

LED lighting at Tungsram means a high degree of reliability due to high quality components and professional engineering.

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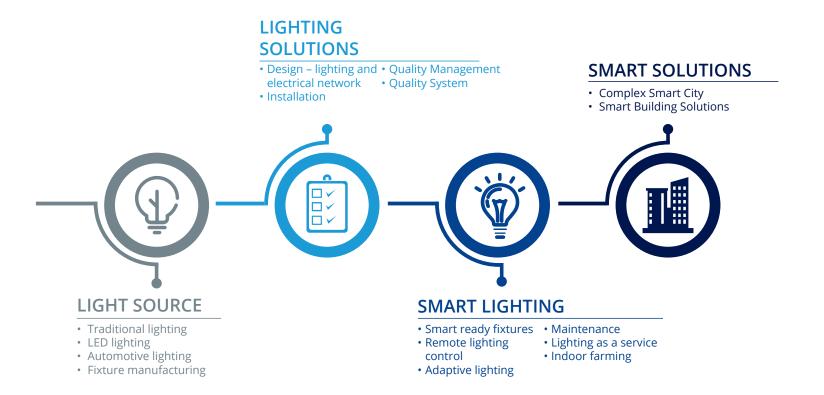
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# We are More than just Lighting

#### **Premium European Quality since 1896**

Powered by a lighting industry track record spanning more than 120 years, Tungsram has consciously developed new solutions in its core area lighting technology since its foundation in 1896. We compete on the world market as a premium European brand, which designs, develops and manufactures products for the needs of today and tomorrow.



# Why choose Tungsram LED lighting?

LED lighting by Tungsram means high degree of reliability due to high-quality components and professional engineering.

#### Wide product portfolio

Tungsram's lighting product portfolio covers all areas of indoor and outdoor lighting, from private homes to schools, public and office buildings, gas stations, sports arenas, highways and car parks.

#### **In-house Lighting Design Team**

Whether it is new installation or relamping project, we are ready to design and develop detailed lighting schemes to support our partners. Our team is working on various lighting projects covering greenhouses and other indoor farming locations, outdoor projects (street lighting) but also including retail shops, hotels, sports lighting, flood lighting, industrial and commercial interiors.

#### Unwavering commitment to Quality

Our quality management systems, supplier and manufacturing quality controls, coupled with the most stringent international certifications are proof of Tungsram's uncompromising commitment to quality. Laboratory services for unique and accredited measurements in photometric, electrical, mechanical and materials science.

Rapid prototype and serial production capabilities, as well as internal measurement capabilities, what accelerate and integrate development steps, providing a complete, controlled, scalable and ready-to manufacture solution for you.



**The world of work is constantly changing.** Not only are traditional roles and responsibilities transformed, but also the way we work and where we work. Working from home, cafés or co-working spaces, meeting online with colleagues from different time zones are just a few of the things that might impact our daily routine.

**Office spaces are also transformed.** Technology allows us to work and collaborate with colleagues wherever this is most comfortable and convenient in the office area. While conducting the daily routines in the office, our health and mental wellbeing must be preserved.

Selecting the optimal lighting sources could be a gamechanger in this field, thus facilitating vital business activities.

# Office lighting for saving energy

# Designing the ideal office lighting is not simply a technical challenge but one of economy and empathy.

Expert planning is required to meet the diverse requirements of ergonomically and photometrically excellent lighting. Good lighting is also needed to meet health and safety criteria: it should provide support for visual processes and protect employees from accidents and health hazards.

Tungsram lighting systems provide great flexibility in a quick and easy way. From traditional technologies to state-of-the-art LED products, we incorporate energy optimization and system intelligence into our portfolio. Fixtures can be expanded, modified and changed to meet the particular needs of the environment.



# Increase efficiency of co-workers through lighting

Finding exactly the right balance between natural and artificial lighting might be challenging. A lack of natural lighting can negatively impact on mood and performance at the workplace.

While poorly lit office spaces can reduce performance, thoughtfully designed lighting solutions add aesthetic value as well as boost productivity, prevent stress and fatigue and provide more human-centric illumination.

At Tungsram, we know from experience that life lived under good lighting is healthier, more effective and simply better.

# Understand how your office works

As your colleagues likely spend most of their day in the office, the environment must be illuminated as effectively and ergonomically as possible. This doesn't just mean bright. It means smart. To improve, it is crucial to understand how your office works and how it could work better.

