

# I.S. 3217

## Pocket guide to emergency lighting



# One Panel – Many Options

For any type of installation, all you need is our one emergency light testing panel. A single panel can support up to 996 devices and be locally networked with up to 200 panels or an unlimited number via our LuxCloud service.

Our system can also interchangeably work as a hybrid in any of these scenarios and offers a huge amount of flexibility and scalability that will suit almost any requirement.



## Retrofit

Do you have pre-existing emergency luminaires? No problem – our intelligent PLUs can be retrofitted to almost any existing luminaire. Just by adding our PLUs to your devices and a simple data cable, your system can become a centralised, automatic testing system without having to replace your existing devices.

## Conversion

If you don't want the hassle of converting devices yourself, simply send them to us and we can convert your lights for you. Not only will we ensure your devices are returned to you ready to plug into your new system, we will also take over the warranty of the device for your peace of mind.

## Ultra-Low Voltage

EasySafe is our next generation of emergency luminaires that require no mains power connection. They are fast to install and maintain, using a first-fix base and a 'twist & click' install method. EasySafe devices draw their power directly from the data cable and are perfect for anyone who needs minimal disruption during installation and maintenance, whilst also providing an energy-saving solution.

## Standalone Devices

We have a range of high-quality standalone LED luminaires and exit signs that come pre-installed with our PLU devices. These reliable devices are made to order in our world-class UK manufacturing site and are ready to be installed straight out of the box.

## Central Battery/Static Inverters

Our system works well alongside existing or new central battery or static inverter systems. Our PLUs and panel can monitor luminaires connected to either system type and provide centralised testing for all your devices as well as interlinking with central batteries via our addressable input/output unit or our 230V hold-off relays.

This guide is written for individuals and organisations carrying out the design, installation, commissioning and maintenance of emergency lighting systems in Ireland.

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# What is an emergency lighting system?



Escape routes are clearly marked with mains lighting.



A total blackout can cause panic and confusion.



Exit signs and escape route lighting support safe, efficient evacuation.

**Emergency lighting is a range of backup lights that will operate fully automatically in the event of a power failure. It provides sufficient illumination to enable all occupants of a building to evacuate the premises safely during a blackout.**

**There are four main types of emergency lighting:**

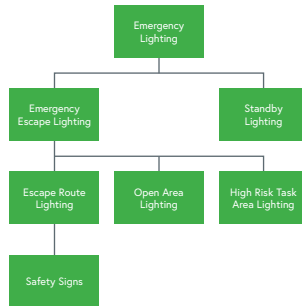
**Escape route lighting:** Helps reduce panic and identify evacuation routes and obstacles in emergency situations such as a fire or security incident. It ensures that the means of escape out of the premises is effectively identified, sufficiently illuminated and can be safely used by the occupants of the building.

**Open area lighting:** Often referred to as anti-panic lighting, this ensures there is sufficient lighting to enable building occupants to reach a place where an escape route can be identified. Open area lighting applies to floor areas larger than 60m<sup>2</sup>.

## High-risk task area lighting:

This provides higher levels of illumination to allow potentially dangerous processes to be shut down or stopped prior to evacuation, for example turning off major machinery equipment.

**Standby lighting:** Only suitable if safe to do so and risk of remaining is minimal. Lighting is provided to enable normal activities to continue substantially unchanged in the event that the supply to normal lighting fails and must provide sufficient light for the visual task (sometimes 100% illuminance).



# Why do we need emergency lighting?



## Life safety first

When the power in a building fails or in the case of a fire or other emergency, emergency lighting helps occupants evacuate the building safely.



## To minimise panic

A well-lit exit route enables people to identify a means of escape and will allow them to exit the building in a timely and sensible manner.



## To help first responders

They may not be familiar with the layout of the building, so emergency lighting will help them reach their targets safely.



## Compliance

Emergency lighting is required to comply with current standards of health and safety in the workplace. It is a legal requirement to prove that you comply with the standards.

# Irish Legislation

**New buildings** –  
Fire Safety Certificate

**Employers** –  
Safety, Health and Welfare at Work Act

**All non-residential buildings** –  
Fire Services Act

**Multi unit developments** –  
Multi Unit Development Act

Irish legislation covers emergency lighting in different ways and has been constantly evolving to cover all possibilities. To ensure the commitments made in the fire safety certificate application are followed through, the Building Control Amendment Regulations in 2014 introduced the role of an Assigned Certifier.

## Fire Services Act 1981 and 2003

### Where does it apply?

To the majority of all non-domestic premises

### What's involved?

- Compliance to **I.S. 3217:2013+A1:2017** – Code of practice for the **emergency lighting** of premises
- Compliance to **I.S. 3218:2013+A1:2019** – Fire detection and fire alarm systems for buildings
- The building must always be safe and if occupants are to remain on site during a power failure, they require suitable protection (standby lighting)

The responsible person is required to ensure that the premises are maintained with a safe means of escape, appropriate emergency lighting and signage. I.S. 3217 is the Code of Practice for the emergency lighting for premises.

## Fire Safety Certificate

### Route to Certificate of Compliance

- Apply at planning stage and typically nominate TGD B as a code to meet the means of escape requirements of the Building Regulations.
- Nominate assigned builder and assigned certifier at commencement notice stage.
- Assigned certifier collects ancillary certificates (including I.S. 3217 and I.S. 3218).
- Assigned certifier signs certificate of compliance on completion.

### Responsible person

The building owner (or occupier) remains the responsible person throughout this process and into the building's future life span.

