EMERGENCY LIGHTING - UCL
GENERAL DESIGN GUIDANCE

Reference:
A. British Standard 5266-1 Emergency Lighting - Code of Practice for the emergency lighting of premises;
B. BS 5266-7 (BS EN 1838) Emergency Lighting - Lighting Applications for Emergency Lighting;
C. UCL Fire Safety Technical Note TN059 - Biological Service areas (Available through the Fire Safety Manager);
D. UCL Design Brief for Mechanical & Electrical & Vertical Transport Services;
F. BS EN 62034: 2012 - Automatic test systems for battery powered emergency escape lighting;

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1.0. Introduction

1.1. The purpose of emergency escape lighting is to provide promptly, automatically luminance in specified areas when the power supply to the normal lighting fails and assist persons within buildings evacuate safely. Emergency escape lighting fulfils the following functions:

- to illuminate escape route signs;
- to provide illumination onto and along such routes as to allow safe movement towards and through the exits provided to a place of safety;
- to ensure that fire alarm call points and fire equipment provided along escape routes can be readily located and used;
- to permit specific operations concerned with safety to be undertaken;

1.2. Emergency Lighting - is provided in the event of supply to the normal lighting failing. Emergency and escape lighting will activate not only on complete failure of the supply to the building, but also on a localised circuit failure.
1.3. Emergency escape lighting is not designed to enable normal operations to be continued on the premises in the event of failure of normal lighting.

2.0. General

2.1. **UCL Standards** - UCL requires that the design, installation and positioning of emergency and escape lighting conforms to Reference A, B & C. Specific design information and other enquiries regarding emergency light systems may be discussed with the **Building Services Team Leader** for UCL Estates Engineering, Maintenance & Infrastructure.

2.2. **Self-Contained Escape Lighting** - the generic form of emergency lighting is known as self-contained escape lighting. Escape lighting is designed to allow persons to escape, and can be divided into three main groups:

- **Emergency Escape Route Lighting** - that part of emergency escape lighting provided to ensure that the ‘means of escape’ is effectively identified and may be safely used at all times whilst the premises are occupied;

- **Open Area (Anti-Panic) Lighting** - areas of undefined escape routes in halls or premises larger than 60m² floor area or smaller areas so that there is adequate lighting to allow persons to orientate themselves and find the appropriate escape route, without causing panic in the process (e.g. a public areas, foyers, gymnasiums, large open spaces etc.);

- **Emergency Lighting for High Risk Task Area Lighting** - high-risk task area lighting is to ensure the safety of people involved in a potentially dangerous process or situation and to enable proper shut down procedures for the safety of others. This is particularly relevant in plant, switchgear rooms, lift motor rooms chemical, gaseous, explosive type activities or environments;

3.0. **UCL Installation**

3.1. Generally, positioning of units should be as per Reference B (Section 4).

3.2. Generally, **3-hour Non-Maintained (3NM)** light fittings should be considered for most locations.

3.3. An escape lighting luminaires are to be sited where it is necessary to emphasise potential danger or safety equipment positions to be emphasised include:

(Note - ‘near’ is normally considered to be within 2m measured horizontally)

- At each exit door intended to be used in an emergency;
• Near to stairs, so that each flight of stairs receives direct light;
• Near any other change in level (steps etc.) on the escape route;
• At each change of direction;
• At each intersection of corridors;
• Near to firefighting equipment and fire alarm manual call points (UCL generally collates these into fire points);
• Near emergency exits and safety signs;
• Near to each final exit and outside the building to a place of safety;

Additionally, provide emergency lighting in:

• **All Seminar Rooms** - as these are effectively ‘places of assembly’ (but generally seating more than 4 persons);
• **Large offices** - where over 60 square metres in size or where to illuminate the exit from the office if the layout is convoluted;
• **Windowless Rooms** - un-fenestrated rooms used as a workplace (but not small storerooms, cupboards etc.);
• **Lift Cars** - lift cars and in motor rooms and specifically a minimum of 15 lux over motor / winding areas;
• **Toilets, Lobbies & Closets** - facilities exceeding 8m² gross area and facilities of less than 8m² without borrowed light should be provided with escape lighting complying as if they were part of an escape route;
• **Motor Generator, Control & Plant Rooms** - emergency lighting as well as task lighting adjacent to main control equipment associated equipment within rooms;
• **Kitchens** - these can be defined as:
  o **tea points / work place kitchens** - provide general emergency lighting depending on size, activities or with seating for 6 or more persons;
  o **Residences (cluster flat type kitchens)** - general emergency lighting depending on size, activities if for example if gas cookers are provided. Additionally, if the kitchen acts as a common room / place of assembly with seating for 6 or more persons;
o Large / commercial kitchens (refectories including large halls of residences) - high hazard area with emergency light provide at a minimum of 15 lux level over general risk areas;

- Halls of Residence - all escape routes and common rooms to be provided with emergency lighting. If a kitchen has gas cooking appliances, this should have emergency lighting, and additionally if the kitchen acts as a common room / place of assembly, emergency lighting should be provided (suggest more than six persons).

3.4. Illuminated Exit Signs - ‘exit signs should be considered for applications where occupants may be unfamiliar with the building’ – UCL’s approach is factored on the additional cost of installation, maintenance & energy costs of these types of fittings. Moreover, the use of European standard ‘running man symbol’ differs from UCL policy of providing fire escape signage to BS 5499 standard.

Therefore, 3 hour Maintained (3M) illuminated sign units should only be considered in the following locations:

- Sleeping Accommodation (e.g. Student Halls of Residences);
- Places of Assembly (e.g. lecture theatres, large centrally timetabled locations, libraries, refectories or if there is an aesthetic reason to provide illuminated signs);

3.5. At all other locations a 3NM Emergency Light Unit is sufficient when located within 2m of the point where a Standard Rigid Plastic Directional Fire Sign is to be fitted. This provides the simplest and most cost effective solution to signage without providing the expense of illuminated signs.

4.0. Other Requirements

4.1. Test Switches (None Addressable Units) - all emergency lighting units (except for addressable types) to be provided with a ‘fishtail’ test key facility and positioned in a clear logical location and mounted at a similar height to the normal lighting switch. Test key should be suitably marked labelled or identified and wired such that the operation of the test key acts as a local lighting circuit failure.

4.2. Records - full commissioning of all lighting must be carried out.

5.0. Addressable Emergency Lighting Systems

5.1. UCL preferred requirement is to install ‘addressable emergency lighting systems’ to reduce maintenance costs substantially and provide accurate records of maintenance required under statutory regulations.

- **Advance Electronics System** - existing older installation arrangements agreed by Estates Electrical Engineering staff through the approved contractor.

5.3. **Network connection** - each addressable panel requires an UCL Networks connection to be provided (depending on location), as part of the installation to ensure connection to monitoring software operated by the UCL Maintenance Staff.

6.0. **Illumination of External Steps and Other Routes**

6.1. **Combined (Sustained) Emergency Luminaries** - emergency lighting luminaries containing at least two lamps, one of which is energised from the normal lighting supply and the other from an emergency lighting supply. These luminaries are intended to provide sustained illumination in areas where safe lighting is required in addition to emergency lighting.

**For example** - an external escape stairs in sleeping accommodation where at night evacuation is required without necessarily a power failure of the local lighting circuit, corridors or escape routes etc.

6.2. As an energy saving measures, it is recommended that the sustained lighting only comes on during the hours of darkness and switches off during daylight, which will extend bulb life and save energy.

This can be achieved by using a light sensitive unit (Photoelectric Sensor) that switches on the lights when there is reduced daylight but switches the lighting off, when sufficient daylight becomes available. It is recommended that a key (fishtail type) be provided for maintenance/testing of the system during daylight hours.

