ES-SYSTEM
Light is Life

INDUSTRIAL LIGHTING

Total Lighting Solutions

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SPACES

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EMERGENCY LIGHTING

LED LUMINAIRES FOR SPECIAL APPLICATIONS

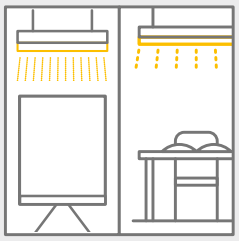
Lighting installations with luminaires using LED technology are characterized by their high energy efficiency, which translates into significant savings due the lower operation costs of this type of solution. This is why many newly built or modernized industrial facilities are equipped with lighting systems based on LED technology. The quality of LED luminaires is particularly important because of the higher environmental requirements their operation is subject to in industrial facilities, as well as their expected level of reliability.

A FRIENDLY WORKING ENVIRONMENT

It is essential to develop a lighting project competently, by not only implementing the recommendations in standards such as EN 12464-1:2012 „Light and lighting. Lighting of work places. Part 1: Indoor work places", but also, what's equally important, taking into account practical experience from previously completed lighting installations and their functioning.

When selecting a lighting system, special attention should be paid to:

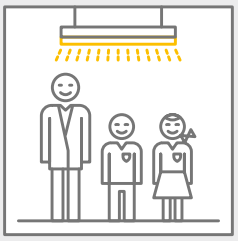
- COMPLIANCE WITH THE PN-EN-12464 STANDARD
- THE PARAMETERS OF THE LUMINAIRES
- ENERGY EFFICIENCY AND OPERATING COSTS
- THE SERVICE LIFE OF THE LIGHTING SOLUTION



Maintained illuminance (E_m)

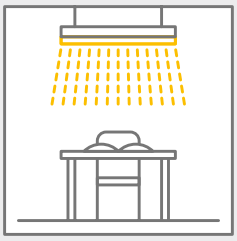
An appropriate level of illuminance must be provided:

- 750lx - electrical and electronic industry: assembly work, fine, e.g. telephones, computers
- 500lx - vehicle construction and repair: body work and assembly
- 300lx - food stuffs industry: sorting and washing of products, packing
- 200lx - power statnions: machine hallsrooms, restrooms
- 150lx - rolling mils, iron and steel works: production plants with occasional manual operation
- 100lx - store rooms: store and stockrooms.



The employees' working comfort and well-being (UGR_L)

The glare rating at workstations should amount to less than 16 and not exceed 28 depending on the type of space.



Lighting uniformity (U_o)

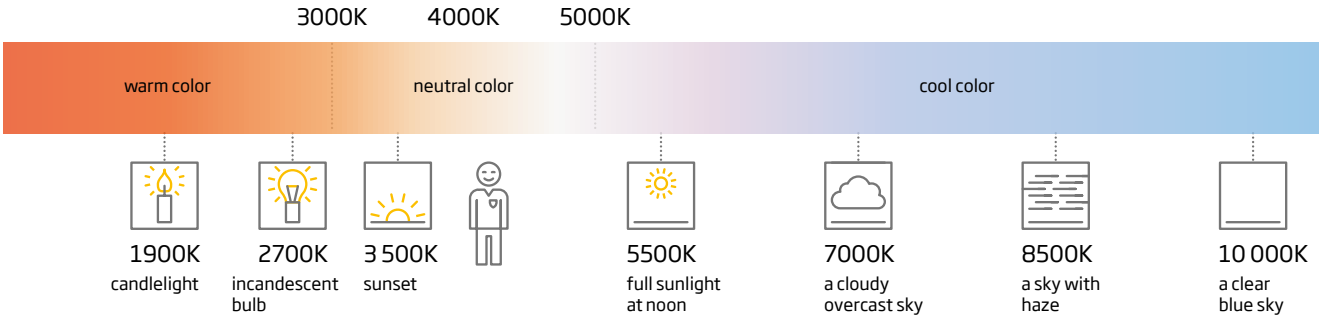
The lighting uniformity (U_o) factor on the task area should reach a value between 0.4 and 0.7.

Accurate color rendering (CRI)

The color rendering index should be greater than 80 but can vary from 20 to 90 depending on the type of space.

Color temperature (CCT/T_{cp})

Luminaires with a color temperature of 4000K have a positive influence on the comfort, concentration and general well-being of employees.



HEALTHY LIGHT

LEDs provide better quality and healthier light.
All ES-SYSTEM products are tested for photobiological safety and obtain relevant certificates.

Natural and artificial optical radiation sources can pose a serious photobiological threat to human eyes and skin. Ultraviolet radiation ranks among the most active and dangerous causes of this type of threat. However, visible light and infrared radiation may also be hazardous when certain exposure limits are exceeded. Assessing the level of photobiological threat that can come from optical radiation emitted from luminaires is a complicated process. It requires access to specialized, calibrated measuring equipment and laboratory personnel with the highest technical competences. ES-SYSTEM has its own testing laboratory which operates according to SMT procedures (Supervised Manufacturer's Testing – one of two manufacturer laboratories of this type in Poland), performing comprehensive photobiological testing.

The classification of luminaires in terms of their photobiological impact is based on risk groups which are defined as follows:

- Risk-free group 0: luminaires that do not pose a threat due to photobiological hazards,
- Risk group 1: luminaires that are not hazardous in normal conditions of use,
- Risk group 2: luminaires that do not pose a threat due to an aversion to very bright light sources or thermal discomfort,
- Risk group 3: luminaires that are hazardous even following temporary or brief exposure. Their use in general lighting is not permitted.

Most ES-SYSTEM luminaires are classified as risk-free in group 0, which means that they do not pose a photobiological risk. This has been confirmed by the appropriate certificates.

HIGH QUALITY LUMINAIRES – RELIABLE LIGHTING SYSTEMS

LED technology creates promising possibilities not only in terms of improving the energy efficiency of lighting installations; it also allows for a different, innovative approach towards lighting design issues in a way that can guarantee the products' broadly defined quality.