NB: The Fire Safety Certificate is applied for at the very start of a project and is carefully implemented during all the stages of building. The process is looked over by a third party assigned certifier who accumulates all the ancillary building certificates, ultimately providing a certificate of compliance upon the project's completion.

This process was introduced to ensure the building owner carries out all the works they stated in their original application for a Fire Safety Certificate. Although the responsible person has nominated an assigned certifier to carry out this plan, the responsible person remains ultimately responsible.

### The responsible person

- The responsible person is clearly identified and is usually the owner, occupiers or employers.
- They are responsible for carrying out a full risk assessment and correctly providing for the installation and ongoing maintenance of the life safety systems in the building.
- They are responsible for the provision and ongoing maintenance of the 'appropriate' fire fighting and fire detection equipment.
- The Fire Service Authorities remain the enforcing authority.
- The Fire Service Authorities are able to visit and are empowered under the Fire Services Act to inspect a premises at any time, without exception, and hold the responsible person(s) accountable for any breaches.
- If any instances of non-compliances are found during an incident, the insurance companies may withhold or cancel any cover.

### Fire Safety Certificate – current responsibility:

- Owner/occupier
- Decides what level of protection is required
- Responsible for own risk assessment
- Responsible for their own fire certification

## Risk assessment

Consultations and/or risk assessments are vital in ensuring that the emergency lighting is suitable and fit for purpose.

### Responsibilities of the risk assessor include:

- Assessing and managing risks
  - Identifying potential fire hazards
  - Identifying location and persons who are at risk
  - Reducing the risks
  - Evaluating the risks – categorising them as high, normal or low.
- Providing appropriate protection systems (such as fire alarms and emergency lighting).
- Developing a suitable policy.
- Implementing procedures, providing training and conducting drills.

Find out more at:

[www.hsa.ie/eng/Topics/Fire/Emergency\\_Escape\\_and\\_Fire\\_Fighting](http://www.hsa.ie/eng/Topics/Fire/Emergency_Escape_and_Fire_Fighting)

# I.S. 3217:2013+A1:2017

I.S. 3217 is a Standard giving detailed guidance on the application and practice of emergency lighting.

## It includes guidance on:

- Design and installation
- Minimum duration
- Response times
- Requirements for maximum to minimum ratio of illuminance, disability glare and colour
- The design procedure
- Installation and wiring of emergency lighting systems
- Commissioning and testing requirements
- Certificates, log books and maintenance

## Compliance with I.S. 3217:2013+A1:2017

In Ireland, it is a fire safety legislation requirement that emergency lighting is provided in the following premises\*:

- Offices and shops
- Premises that provide care
- Community halls
- Pubs, clubs and restaurants
- Schools
- Tents and marquees
- Hotels and hostels
- Factories and warehouses
- Common areas in houses with multiple occupants

## Product Conformity

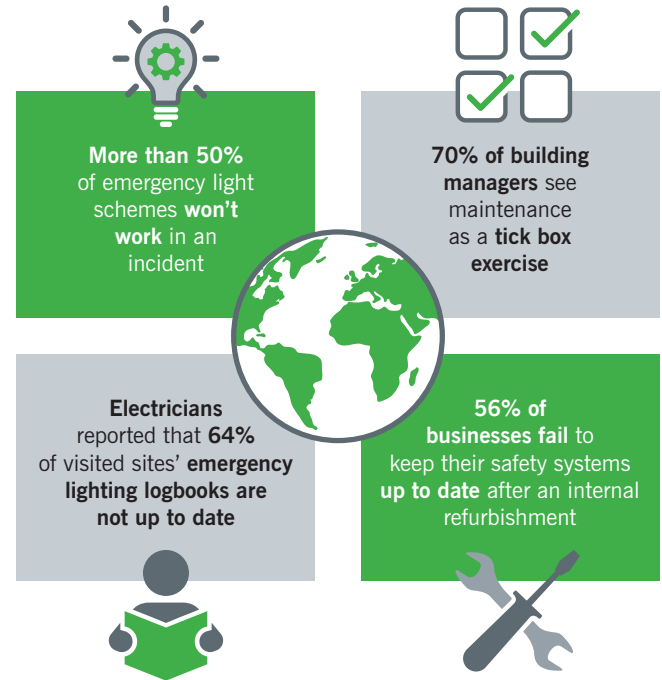
All emergency luminaires must be engineered to the correct standard. The following European emergency lighting product standards cover safety and performance for emergency luminaires and conversion modules:

- EN 60598-2-22:1999
- EN 60925
- EN 60924

Emergency lighting luminaires used on escape routes are required to be fire retardant (850°C hot wire tested).

\* Please refer to Annex G from I.S. 3217:2013 + A1:2017 for full list of specific building types.

# The real world – according to multiple surveys



# System summary



The table below highlights the key features of LuxIntelligent

	LuxIntelligent by Advanced
Maximum loops per standard size panel	4
No. of mains-powered lights per loop	249
No. of mains-powered lights per panel	996
No. of low-voltage lights per loop	50
No. of low-voltage lights per panel	200
Total no. of supportable devices	996
Hybrid of low-voltage and mains-powered emergency lighting?	Yes
Compatible with central battery systems / static invertors?	Yes
Data cable voltage	32V DC
Remote cloud service?	Yes
Secondary interface panel required?	No
Separate stepdown transformer required?	No
Event memory	1000 events
Maximum networkable panels	200
Able to convert non-emergency lights to emergency lights?	Yes
Able to work with pre-existing emergency lights?	Yes
Light spacing between low voltage open-area devices – 2m height	7.40m
Light spacing between low voltage corridor lens devices – 2m height	13.00m
No. of low voltage corridor devices needed for 2m high, 500m long corridor?	39
Adjustable corridor lens alignment after installation?	Yes
Battery type	NIMH
Power consumption of luminaires whilst charging	0.4W
Battery supplied or sold separately?	Supplied with devices
Designed to comply with BS EN 60598-2.22 (4 year battery life)?	Yes
First fix, common base?	Yes
Adjustable emergency exit sign angle?	Yes

# LuxIntelligent product and system information

LuxIntelligent by Advanced makes emergency light testing and compliance easier and more cost effective, whatever the size of your site.