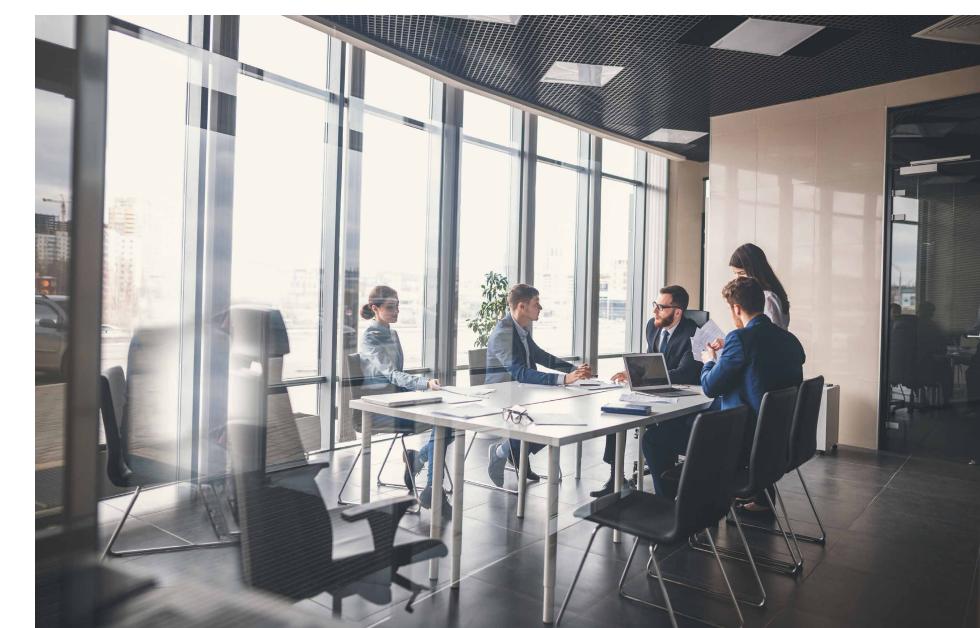
Although the required lighting is standardized and centrally controlled, there is a huge difference in the amount and quality of light necessary for various types of work in the different hallways, meeting rooms and public spaces.

Colleagues commute in corridors and hallways. To make this smooth and comfortable, shadows should be eliminated. Bright lights in meeting rooms can inspire but also intimidate. A comfortable hue determines the atmosphere of a meeting. Workstations must ensure focus without glare. A combination of indirect lights and desk lighting assists colleagues in their work.









# DESIGN YOUR IDEAL OFFICE LIGHTING WITH TUNGSRAM

Office Lighting by areas



# Workstation lighting

We believe in the importance of lighting, especially in connection with the workstations of your office. With efficient light sources and lighting management systems placed in the workspace where most time is spent, you can improve the effectiveness and morale of colleagues.

#### **Relevant products:**

- Edgelit Panel Premium
- Tudolio
- Torofi



# Conference room lighting

Providing the right circumstances for conferences and meetings can be a defining factor in their eventual outcome. By utilizing a combination of our products, plain and unfriendly conference rooms can be revitalized at a fraction of the investment cost of a complete refurbishment.

#### **Relevant products:**

- TU Linear Indirect
- Tudolio
- Recessed Spotlight
- Panel
- Multigimbal

# Communication zone lighting

Designing the ideal workplace lighting not only establishes visual conditions but creates workplace satisfaction. Using lighting in a smart combination with the spaces, furniture and technology of your office, it becomes a major design element. Good lights create a great atmosphere for better communication.

#### **Relevant products:**

- Scoop Downlight
- Tungsram Batten Switch
- Recessed Spotlight
- Integrated Bulkhead
- Surface Mount Downlighter IP 54
- Emergency Kit



# Lobby, foyer and corridors

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The primary role of lighting is to ensure maximum visibility and create stylish appearances within the office building. Utilizing the adjustability of our fixtures, a perfectly personalized lighting effect can be achieved, thus creating a unique experience for everyone.