High luminous efficacy and functional durability, an instant start and subsequent reignition with full luminous flux, high shock resistance, a smoothly adjustable light output and good color rendering are all factors that make LEDs an interesting alternative to other energy-efficient lighting systems in most applications. Poor quality LED luminaires usually lack most of the above-mentioned advantages, and difficult working conditions in industrial facilities very quickly highlight their imperfections. LED luminaire design that has not been properly thought through will not meet the requirements in terms of its resistance to a dusty and damp working environment or a high operating temperature, which drastically shortens service life. Incorrectly selected luminaire housing materials are bound to rapidly deteriorate in industrial settings which are not chemically indifferent. Low quality power supply systems reduce the energy efficiency of the lighting system, but what's more important and more severe in consequences – they cause problems resulting from lacking electromagnetic compatibility, such as interference with other devices. Poor quality power supply systems are also a major cause of damage to LED luminaires, which negatively affects operating costs, particularly when it comes to lighting installations in industrial facilities, where the luminaires are usually difficult to access. Furthermore, badly constructed luminaire optical systems or low-quality lighting projects increase the risks associated with the exceedingly high brightness of the LEDs, which can significantly reduce the quality of the supplied lighting while limiting its energy efficiency. In this context, it is important to realize that there is currently a considerable amount of luminaires on the market which not only fail to meet basic safety requirements, but are also poorly constructed, thereby wasting the potential that lies within LED technology.

COMPETENCE IS WHAT MATTERS

The conscious use of LED luminaires is extremely important, so that the products used are a perfect fit for the very specific requirements of each industrial facility. In addition to ensuring the technical adequacy of the designed lighting, it is also essential to provide the users with proper visual comfort. People acquire more than 80% of information about the environment through eyesight, which should translate into being aware of how essential it is to have appropriate lighting that acts as the carrier of this information. Suitable lighting conditions and the resulting visual comfort have a direct impact on the quality, safety and speed with which tasks are performed at work. An important element of a lighting installation is a properly designed control system, which significantly improves the lighting's energy efficiency, as well as its operating comfort.

Without a doubt, professional lighting installations with LED luminaires – especially those complemented by a control system – can provide high quality lighting while significantly reducing electricity demand compared to conventional lighting solutions. In order to be able to appreciate the aforementioned quality and energy efficiency of the lighting, however, it has to operate reliably through the years. Given the fact that on one hand, LED luminaires are complex electronic devices, and on the other hand, they are often subject to difficult working conditions in industrial facilities, it should be encouraged to pay close attention to the quality of the LED lighting design solutions. Even a very competently devised lighting project will only be an empty promise of potential benefits if it isn't based on luminaires of adequate quality to achieve its objectives. ES-SYSTEM offers a broad range of professional LED lighting systems designed specifically for industrial lighting applications. These products include INDUSTRY FLOWER, CYBERIA, COSMO, COSMO FX, INDUSTRIA, FORTE and PURE, which are the result of over 25 years of experience in the production of luminaires for this segment. The company also has several teams of engineers with vast experience in designing and completing lighting installation projects for this type of investment.

SMART LIGHTING

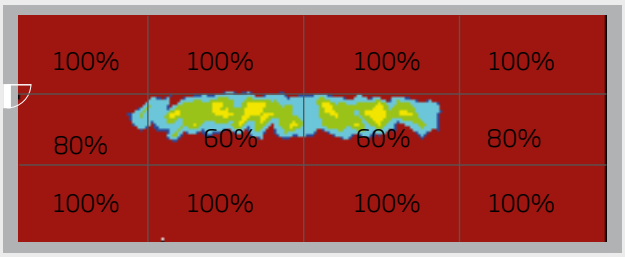
It has become increasingly important for employers to provide a comfortable working environment for their employees, all the while optimizing the cost. So how can we provide employees with a space that will contribute to working effectively and reduce office energy consumption? The best solution is to create an „intelligent workplace" by using the latest in software, sensor and lighting technology.

ES-SYSTEM applies control systems using the DALI protocol which makes it possible to program lighting precisely according to the customer's preferences. Thanks to special multisensors, this solution not only saves energy by maintaining a constant light intensity on the work plane, but it also imitates natural daylight.
In addition, DALI technology allows you to personalize the selected luminaire and control it via your mobile phone.

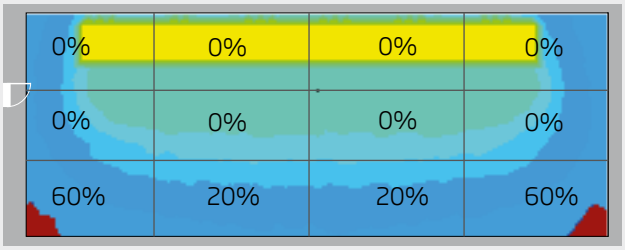
DAYLIGHT PROFILE THROUGHOUT THE DAY :

The percentages given represent the artificial lighting intensity.
These calculations were performed on November 2nd in a 4000m² production plant.

07:00



11:00



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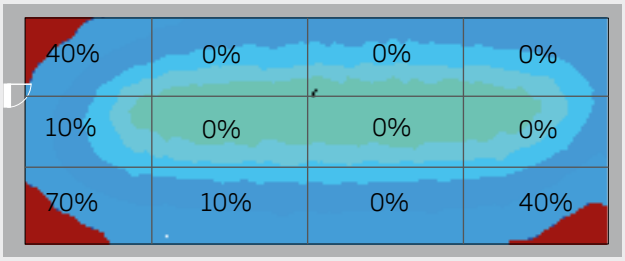
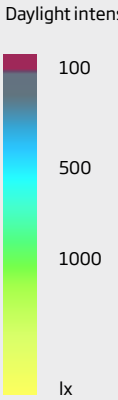
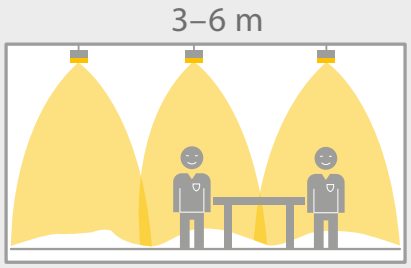




SMART LIGHTING

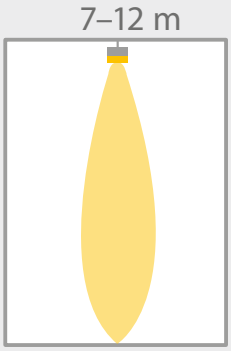
The app recognizes the presence of employees in individual spaces. The light then follows the employee, simultaneously taking into account the time of day and even the weather outside. In the evenings, when there are only a few people or a cleaning crew left in the area, there is no need to light an entire floor of the building. Instead of keeping all the luminaires on, it's better to target which workplaces should remain lit in order to provide working comfort. This solution grants the users complete control over the lighting and additionally protects against unauthorized use by applying a a high level of encryption. Our system can also be used with software that provides a full bird's eye visualization and monitoring of the lighting installation, collecting a multitude of data related to maintenance and energy consumption.