It comes with optional cloud-driven, mobile and desktop monitoring and management. Most importantly, it provides demonstrable proof of compliance to I.S. 3217.

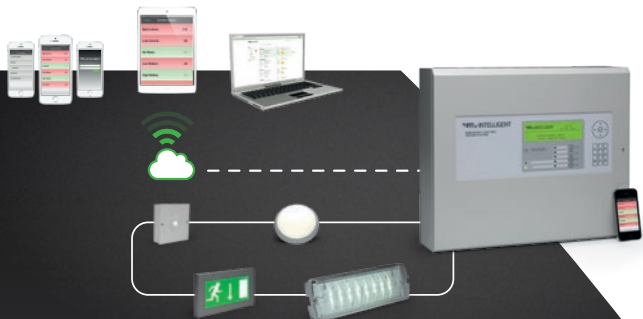
- **Easy installation:** A LuxIntelligent system is easy to install and manage.
- **Testing:** Built-in testing and monitoring of your emergency lighting to I.S. 3217, EN 50172 and beyond. No engineer time required.
- **Flexibility:** A LuxIntelligent single panel can support up to 996 devices and works with almost any light.
- **Scaleable:** A cabled LuxIntelligent network can support 200 panels. Alternatively you can link and manage an unlimited number of panels via our 'cable free' cloud networking.
- **Retrofitting:** Our intelligent PLUs can be retrofitted to almost any existing luminaire.
- **Easy conversion:** Keep your existing wiring and luminaires and convert them to our addressable protocol. Send your devices to us and we can convert them for you.
- **Low voltage:** Our ultra-low voltage EasySafe emergency luminaires require no mains power connection.
- **Save costs:** Try our online savings calculator to see the cost savings that a LuxIntelligent system brings.
- **Proof of compliance:** Live status and test reporting available on your phone, tablet or PC.

Scan this code to find out more





**LUX INTELLIGENT**  
by **Advanced**



## THE BEST ROUTE TO COMPLIANCE FOR YOUR EMERGENCY LIGHTING

### Our flexible CPD module on emergency light testing includes

- A complete overview of I.S. 3217:2013 + A1:2017
- How to comply
- How to be proactive
- Emerging technologies

We can deliver the CPD in a variety of ways to suit you. We offer sessions remotely via Zoom, in-person at our Newcastle upon Tyne training centre, or at your premises – over a working lunch or in a more extended form with in-depth explanations and time for questions and answers.



Please get in touch to find out more/discuss your needs.



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Web: [www.luxintelligent.com](http://www.luxintelligent.com)

To make a booking or discuss your requirements, email:

[sales@luxintelligent.com](mailto:sales@luxintelligent.com)

## Emergency lighting design checklist

### Emergency lighting design checklist:

- Consider relevant information about the premises from drawings, a site survey or the building's responsible person
- Examine the risk assessment
- Consider the duration of the emergency lighting
- Identify emergency escape routes and take account of potential hazards
- Identify the locations of fire alarm call points, fire fighting equipment and fire safety signs
- Determine the type of emergency lighting system required
- Consider the means of isolation for testing and/or maintenance
- Coordinate/interface with luminaire manufacturers where the main luminaires are to be converted into emergency lighting luminaires
- Identify the exit sign requirements
- Identify any high risk areas
- Identify any open floor areas larger than 60m<sup>2</sup>
- Identify any requirement for external illumination outside final exit doors and on a route to a place of safety

# Emergency lighting products

## Escape signage

Escape signs should be placed:

- At all normal exits
- At all emergency exits
- Along escape routes
- Anywhere else if the route to the nearest exit is not clear

The format of emergency escape signs has changed over the years. Below are the four most common signs in use today.

The current internationally-recognised format has a pictogram and arrow, and the wording is optional. **It is not permitted to mix the different designs.**

- Escape sign types should not be mixed within a building
- Older types of sign formats may still be used for existing buildings
- New buildings should use the ISO 7010 format as referenced in I.S. 3217

## The three most common signs in use today



European Signs  
Directive 1996  
(Allowed)



Text only  
Illegal since 1999



ISO 7010  
(Correct)

Please note that 'arrow up' is straight on for the ISO 7010 standard and not 'arrow down'.



Sign types should not be mixed within a building.

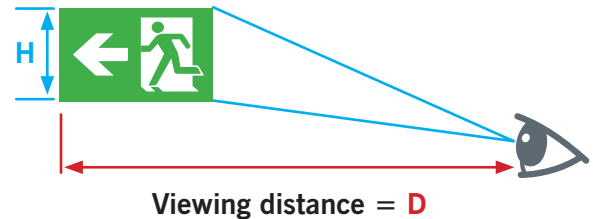
Older types of sign formats may still be used for existing buildings.

New buildings should use ISO 7010 format as referenced in I.S. 3217.