#### **Relevant products:**

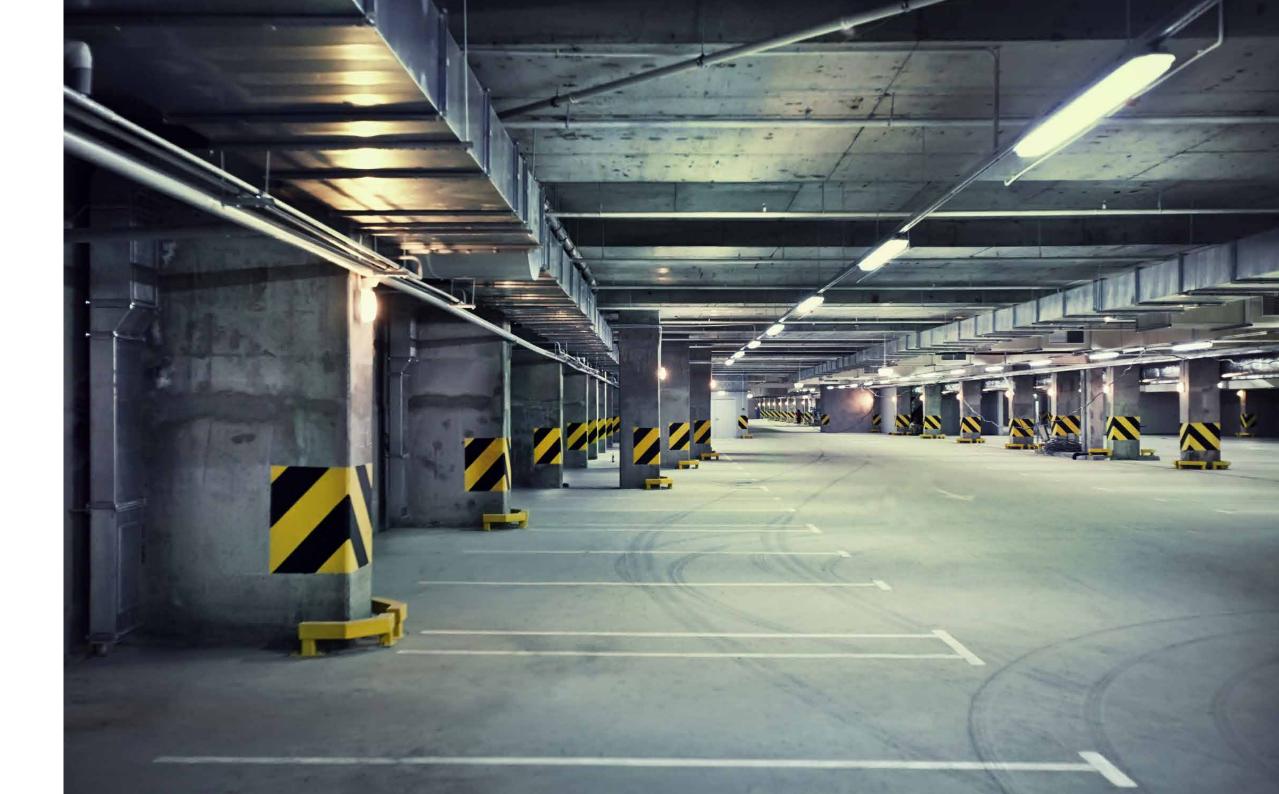
- Ceiling Lights
- Multigimbal Downlight
- Trackspot ADV
- Trackspot LUX
- COB Downlight IP54

# Garage and passage areas

At the end of a tiring day, it is important to provide support with perfectly designed lighting, hence safer movement can be achieved. Our portfolio consists of a wide set of impact and weather resistant solutions with extra-long lifetime.

#### **Relevant products:**

- Integrated Mariner Premium
- Tubular IP67/69K
- Fireproof Downlight (spotlight)
- Emergency Kit
- Floodlight



# TUNGSRAM PRODUCTS



# **Edgelit Panel Premium**

#### **PANELS**

Besides providing perfect illumination for rooms and spaces, Tungsram LED luminaires boast a balance of attractive appearance and outstanding efficiency. When turned on, the panels give uniform light distribution and glare-free lighting, while the fixture is almost invisible when turned off. Tungsram LED panels are perfect replacements for old technology-based compact fluorescent lamps. Thanks to excellent performance (120lm/W), fewer panels can result in evenly lit areas. The low glare level (UGR <19) and the different colour temperatures (4000K and 6500K) provide extra comfort for office workers, increase their activity and reduce eye strain while working.





#### **Key benefits:**

- Uniform luminosity surface
- Long service life 50,000 hours
- High efficiency 120lm / W
- Low glare level

More advantages here:





Along with the rise of Human-Focused Lighting, the different illumination needs of different office areas - workstations, meeting rooms, community spaces - are also getting greater attention, while a consistent look also needs to be ensured. We have created

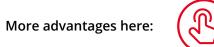
the Tungsram Tudolio product range to meet these needs; it gives designers and building constructors a great deal of freedom beyond the basic functions. Thanks to the modular units, it is easy to install and transport rapidly from our warehouses. Available in three colour

temperatures: 3000K, 4000K and 5700K, which can be customized by a switch at installation. Extremely high colour rendering: CRI 92 and low glare; UGR <19. Available in three sizes: 100mm, 200mm, 300mm; and

three mounting modes: recessed, surface mounted or suspended. With all this in mind, the result is a versatile and widely applicable lighting solution with aesthetic design.

#### **Key benefits:**

- Extended lifetime of 50,000 hours
- · Equipped with specular reflector
- Available with static or DALI driver













**Tudolio** 

**DOWNLIGHTERS** 

#### Torofi

#### LINEARS

The unique interior design of various office spaces and commercial units poses a major challenge to lighting designers and interior architects. The simple and flexible mounting of our modern and aesthetic Torofi product range is completely customizable to deliver the right light to any corner of your office.