PERFECT LIGHT DISTRIBUTION



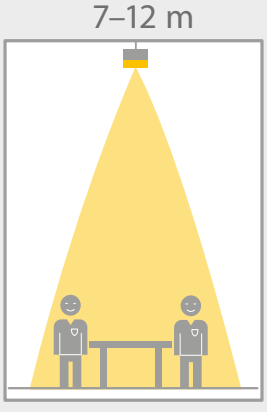
COSMO APEX, COSMO ECLIPSE, COSMO ORION, COSMO LED, CYBERIA 220, GAMMA LED, INDUSTRIA 3, INDUSTRY FLOWER MIDI, LEDEX TOP 2, LEDEX TOP, PURE 1,3,4

- In production areas, emphasis is placed on the uniform illumination of surfaces.
- Machines and manufacturing areas can be planned and used independently of the lighting solution. This allows flexible production concepts without any need for action as far as luminaire positioning is concerned.



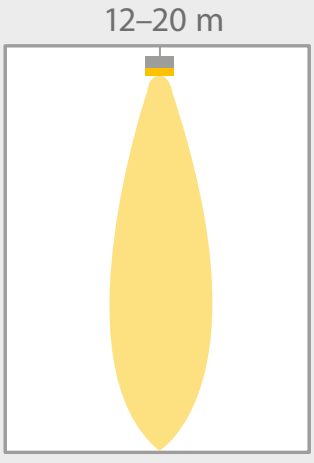
COSMO NOVA, COSMO LED RW2, LEDEX TOP2 version with narrow light distribution

- Illuminance levels have been optimised for medium and high racking: focus is on aisle areas.
- A specially designed and installed solution will provide uniform illumination of aisle areas and shelf surfaces.



CYBERIA 390 i 540, FORTE 1, INDUSTRY FLOWER

- Spacious industrial halls with large luminaire mounting heights require substantial luminous flux emission units in order to provide the normatively required lighting intensity levels.
- Properly designed optical systems increase the efficiency of lighting, which significantly improves the energy efficiency of the lighting installation.



INDUSTRY FLOWER MAXI

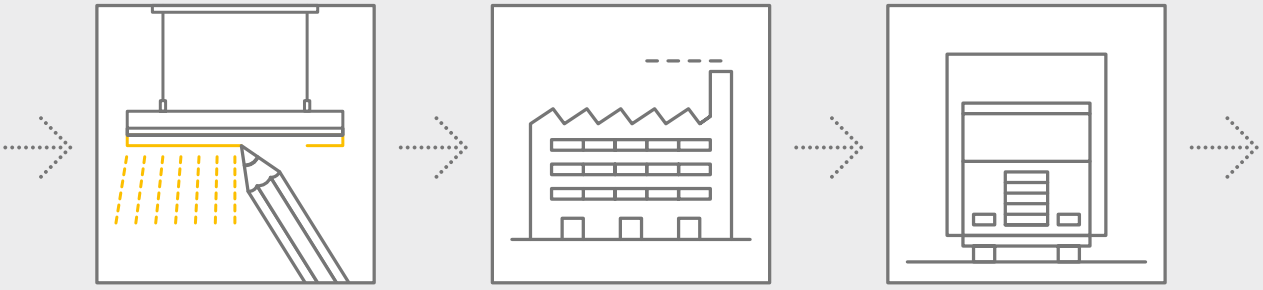
- Particularly high rooms require the use of luminaires with precise lens optics in order to effectively provide sufficient lighting on the working plane.

A COMPREHENSIVE RANGE OF SERVICES

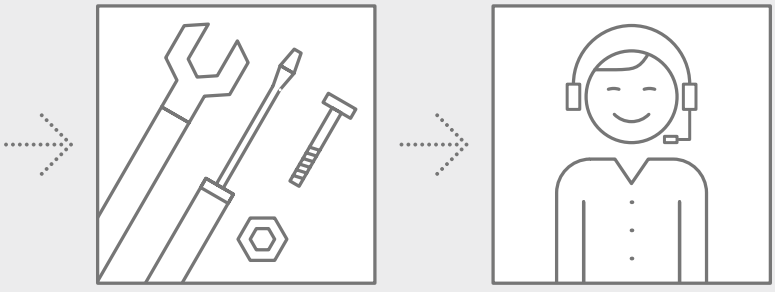
ES-SYSTEM offers a comprehensive range of services – from itemizing lighting, analyzing and diagnosing customer needs, to working out and designing a customized lighting solution, as well as performing installation and after-sales services.

WE OFFER:

Inventory checking **Analysis and diagnosis** **Planning**



Design **Production** **Logistics**



Installation consultations **After-sales service**

WE ILLUMINATE ANY SPACE

Industry & Infrastructure

Education & Sports

Retail

Arts & Culture

Hotels & Residential

Street & Infrastructure

Offices

HealthCare

Urban and Facade Illuminations

PRODUCTION

HEIGHT: UP TO 7M

PRODUCTS

COSMO APEX
36

COSMO ECLIPSE
36

COSMO NOVA
37

COSMO LED
38

COSMO LED LAM
38

INDUSTRIA 1
40

INDUSTRIA 3
40

INDUSTRY FLOWER MIDI 2
41

INDUSTRY FLOWER MIDI 3
41

INDUSTRY FLOWER MIDI 4
41

CYBERIA 220
39

GAMMA LED
40

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

EXAMPLE

Luminaire: COSMO LED
Floor space: 4000m²

Number of luminaires: 55

Energy consumption:
4345W

Energy demand:
1,04W/m²/100lx

Energy consumption using conventional light sources:
8680W

Energy demand using conventional light sources:
2,14W/m²/100lx

Energy savings compared to conventional luminaires: 50%

PRODUCTION

HEIGHT: UP TO 7M, HIGH TEMPERATURE

PRODUCTS

COSMO APEX
36

COSMO NOVA
37

COSMO LED
38

COSMO LED LAM
38

INDUSTRIA 1
40

INDUSTRIA 3
40

CYBERIA 220
39

PURE 1
42

PURE 3
42

PURE 4
42

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: COSMO LED version for T_a < +50°C
Floor space: 2000m²

Number of luminaires: 30

Energy consumption:
2370W

Energy demand:
1,06W/m²/100lx

Energy consumption using conventional light sources:
4340W

Energy demand using conventional light sources:
2,15W/m²/100lx

Energy savings compared to conventional luminaires: 45%

PRODUCTION

HEIGHT: ABOVE 7M

PRODUCTS

INDUSTRY FLOWER MAXI 2
41

INDUSTRY FLOWER MAXI 3
41

INDUSTRY FLOWER MAXI 4
41

CYBERIA 390
39

CYBERIA 540
39

FORTE 1
39

COSMO NOVA
37

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: CYBERIA 390
Floor space: 2200m²