## Escape sign viewing distances

Viewing distances specified in I.S. 3217:



Maximum viewing distance **D**:  
for **INTERNALLY** illuminated signs **200 x H**  
for **EXTERNALLY** illuminated signs **100 x H**

## Examples

- **Internally-illuminated sign 175mm high.** The maximum viewing distance is 35,000mm or 35 metres (175mm x 200 = 35 metres)
- **Externally-illuminated sign 175mm high.** The maximum viewing distance is 17,500 mm or 17.5 metres (175mm x 100 = 17.5 metres)

## Mounting heights

- Signs shall be positioned between 2 metres and 3 metres above floor level, measured to the base of the sign.

Note: To ensure that the emergency exit sign is within the observer's field of vision, the sign should be mounted not higher than 20° above the horizontal view for all observer points within the viewing range of the sign.

- Mounting heights greater than 3 metres may be used, eg in large open spaces for operational reasons, but care should be taken to ensure that such signs are both conspicuous and legible.



## Escape sign illumination

Escape signs may be either externally or internally illuminated to ensure they are conspicuous and legible. Externally-illuminated signs should be illuminated to no less than 15 lux.

Photoluminescent, self-adhesive or perspex signs must be illuminated to 50 lux in a mains-healthy condition as per EN 1838.



## Escape sign luminance

### Minimum luminance

The luminance of any coloured area of the safety sign shall be at least  $2 \text{ cd/m}^2$  for all relevant viewing distances on emergency operation (see 5.4 and Annex A of I.S. EN 1838:2013).

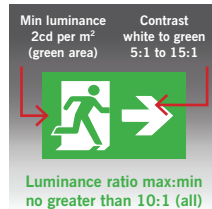
### Luminance ratio

The ratio of the maximum luminance within either white or the safety colour must not be greater than 10:1 (i.e. in all areas and colours).

### Contrast

The ratio of the luminance  $L_{\text{contrast}}$  colour to the luminance  $L_{\text{safety}}$  colour shall not be less than 5:1 and not greater than 15:1 (see Annex A of I.S. EN 1838:2013).

The safety colour and contrast colour shall conform to the requirements of ISO 3864-1 and ISO 3864-4, and shall be measured in accordance with ISO 3864-4.



## Maintained and non-maintained exit signs

As there may be local regulations applying to the premises, the relevant authorities should be consulted regarding exit signs. This is particularly important for licensed premises, places of entertainment, or places with sleeping accommodation including hospitals or residential care homes.

### It is important to:

- Research any local regulations.
- Establish the use of the premises.

## Maintained and non-maintained luminaires

A maintained luminaire operates when either normal lighting or emergency lighting is required.

A non-maintained luminaire only operates when the normal supply to the mains lighting fails.

A combined (or sustained) luminaire has two or more lamps, with one lamp dedicated to emergency use which operates when the mains fails.



# Where to place emergency lighting

## Escape route areas



5 lux

Every exit door



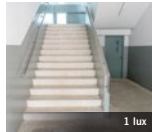
5 lux

Non-illuminated exit signs



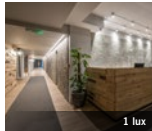
1 lux

Outside final exits and to a place of safety



1 lux

At stairs so each step receives direct light



1 lux

Any change of direction



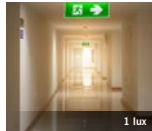
5 lux

Near each first aid point



1 lux

Any change of floor level



1 lux

Any corridor intersection



5 lux

Near each place of fire-fighting equipment



5 lux

Manual call point

Note: The term 'near' is normally considered to be within 2 metres measured horizontally. These positions need to be illuminated to 5 lux minimum at the reference plane.

The emergency lighting shall reach 50% of the required illuminance level within 5 seconds and full required illuminance within 60 seconds.

## Additional non-escape route areas



15 lux

Kitchens



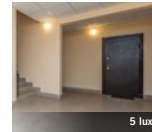
15 lux

First aid rooms



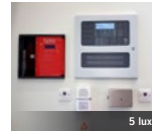
50 lux

Treatment rooms



5 lux

Areas of refuge



5 lux

Fire alarm control and indicating equipment



5 lux

Lifts\*



1 lux

Disabled toilets



1 lux

Toilets >8m<sup>2</sup> without borrowed light



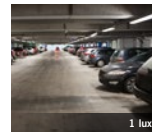
1 lux

Escalators to enable users to safely disembark



5 lux

Plant rooms for generators and control equipment



1 lux

Pedestrian routes in covered car parks



15 lux

Reception areas



5 lux

Near any safety signs

\* Emergency lighting is only required for lifts when they are part of the evacuation plan in the risk assessment. For high risk task areas, 10% of light is required for the task – never less than 15 lux.

# Emergency lighting system requirements for certificate of annual inspection and testing

The table below specifically refers to the requirements for I.S. 3217:2013 +A1:2017. For previous versions (i.e. 1989, 2008 & 2013, please refer to Annex D in I.S. 3217:2013 + A1:2017).

Please note: The checklist is not an exhaustive list of requirements and is the minimum required for a certificate of annual inspection and testing. If a certificate cannot be issued, then a report detailing the faults and/or deviations from the standard must be issued (please refer to Annex C8 in I.S. 3217).

