Pathfinder

Emergency LED lighting system

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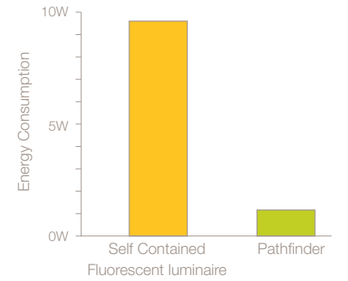
Pathfinder is a self contained central battery LED emergency lighting system designed to create an optimum emergency lighting scheme.

Driving Down Energy Consumption

LEDs have many advantages over traditional emergency lighting systems. Low energy comsumption and 50,000 hour life means that Pathfinder will dramatically reduce your through life maintenance and running costs, whilst it is not generally recognised that integral emergency luminaires can add significantly to the overall energy comsumption of a lighting installation. The constant trickle charge required to maintain emergency batteries can account for up to 14% of the luminaires overall energy comsumption. This parasitic load can be reduced dramatically by using Pathfinder, as the extremely low energy comsumption requires only a fraction of the power to charge.



Energy consumption of an emergency luminaire

Lowest Cost of Ownership

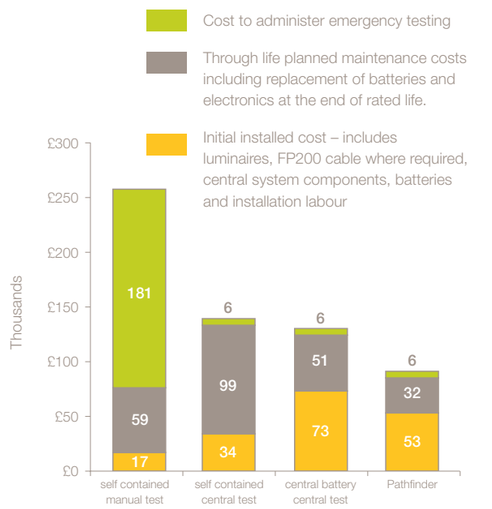
Self contained emergency lighting with an individual battery pack and inverter in each luminaire can offer the lowest installed cost for an emergency lighting scheme, however there are two issues which can make the solution very expensive over the full life cycle of an installation:

- Manual testing via key switches is labour intensive and can be unreliable
- A four year battery life requires frequent maintenance and replacement

Central testing systems can dramatically reduce the cost of emergency testing compared to manual testing, however maintenance and replacement of self contained batteries is still expensive.

Conventional central battery central test systems can significantly reduce the cost of battery maintenance and replacement due to ease of access.

Pathfinder LED central battery central test offers the lowest energy and life cycle cost solution. Low energy consumption means battery life capacity is only 5% of that for a conventional central battery system.