Number of luminaires: 42

Energy consumption:
6510W

Energy demand:
0,96W/m²/100lx

Energy consumption using conventional light sources:
12 240W

Energy demand using conventional light sources:
1,62W/m²/100lx

Energy savings compared to conventional luminaires: 47%

PRODUCTION

HEIGHT: ABOVE 7M, HIGH TEMPERATURE

PRODUCTS

INDUSTRY FLOWER MAXI 3
41

CYBERIA 390
39

CYBERIA 540
39

FORTE 1
39

COSMO NOVA
37

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

EXAMPLE

Luminaire: CYBERIA 390 IN
Floor space: 1000m²

Number of luminaires: 16

Energy consumption:
2480W

Energy demand:
1,10W/m²/100lx

Energy consumption using conventional light sources:
4080W

Energy demand using conventional light sources:
1,71W/m²/100lx

Energy savings compared to conventional luminaires: 39%

LOW STORAGE WAREHOUSE

PRODUCTS

COSMO APEX
36

COSMO NOVA
37

COSMO LED
38

INDUSTRIA 1
40

INDUSTRIA 3
40

LEDEX TOP
41

LEDEX TOP 2
42

INDUSTRY FLOWER MIDI 2
41

INDUSTRY FLOWER MIDI 3
41

INDUSTRY FLOWER MIDI 4
41

CYBERIA 220
40

GAMMA LED
40

EXAMPLE

Luminaire: LEDEX TOP 2
Floor space: 1000m²

Number of luminaires: 20

Energy consumption:
1200W

Energy demand:
0,89W/m²/100lx

Energy consumption using conventional light sources:
2646W

Energy demand using conventional light sources:
2,13W/m²/100lx

Energy savings compared to conventional luminaires:
55%

HIGH STORAGE WAREHOUSE

PRODUCTS

COSMO LED RW2
38

COSMO NOVA
37

LEDEX TOP 2
42

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: COSMO LED RW2
Floor space: 10 000m²

Number of luminaires: 400

Energy consumption:
31 600W

Energy demand:
2,08W/m²/100lx

Energy consumption using conventional light sources:
57 600W

Energy demand using conventional light sources:
4,06W/m²/100lx

Energy savings compared to conventional luminaires:
51%

FOOD, PHARMACEUTICAL AND COSMETIC PRODUCTION

PRODUCTS

INDUSTRIA 1
40

INDUSTRIA 3
40

COSMO APEX
36

COSMO ECLIPSE
36

COSMO NOVA
37

COSMO LED
38

COSMO LED LAM
38

FORTE 1
39

PURE 3
42

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: COSMO LED
Floor space: 5000m²

Number of luminaires: 180

Energy consumption:
14 220W

Energy demand:
0,94W/m²/100lx

Energy consumption using conventional light sources:
29 760W

Energy demand using conventional light sources:
1,94W/m²/100lx

Energy savings compared to conventional luminaires:
52%

FOOD PRODUCTION

HIGH TEMPERATURE

PRODUCTS

INDUSTRIA 1
40

INDUSTRIA 3
40

FORTE 1
39

COSMO APEX
36

COSMO NOVA
37

COSMO LED
38

COSMO LED LAM
38

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: COSMO LED wersja dla T_a < +50°C
Floor space: 2000m²

Number of luminaires: 182

Energy consumption:
14 378W

Energy demand:
0,96W/m²/100lx

Energy consumption using conventional light sources:
29 512W

Energy demand using conventional light sources:
1,92W/m²/100lx

Energy savings compared to conventional luminaires: 51%

CLEANROOMS – HEALTHCARE FACILITIES

PRODUCTS

PURE 1
42

PURE 3
42

PURE 4
42

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: PURE 3
Floor space: 5000m²

Number of luminaires: 588

Energy consumption:
26 460W

Energy demand:
1,11W/m²/100lx

Energy consumption using conventional light sources:
96 432W

Energy demand using conventional light sources:
4,13W/m²/100lx

Energy savings compared to conventional luminaires: 73%

COLD ROOMS

PRODUCTS

COSMO APEX
36

COSMO NOVA
36

COSMO LED
38

COSMO LED LAM
38

COSMO LED RW2
38

INDUSTRIA 1
40

INDUSTRIA 3
40

FORTE 1
39

CYBERIA 220
39

CYBERIA 390
39

CYBERIA 540
39

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: COSMO LED version for T_a < -40°C
Floor space: 600m²

