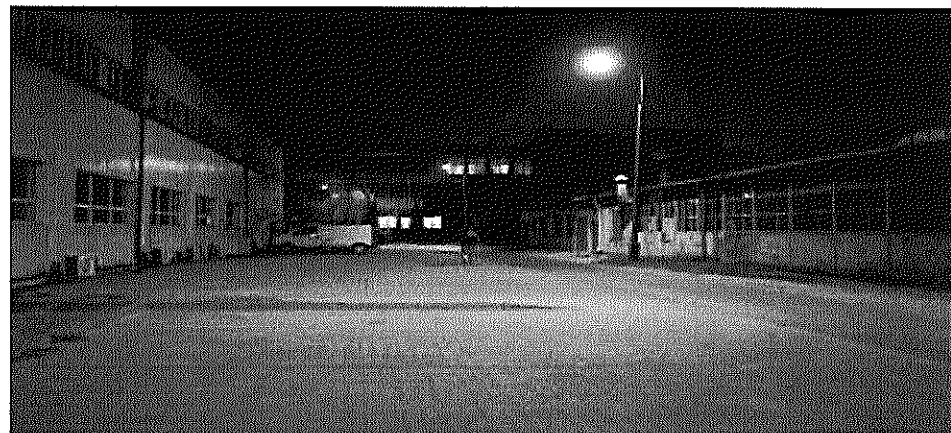
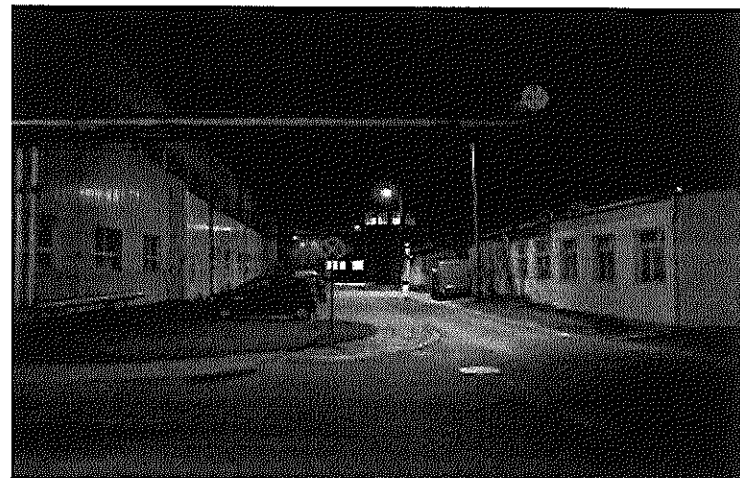
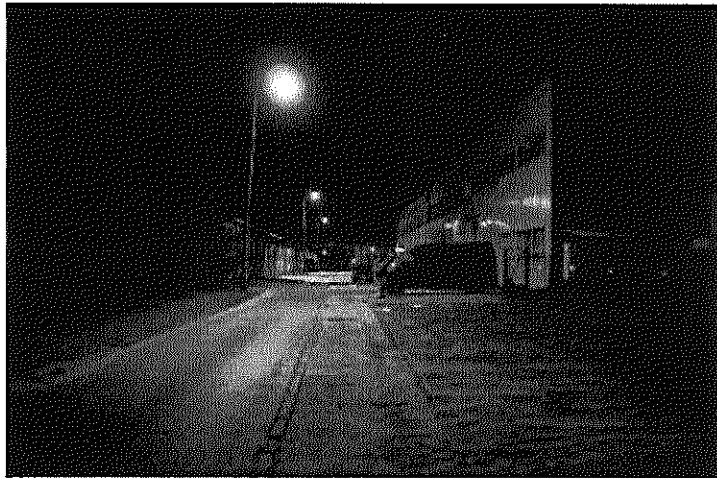
Project: individual customization



Interior Lighting Portfolio



OUTDOOR LIGHTING Portfolio



Thank you for your attention