LIGHTPOINT.

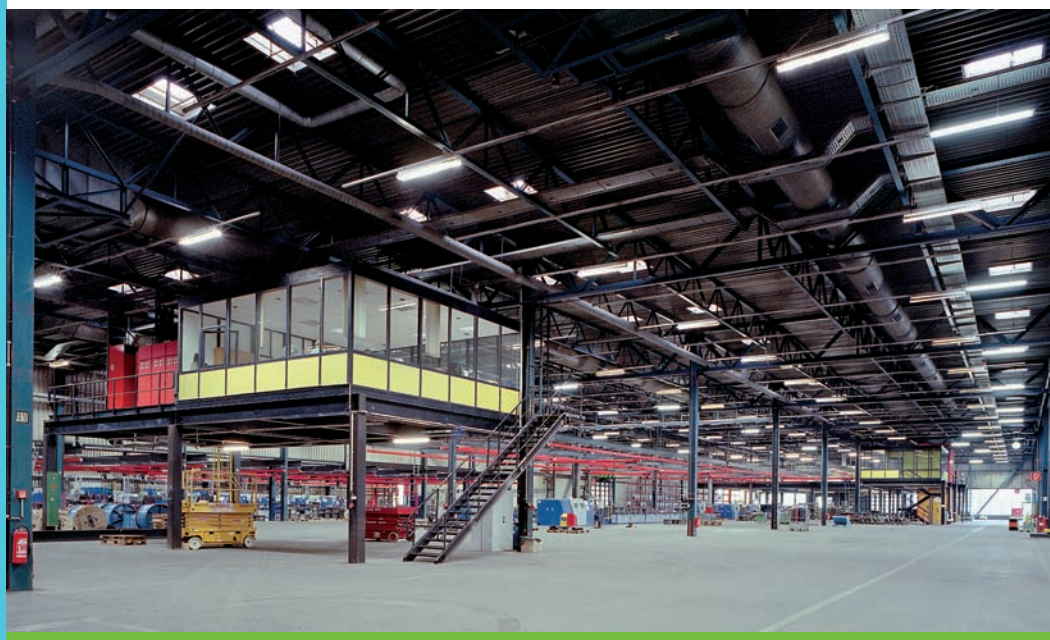
An ETAP publication | 2011-2

Smart Guidance

ETAP
EXCELLENT LIGHTING, SAVING ENERGY

Faster service through standardised offering

Movement detection in corridors



ETAP is launching a comprehensive range of movement sensors for complex applications such as corridors and high spaces. We now have a practical and readily implementable solution for all special applications.

A sensor for every sort of application

Dimming or switching light based on movement detection is common practice in office buildings, but less evident in corridors or open spaces. Conventional sensors have a limited cone-shaped detection pattern and do not operate efficiently in such environments.

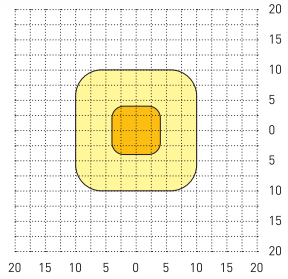
- In **corridors**, detection has to cover the whole length, requiring the use of sensors having elongated detection zones.
- In **large, open spaces**, e.g. industry halls up to 12 m high, sensors capable of detecting the faintest movement also at great distances, are required.

The demand for light control in industrial environments is growing due to the increasing importance of energy efficiency.

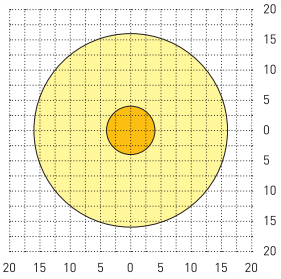
EXCELLENT LIGHTING
SAVING ENERGY

and open spaces

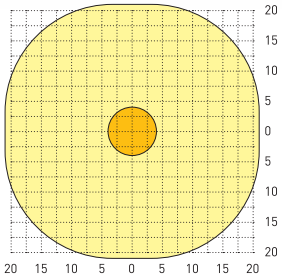
OPEN SPAPE



H < 4 m

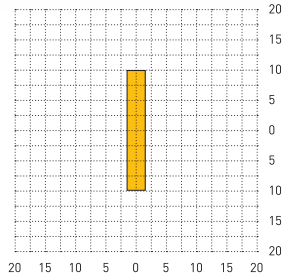


4 m < H < 8 m

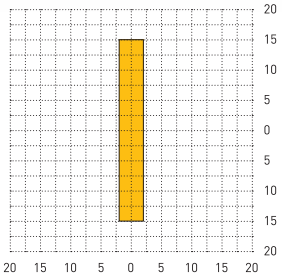


H > 8 m

CORRIDOR



H < 4 m



H > 4 m

: to the sensor
: across the sensor

Faster response to growing demand

The demand for light control in this type of environment is growing due to the increasing importance of energy efficiency. That is why ETAP has extended its standard range of movement sensors. 'We now have practical solutions for all possible applications,' explains product development manager Jurgen Lambrechts. 'We can now respond faster to any requests, also for these demanding applications. The detectors are available from stock. All that remains to be done is to configure the sensors to the customer's requirements and integrate them into our industrial lighting lines.'