Item	Requirement	
<b>a</b>	Mode of operation for emergency exit signs is maintained	✓
<b>b</b>	There is evidence that the system is being adequately maintained	✓
<b>c</b>	Emergency exit signs clearly and unambiguously indicate direction of escape	✓
<b>d</b>	All emergency luminaires and signs are operational and meet the full durational test requirements	✓
<b>e</b>	Following the completion of the full duration test, all emergency lighting indicators show healthy status	✓
<b>f</b>	The following points of emphasis have emergency luminaire(s):	✓
	1) Each staircase	✓
	2) Each change in floor level	✓
	3) Each change of direction	✓
	4) Each fire alarm call point	✓
	5) Firefighting equipment	✓
	6) Each emergency exit door	✓
	7) Outside each final exit and outside the building to a place of safety	✓
	8) Emergency exit and safety signs required by the enforcing authority(ies)	✓
	9) Each first aid post	✓
	10) Each intersection of corridors	✓
	11) Near escape equipment provided for the disabled	✓
<b>g</b>	The following locations have emergency escape lighting provided	✓
	1) Lift cars	✓
	2) Moving stairways and walkways	✓
	3) Toilets and toilet lobbies	✓
	4) Disabled toilets	✓
	5) Refuge areas for the mobility impaired	✓
	6) Motor generator, control, switch and plant rooms	✓
	7) Covered car parks (pedestrian escape routes)	✓
	8) Open areas greater than 60m <sup>2</sup>	✓
	9) High risk task areas <sup>1</sup>	✓
<b>h</b>	There is a suitable test facility for simulating failure of supply	✓
<b>i</b>	In the event of circuit failures on emergency escape stairwells, emergency escape lighting is present and functions <sup>2</sup>	✓
<b>j</b>	It is the opinion of the person(s) undertaking the annual inspection and testing that the illuminance requirements of the application version(s) of I.S. 3217 are complied with and that emergency lighting is provided in all locations required by I.S. 3217.	✓

<sup>1</sup> Where it is not possible to determine if an area is a high risk task area, this should be noted on the certificate or report as appropriate.

<sup>2</sup> The person(s) carrying out the annual inspection and testing shall ensure that suitable measures and precautions are taken to safeguard the building occupants.

## Escape equipment

Emergency lighting luminaires must be installed near escape equipment, refuge points and communication call points.



## Toilets

Facilities exceeding an 8m<sup>2</sup> gross area, including cubicle area should be provided with emergency lighting as if they are open areas. Toilets for disabled use, and any multiple toilet facilities without borrowed (or indirect) light, should have emergency illumination from at least one luminaire.

### Emergency lighting recommended



Toilets in en-suite bedrooms for disabled user

**Toilet**



Multiple toilets up to 8m<sup>2</sup> – no borrowed light (at least one luminaire)



All toilets for the disabled (one luminaire)



Toilets >8m<sup>2</sup> with or without borrowed light  
**0.5 lux minimum**  
(more than one luminaire may be required to achieve 0.5 lux)

### Emergency lighting NOT recommended



Toilets in en-suite bedrooms for able-bodied

**Toilet**



Toilets less than 8m<sup>2</sup> with borrowed light during operational hours



Single toilets for able-bodied

For full details, refer to I.S. 3217 Part 8.5.2.4 and Annex E1 for typical arrangement examples.

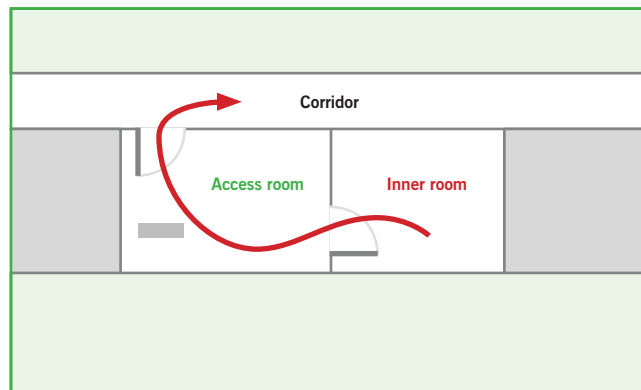
## Inner rooms

An inner room is defined as:

**A room from which escape is possible only by passing through another room (the access room).**

This means that the access room would be the escape route from the inner room and should have emergency lighting.

An exception might be if the access room was quite small and the wall and/or door to the escape corridor outside was visible through a clear panel or window. This would be subject to a risk assessment which would highlight if there were any obstructions to the light.



# Emergency light levels



## Escape Routes

- Routes occupants must follow to evacuate the premises
- 1 lux minimum
- At least 2 luminaires per compartment



## Open Core Areas

- Areas >60m<sup>2</sup>
- 0.5 lux minimum (excluding 0.5m border at edge of area)
- If escape route runs through open area, escape route still 1 lux



## High-risk Task Areas

- Done on case-by-case basis as part of site risk assessment
- 10% of light required for the task
- Never less than 15 lux

## 1 lux = one lumen per square metre.

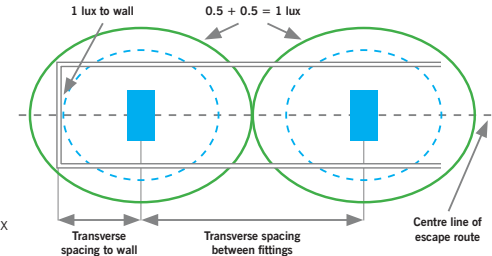
In photometry, this is used as a measure of the intensity, as perceived by the human eye, of light that hits or passes through a surface. Lux can be measured by specific handheld devices, or it can be calculated at the design stage using specific 3D software suites.