The fixtures in the Torofi family has the same superior features and the same look and feel, so a beautiful lighting design can be composed from the different elements. The suspended/surface mount version are available in extruded aluminium frame in black or white. Through seamless, continuous connection, all light forms an interior designer can only dream about, can be applied. Available with various installation modes: suspended, surface mount, track rail mount and recessed. Thanks to its high color rendering (CRI80 +), it provides perfect viewing conditions and offers a pleasant atmosphere.

#### **Key benefits:**

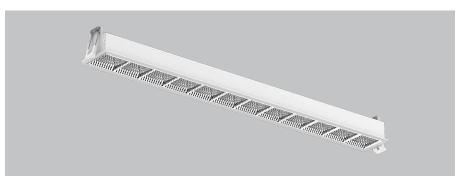
- Extremely low glare level due to special optics (up to UGR14)
- Available with static or DALI control
- Two sizes of the Suspended products: 1167mm and 2330mm and two sizes of the recessed types: 511mm and 1177mm long.
- Available in two CCT (3000K and 4000K)
- High efficiency up to 128lm/W
- Very long lifetime with 65.000 hours
- Available in both Direct/Indirect and Direct
- light distribution versions.

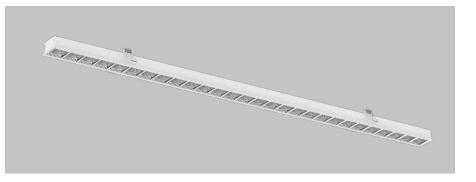












#### **Linear Indirect**

#### LINEARS

In order to achieve efficient and useful meetings or conference calls, a high degree of concentration and attention is a must. The Tungsram Linear Indirect G1 luminaire provides a high colour rendering index of 80+, which helps the eyes and mind to focus, while its low glare rate (UGR <19) further enhances concentration. Furthermore, Linear Indirect has incredibly high efficiency (up to 135lm/W), it requires low maintenance and provides long service life.

With the five different wattage options (from 22W to 50W), it can be used to illuminate a vast number of meeting room formats. With a lifetime of 75,000 hours and low maintenance requirements, Linear Indirect is a reliable and long-term solution for everyone.



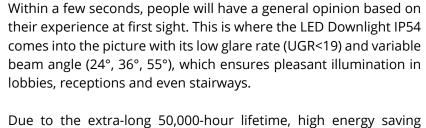


#### **Key benefits:**

- Pleasant lighting environment, very low glare level due to indirect illumination
- High efficiency 136lm / W
- Extremely long service life 75,000 hours (L90B10)

More advantages here:





First impressions matter, whether about a person or a company.

Due to the extra-long 50,000-hour lifetime, high energy saving capacity (70% when compared with conventional CFL fixtures) and durable IP54 protection rating, it is a reasonable long-term investment for everyone. It is relatively simple to install and maintain, furthermore it is an affordable solution for retrofits or new installations.





**DOWNLIGHTERS** 



#### **Key benefits:**

- IP54 protection, making it suitable for use in all areas
- Low glare pleasant lighting





### **Batten Switch**

#### **BATTENS**

A natural light sensation coming from under-cabinets, shelves, stairwells, corridors and entrances lightens up the mood of any colleague. Our compact linear soft lighting solution, the Batten Switch, is designed to be that mood enhancer in the employee's life. It has a long 30,000-hour lifetime, high energy efficiency of 100lm/W and the great colour rendering index (CRI80) results in maintaining that good mood.

The luminaire is fitted with an on/off switch for individual operation. The best choice for smooth linear lighting. We offer this range of eight luminaires in four wattage options. Batten Switch offers up to 50% energy-saving benefits especially with 4.5W and 8W when replacing 8W and 13W T5 tubes.



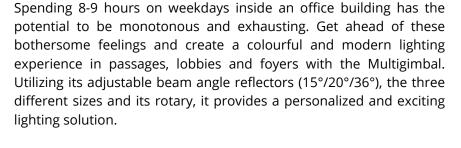


#### **Key benefits:**

- Continuous light sequence by connecting the individual modules
- Different lengths from 30cm to 120cm

More advantages here:





The 340° rotational angle allows you to tailor light to where you need it with the ability to create general lighting or accent lighting. The Multigimbal is quiet, it gives precise light distribution and is very environmentally friendly, with 70% energy savings compared to standard CMH. The long 50,000-hour lifetime, two colour temperatures (3000K and 4000K) and high efficiency (+93lm/W) represent a great long-term solution.