LEDs: Opportunities and Challenges

LEDs radiate differently, which you can (cannot) see

A LED and a fluorescent lamp are two wholly different light sources. LEDs are not only much smaller but also much more luminant. To optimally use the light, a specific optics and luminaire design is required. "LEDs offer unprecedented opportunities but also pose some daunting challenges," says specialist Ward De Ketelaere.

Two fundamental differences

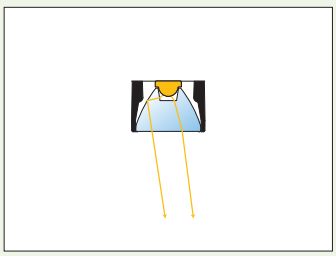
Optically speaking, the difference between a LED and a fluorescent lamp can be summarised in two sentences. One: while a LED is a point light source, a fluorescent lamp by comparison is a 'plump tube'. Two: a fluorescent lamp radiates light all round, whereas a LED emits light only in a limited angle. "These are not unimportant details," says De Ketelaere. "They are fundamental differences that call for a thorough revision of the optics and luminaire design."

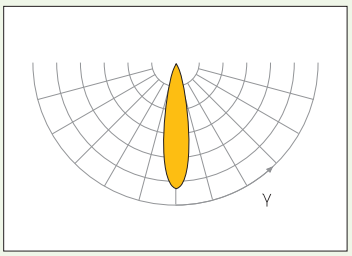
Perfect light direction as you see fit

As a point light source, a LED offers quite a number of benefits. "It's easier to direct light rays from a point than from a wide radiation surface," explains De Ketelaere. "It is possible to develop lenses, light guides or reflectors that perfectly direct the light as you see fit, with limited loss. An example are the lenses that we developed for our Flare spot or extremely wide-angle K7 escape route lighting. Such solutions are not possible with fluorescent lamps, which always radiate (unwanted) light outside the bundle."

FLARE SPOT
high power LED – lens

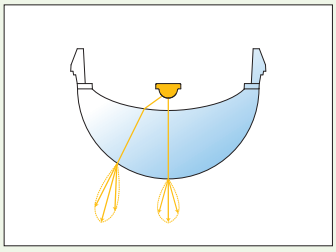
Featuring a specially developed lens, the Flare spot with LED has a highly bundled light distribution, an effect that cannot be technically achieved with fluorescent lamps.

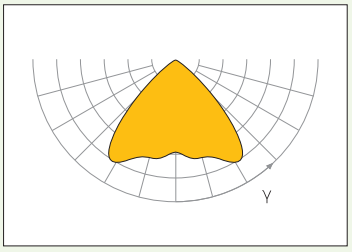




FLARE DOWNLIGHT
high power LED – lens

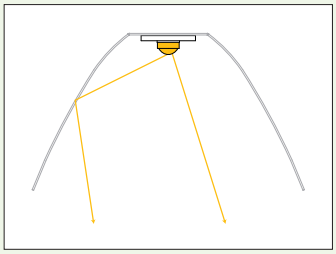
The bright light of the LED in the D4 downlight is spread across the lens surface area (2.5 cm diameter). The lens surface is specially treated to further soften the light.

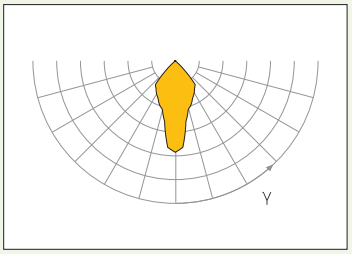




E1 LED
high power led – reflector

This industrial luminaire for cooling and freezing areas, E1 with LED, has a narrow-angle light bundle based on a well thought-out reflector design.





LED

EXCELLENT LIGHTING
SAVING ENERGY

Avoiding peak luminances

Lenses also play a role in avoiding disturbing peak luminances, a major challenge in the use of high power LEDs. By comparison, a compact fluorescent lamp of 26 W has a luminance of 50,000 cd/m², an unshielded LED of 3 W has a luminance that is two thousand times as high. "That light is bright enough to cause eye damage when looking directly into the LED," says De Ketelaere. "That is why we have to spread the light across a larger surface area, e.g. a large lens surface, as used in the D4 downlight."

Perfectly uniform illumination

Peak luminances are less of a problem when using low power LEDs. "In many cases, however, we still try to keep the LEDs hidden from view," says De Ketelaere. "For this, we use a combination of reflectors and diffusers. Recently, for example, we developed the UM2 with LED. On the outside you cannot see that LEDs are used, the diffuser is perfectly uniformly illuminated *(see also 'UM2 LED' on page 6)*.

Ready-made LED modules

Sometimes we use LED modules, which are LEDs in a fully finished housing. They can be described as 'LED lamps', you don't even notice that they contain LEDs. For the light distribution, we work almost exclusively with reflectors.

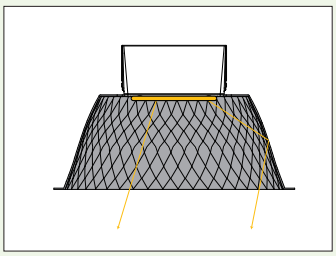
Light control with light guides

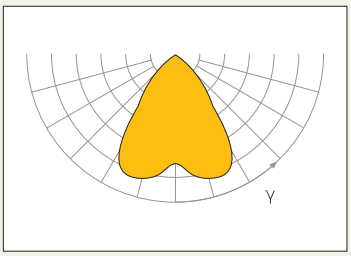
Another technique is the use of light guides that transport the LED light from the light source to the luminaire surface. This technique is applied, for example, in signage luminaires to ensure the perfectly homogeneous illumination of the pictograms.

