K9

Safety through LED technology

ETAP

The K9 is a comprehensive range of emergency lighting with LED (Light Emitting Diode) technology, from anti-panic lighting and escape route lighting to illuminated safety signs. It can be surface-mounted, recessed or fitted in a luminaire.

Effective emergency lighting with LEDs

design award winner

Compact

The use of LEDs and NiMH batteries (nickel metal hydride) make a very compact design possible. The design is a perfect illustration of the principle 'less is more'.

Long life of LEDs

LEDs have a long lifespan of up to 10 years. However, their light output gradually drops. That is why it is important to carefully manage their usable life cycle: the period in which they emit sufficient light to stay within the standards.

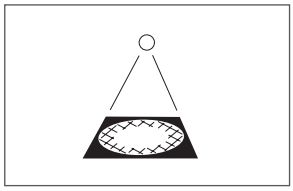
Photometry as a function of the application

In every K9 model the photometry is adapted to the specific application: anti-panic lighting, escape route lighting or maintained signage operation. Moreover, ETAP has also engineered optimal thermal management. Special cooling cells conduct the internal heat elsewhere, giving the (cooler) LED a higher luminous flux. This means fewer luminaires are required to meet the standard.

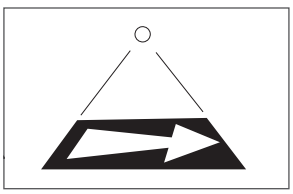
LIFE CYCLE OF LIGHT SOURCES FOR EMERGENCY LIGHTING

Light source	Physical life cycle (hr)
incandescent lamp	800 - 1.000
fluorescent lamp	7.000 - 8.000
cold cathode lamp	20.000 - 40.000
LED	20.000 - 100.000