Number of luminaires: 24

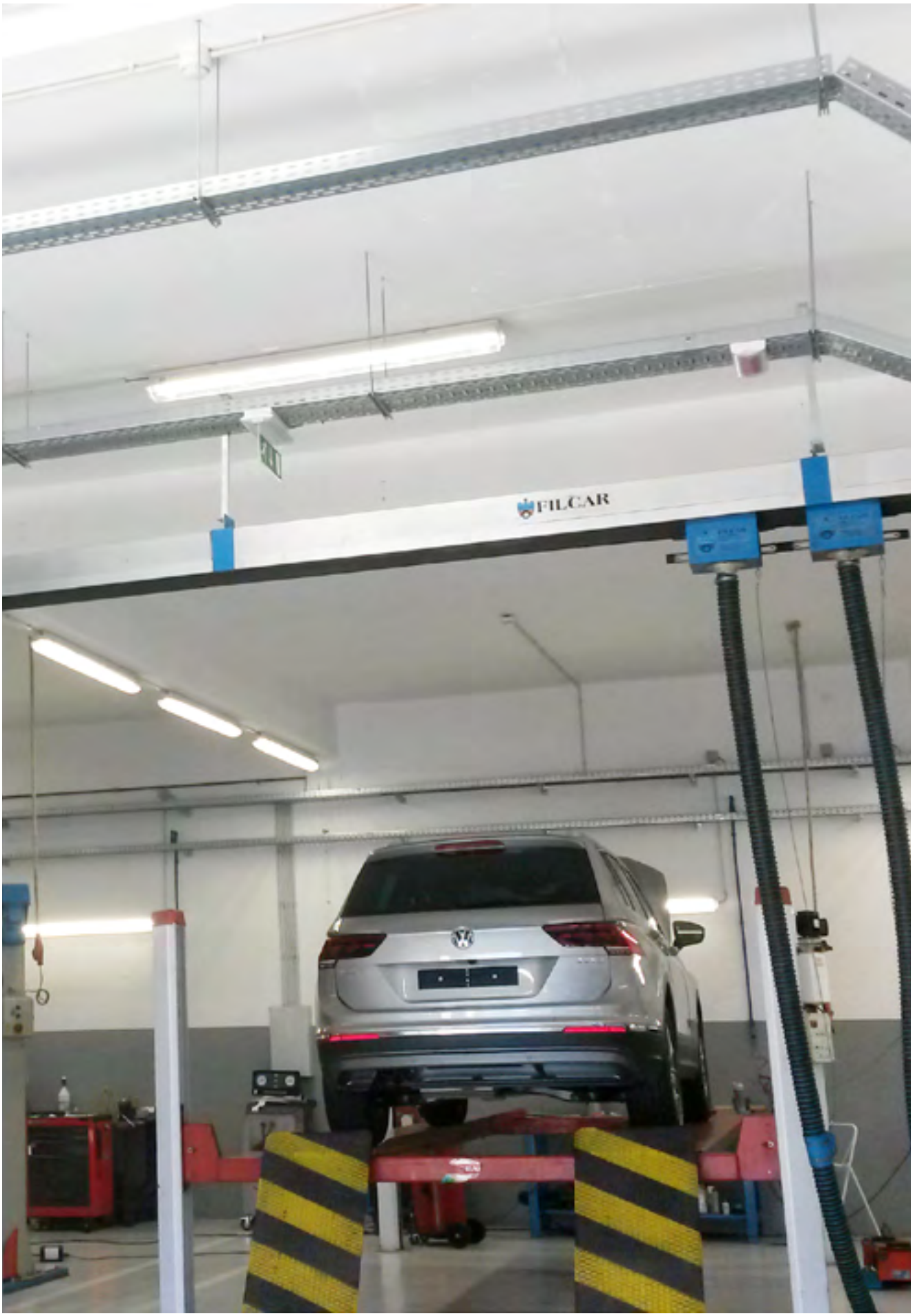
Energy consumption:
936W

Energy demand:
1,00W/m²/100lx

Energy consumption using conventional light sources:
1440W

Energy demand using conventional light sources:
2,29W/m²/100lx

Energy savings compared to conventional luminaires: 35%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PRODUCTS

COSMO APEX
36

COSMO ECLIPSE
36

COSMO NOVA
37

COSMO LED
38

COSMO LED LAM
38

INDUSTRIA 3
40

INDUSTRY FLOWER MIDI 2
41

INDUSTRY FLOWER MIDI 3
41

INDUSTRY FLOWER MIDI 4
41

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

MONITOR1 IP40 LED
45

EXAMPLE

Luminaire: COSMO LED LAM
Floor space: 400m²

Number of luminaires: 80

Energy consumption:
2160W

Energy demand:
1,01W/m²/100lx

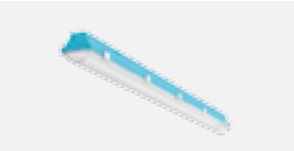
Energy consumption using conventional light sources:
5580W

Energy demand using conventional light sources:
2,76W/m²/100lx

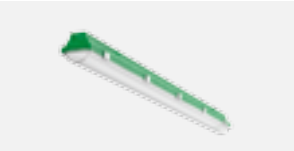
Energy savings compared to conventional luminaires:
61%

PARKING LOTS (INDOOR)

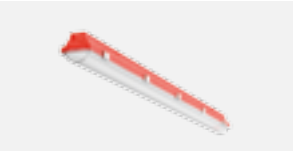
PRODUCTS



COSMO ORION
37



COSMO ORION
37



COSMO ORION
37

COSMO APEX
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COSMO ECLIPSE
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COSMO NOVA
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COSMO LED
38

COSMO LED LAM
38

INDUSTRIA 1
40

INDUSTRIA 3
40

MONITOR1 IP65 LED
45

MONITOR2 IP65 LED
45

MONITOR1 IP65 LED OP20
46

EXAMPLE

Luminaire: COSMO LED
Floor space: 6000m²

Number of luminaires: 153

Energy consumption:
3825W

Energy demand:
0,85W/m²/100lx

Energy consumption using conventional light sources:
8910W

Energy demand using conventional light sources:
1,98W/m²/100lx

Energy savings compared to conventional luminaires:
43%

EMERGENCY LIGHTING

One of the requirements during the construction of production buildings is for them to have appropriate emergency lighting installations. A reliable network ensures the employees' safety in case of an emergency and allows fast and easy evacuation. The system's correct operation and the type and frequency of its control testing are strictly defined by emergency lighting standards and legislation. ES-SYSTEM manufactured central monitoring systems for autonomous luminaires and central power supply systems for emergency lighting guarantee compliance with all these conditions. Our assortment includes a variety of escape route and directional luminaire systems. In addition, we have developed NESSI, our own unique application which makes it possible to supervise and configure central monitoring and power supply systems. Our systems automatically monitor the status of individual luminaires, ensuring the electronic systems, light sources and batteries work perfectly at all times. The system indicates luminaires that are not working correctly and makes it possible to fix them before a general power failure occurs. This eliminates risk of escape routes being left without lighting in an emergency. NESSI allows you to plan functional and back-up time tests whenever it is most convenient for the user, and their results are automatically recorded in the emergency lighting system's event log. NESSI makes it possible to place icons symbolizing the installed luminaires and devices on maps of the building, which clearly determines their location and makes it easier to maintain the system. The application's intuitive user interface ensures comfort and reliability while using it. Our systems have been in place for years in various public buildings such as office complexes, museums, shopping malls or airports all over the world, proving that they are dependable, functional and among the top emergency lighting fixtures on the market.

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EMERGENCY LIGHTING

system COSMO APEX

COSMO APEX

Technical data:

- Luminous flux: 3900–7300 lm
- Power: 34–52 W
- Max. luminous efficacy: 114–150 lm/W
- Color temperature: 3000K, 4000K
- CRI: >80
- Ingress protection: 66
- Power supply: 230V AC

COSMO APEX system features:

- excellent cost/performance ratio
- reduced individual LED visibility thanks to a high-performance ribbed diffuser that guarantees great lighting efficiency
- housing made of polycarbonate
- high mechanical impact resistance (IK08)
- high ingress protection (IP66)
- housing made of polycarbonate
- gray or metallic-painted housing
- high luminous efficacy – up to 150 lm/W
- color temperature uniformity – SDCM < 3
- quick installation – the LED panel combined with the diffuser
- DALI dimmable version also available
- ceiling-mounted or pendant version

system COSMO ECLIPSE

COSMO ECLIPSE

Technical data:

- Luminous flux: 3500–6400 lm
- Power: 32–50 W
- Max. luminous efficacy: 109–128 lm/W
- Color temperature: 3000k, 4000K
- CRI: >80
- Ingress protection: 65
- Power supply: 230V AC

COSMO ECLIPSE system features:

- transparent diffuser with extra optics in the form of a parabolic darklight louvre which reduces glare
- high ingress protection (IP:65)
- polycarbonate housing
- gray or metallic-painted housing
- high luminous efficacy – up to 128 lm/W

system COSMO NOVA

COSMO NOVA

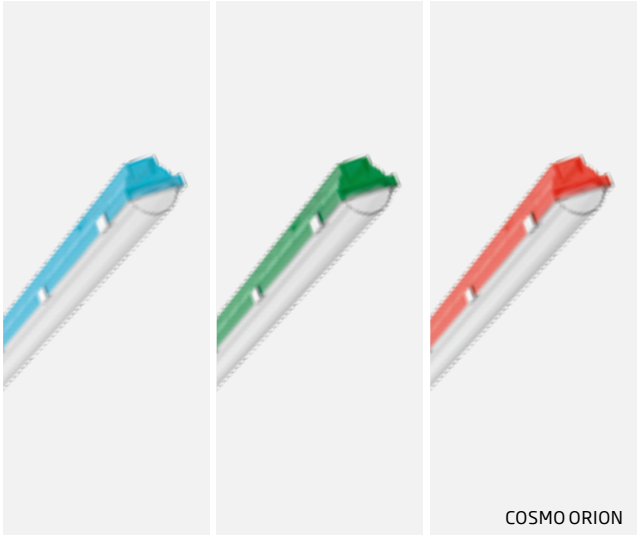
Technical data:

- Luminous flux: 3700–6100 lm
- Power: 36–46 W
- Max. luminous efficacy: 113–145 lm/W
- Color temperature: 3000K, 4000K
- CRI: >80
- Ingress protection: 66
- Power supply: 230V AC

COSMO NOVA system features:

- high ingress protection (IP66)
- gray or metallic-painted housing
- transparent diffuser with extra glare-reducing, performance-enhancing lens optics
- high luminous efficacy – up to 145 lm/W
- color temperature uniformity – SDCM < 3
- high mechanical impact resistance (IK08)
- quick installation – LED panel combined with the diffuser
- DALI dimmable version also available
- ceiling-mounted or pendant version

system COSMO ORION



COSMO ORION

Technical data:

- Luminous flux: 5500 lm
- Power: 55 W
- Max. luminous efficacy: 100 lm/W
- Color temperature: 3000K, 4000K
- CRI: >80
- Ingress protection: 65
- Power supply: 230V AC

COSMO ORION system features:

- transparent, illuminated, colorful polycarbonate housing
- ribbed diffuser
- high mechanical impact resistance (IK08)
- high ingress protection (IP65)
- glare-reducing, internal light-diffusing structure
- color temperature uniformity – SDCM < 3 for white light
- quick installation – LED panel combined with the diffuser
- DALI dimmable version also available
- ceiling-mounted or pendant version

PRODUCTS

system COSMO LED RW2

COSMO LED RW2

Technical data:

- Luminous flux: 7500–7800 lm
- Power: 70 W
- Max. luminous efficacy: 107–111 lm/W
- Color temperature: 3000K, 4000K, 5000K
- CRI >80
- Ingress protection: 65
- Impact resistance: 08
- Power supply: 230V AC

COSMO LED RW2 system features:

- pendant or ceiling-mounted luminaire with increased resistance to adverse environmental conditions
- designed for use in rooms with high ceilings, such as high bay warehouses
- equipped with efficient lens optics
- high ingress protection rating (IP:65)
- versions suitable for operation in a wide range of ambient temperatures -40°C < Ta < +50°C
- 3 color temperature variants: 3000K, 4000K, 5000K
- ON/OFF and DALI versions also available

system COSMO LED

COSMO LED LAM

COSMO LED (milky)

COSMO LED (clear)

COSMO LED (opal)

Technical data:

- Luminous flux: 2900–9800 lm
- Power: 25–79 W
- Max. luminous efficacy: 120–132 lm/W
- Color temperature: 3000K, 4000K
- CRI >80
- Ingress protection: IP65
- Impact resistance: IK08
- Power supply: 230V AC

COSMO LED system features:

- pendant or ceiling-mounted luminaire with increased resistance to adverse environmental conditions
- designed for use in rooms with high ceilings, such as high bay warehouses
- PC diffuser and housing
- three types of diffusers available: clear, opal and milky opal
- high ingress protection rating (IP:65)
- three types of diffusers available: clear, opal and milky opal
- versions suitable for operation in high ambient temperatures -40°C < Ta < +50°C also available
- other color temperatures and color rendering index variants available to order

PRODUCTS

system CYBERIA

CYBERIA 390

Technical data:

- Luminous flux: 11 000–38 000 lm
- Power: 90–285 W
- Max. luminous efficacy: 122–142 lm/W
- Color temperature: 4000K
- CRI >80
- Ingress protection: IP65
- Impact resistance: IK09
- Power supply: 230V AC

CYBERIA system features::

- pendant luminaire with increased resistance to adverse environmental conditions
- painted, aluminum housing
- painted aluminum housing with a diffuser made of transparent hardened glass
- a wide range of luminous flux variants
- ON/OFF and DALI versions available
- versions suitable for operation in high ambient temperatures -40°C < Ta < +35°C also available
- other color temperatures and color rendering index variants available to order

system FORTE

FORTE 1

Technical data:

- Luminous flux: 17600–23 600 lm
- Power: 135–184 W
- Max. luminous efficacy: 130 lm/W
- Color temperature: 4000K
- CRI >80
- Ingress protection: IP65
- Power supply: 230V AC

FORTE system features:

- ceiling-mounted or pendant luminaire with increased resistance to adverse environmental conditions
- anodized aluminum housing with a diffuser made of transparent hardened or laminated glass
- the radiator's construction limits excessive dust ingress
- ON/OFF and DALI versions available
- versions suitable for operation in high ambient temperatures -40°C < Ta < +35°C also available
- other color temperatures and color rendering index variants available to order

PRODUCTS

system GAMMA LED

GAMMA LED

Technical data:

- Luminous flux: 14 200lm
- Power: 128W
- Max. luminous efficacy: 110lm/W
- Color temperature: 4000K
- CRI >80
- Ingress protection: IP65
- Power supply: 230V AC

GAMMA LED system features:

- ceiling-mounted or pendant luminaire
- painted aluminum housing with a diffuser made of transparent hardened glass
- a wide range of luminous flux variants
- ON/OFF and DALI versions available
- other color temperatures and color rendering index variants available to order
- versions suitable for operation in high ambient temperatures -40℃ < Ta < +50℃ also available
- high ingress protection rating (IP65)

system INDUSTRIA

INDUSTRIA 1

INDUSTRIA 3

Technical data:

- Luminous flux: 3900–12 200 lm
- Power: 33–95 W
- Max. luminous efficacy: 118–131 lm/W
- Color temperature: 4000K
- CRI >80
- Ingress protection: IP65
- Impact resistance: IK07, IK09
- Power supply: 230V AC

INDUSTRIA system features:

- ceiling-mounted or pendant luminaire with increased resistance to adverse environmental conditions
- anodized aluminum housing with a glare-reducing darklight louvre
- three types of diffusers to choose from, all ensuring uniform light distribution
- the luminaire's construction prevents it from collecting dirt
- ON/OFF and DALI versions available
- versions suitable for operation in high ambient temperatures -40° < Ta < +50° also available
- other color temperatures and color rendering index variants available to order

system INDUSTRY FLOWER MIDI, MAXI

INDUSTRY FLOWER MAXI 4

INDUSTRY FLOWER MIDI 2

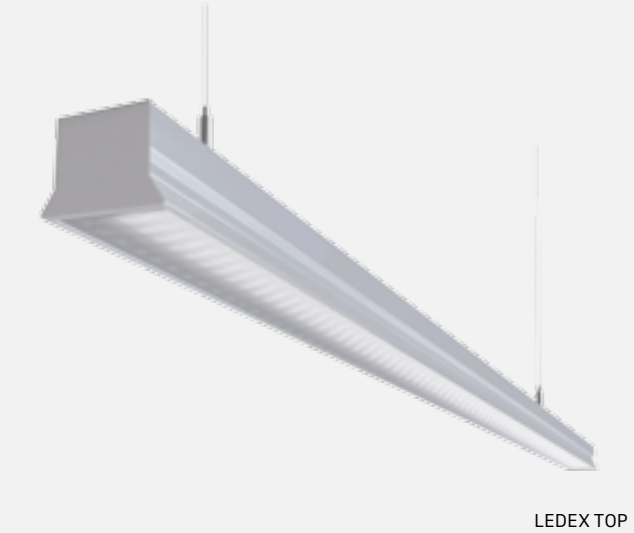
Technical data:

- Luminous flux: 6200–32 600 lm
- Power: 65–340 W
- Max. luminous efficacy: 83–114 lm/W
- Color temperature: 4000K
- CRI >80
- Ingress protection: IP65
- Impact resistance: IK08 (Midi)
- Impact resistance: IK09 (Maxi)
- Power supply: 230V AC

INDUSTRY FLOWER system features:

- pendant luminaire with increased resistance to adverse environmental conditions
- freely adjustable petals which can be equipped with lens optics with different light distribution variants
- painted aluminum housing and petals
- transparent or matte hardened glass diffuser
- the unique possibility to direct the light beam as needed
- two luminaire sizes available – MIDI, MAXI
- versions with two, three or four petals to choose from
- ON/OFF and DALI versions available
- other color temperatures and color rendering index variants available to order
- excellent lighting and functional parameters

system LEDEX TOP



LEDEX TOP

Technical data:

- Luminous flux: 4300–20 700 lm
- Power: 36–168 W
- Max. luminous efficacy: 130 lm/W
- Color temperature: 3000K, 4000K
- CRI >80
- Ingress protection: IP20
- Power supply: 230V AC

LEDEX TOP system features:

- ceiling-mounted or pendant luminaire
- a high performance lens system to ensure exceptional working and learning comfort
- a linear luminaire system with painted steel housing
- a microprismatic PMMA diffuser
- ON/OFF and DALI versions available
- other color temperatures and color rendering index variants available to order

PRODUCTS

system LEDEX TOP 2

LEDEX TOP 2

LEDEX TOP 2
(narrow-beam version)

Technical data:

- Luminous flux: 8000–23 600 lm
- Power: 60–190 W
- Max. luminous efficacy: 138lm/W
- Color temperature: 3000K, 4000K
- CRI >80
- Ingress protection: IP20
- Power supply: 230V AC

LEDEX TOP 2 system features:

- pendant luminaire
- a linear luminaire system with painted steel housing
- a panel of wide- or narrow-beam lens optics which improves lighting efficiency and lowers the UGR
- ON/OFF and DALI versions available
- other color temperatures and color rendering index variants available to order