D1 LED

LED module – reflector

The D1 downlight with LED contains a LED module. The light distribution is based exclusively on reflectors.

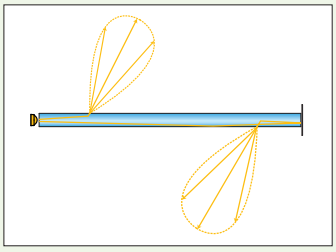


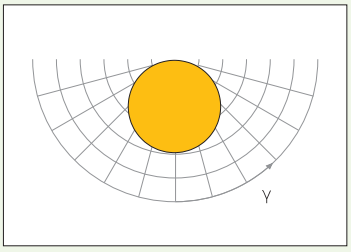


K7

high power LED – light guide

The pictograms of the signage luminaires of the K7 emergency lighting range are perfectly homogeneously illuminated through the use of light guides.

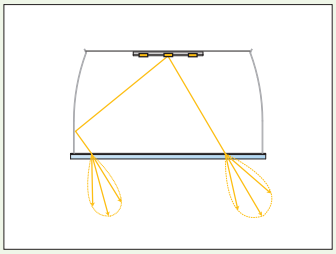


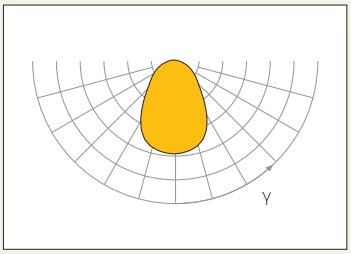


UM2 LED

low power LED – reflector & diffuser

The low power LEDs in the UM2 with LED are completely hidden from view through the use of a diffuser. A reflector allows optimal use to be made of the LED light, resulting in a perfectly uniformly illuminated diffuser.





Further information on LEDS?
Consult our manual at www.etaplighting.com.

LED

EXCELLENT LIGHTING SAVING ENERGY

UM2 & Elisse

Growing interest in diffusers

Changing European regulations are driving the growing interest in diffuser luminaires. That is why ETAP continues to expand its range of diffusers, this time with the LED version of UM2 and the new Elisse. Diffusers create a pleasant spatial experience. Another advantage of diffusers is that they hide the light source from the eye and thus prevent direct exposure, a significant plus for applications in, for example, the health sector. With their flat finish these new luminaires are also easy to clean.

The well-known rigid design of the UM2, now with LEDs on the inside.

A modified reflector and a MesoOptics™ film to get the most out of the LEDs.

5 YEAR WARRANTY

UM2 with LED: perfect illumination, high efficiency

The UM2 luminaires are now also available with LEDs as light source. Special attention has been paid to the optical design and the cooling.

The UM2 luminaires are known for their rigid design, stylish finish and high energy efficiency made possible by, among other things, the controlled light distribution provided by the MesoOptics™ film. The LED version offers an even more uniform illumination that the fluorescent version. The design is developed for maximum heat dissipation, allowing a lifetime of 50,000 hours (at 86 % light flux, 25°C) to be achieved. The mounting height could nevertheless be limited to 100 mm. Also the reflector design and the integrated power supply were designed for optimal light source efficiency (up to 87 lm/W, max. 3297 lm luminous flux).
The LEDs and the associated cooling, together with the tiltable optics, form an enclosed whole, thereby ensuring safe installation and preventing any risk of damage to the LEDs.

Finished with a fine aluminium trim.

Energy efficiënt and integratable with ELS daylight control or multisensor.

Elisse: uncomplicated lighting with diffusers

Elisse is a new diffuser luminaire with fluorescent lamp, an uncomplicated solution for comfortable general lighting.

Elisse is a linear (1200x300 mm) or square (600x600 mm) luminaire with a flat diffuser in glass. The low brightness provides natural lighting comfort. This makes Elisse particularly suitable for general lighting in e.g. schools, stores, offices and the health sector.

Elisse is also maintenance friendly: the hinged optics can easily be opened and closed.

[further information: www.etaplighting.com]
brochure: downloads > brochures > UM2

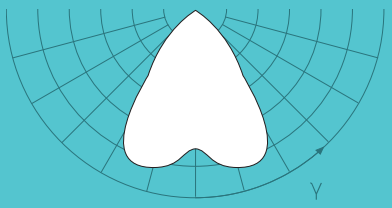
Luxial D1 with LED

A new, LED-based reflector design

The Luxial D1 downlight is now also available in a LED version. For this new version, ETAP has developed an entirely new reflector. The result is a high-efficiency, wide-angle LED downlight with excellent luminance control.

Specular aluminium reflector

Satin-anodised aluminium reflector



The modified reflector design provides a wide-angle light distribution. As a result, fewer luminaires are needed to achieve uniform lighting results.

A classic downlight with LED

The Luxial downlight family is known for its rigid form and perfect finishing, its energy efficiency and its high lighting and maintenance comfort. These downlights are eminently suitable for standard office applications. ETAP is now launching the first LED version of the range: a LED variant of the round recessed luminaire with a 220 mm diameter.