The life cycle depends on the control



anti-panic lighting



escape route lighting

Compact light sources with a long life

The LEDs are positioned for uniform illumination

Compact

Simplicity

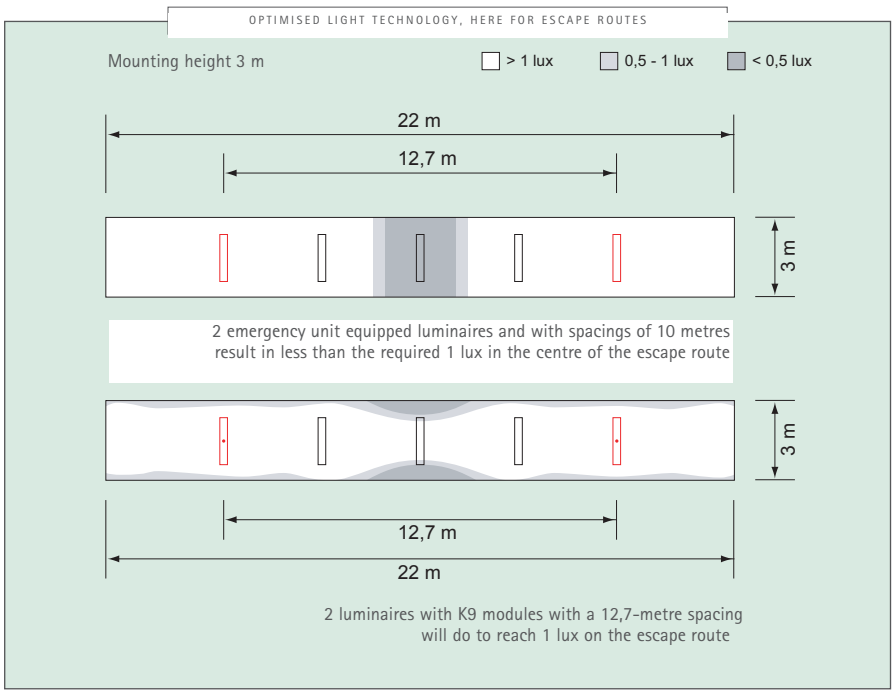
Unobtrusive

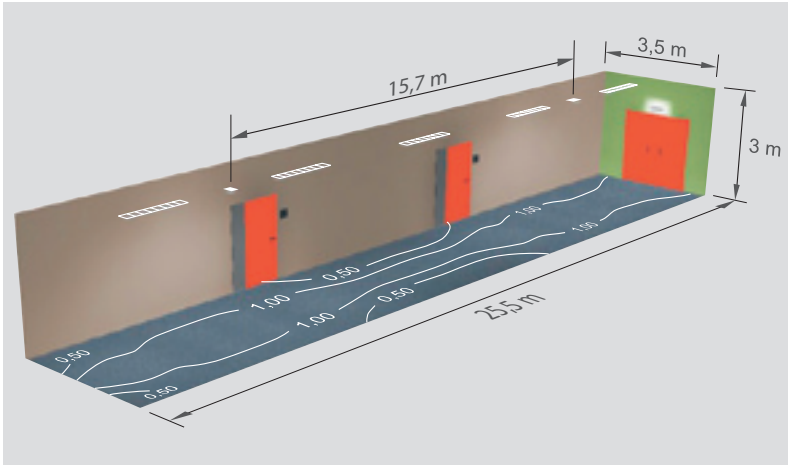
LED not effected by switching

As with all ETAP emergency lighting luminaires the operation and autonomy of the K9 luminaires is regularly tested. This has a negative effect on the life of a fluorescent lamp used for emergency lighting. LED-based emergency units are not effected by this.

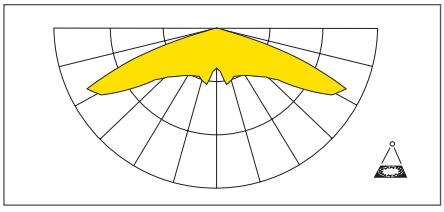
Environmentally-friendly

The LEDs' compactness and long life considerably reduces the use of raw materials. With permanent use, the LED light source needs replacing less often than fluorescent lamps. A LED does not contain any mercury whereas a fluorescent lamp does. The use of high temperature NiMH batteries also has certain environmental benefits. They are more compact, do not contain any cadmium and can be recycled. Also, the charging process requires little energy: one recharge period of a maximum of one hour per day suffices. Last but not least, the aluminium housing can be fully recycled.

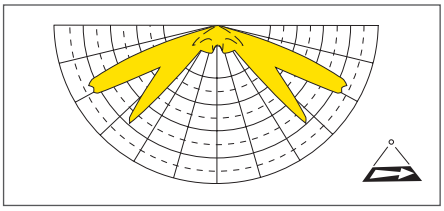




Spacings of 15,7 metres



Round anti-panic lighting



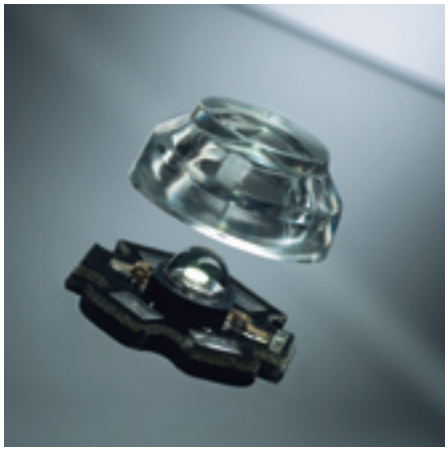
Lighting in the direction of the escape route

The stand alone anti-panic and escape route emergency lighting's photometric optimisation means fewer luminaires are required to meet the standards.

Efficient anti-panic and escape route lighting

Patented photometry means less luminaires

The anti-panic and escape route lighting luminaires use one high-power LED; the sophisticated photometry does the rest. ETAP engineers designed a special anti-panic lighting lens to spread the light equally over the widest area possible. In escape route lighting a reflector is fitted around the lens, which concentrates the light along the centre line of the escape route, resulting in less luminaires being required.
Both models are available as night-emergency lighting. They provide 5 lumen at all times, enough for night security to safely patrol.