# Multigimbal

DOWNLIGHTERS

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#### **Key benefits:**

- Single, twin and triple lamp versions available
- Aluminium housing
- No harmful ultraviolet or infrared light











### **Surface Mount Downlighter IP54**

#### **DOWNLIGHTERS**

Pleasant and relaxing illumination is essential even in smaller, more quiet places in the office. Kitchens, lavatories and quiet rooms are where colleagues can rest and have a quick chat. The Surface Mount Downlighter IP54 is capable of creating these pleasant conditions due to its extra-low glare rate (UGR<16) and aesthetic design with black and white housing.

Surface Mount Downlighter perfectly adapts to office area purpose changes thanks to the three different wattage options (15W – 25W – 35W). Our fixture is available in three different sizes; 100mm, 120mm, 170mm, which opens the door for various application ideas. Furthermore, it is impact, dust and shock resistant, thus making it a gamechanger in its league



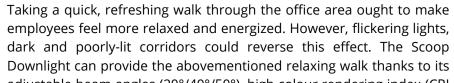


#### **Key benefits:**

- Optional 60° reflector available
- CRI 80
- Robust die-cast aluminium housing

More advantages here:





adjustable beam angles (20°/40°/50°), high colour rendering index (CRI 80) and great lumen output (2100-3500lm). This is an excellent solution for replacing standard HID versions and can save up to 50% energy as

The isolated driver solution available in non-dimmable version achieves great dimming compatibility with worldwide brand dimmers. The Scoop Downlight has a lifetime of 50,000 hours with an energy efficiency class of A+ and A++, therefore it is a great 21st century solution.



## **Scoop Downlight**

**DOWNLIGHTERS** 



#### Key benefits:

- Adjustable tilt angle from -15° to 35°
- Die-cast aluminium body and heatsink for effective thermal management
- 3000K and 4000K colour temperature





# Track Spot ADV & LUX

#### **TRACKLIGHTS**

The LED Track Spot ADV & LUX ranges, with their sleek appearance and superb colour rendering, CRI90 + are an excellent choice in stores where it is important that the true color of the products is well reflected by artificial lighting. It can also be a good choice in restaurants where artificial lighting should reproduce correctly and appetizingly the true color of the food.

Thanks to its high efficiency of 105-110lm/W, energy savings of up to 50% compared to conventional lamps can be achieved. Unique, patented design and a wide variety of interchangeable lenses make shopping or exhibitions unforgettable experiences.

#### **Key benefits:**

- Perfect color reproduction CRI> 90
- Interchangeable optics with different beam angles























# Recessed Spotlight G1

#### **DOWNLIGHTERS**

In terms of lighting, small areas require as much attention as wide open-office areas. Furthermore, the aim is to use fewer fixtures while maintaining perfect and crystal-clear illumination. The Recessed Spotlight G1 was created for this purpose, thanks to its high efficiency (90lm/W), great lumen output (550lm) and different colour temperatures (3000K, 4000K, 6500K). It is an ideal replacement for halogen spotlights giving an 88% energy saving.

The Recessed Spotlight G1 is equipped with an integrated polycarbonate lens and adjustable die-cast aluminium housing which further enhances the desired light for the area. Thanks to its compact size it is suitable for 68-72mm cut-out sizes, so it requires very little space to install. Its adjustable beam angle (40°) further enhances the great lighting experience.

#### **Key benefits:**

- Adjustable and fixed light source
- Round and square shape













# **Integrated Bulkhead**

**BULKHEADS** 

Passages and smaller areas require the perfect solution despite the short time people stay there. We should aim to provide pleasant and relaxing moments as well, which can be done using the LED Integrated Bulkhead. Thanks to its three different colour temperatures (3000K, 4000K and 6500K), great lumen output (855-4000) and high protection rates (IP65, IK10), it is an ideal solution for damp environments, entrance halls, receptions, stairwells, corridors, circulation routes, rest areas.

The Integrated Bulkhead is available in three different sizes (250mm, 300mm and 330mm) with high efficiency (up to 106lm/W). Compared to luminaires that use 2D fluorescent lamps, the Integrated Bulkhead saves up to 60% energy.



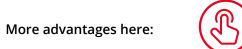


#### **Key benefits:**

- High impact resistance IK10
- High IP protection IP65







# Fireproof Downlight

#### **DOWNLIGHTERS**

Fireproof Downlight, which is a special fire-rated fixture, provides sufficient illumination for everyone even in emergency situations and ensures safety in your office area passages. Due to its extended lifetime (30,000 hours), dual switch colour temperature (3000K, 4000K) and high colour rendering index (CRI 80+), it is a great solution for corridors, stairways and garages.

It is an ideal replacement for halogen spotlights giving an 80% energy saving. Fireproof Downlight does not emit ultraviolet and infrared light, which makes it a more healthy fixture. It has a 36° beam angle which creates a wide and safe illumination zone for everyone.