The best in terms of efficiency and comfort

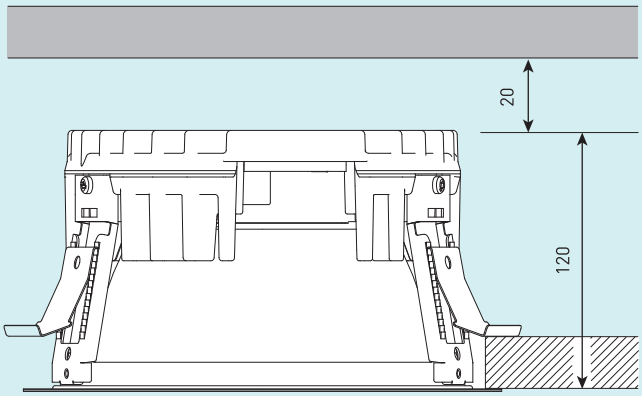
The D1 with LED is much more than a D1 with a new light source. To fully exploit the benefits of LEDs, ETAP has fully revised the reflector design. This resulted in a very wide-angle light distribution. No additional accessories are needed to achieve a UGR <19. In terms of efficiency and comfort, the D1 with LED may be considered as a reference in its class.

Mounting of Luxial is quick and does not require tools.

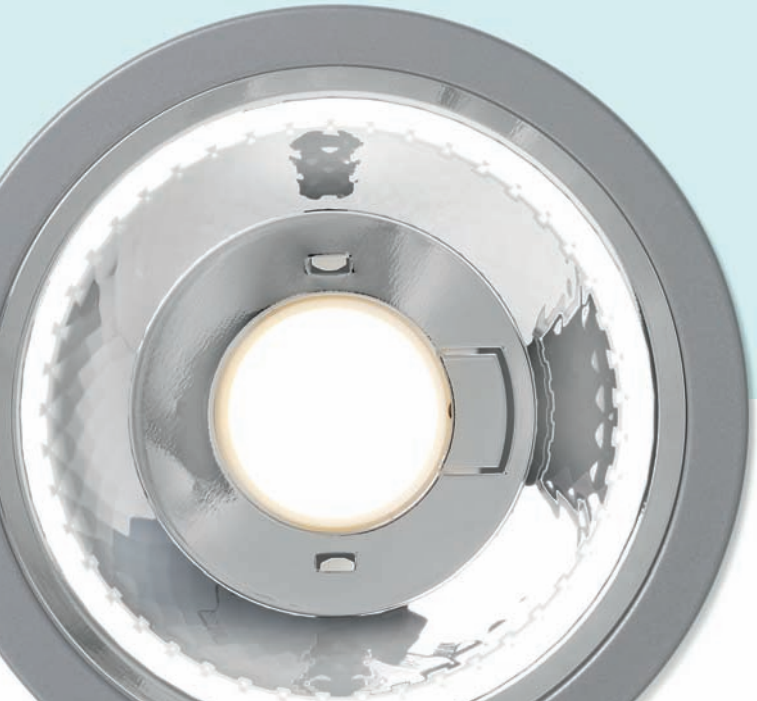
For Luxial with LED, the customised heat sink ensures a long lamp lifetime.

LIST OF FEATURES

- High luminaire efficiency (70 lm/W for the 1100 lm version, 71 lm/W for the 2000 lm version and 61 lm/W for the 3000 lm version).
- The D1 with LED has an actual lifetime of 50,000 hours (70 % lumen retention) thanks to the well thought-out thermal design.
- Integrated power supply with high duty factor.
- Rapid, tool-less assembly.
- Self-positioning, snap-in reflector with transparent plastic protection against dust and dirt on the site of installation.
- Mounting depth of 140 mm, including 20 mm of clearance for cooling.



Luxial with LED only requires a depth of 140 mm, including 20 mm for air circulation.



THE RANGE

- D1 with LED is available in 1100 lm, 2000 lm and 3000 lm with a colour temperature of 3000 K or 4000 K.
- Aluminium reflector in 2 versions: specular or satin-anodised.
- Luxial® downlights can be shielded with an IP44 cover glass for applications in humid environments.
- Dimmable version is DALI compatible and can be combined with ELS light control.
- Numerous accessories, e.g. glass plate or ring to create accents.
- Choice between white and grey trim.

[further information: www.etaplighting.com]
brochure: downloads > brochures > Luxial

EXCELLENT LIGHTING
SAVING ENERGY

EHAD

Round diffuser luminaires

ETAP is launching a new range of round diffuser luminaires. The EHAD series is available in all possible variants: suspended, recessed and surface mounted luminaires for walls and ceilings. EHAD is especially suitable for use in the healthcare sector, but also for the creation of special architectural accents.

The compact EHAD luminaires have a 360 mm diameter and are fitted with a circular 22W fluorescent lamp. The series is also available with a built-in emergency unit (1 hr or 3 hrs). The HaloOptics™ diffuser combines the comfort of low brightness with high efficiency. This makes EHAD particularly suitable for use as general lighting in hospitals, rest homes, schools, offices and other working and living environments.

In addition to the recess mounted version, there is a round surface mounted version, OEHAD, and a round suspended version, SIHAD. These versions have a partially perforated cover, which creates a remarkable and modern light effect.

1. The recess mounted version has a mounting depth of 110 mm.
2. The O'EHAD surface mounted version for walls and ceilings.
3. The SIHAD suspended version.