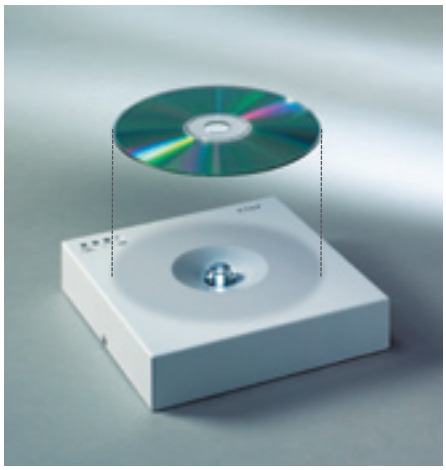
The especially designed lens provides uniform lighting

Design aimed at a problem-free life

Installing a K9 could not be simpler. All you need to do is mount the base plate and connect the electrical supply .After connecting the battery to the electronics in the aluminium housing, you click it on to the base plate. Secure it with two screws and that's it.
The circular slots allow you to change the orientation after you've put it together.
The batteries are easily accessible after disassembling the housing for maintenance purposes.

The reflector directs the light along the centre line of the escape route

The anti-panic lighting lights a 155 m² floor surface with an illuminance of 0,5 lux



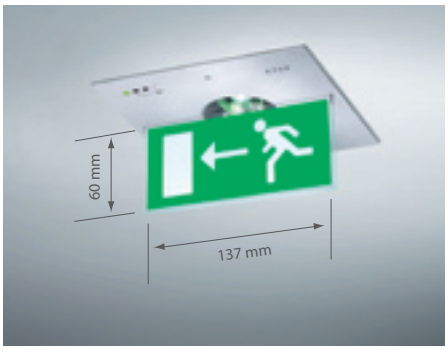
The use of LED technology translates into emergency lighting the size of a CD

The orientation can still be modified after mounting

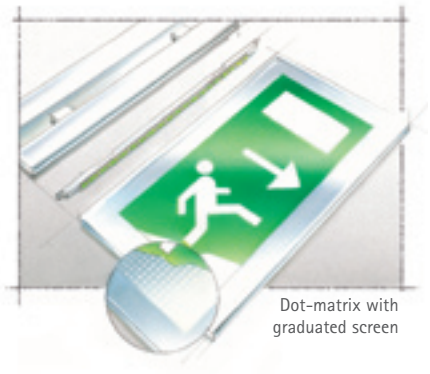
According to European Standard EN 1838 the pictogram luminance has to exceed 2 cd/m^2.
The K9 series allows you to choose luminaires with maintained or non-maintained signage.

Security and durability

Maintained signage operation
Viewing distance: 26 m



Non-maintained signage
Viewing distance: 12 m



Dot-matrix with graduated screen

Uniform illumination

The specially positioned low power LEDs provide a uniform illumination of the plexiglass sign. The plate is printed with a dot-matrix pattern that becomes denser the further removed from the light source. This guarantees a very even illumination of the sign resulting in excellent recognition.

Monitoring of non-compliance

In maintained operation LED luminance decreases over time. When it is at risk of dropping below the minimum standard, which would result in an unsafe situation, an ETAP patented sensor ensures that users are alerted, so they are able to replace the light source.
K9 always provides a high sign luminance in emergency mode. In standby mode K9 offers two choices: a model that powers the LEDs in full in standby mode (usable life cycle 3 years) and a model that reduces the LED's light output in standby mode to 2 cd/m^2 (usable life cycle 10 years).