Full Life Cycle costs based upon 300 lighting points over a 25 year cycle

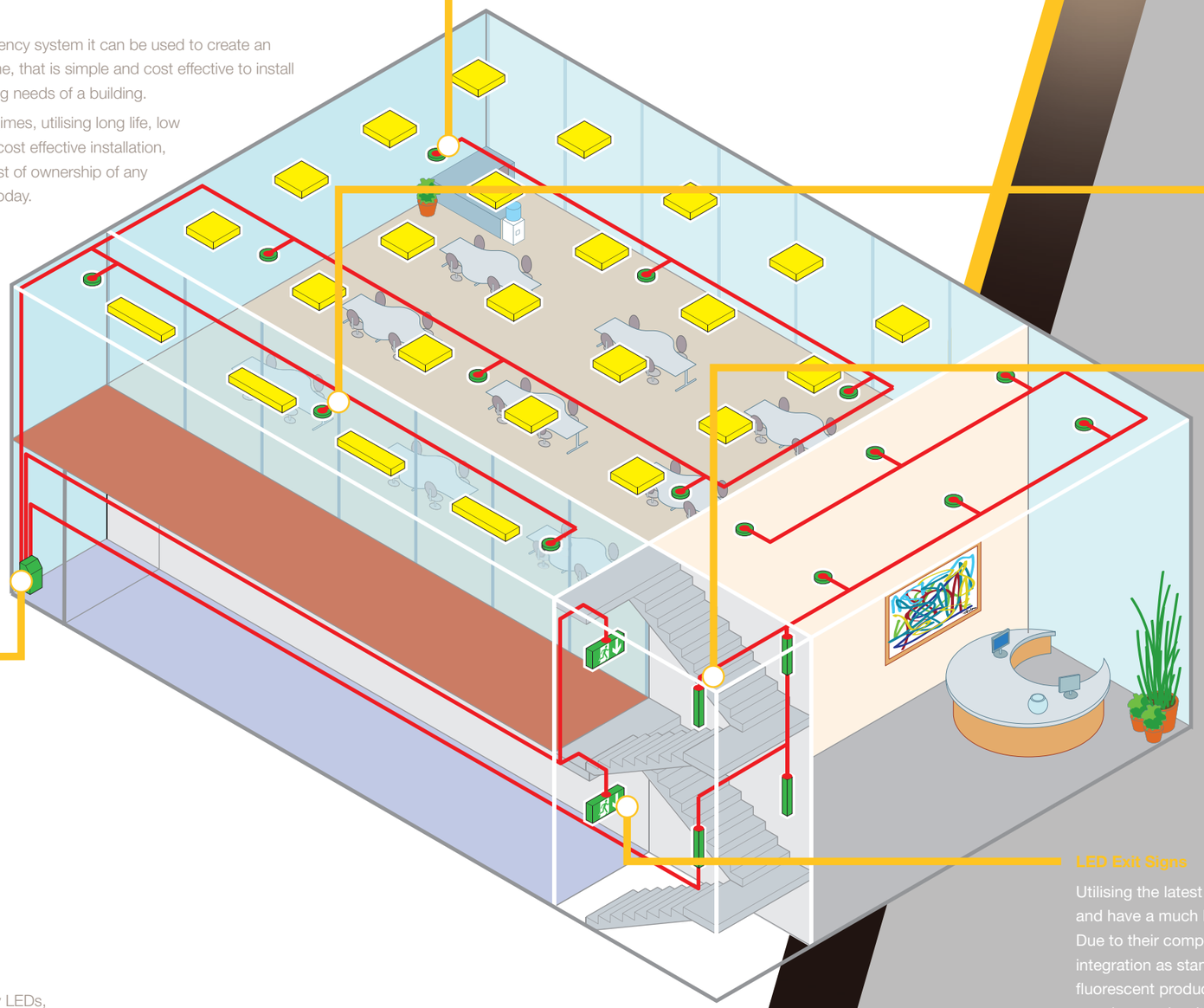
The pathfinder system

Overview

Pathfinder is a self contained, low power supply, central battery LED emergency lighting system. The system is capable of conducting automatic testing in accordance with BS EN 62034 and contains a non volatile memory able to store up to 2,000 test events.

As Pathfinder is a dedicated emergency system it can be used to create an optimum emergency lighting scheme, that is simple and cost effective to install and is scalable to meet the changing needs of a building.

With simple and efficient testing regimes, utilising long life, low maintenance LEDs combined with cost effective installation, Pathfinder will deliver the lowest cost of ownership of any emergency system on the market today.



Control Panels

PFDPANEL12AH
PFDPANEL24AH

PFDPANEL48AH

With the system utilising low energy LEDs, batteries are incorporated in the control panel and require significantly less space than traditional fluorescent central battery systems.

LED Heads

Delivering all the benefits of LEDs, the Pathfinder LED Head integrates effortlessly with its surroundings and due to its efficient, effective performance and with the ability to create an optimum emergency lighting scheme, initial installed costs are reduced. IP68 version also available

The LED escape route head is especially effective in corridor applications.

LED Stairwell

For the architecturally demanding applications, the Pathfinder LED Stairwell provides a discreet emergency lighting solution. With a life span of 50,000 hours and robust construction, years of low through life maintenance costs are available.

LED Exit Signs

Utilising the latest LED technology, Pathfinder Exit Signs are robust and have a much longer life than traditional florescent exit signs. Due to their compact size, Pathfinder Exit Signs offer architectural integration as standard and are less intrusive than comparative fluorescent products. Order legend panels separately, all legend panels comply with the standard BS 5266-1 (BS EN ISO 7010)

Pathfinder specification

Overview

Pathfinder is a self contained, low power supply, central battery LED emergency lighting system in accordance with BS EN 50171 Central Power Systems.