# Spacing of luminaires

## Escape routes

Emergency luminaires should be sited in addition to the points of emphasis:

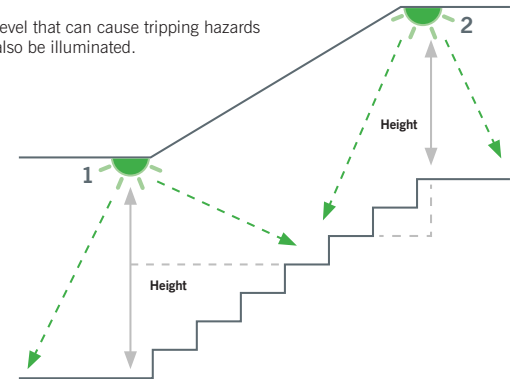
- On escape routes up to 2m wide – 2 lux minimum on the centre line.
- On escape routes that may be used by the young, elderly, physically impaired or partially sighted – a minimum of 1 lux on the centre line.



## Staircases

There must be even distribution of illuminance throughout the escape route. When placing luminaires near stairs, they must be located so that each tread receives direct light.

Other changes of level that can cause tripping hazards in low light must also be illuminated.



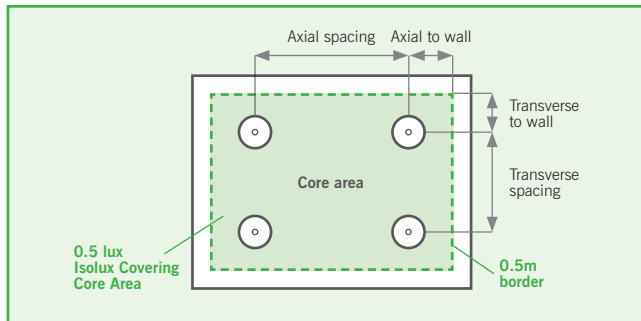
# Photometric data and spacing tables

## Open areas

Emergency luminaires should be sited in open areas used as escape routes and in open areas larger than 60 m<sup>2</sup>, to 0.5 lux minimum. Only the core area is considered because people do not often move through the outer 0.5m perimeter border.

Note that the transverse and axial orientation may be more efficient in using luminaires. Some open area luminaires have a circular light distribution, so the transverse and axial would be identical.

In open areas, moveable desks, chairs and other furniture can be ignored for emergency lighting. However, where there is a fixed partition, the 0.5m border follows the shape of the partition and the emergency lighting must be designed around it.



## External areas adjacent to final exits

If the area outside the building has hazards in darkness such as a riverbank or steep stairs, the fire risk assessment should determine if further emergency luminaires are needed to reach a place of safety. This might involve placing emergency lighting outside a building adjacent to the final exit door.

If street lighting is available and adequate, it may be used with the agreement of the fire authority but could be affected by a local mains failure. The availability of street lights would need to be assessed to make sure they are illuminated at all times the building is occupied.

How you achieve the required illuminance levels is dependent on the position and orientation of the luminaires.

The simplest form of photometric data is spacing tables. These provide the information to help you decide whether additional luminaires are needed besides those required for the points of emphasis.

Most luminaires have been independently tested to prove their photometric performance, and the data has been third-party inspected. Manufacturers construct their own spacing tables for designers and installers to use.

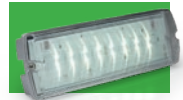
### Example spacing data for EasySafe open area downlighter to 0.5 lux



Mounting height (m)	Open area (0.5 Lux)		Corridor (1.0 Lux, 2m wide corridor)	
	Spacing to wall (m)	Spacing between (m)	Spacing axial to wall (m)	Spacing between (m)
2.0	2.3	7.4	4.5	13.0
2.5	2.4	8.1	2.35	12.7

### Example spacing data for Mor-LED bulkhead

Mounting height (m)	Trans. to wall	Trans. to trans.	Axial to trans.	Axial to axial	Axial to wall	
2.5	1.6	5.9	4.3	3.0	1.0	1 lux min. at centre
4.0	1.1	4.7	3.6	2.6	0.4	
2.5	2.6	8.7	7.2	4.7	1.2	0.5 lux min. (open)
4.0	1.9	8.5	7.0	4.5	0.6	

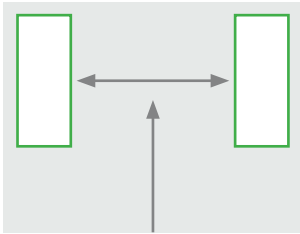


## Photometric data files

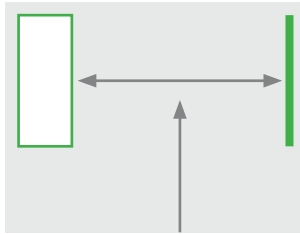
Lumidat (LDT) files for use in 3D light design software are available for all LuxIntelligent luminaires on our website.

# Mounting positions

## Transverse mounting positions

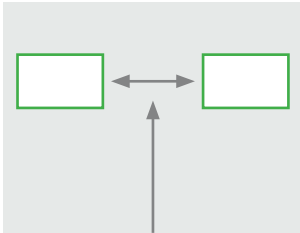


Transverse to transverse

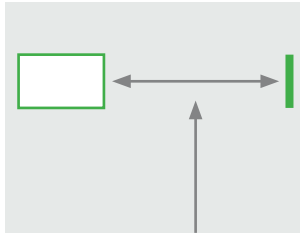


Transverse to wall

## Axial mounting positions



Axial to axial



Axial to wall

# DYNAMIC SAFETY SIGN SYSTEMS



2 x better detection and  
3 x better decision making



The signs are intuitive, using  
symbols rather than words so they  
are easily understood by all



Complies with EN1838. Luminaire  
compliant to EN60598-2-22, ISO 30061,  
ISO 3864-1 and ISO 3864-4

- ✓ Successfully interrupts occupants' routines with new information
- ✓ The more dynamic the system, the less likely it is to be ignored
- ✓ Occupants twice as fast at detecting exit signs
- ✓ Occupants three times as likely to follow correct exit path
- ✓ Less chance of main entrance bottle-necking
- ✓ Direct communication between fire and emergency lighting systems
- ✓ Can be integrated with existing addressable fire system

For more information or to  
discuss your requirements, email:

[sales@luxintelligent.com](mailto:sales@luxintelligent.com)

# System design

Every system design must correctly locate luminaires to reveal specific hazards and highlight safety equipment and signs – known as points of emphasis – whether it is for an emergency escape route or open (anti-panic) area.