LED EXCELLENT LIGHTING SAVING ENERGY

‘Greenest’ building in Middle East now even more environment friendly

For the renovation of its headquarters in the United Arab Emirates, the Dubai Chamber of Commerce & Industry called upon ETAP, which devised a unique lighting solution using both fluorescent and LED luminaires. Energy efficiency was a top priority for the client, who was the first in the Middle East to be awarded a Leadership in Energy & Environmental Design certificate (LEED EB2.0) for an existing building, in 2009.

ETAP designed a custom made fluorescent lighting system for the honeycomb ceiling of architect Bluehaus Group.

Large-scale renovation project

End 2010 the Dubai Chamber of Commerce & Industry began with the renovation of its headquarters. Energy efficiency was one of the top priorities of this project. The Dubai Chamber has for some time been making significant efforts towards the sustainable management of this building. An additional challenge was to create a lighting system that could be integrated into the honeycomb ceiling designed by the architect (Bluehaus Group).

Efficient mix: the installation for Dubai Chamber included custom made fluorescent luminaires, D4 downlights with LEDs, and K9 emergency lighting with LEDs.

Energy consumption drops by 75%

For the honeycomb ceiling, ETAP designed an efficient and energy-friendly lighting system in consultation with, and tailored to the needs of the client. The result is a hexagonal luminaire with a diameter of 1.35 m, fitted with 3 fluorescent lamps (14W), and equipped with a HaloOptics® diffuser, which provides high efficiency and offers a nice, homogeneous illumination.

The custom made fluorescent luminaires were supplemented with LED lighting, including 199 Flare spots and 302 D4 downlights. The K9 emergency lighting, too, is equipped with LEDs. The LED luminaires are characterised by a long lifetime, minimal maintenance, and environment friendliness, and therefore also perfectly fit in with the sustainability concept of the Dubai Chamber. End result: with ETAP’s innovative light design, the system has a power consumption that is one-fourth of the power consumed by the previous system.

PROJECT DATA

CLIENT:
Dubai Chamber of Commerce & Industry
INTERIOR ARCHITECT: Bluehaus Group
ENGINEERS: RMJM
INSTALLER: Highgate Interiors

LIGHTING
- 72 custom made hexagonal diffuser luminaires
- 302 D4 downlights with LEDs
- 199 Flare LED spots

EMERGENCY LIGHTING
- 48 K9 signage luminaires
- 79 integrated K9 modules

[further information: www.etaplighting.com]
References > Dubai Chamber

Smart Guidance

Intelligently guiding masses of people

Away from danger – Safe emergency exits light up green, unavailable emergency exits light up red.

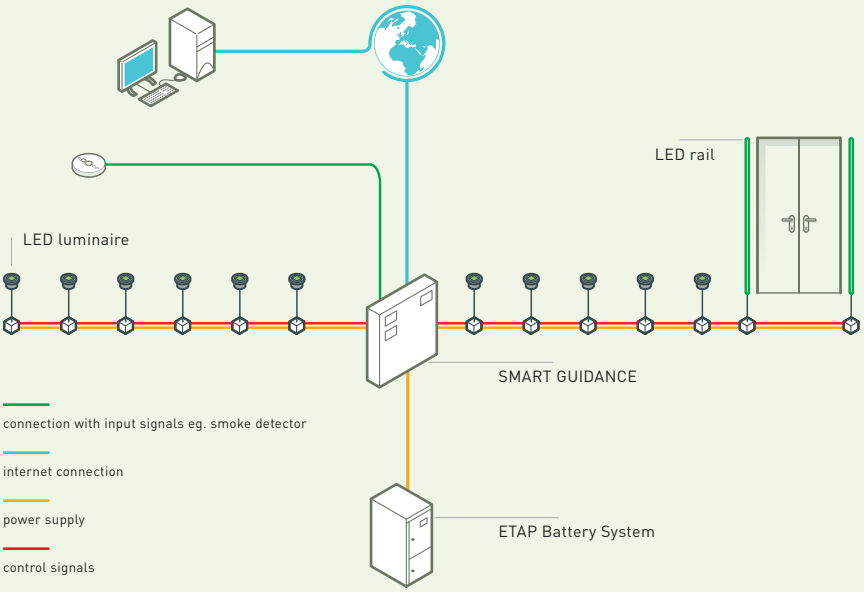
With Smart Guidance, ETAP introduces an innovative guidance system that guides people to their destination in an intelligent and intuitive way. Smart Guidance is intended first of all for locations where large groups of people come together in unfamiliar or complex environments such as stations, cinema halls, sports events, hotels or hospitals.

The Smart Guidance system consists of a series of luminaires that are installed along the recommended route, and that are switched as running light to indicate the right direction. In addition, LED rails are installed around passages which indicate by means of a green or red colour whether the passage can be used or not. A central controller responds to alarms and adapts the signals accordingly.

Rapid evacuation

Smart Guidance helps to evacuate large groups of people more rapidly and safely in emergency situations. The moving light of the luminaires removes all doubt as to the direction to be followed by people. This saves valuable time during evacuations. In addition, Smart Guidance indicates the most appropriate escape route. Safe emergency exits light up green, blocked or unavailable emergency exits light up red. All these devices help save human lives at crucial moments.

Moving light – Smart Guidance indicates not only the route, but also the right direction.