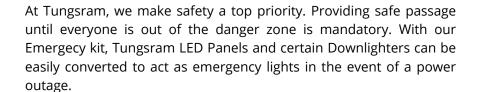


#### **Key benefits:**

- Three different colours of bezels
- Reduced replacement and maintenance costs

More advantages here:





Together with the luminaires, it can provide a luminous flux of 250-370lm for at least 3 hours. The compact polycarbonate housing includes both electronics and battery.







- Easy and simple to connect to luminaires
- The control lamp can be easily mounted on the
- ceilingSwitching time between power cord and emergency
- Switching time between power cord and emergency power supply: <0.5 sec









**OTHERS** 

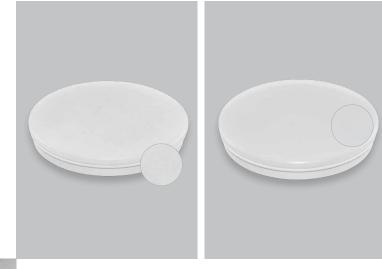
# Ceiling Light

#### **BULKHEADS**

Offices with classic interior design require elegant and modest lighting solutions while providing refreshing and crystal-clear illumination. The Ceiling Light provides even more, due to its multi-mounting capabilities (ceiling and wall mounted), lightweight construction (0.62kg) and diverse colour temperature levels (3000K, 4000K, 6500K) for entrance halls, receptions, corridors and even rest areas. Our Ceiling Light is available in three different sizes with two finishes.

It has a high lumen output (870-1850lm) which provides pleasant illumination for people. Thanks to the two different cover colours (white and pattern), the Ceiling Light can be utilized in many different areas of application. It brings the perfect LED solution for everyone, even those on tight budgets.



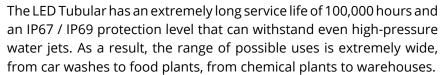


#### **Key benefits:**

- Wide beam angle
- Fast, simple and easy installation options
- Extended 25,000-hour lifetime

More advantages here:





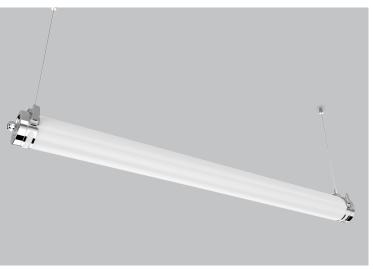
Various designs are available in the product family with PC, PMMA or tempered glass sheath for the right level of protection, even with HACCP certification.

There are also versions in the product family that have special corrosion protection.



### LED Tubular IP67/69K

LINEARS



#### **Key benefits:**

- Outstanding efficiency, up to 150lm / W.
- More than 100,000 hours of life
- The highest possible level of IP protection, making it suitable for use in almost any environment.





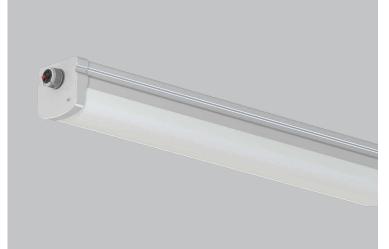
### **Integrated Mariner Premium**

#### **MARINERS**

Garages, multi-storey car parks and passage areas require more sophisticated illumination due to the lack of natural light and windows. The Integrated Mariner Premium is compact with a high lumen output (up to 140lm/W) and it represents a completely integrable lighting solution for applications with high requirements for luminous intensity and resistance. Due to the quick connector solution, it allows for fast and simple single or continuous fixture installations.

Thanks to the two colour temperatures (4000K and 6500K), high lumen output (3800-6200lm) and IP65 protection, it permits safe movement for everyone. Products with microwave motion sensor are also available in the range. The sensor is integrated into the fixture and pre-set for a 5-minute holding time and 5-meter detection range.



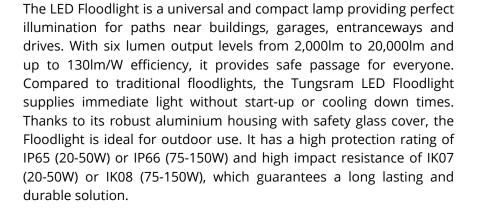


#### **Key benefits:**

- High efficiency up to 140lm / W
- High IP protection IP65
- High Fracture Protection IK08
- Long service life 50,000 hours (L80B50)

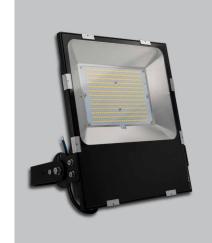
More advantages here:





Products in the range include those with motion and daylight sensors, lamps with symmetrical and asymmetrical light distribution.