## Key:

- Exit signs
- Escape route luminaire
- Fire alarm panel
- External emergency lighting
- ☀ Safety luminaire high output focussed
- Open area identified
- ☀ Open area emergency lighting
- Call point
- Escape route identified
- ☘ Safety luminaire high output
- ▲ Fire extinguisher
- Areas of hazard identified



The design must also take into account the type of luminaire needed and its light output as detailed by EN 1838:2013 and EN 60598-2-22.



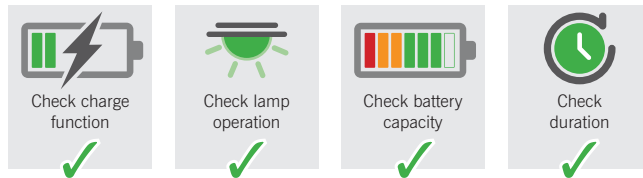
# Emergency light testing

Regular servicing is essential and an emergency lighting system must be regularly tested to ensure its compliance with I.S. 3217:2013+A1:2017 and I.S. EN 50172.

## Emergency lighting test switches

The use of a miniature circuit breaker (MCB) or fuse which isolates the whole lighting circuit is not acceptable as this could introduce a risk of injury when the emergency lights are being tested.

### Testing requirements

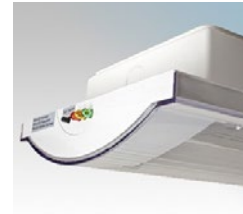


There are three ways to test your system.



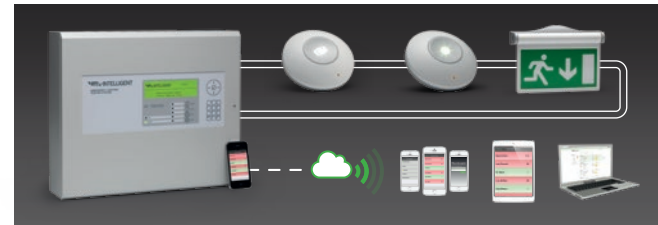
#### Manual

- A switch is used to isolate emergency devices.
- Tester walks site to check functionality.
- Returns to ensure lights functioning at end of test.
- Manually records data and any rectification work.



#### Self-testing

- The luminaire performs its own functionality test and an LED indicator on the device draws attention to any issues.
- This still requires manual checks/physical walk-arounds.
- It also requires manual records and reactive rectification work.



#### Automatic addressable testing system

- No need for an engineer to manually check the lights.
- Programmable automatic test times.
- Emergency devices automatically reset after pre-programmed test schedule is complete.
- Instantly reports multiple failure types for proactive fixes.
- Test results are automatically recorded electronically.
- Each device has an addressable location.
- A central test unit is used to isolate emergency devices.

# Automatic testing schedule and routines

Daily testing is only required if you have a central battery system. In all other cases, each luminaire must have a short functional test every month (typically 10 minutes).

Once a year, a full-rated duration test must be carried out. This can be done in phases throughout the year. All results must be recorded and accessible. Any failures must be noted and rectified at the earliest opportunity.

**Testing checklist:**

- ✓ Short duration required for I.S. EN 50172:2004 & I.S. 3217:2013+ A1:2017 Section 9.3.
- ✓ Shorter duration test reduces damage and wear to the system.
- ✓ All luminaires must be checked to ensure they are functioning correctly.
- ✓ Tests should be conducted outside regular working hours.
- ✓ Full duration tests can be done in phases throughout the year.
- ✓ All results must be recorded (I.S. 3217:2013+A1:2017).
- ✓ Any failures must be rectified as soon as possible.

**Short duration test**



10 mins



Monthly

**Full duration test**



180 mins



Annually

# Worldwide monitoring in your pocket



The LuxIntelligent cloud stores your test data securely and gives you live status, advisories, reports and monitoring on your smartphone, tablet or computer.

You can monitor all your sites, anywhere in the world down to device level, from one account and share the system elements and reports you want with engineers or maintenance staff.

## Live compliance and monitoring – 3 ways

- On-board keypad and LCD screen for easy navigation, programming and maintenance.
- Comprehensive PC management tool can be connected to the panel directly via RS232. Also modem or GSM connections and LAN via serial to ethernet connectors.
- Cloud service and LuxIntelligent mobile, tablet and desktop apps giving live status and current and historical reports, complete system data, faults and advisories.



# Proof of compliance

## Exportable proof of testing and compliance data

Easily prove you are compliant with I.S. 3217:2013 with exportable testing and maintenance data.

LuxIntelligent ensures you will always have exportable proof of your testing and device status.