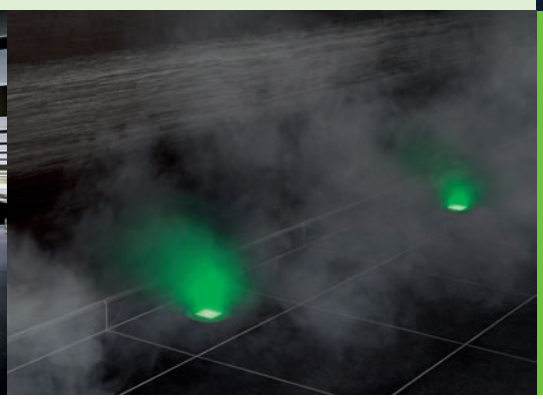
Smooth traffic

The system is also useful in normal day-to-day situations. In stadiums and cinema halls, for example, Smart Guidance guides visitors to their seats in dark or semi-dark spaces. Afterwards they can leave the site in a smooth and orderly fashion. Moreover, they do so following the route indicated by the organisers, thereby preventing queue-ups, accidents or panic situations.

In hotels and hospitals, Smart Guidance helps visitors – who are often unfamiliar with the environment – navigate throughout the building. Moreover, the system provides accurate lighting in corridors and shows the way to crucial locations such as reception halls and emergency exits.

Leading the way – Smart Guidance adds to the feeling of security and prevents accidents when exiting public spaces.

Safety first – Smart Guidance can also issue a warning, e.g. of imminent danger.



Always visible – In-ground luminaires are perfectly integrated and remain visible during heavy smoke conditions.

[further information: www.etaplighting.com]
brochure: downloads > brochures > Smart Guidance

New version of ESMweb™

Your emergency lighting under control

The new version of ESMweb™ allows up to 8,000 emergency luminaires to be managed from a central location. This means that the benefits of the web application are now also available for large buildings and building complexes.

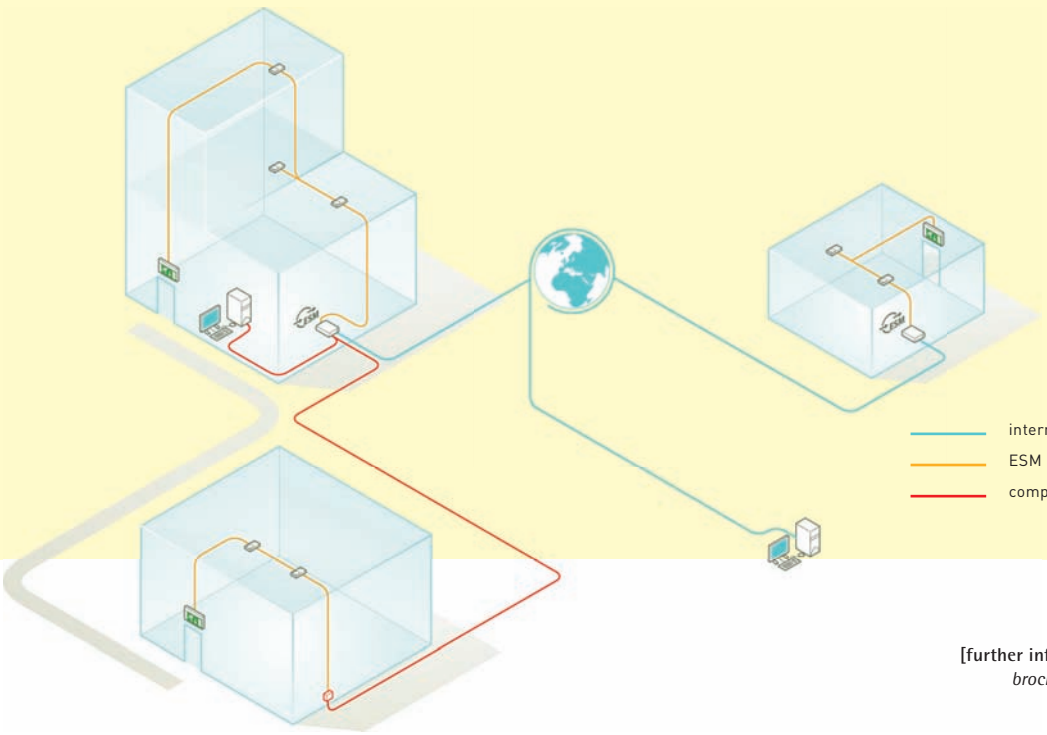
Productivity gain through web technology

ESMweb™ is the web-based version of ETAP Safety Manager, the central monitoring and control system that enables the maintenance of emergency lighting systems in accordance with EN 50172. The focus is on user friendliness, productivity and increased safety:

- You can see in a glance if all of your emergency lighting luminaires are operating correctly. The ESM software will warn you as soon as safety is no longer ensured.
- Fault messages contain all the information you need to remedy them immediately: location on a floor plan or photo, type of luminaire, description of the defect, required spare parts, etc.
- The application is accessible from any computer or mobile device with Internet access.
- The user management feature allows external people to be granted access to specific components. Maintenance firms, for example, can retrieve their task lists.

Suitable for any large building

ETAP has developed a web controller for ESMweb™ which can manage up to 8,000 emergency luminaires. With the new controller we can cover any large building, including building complexes made up of multiple units. This results in significant time and cost savings. To reduce the wiring, you can use your local area network.



The new web controller of ESMweb™is suitable for completely covering any large building.