6.3. Corridors forming part of the escape route particularly from ‘Public Areas’ that are infrequently used that require the general lighting to come on when being used by evacuating occupants should in addition to the emergency lighting, be fitted with a movement sensor of similar arrangement.

7.0. **Emergency Lighting Provision - Lecture Theatres & Seminar Rooms**

7.1. Emergency lighting in lecture theatres **MUST NOT** have any local overrides, except for the provision of fishtail keys for testing the system.
7.2. Three-hour maintained low-level lighting should also be considered to ensure background illumination of seating access steps.

7.3. In addition, normal 3 hour non-maintained (3NM) emergency lighting is to be provided at ceiling and or wall levels.

7.4. **Darkened Environments** - it is recognised that in university lecture theatres and some seminar rooms, there may be a considerable range of activities being demonstrated. To prevent the blocking off excessive light from maintained emergency fittings, a compromise is required.

Design Engineers should consider the use of **Cinema & Theatre type emergency lighting** (which was originally designed to the following **non-current** standard):


7.5. Where placket facilities are required, in seminar rooms / lecture theatres / theatres then the CineLite should be used.

7.6. Where identified as required then only 3-hour Maintained (3M) should be supplied and installed.

- **CineLite unit 3hour maintained units only, to installed and fitted:**
  - See attached note other companies can supply also:
  - Available from - **Advanced Electronics Ltd**
  - See [www.advancedco.com](http://www.advancedco.com)
**PRODUCT FEATURES**

The CINE LiTe luminaries are available in Black finished steel, fitted with a fret cut legend panel to reduce light emission, suitable for use in Theatres, Cinemas, School Halls and Discos. The CINE LiTe also has an opal threshold downlight panel to illuminate the area below the sign. The pictogram legends supplied comply with the Safety Signs Regulations. The CINE LiTe is supplied as standard with an 8W lamp, with a high light output level which provides 160 lumens at source.

**DESCRIPTION**

CINE LTE luminaires are available in both single and double sided styles. The single sided version can be surface mounted via a rear central Besa entry, whereas the double sided version has a central top Bese entry point. The CINE LTE luminaires are available with Maintained and Non maintained operation. All emergency versions provide 3 hour duration as standard from integral high temperature Nickel Cadmium batteries. The luminaire fully complies to the requirements of EN60598.2.22. The luminaire is supplied complete with PuLsE communication capability for use on Advanced Electronics Addressable Emergency Lighting Panels.

**MODELS, SALES ORDER PARTS:**

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<th>Code</th>
<th>Description</th>
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<tr>
<td>NLS8/NM3/P-H:</td>
<td>CINE-LiTe 8W Non-maintained Single Sided Addressable Luminaire</td>
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<tr>
<td>NLS8/M3/P-H:</td>
<td>CINE-LiTe 8W Maintained Single Sided Addressable Luminaire</td>
</tr>
<tr>
<td>NLD8/NM3/P-H:</td>
<td>CINE-LiTe 8W Non-maintained Double Sided Addressable Luminaire</td>
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<tr>
<td>NLD8/M3/P-H:</td>
<td>CINE-LiTe 8W Maintained Double Sided Addressable Luminaire</td>
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**ITEM**

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<tr>
<th>ITEM</th>
<th>SPECIFICATION DETAIL</th>
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<tbody>
<tr>
<td>Supply Voltage</td>
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<tr>
<td>Lamp</td>
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<td>Supply Current</td>
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<td></td>
<td>Non-maintained: 40mA</td>
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<td>Battery</td>
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<td>(Charge Current 250mA Nominal)</td>
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<tr>
<td>Recharge Period</td>
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<tr>
<td>Cable Entry</td>
<td>Back BESA entry on single sided</td>
</tr>
<tr>
<td></td>
<td>Top BESA entry on double sided</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Dimensions L x W x H</td>
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As our policy is one of constant product improvement the right is therefore reserved to modify product specifications without prior notice.

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