General

The Pathfinder self contained, low power supply, central battery LED emergency lighting system must be capable of conducting automatic testing in accordance with BS EN 62034 and contain a non volatile memory able to store up to 2,000 test events. The logbook must be able to be downloaded directly from the panel to a INO stick. With a cabinet size of 800 x 400 x 170 (mm) containing valued regulated lead acid batteries to provide 3 hours emergency duration backup power in the event of mains failure for a total load of 12 Amps. Load to be supplied via four separate circuits with each circuit to have both output terminals fused with serviceable fuse holders.

The Pathfinder self contained, low power supply, central battery LED emergency lighting system must be capable of continuously supplying 24V volts from each output circuit whilst running in mains healthy mode. A single 2-core cable from each of the four circuits must be able to supply 24 volts to twenty emergency LED luminaires whilst simultaneously acting as the data control line for each emergency LED luminaire. Each emergency LED luminaire shall have a unique address with mode of operation being determined at the Pathfinder control panel to allow for non-maintained, maintained and switched maintained emergency luminaires on the same circuit. Whilst running in mains healthy mode each emergency LED luminaire shall be able to have a pre-set dimming level determined at the Pathfinder control panel. Dimming parameters must be from 0% to 100% with programmable incremental values of 10%. In the event of mains failure all the emergency LED luminaires shall operate at full output. The Pathfinder control panel must include four input switching circuits to control any switched maintained operation on the output circuits. For each luminaire a description / location must be programmable at the Pathfinder control panel. The programming features of the Pathfinder control panel must be password protected.

The Pathfinder control panel display

The Pathfinder control panel display must continuously display the system status via a 4 x 20 LCD display and four panel mounted indicator LEDs showing system healthy, battery operation, (general) failure and charge failure. Each output circuit must have two panel mounted indicator LEDs capable of showing circuit on and circuit fail status.

Networking

Each Pathfinder control panel must be capable of being accessed via an internet browser over a network by way of IP addressing. The Pathfinder control panel should be controllable via an internet browser to allow for remote functional testing, blocking / releasing of the devise and manual reset. The Pathfinder control panel must also allow the system status to be viewed, stored and printed via a web browser.

Software

Software loaded onto a central PC must be cable of interrogating and controlling networked Pathfinder control panel units and be able to configure all automatic testing and display, store and print all test results. The software must also be capable of automatically sending status reports via email.

Loading Chart for Pathfinder LED Units

Description	Part Number	Loading (A)
Large Exit Sign 22M (ceiling, wire or rod suspended)	PFD CEILING / WALL / SUSPENDED //22M Requires Legend	0.125
LED Exit Sign Recessed Ceiling Mounted	PFDRECESSED	0.150
Architectural Exit Sign	PFDARCH / CEILING / WALL / SUSPENDED Requires Legend	0.200
LED Exit Bulkhead IP43	PFDEXIT/IP43 Requires Legend or Cover	0.125
LED Exit Bulkhead IP65	PFDEXIT/IP65 Requires Legend or Cover	0.200
Recessed LED including Corridor & IP68	PFDRELED S/W - PFDCOLED S/W - PFDRELEDS/IP68	0.140
Stairwell LED Light	PFDSTAIR	0.115

Maximum Cable Runs

The maximum lengths of a cable run (for the maximum allowable voltage drop of 3.5V and maximum length for control) are as follows:

Radial		
Output circuit power	Cable size	Length of cable run
3A	1.5mm² MAX 147m	49m
2A		74m
1A		147m
3A	2.5mm² MAX 245m	82m
2A		123m
1A		245m

Ring		
Output circuit power	Cable size	Length of cable run
3A	1.5mm² MAX 294m	98m
2A		148m
1A		294m
3A	2.5mm² MAX 490m	164m
2A		246m
1A		490m

Note:

The tables above are typical indicative examples only, final design will need to take into account:

- Number of units
- Types of units
- Length of control wiring per channel
- Location of Panels

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