# Floodlight

**FLOODLIGHTS** 









#### **Key benefits:**

- Types with symmetrical and asymmetrical light distribution.
- Twilight switch or integrated motion-twilight versions.
- Long service life: 50,000 hours (L80B10)
- High impact resistance (up to IK08) and high level of IP protection (up to IP66)





# Our smart lighting control solutions

# "TUNGSRAM CONNECTED BY HELVAR"

Using data from daylight and motion sensors, lighting control solutions can save up to 40% energy. Tailor-made, continuously learning, optimized systems not only reduce costs but also help achieve sustainability goals.

With the help of the state-of-the-art, wireless technology you can start building a truly modern, data driven, intelligent environment today.

#### REPEATABLE ROOMS

#### RoomSet

- Drag, drop and repeat without a laptop
- Set up one room in a matter of minutes, and then thousands more with the swipe of a finger
- User friendly Bluetooth app, making even the largest of projects quick
- The wireless Bluetooth® control panel, gives you full lighting control from anywhere in the room with no extra wiring



#### ActiveAhead

- Perfect for renovations
- Ready out of the box simple installation, no wiring required
- Substantial energy savings
- Lighting controls that remember walkways and think ahead, so you don't have to
- The node, driver and sensor are designed to fit inside a light fitting, so it's ideal for refurbishments that can't use control cabling





# SIMPLE EFFICIENCY AND CONTROL DIGIDIM

- Program any section or area
- Intelligent lighting control from single rooms to large areas
- Easy to use Toolbox software, which makes programming quick and simple
- Speaks to AV systems and blinds

# VERSATILE SITE LIGHTING CONTROLS Imagine

- Super-flexible from single rooms to megastructures
- Real time energy monitoring and app-based fine-tuning
- Bespoke automation, transitions and scenes
- Easy to integrate with other systems at a building or cloud level to gain ultimate control of your spaces





# Intelligent wireless lighting controls

## HELVAR ACTIVEAHEAD

Active ahead will continuously learn and generate insights, maximizing positive impact on wellbeing and optimizing your ever-evolving building.



#### **SELF LEARNING**

Wirelessly networked ActiveAhead nodes use a smart algorithm to learn how the space is used. They also respond to the amount of natural light in the space.



#### **ALWAYS ADAPTING**

ActiveAhead continuously adapts to possible changes, for example, a wall installation or removal, or a change in the layout of a space.



#### SIMPLE INSTALLATION

No control wiring, programming or configuration is needed. Optional customisation and grouping is possible using the ActiveAhead mobile app.



#### FORWARD-THINKING

Lower building operation costs and increase peace of mind via advanced data analytics.



#### PERSONAL LIGHTING

You can also tune the light settings on your very own desk according to your needs, allowing you to manage the light settings you prefer, resulting in a boost in satisfaction and productivity.



#### **ENHANCED COMFORT**

An ActiveAhead node starts learning from the moment it's powered up and it never stops. With predictive lighting, lights can be automated, and can be switched on before you arrive.



















# Tungsram Smart Solutions for your Buildings and Offices



# DYNAMIC LOCATION INTELLIGENCE BASED FACILITY AND ASSET MANAGEMENT

Tungsram can provide facility and asset management with dynamic map based visual representation and location-based optimization. We recommend the solution for customers who manage buildings and business venues in multiple locations. Tungsram has the ability to integrate all indoor and outdoor location-based data into a single platform. Managing the dispersed facilities and assets in time and space with our platform increases operational efficiency, transparency and reduces maintenance costs. Furthermore, all smart solutions offered by Tungsram can be built on this central platform. This enables a comprehensive analytics overview and management capability of the various supported business processes and functionalities.

#### ASSET & PERSON TRACKING

The Bluetooth and GNSS based solution enables a seamless indoor and outdoor tracking of assets and people to optimize work quality, asset utilization and business venue set-up. Work orders can be assigned to staff based on their location and the availability of assets.





#### **ACCESS SYSTEM**

A modern plastic card or mobile phone based access system enables an efficient central administration of access rights and entrance statistics. The access system can be easily scaled to include new areas and upgraded with cashless payment and entrance ticket handling functionalities.

#### **SMART PARKING**

Smart Parking is a convenient, user-friendly parking solution for parking slot reservation, navigation and monitoring parking lot utilization. Users can navigate their complete journey from their outdoor location to their parking space (both indoor and outdoor) using one application.









#### **INDOOR NAVIGATION**

The solution is an integrated indoor and outdoor positioning system with route tracking, navigation and location-based analytic capabilities in one mobile application. The client can create its own specialized "Google Maps" for outdoors and a digital building model for indoors.