Minimum light source, maximum effect

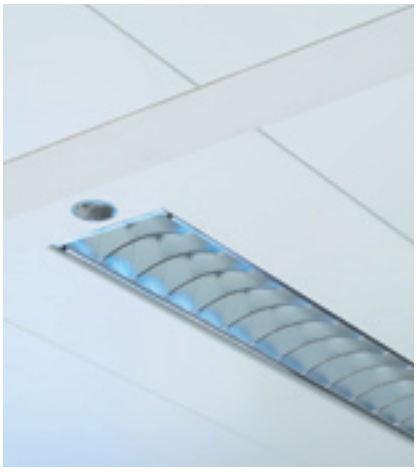
In non-maintained signage the high-power LED only comes on in case of a test or an emergency, which means the light source never needs replacing under design conditions. A small pictogram (height 60 mm) lit by a single LED can be easily recognised from a distance of 12 metres.

Easy to mount

Recessed models can be connected and mounted in a ceiling cutout. Surface-mounted models have a base plate with terminal block on which the housing can be clicked and secured.

Between baffles

Central in downlight



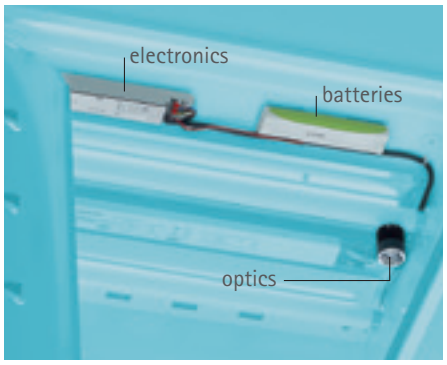
In the extension

The small K9 anti-panic or escape route lighting module has been integrated unobtrusively in a luminaire. ETAP pre-assembles and positions the module for easy mounting and maintenance. The module is also available separately.

Integrated emergency lighting

Discreet and unobtrusive

For different reasons (cost price, lamp, life, light distribution) the use of general lighting as emergency lighting is not recommended. For instance, the ends of fluorescent lamps go black if they are switched often in emergency operation and fail early. The K9 module is an excellent alternative to emergency conversion units. The LED in the K9 module is not effected by switching which means, in principle, it never needs replacing. The high-power LED and the perfectly tuned photometry means a reduced number of K9 modules is required.



LED technology saves the lamps for lighting and uses up less room than emergency power units

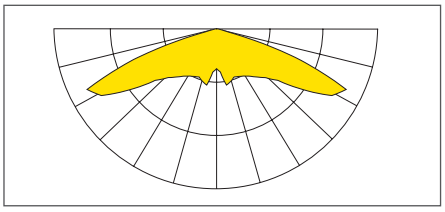
Different situations, different solutions

The whole idea behind the design of the K9 module was compactness. The diameter amounts to only 3 centimetres because a high-power LED works as a point light source. The sophisticated photometry does the rest. A special lens spreads the light equally over a large surface (for anti-panic lighting). In escape route lighting a reflector concentrates the light over the centre line of the escape route. Again, fewer luminaires are required.

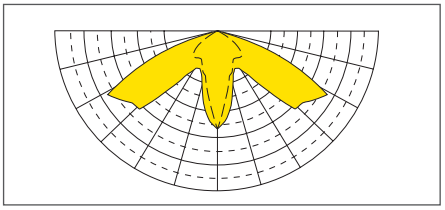
An environmentally-friendly alternative

The power consumption is minimal because of the use of LEDs, low-energy design, and the favourable charging process of the nickel metal hydride battery. The battery volume is three times smaller than in emergency conversion units now. By using a separate light source for your emergency lighting the reliability increases and the general lighting will last longer. This means: less maintenance and replacement of the fluorescent lamps in the general lighting.