[further information: www.etaplighting.com]
brochure: downloads > brochures > ESM

LED

Stylish and original

K8 – emergency lighting with a difference

ETAP is launching a new series of emergency lighting luminaires with LEDs. The K8 series immediately catches the eye with its unique design. Just like all of our other emergency lighting series, it meets the most stringent requirements in terms of reliability and efficiency.

5 YEAR WARRANTY

Uniformly illuminated signage

Thanks to the specially designed lens, only one 3W LED is needed for homogeneous illumination of the pictogram. The foil with the pictogram is located behind the cover, protected against dirt and damage, and thus contributes to bright and clear illumination. It enhances recognition of the signage, thereby increasing the safety level in your building.

Long lifetime

The LED has an expected useful life of 10 years, so your safety is guaranteed for a long time. In maintained mode, the light flux of the LED is monitored continuously. You are alerted when a LED approaches the end of its useful life.

Easy maintenance

Due to the long lifetime of the LEDs, K8 requires only minimal maintenance. Any maintenance that is needed can safely be carried out at floor level: the internal part of the luminaire can easily be disconnected, with the mains voltage being automatically interrupted.

Environment friendly with minimal energy usage

K8 has a minimal environmental impact. The LEDs do not contain any mercury, in contrast with fluorescent lamps, and the NiMH batteries are cadmium-free. Moreover, the batteries need to be charged only one hour each day. This explains the low energy usage of K8: 5.3 kWh/year for escape route lighting, and 20.6 kWh/year for signage.

[further information: www.etaplighting.com]
brochure: downloads > brochures > K8

Server space spectacularly lighted

L und M, the German specialist in data processing, chose a unique LED solution which turns the central server space into a spectacular light show. Visitors are offered various vantage points to watch the server space, which extends over three floors.

A special challenge

The most attractive specialist in the field of document processing: that is the mission of L und M. For any company and for any type of data carrier, L und M has a suitable concept for an improved information flow regardless of the type of document, be it digital or analogue.

The first brick of a new building to be erected in accordance with the most recent ecological standards, and in line with the efficient work processes promoted by L und M, was laid in May 2010. HKW, a group of architects based in Kiel, was presented with a special challenge for this project: L und M wanted to put its central server literally into the spotlight via an original and innovative lighting design. The architect knew that he could rely on ETAP's expertise for such tours de force. Various ideas were put forward and the choice eventually fell on a solution built around 90 special suspended LED luminaires from ETAP.

Server lighted across three floors

The custom designed luminaires consist of 90 tubular HaloOptics® polycarbonate diffusers that are attached to the ceiling with transparent cables. The ceiling contains also the Dali ballasts that allow the LED luminaires to be dimmed per floor. Programmable, dynamic scenes thus enable different light movements and patterns to be displayed from the central server over the full height of the building.

THE LIGHTING CONCEPT REFLECTS THE MISSION OF L UND M – TO ENSURE AN EFFICIENT INFORMATION FLOW.

"Architectural firm Hertzsch Kersig Wardeiner Architektenpartnerschaft (HKW) attempts to successfully complete its role in every stage of the construction process. The building is approached as a whole and must be suitable for permanent use. The technical infrastructure is an important part of the total concept. Lighting plays a critical role in the creation of a spatial atmosphere: with daylight and artificial light, controlled centrally or switched individually, functional or atmospheric.

We wanted to present the lighted server as the digital heart of L und M: with slightly undulating movements against a red background in an almost dematerialised space. For the implementation of this idea, our choice quickly fell upon ETAP. We know them as a flexible and innovative company that has the necessary expertise to put innovative concepts into practice. Direct contacts with ETAP and the actual implementation went very smoothly and professionally. We look forward to working with them on many more projects in the future."

Hertzsch Kersig Wardeiner Architektenpartnerschaft

[further information: www.etaplighting.com]
References > L und M GmbH

LED

New test lab in Malle

Spearhead of innovation

ETAP is installing a new lab with a total surface area of 178 m² in Malle. In addition to conventional conformity tests, the lab accommodates a wide variety of test set-ups that enable us to further optimise the performance of our latest generation of LED luminaires.

In the climatic chamber, tests can be carried out at temperatures from -20°C to 45°C (including humidity control).

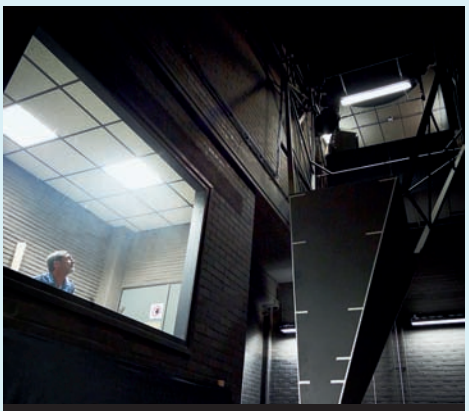
The new lab will also house numerous set-ups to determine the lifetime and performance of luminaire components, including duration and switching tests. An additional goniophotometer will provide even more flexibility in measuring light intensities and light outputs. There will also be a climatic chamber for simulating extreme conditions (from -20 to +45°C) and set-ups for measuring the influence of air movements on luminaires. The lab also features conformity tests for flammability (the so-called glow wire test) and protection against water ingress (all levels indicated by the second digit of the IP classification).