#### **SAM - SPACE AND ASSET MANAGEMENT**

The absolute essential tool for your agile working environment. A flexible management platform of HR, OP, or any department with direct relations of the office space. It provides the most accurate yet simple solution to your working environment. Control the size & variety of team areas, collaboration zones and create the most efficient format based on the floorplan layout.





#### **SMART BENCH**

Tungsram offers 3 products, two smaller and one larger smart bench. The smart benches attract visitors with their innovative design, smart device charging, WiFi hot-spot and digital display-based targeted information service. The benches secure their own energy with solar panels.

# **ArchiFM - Asset, Facility and Property Management**

The possibility to integrate the most successful Hungarian facility management software system, ArchiFM, into our portfolio adds an immense value to Tungsram, since its lighting optimization capabilities can complement our lighting solutions in any facility. Next-generation property management for increased building value, cost savings on building operation and maintenance, higher work efficiency and heightened employee and visitor satisfaction.

# Management of warranty work

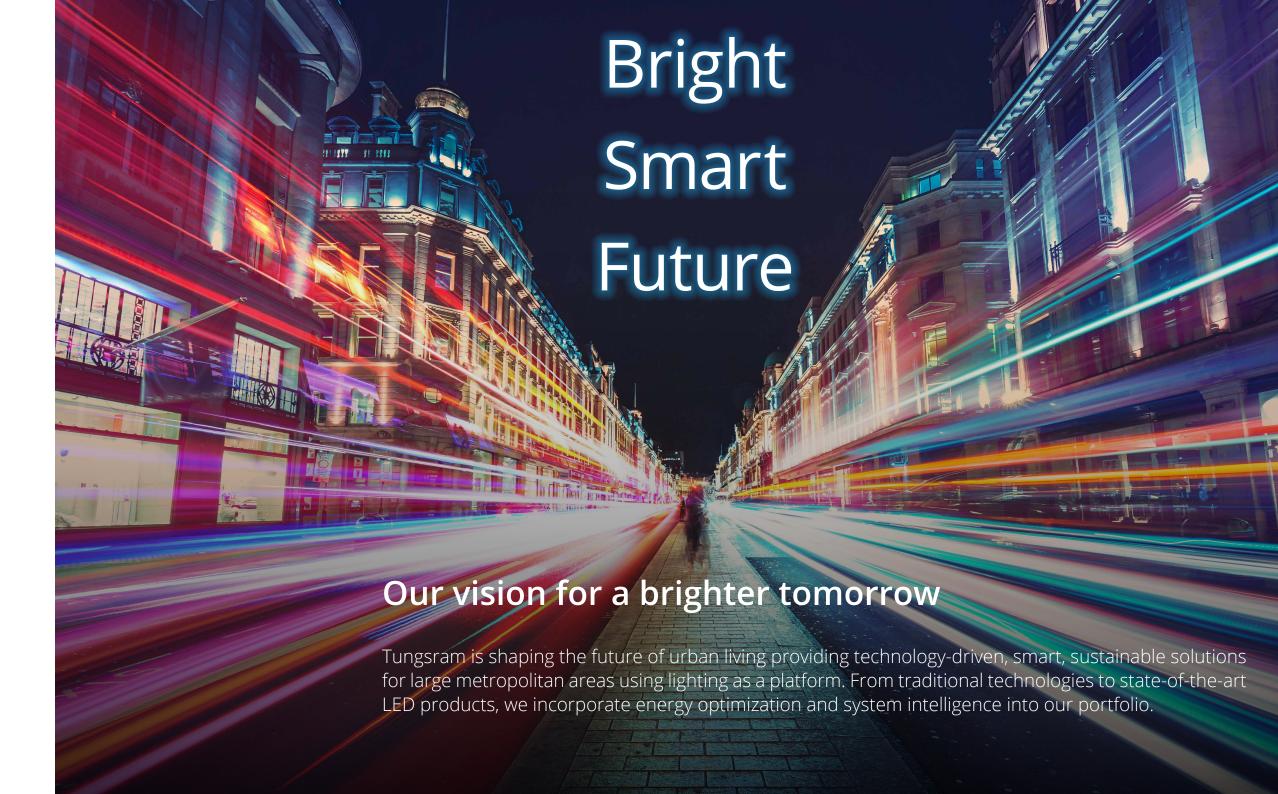
- Management of operator logs
- Equipment status
- Reduce asset lifecycle costs
- Maintenance and preventive maintenance reminders
- Device history
- Inspection and service
- Labor certificates
- Recording and Managing Permissions





# **ABOUT TUNGSRAM**

Tungsram, an iconic name, returned to the global market in 2018 as a premium innovative European technology brand following the acquisition of GE Lighting's general lighting business in Europe, the Middle East, Africa and Turkey as well as GE's global automotive operation.



# **Trungsram**

#### **TUNGSRAM GROUP**

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