Escape route lighting which, with a mounting height of 3 metres, allows spacings of more than 13,2 metres



anti-panic lighting



escape route lighting

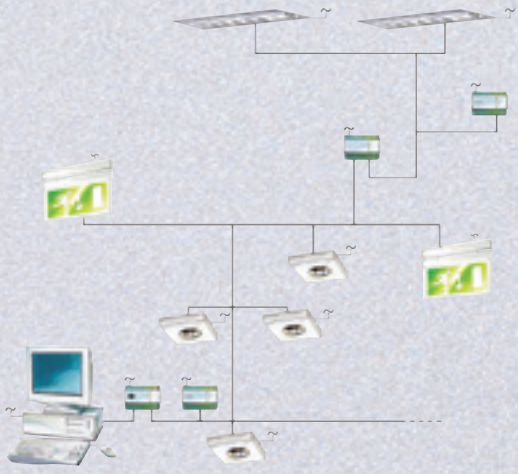
Reliability through extensive self-test

Every self-contained K9 comes with an extensive automatic self-test making your emergency lighting foolproof. The duration, the electronics and the operation of the LEDs are tested regularly. The maintained signage luminaire notifies you when the light output of the LEDs no longer meets the standards.

Clear indication of the status

Centralised monitoring for more safety

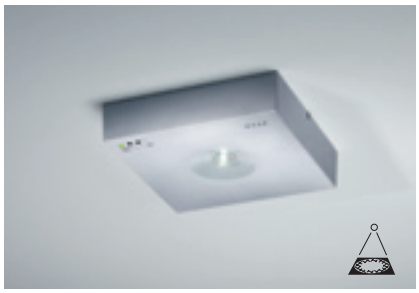
A specific model of the K9 modules and luminaires can be selected to operate with the ETAP Safety Manager system, (a PC based central monitoring and remote control system) which reports the state of the electronics, LEDs, batteries and network connection consulted both on the luminaire and the central PC.



ESM computer with K9 luminaires and lighting luminaires with K9 module

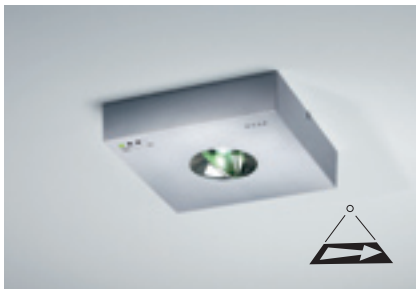
K9 - Product overview

EMERGENCY LIGHTING LUMINAIRES



Surface-mounted, anti-panic lighting
Night-emergency lighting

Recessed, anti-panic lighting (round and square model)
Night-emergency lighting



Surface-mounted, escape route lighting
Night-emergency lighting

Recessed, escape route lighting (round and square model)
Night-emergency lighting

ILLUMINATED SAFETY SIGN LUMINAIRES

Surface-mounted ceiling, maintained

Surface-mounted wall, maintained

Recessed ceiling, maintained

Right angle on the wall, maintained

Surface-mounted, non-maintained

Recessed, non-maintained

Suspended, maintained

K9 MODULE IN LIGHTING LUMINAIRES

Anti-panic lighting

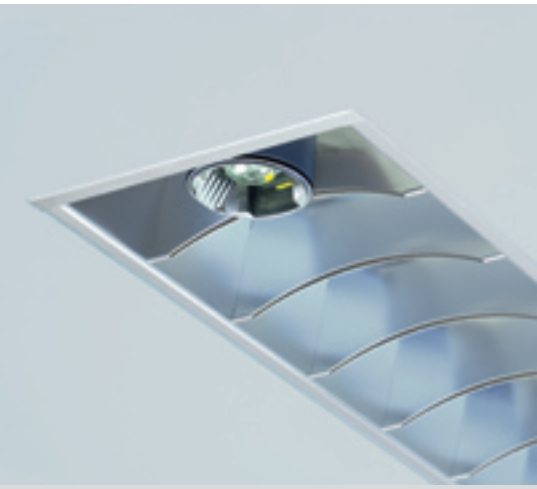
Escape route lighting

The housing is finished in white aluminium (RAL 9006) or white (RAL 9003) which is optional for most types.

All models can be used as self-contained luminaires and for a central emergency supply. Self-contained models have a one or three hour duration.

K9

Design Conix Architects



Patented photometry

Patented LED performance monitoring

- One solution for all applications
- Compact design
- LED technology
  - Efficiency
  - Long life
  - Ingenious photometry
- Complete series
- Durable and environmentally-friendly

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