ENTRANCE LOBBY						20/06/2020
Lighting Panel Report ENTRANCE LOBBY						
Auto Test Results						
Address	Type	Zone	Text	Test Group	Test Commenced	Result
11.0	PULL NON MAINTAINED	1	ABOVE CONTROL PANEL	1	12/06/2020 09:00:00	Pass
11.2	PULL NON MAINTAINED	1	STAIRS UP CORRIDOR	2	12/06/2020 09:00:00	Pass
11.3	PULL NON MAINTAINED	1	ADJACENT LIFTS	1	12/06/2020 09:00:00	Pass
11.4	PULL NON MAINTAINED	1	ADJACENT LIFTS ES	2	12/06/2020 09:00:00	Pass
11.5	PULL NON MAINTAINED	1	PORTERS LOBBY FB	1	12/06/2020 09:00:00	Pass
11.6	PULL NON MAINTAINED	1	TOP OF STAIRS TO LFP	2	12/06/2020 09:00:00	Pass
11.7	PULL NON MAINTAINED	1	ADJACENT PORTERS LODGE	1	12/06/2020 09:00:00	Pass
11.8	PULL NON MAINTAINED	1	FEMALE LOCKER ROOM	2	12/06/2020 09:00:00	Pass
11.9	PULL NON MAINTAINED	1	MALE LOCKER ROOM	1	12/06/2020 09:00:00	Pass
11.10	PULL NON MAINTAINED	5	CORRIDOR OUTSIDE GLIS	2	12/06/2020 09:00:00	Pass
11.11	PULL NON MAINTAINED	1	MALE W/C	1	12/06/2020 09:00:00	Pass
11.12	PULL NON MAINTAINED	1	CORRIDOR TO LECTURE THEATR	2	12/06/2020 09:00:00	Pass
11.13	PULL NON MAINTAINED	1	FEMALE W/C	1	12/06/2020 09:00:00	Pass

Above is an example of an auto-test result: it shows you the device address, type, zone, location, test group, when the test commenced, the test duration and if it passed or not. If it does not pass, then you receive a number of different failure reports.

A few are shown here as examples.

### Fault examples

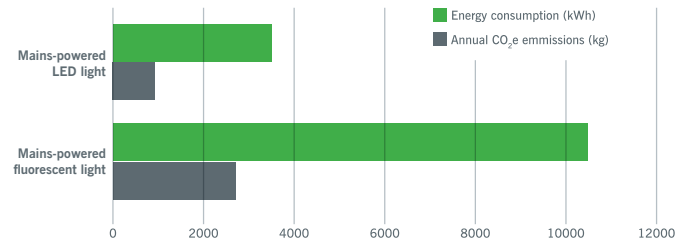
Failed – Bat Low 9.4V	Failed near end of test – replace battery soon	Failed – Lost Comms	Check device wiring – possible loose connection
Failed – Bat Low 0.0V	Battery failed within 1m – replace immediately	Failed – Light Low 51	Light output low – tube or LED failure

# Save lifecycle costs by switching to LED

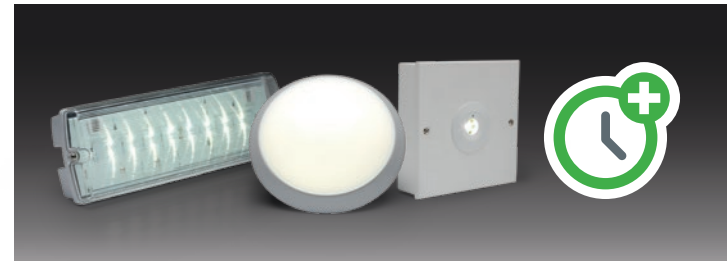
The benefits of switching from fluorescent to LED emergency lighting include:

- More cost effective
- Higher life expectancy
- Smaller battery backup
- Lower power consumption

## A greener solution: A 100 luminaire system



Comparison of traditional mains-powered fluorescent technology against mains-powered LED equivalent on an annual basis





## ONE-DAY LUXINTELLIGENT PRODUCT TRAINING

Our comprehensive training course covers a wide range of content including:

- An introduction to emergency lighting and LuxIntelligent
- Our new EasySafe ultra-low voltage lighting range
- Guidance to help you decide how many devices you need, depending on the size of the system
- A live demonstration of the LuxIntelligent panel
- A guide to the key information required for commissioning and essential pre-commissioning checks
- An explanation of the benefits and ease of use of LAN networking and cloud monitoring

The training can be delivered online or in person.

To make a booking for a training course or to discuss your requirements, email:

[sales@luxintelligent.com](mailto:sales@luxintelligent.com)

## Emergency lighting checklist

### Emergency lighting checklist:


- ✓ Escape routes – **minimum 1 lux** on the centre line.
- ✓ **Open areas.** Any room above 60m<sup>2</sup>. 0.5 lux in core area.
- ✓ Emergency lighting **is compulsory** in toilets larger than 8m<sup>2</sup>, or in disabled toilets.
- ✓ Exit signs **do not** count towards emergency lighting levels.
- ✓ Exit signs without internal illumination **must be** illuminated (to 15 lux).
- ✓ Escape routes **must contain a minimum** of 2 emergency luminaires (not including signs).
- ✓ Exit signs **must meet** maximum viewing distance requirements.
- ✓ Final exit signs **are must to be of maintained type.**
- ✓ Not all emergency fittings are the same. Lower cost = more fittings required. **Check spacing tables.**
- ✓ Fire extinguishers, fire call points, fire alarm panels, door panic bars, refuge points, first aid signs – **all need illuminating.**
- ✓ **Testing is mandatory** and must be logged monthly and annually.




Made in the UK. Trusted around the world.

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