Special attention for LED

'The lab will be a spearhead of innovation,' says lab manager Eddy Bauwens. 'It is aimed to support development and production in all fields. That is why we want to make it as complete as possible. Our developers can use the lab results to further improve the components. Special attention is paid to the new LED technology. 'LEDs impose new and different requirements,' says Bauwens. 'For a more efficient control of the binning process (sorting of LEDs for constant light quality), for example, we plan to use a spectrum analyser. There will also be a new photobiological safety test set-up specially for LEDs.'

1

2



The goniophotometer measures the light intensity and light output of the luminaires.

The lab features conformity tests for flammability (1). In the IP room, lumainares are tested on their protection against water infiltration (2).

EXCELLENT LIGHTING
SAVING ENERGY

Nestlé France wins Greenlight award 2011 for France.

Want to become a GreenLight Partner?
ETAP helps you obtain the GreenLight certificate. We conduct feasibility studies and assist you with the application process. Interested? Contact your ETAP adviser.

NEW GREENLIGHT PARTNERS

Again a number of our customers have been awarded the GreenLight certificate in recent months. With the GreenLight programme, the European Commission aims to encourage private and public organisations to install energy-efficient lighting in their buildings. GreenLight Partners undertake to save at least 30% of energy on their lighting systems.

- Auchan Titan (Romania)
- Decathlon Berceni (Romenia)
- Decathlon Brasov (Romenia)
- Decathlon Policolor (Romania)
- Decathlon Ecathlon SC Roumasport SRL (Romania)
- Kultus Extra - Derioko Udala (Spain)
- Kreisausschuss des Main Taunus Kreises (Germany)
- Saint-Péray (France)
- Universidad Nacional de Educación a Distancia (UNED) (Spain)
- VZW K.S.O.Z. - Vrije Middenschool Zonhoven (Belgium)

[further information: www.etaplighting.com]
brochure: downloads > brochures > GreenLight
website: www.eu-greenlight.org

ALL OUR NEW PRODUCTS IN ONE HANDY SUPPLEMENT

All information about the latest ETAP products will from December be available as a supplement to our existing catalogue. In it, you will find a detailed overview of all the products discussed in this Lightpoint. You can download the supplement from www.etaplighting.com, or obtain a copy through your ETAP adviser.

[further information: www.etaplighting.com]
downloads > catalogues

Mechelse Veiling invests in light control systems

Maximum saving, flexibility and comfort

Crate washing facility: 440 individual E12/135 DALI luminaires

PROJECT SHEET

- ETAP light lines
- E5200/280 DALI
- E12/135 DALI

EXCELLUM

New Hangars:

- SSU ____ 1
- ECU ____ 3
- Movement detectors ____ 218
- Daylight sensors ____ 8
- DALI lines ____ 19
- Technical rooms and office zones on GreenBus

Box washer:

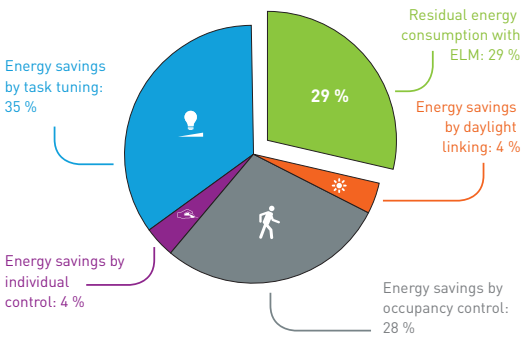
- ECU ____ 1
- Daylight sensors ____ 1
- Movement detectors and push buttons ____ 13
- DALI lines ____ 8

The Mechelse Veiling in Sint-Katelijne-Waver is the largest co-operative society as a vegetable auction in Europe. ETAP provided optimal lighting for two recent ambitious construction projects.

Early 2010 the auction began with the construction of a 30,000 m² shed for the storage of the 155 million vegetable packages processed there each year. ETAP and its subsidiary Excellum offered a total solution of luminaires and a control system. The 218 movement sensors activate the lighting only where people are present. Furthermore, large light domes, combined with daylight sensors, ensure that the lighting is switched off or dimmed wherever possible. For the customer, this results in a significant saving, while the light control system provides comfort and flexibility.

At the end of last year Mechelse Veiling also decided to erect a modern crate washing facility, capable of unstacking, washing and restacking 20,000 crates per hour, within the existing infrastructure.

For the lighting of this showpiece in its packaging department, the client again decidedly chose to partner with ETAP. The reasons? Considering the virtually fully continuous operation of the new hall and the crate washing facility, the Excellum light control system enables substantial savings to be made. Here, too, maximum comfort is ensured and the lighting can be modified or extended at any time.



New hall with 1,000 E5200/280DALI luminaires on light lines

ETAP
EXCELLENT LIGHTING, SAVING ENERGY

ETAP Lighting, U.K. Branch
Unit 6 – Windsor Business Centre
Vansittart Estate – Windsor - Berkshire SL4 1SE
Tel.+44 (0)1753 829970
Fax +44 (0)1753 859208
e-mail: enquiries@etaplighting.com
www.etaplighting.com

ETAP Export Department
Antwerpsesteenweg 130
B-2390 Malle - BELGIUM
Tel. +32 (0)3 310 02 11
Fax +32 (0)3 311 61 42
export@etaplighting.com
www.etaplighting.com