system PURE 1, PURE 3, PURE 4

PURE 1

PURE 3

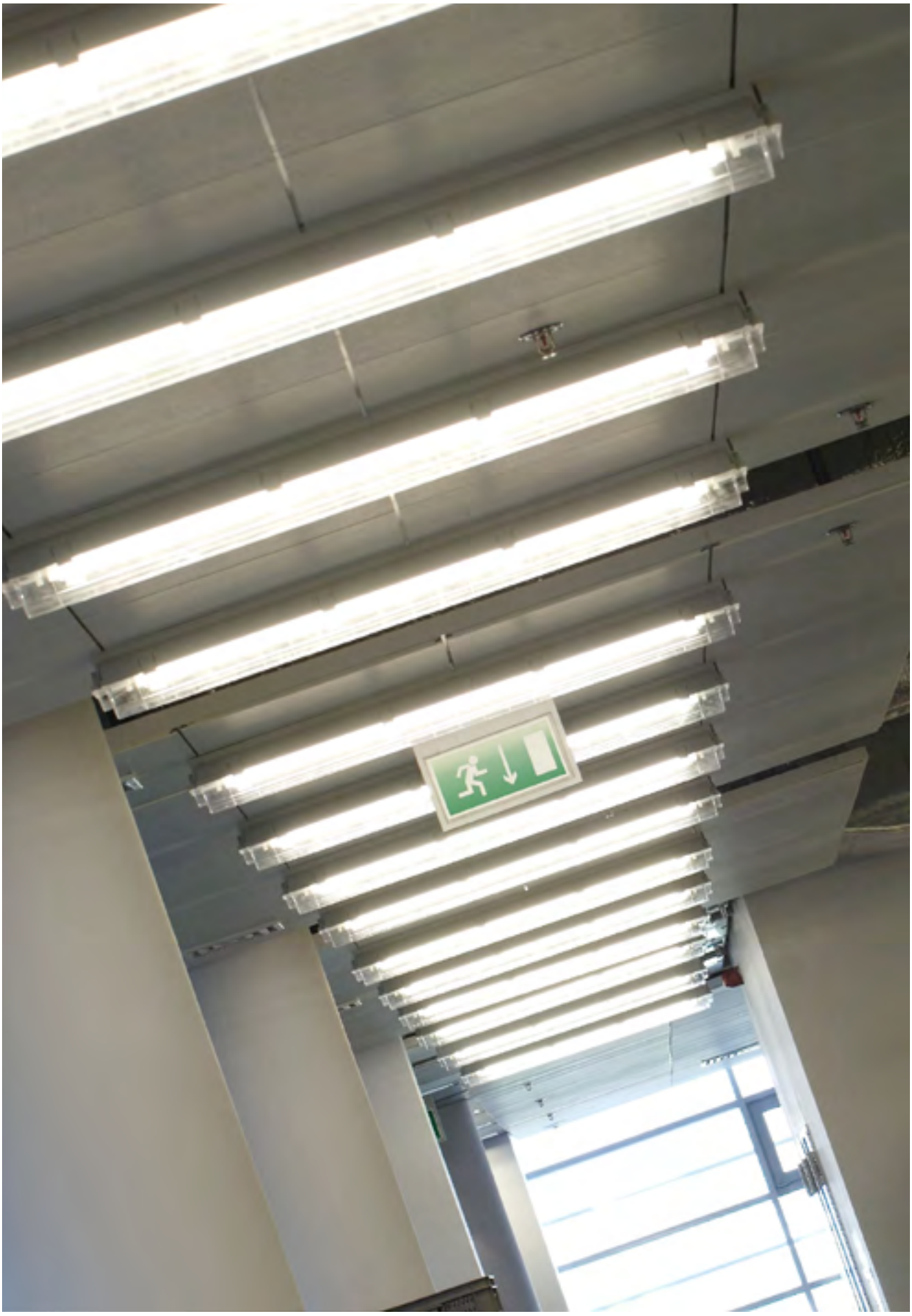
PURE 4

Technical data:

- Luminous flux: 3500–12600 lm
- Power: 34–103 W
- Max. luminous efficacy: 91–124 lm/W
- Color temperature: 4000K
- CRI >90, >80
- Ingress protection: IP65
- Power supply: 230V AC

PURE 1, PURE 3, PURE 4 system features:

- a luminaire for recessed installation in suspended ceilings or for surface mounting on ceilings (PURE 1N, PURE 3N), with increased resistance to adverse environmental conditions and easy cleaning
- painted steel housing
- a diffuser made of matted hardened glass (PURE1), prismatic PMMA (PURE3), or transparent hardened glass with a parabolic darklight louvre (PURE 4)
- available in 2 sizes: 597x597 and 1197x297
- ON/OFF and DALI versions available
- other color temperatures variants available to order
- high color rendering of CRI >90 or >80
- high ingress protection rating (IP65)



EMERGENCY LIGHTING

system MONITOR1 IP65 LED

MONITOR1
IP65 LED

Technical data:

- Light source power: 1,2W
- Ingress protection: 65
- Protection class: II, III
- Power supply: 230V AC, 220V DC, 24V DC

MONITOR1 IP65 LED system features:

- available versions: STI, ATI, CTI2 3x64, CTI-DALI, CB24, CB24A, CB220
- materials: plastic, PC
- installation: surface mounting on walls
- operating time: 1h, 3h
- sign visibility range: 22m

*STI - standard version, ATI - version for individual monitoring, CTI2 3x64 - version for central monitoring, CTI-DALI - DALI version for central monitoring, CB24 - version for the 24V central battery, CB24A - version for the 24V central battery with addressing, CB220 - version for the 220V central battery

system MONITOR1 IP40 LED

MONITOR1
IP40 LED

Technical data:

- Light source power: 1,2W
- Ingress protection: 40
- Protection class: II, III
- Power supply: 230V AC, 220V DC, 24V DC

MONITOR1 IP40 LED system features:

- available versions: STI, ATI, CTI2 3x64, CTI-DALI, CB24, CB24A, CB220
- materials: plastic, PC
- installation: surface mounting on walls
- operating time: 1h, 3h
- sign visibility range: 20m

system MONITOR2 IP65 LED

MONITOR2
IP65 LED

Technical data:

- Light source power: 1,2W
- Ingress protection: 65
- Protection class: II, III
- Power supply: 230V AC, 220V DC, 24V DC

MONITOR2 IP65 LED system features:

- available versions: STI, ATI, CTI2 3x64, CTI-DALI, CB24, CB24A, CB220
- materials: plastic, PC
- installation: surface mounting on ceilings
- operating time: 1h, 3h

*STI - standard version, ATI - version for individual monitoring, CTI2 3x64 - version for central monitoring, CTI-DALI - DALI version for central monitoring, CB24 - version for the 24V central battery, CB24A - version for the 24V central battery with addressing, CB220 - version for the 220V central battery

EMERGENCY LIGHTING

system MONITOR1 IP65 LED OP20

MONITOR1
IP65 LED OP20

Technical data:

- Light source power: 1,2W
- IP: 65
- Protection class: II, III
- Power supply: 230V AC, 220V DC, 24V DC

MONITOR1 IP65 LED system features:

- available versions: STI, ATI, CTI2 3x64, CTI-DALI, CB24, CB24A, CB220
- materials: plastic, PC
- installation: surface mounting on ceilings
- operating time: 1h, 3h

ES-CTI2 3x64

ES-CTI2 3x64

Technical data:

- Maximum number of devices per unit: 192
- Maximum number of devices per bus: 64
- No. of communication buses: 3
- LCD display
- Power supply: 230V AC

ES-CTI2 3x64 features:

- battery and light source status monitoring in emergency luminaires
- manual and automatic functional test activation
- manual and automatic autonomy test activation
- grouping of the installed luminaires according to their function
- maximum number of devices per system: unlimited

EMERGENCY LIGHTING

ES-NET CB220

ES-NET CB220

Technical data:

- Monitoring of up to 20 luminaires per circuit
- Load current of each circuit: 3 A
- Maximum power load of the system: 1.5 kVA, 2 kVA, 5.2 kVA, 9.2 kVA, 14.4 kVA, 18 kVA
- Ingress protection: 20
- LCD display
- Power supply: 230 V AC

ES-NET CB220 features:

- system programming via: a system application, a web browser, Master module keyboard
- luminaire testing via the power supply line
- compatible with BMS (Building Management System)
- direct communication with any computer via Ethernet
- AGM batteries with a declared service life of 10 years
- automatic luminaire and circuit calibration

ES-CTI2 CB24V

ES-CTI2 CB24V

Technical data:

- Maximum number of devices per unit: 80
- Number of circuits: 4
- Circuit load: 6 A
- System load: 16 A
- Ingress protection: 20
- LCD display

ES-CTI2 CB24V features:

- automatic testing according to a set schedule
- reading and printing from the event log
- freely programmable mixed-mode operation on a circuit for addressable luminaires
- CB24A system communication with the luminaires via the power supply lines
- grouping of the luminaires according to their function
- monitoring of power failures by means of voltage and potential-free connectors
- batteries with a declared service life of 10 years

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