





What is SmartScan?

We have **Wirelessly** combined our 3 market-leading systems:









SmartScan is available in two platforms;

Platform 1

Luminaires operate on a stand-alone basis:

Smart luminaires link wirelessly in groups for presence detection and scene setting. Energy performance data can be retrieved using the SmartScan Programmer.

Emergency luminaires are self-test with the addition that operational status information can be retrieved using the SmartScan Programmer.

Platform 2

The same luminaires are also very simply wirelessly linked into a Gateway which collects and transmits their energy performance data and emergency lighting operational status information to the World Wide Web for viewing using tablets, smart-phones, laptops and computers.

Projects initially installed to Platform 1 can easily be upgraded later to Platform 2 by installing a SmartScan Gateway (see page 24).



What are the benefits?



System Flexibility

SmartScan utilises a wireless mesh network. Each device acts as a repeater, ensuring that data signals always find a suitable communication path. Groups are easily created and changed providing future flexibility without altering wiring.

Excellent Wireless Reliability

An operational frequency of 868MHz (922MHz in Australasia) provides excellent transmission distances and better penetration of signals.



Efficient Communication

Intelligent algorithm with low transmission of data – transmits less than 1% of total time (99% of time wireless is off) reduces wireless traffic increasing reliability.



Intelligent Connectivity

Software uses simple wait before transmit logic to ensure error free transmissions.







Reduced Installation Costs

The SmartScan Gateway and compatible Smart, Smart External and emergency luminaires simply require a mains connection. All communication cables are replaced by the mesh network so there is no need for data cables, additional power supplies, control modules.



Simple and Fast Commissioning

Using a single robust hand held infra-red programmer all luminaire types can be very quickly and easily commissioned, and all operational settings can be fine tuned in the future if desired.



Made in the UK

Customer assurance that the system and luminaires are fully compatible - designed and manufactured by Thorlux in the UK. SmartScan builds on the ultra reliable first wireless generation of Smart - SmartTR.

Platform 2



Powerful Information Collection

The SmartScan Gateway uses the mesh network to communicate with individual luminaires, sending out instructions such as emergency lighting automatic testing times. It also reads energy performance data and the emergency lighting status from SmartScan luminaires and transmits it to the World Wide Web for viewing using tablets, smart-phones, laptops and computers.



SmartScan Platform 1 How does it work?

Smart

Projects utilising the Thorlux Smart System can frequently benefit from energy savings in excess of 70% when compared with conventional technology.

The factory fitted addition of a SmartScan transceiver, to a Thorlux Smart luminaire, introduces the latest wireless mesh network technology and replaces the wired Motionline communication signals between luminaires with sophisticated, trouble free wireless transmissions.

Each transceiver can be individually programmed with a SmartScan Programmer, during commissioning, and assigned to work exclusively within a particular building, or group created within that building. Energy performance data can be retrieved using the SmartScan Programmer. SmartScan uses 868MHz (922MHz in Australasia) secure radio communication chosen for its excellent transmission distance and object penetration, especially useful within buildings. Each luminaire acts as a wireless node, repeating each command received onto the next luminaire, providing a robust system that will always find a communication path.



Emergency

At Platform 1 all SmartScan emergency luminaires are stand-alone. Each luminaire will self-test to the schedule specified in BS EN 50172:2004. The operational status of each luminaire is displayed by the status LED and operational status information can be retrieved using the SmartScan Programmer. Manual tests can also be initiated at each luminaire using the SmartScan Programmer. The user, legally, will need to inspect each luminaire at prescribed intervals to monitor test status and manually log the results.







Addressing - Each SmartScan transceiver can be assigned an address to suit its application. The following parameters are programmable:



Building Address

Identifies devices that are within the same system and forms the boundary for the wireless mesh network to prevent adjacent buildings communicating.



Group Address

All luminaires with the same building address and the same group address will work together for presence detection and scene control. Up to 254 different zones can be created in one building.



Device Address

To provide unique identification, individual luminaires within each group can be given an address.



Link Address

Allows presence detection communication signals to be transmitted between different groups of luminaires. Each group can be set to transmit or receive an independent link address enabling occupancy in one area to keep another linked unoccupied area illuminated.



SmartScan Platform 2 **How does it work?**

Compatible Smart, Smart External and emergency luminaires wirelessly communicate with each other and the Gateway through the mesh network.

The Gateway transmits Smart energy performance and emergency lighting status reports to the SmartScan web server.

- 3
- Users employ their chosen device to access the energy performance and status reports.

















SmartScan Platform 2 Website

Delivers full energy performance reports.

Provides emergency lighting status information.

Controls emergency lighting testing dates/times.

Controls external lighting switching times.

User Friendly

The system is accessed using a web browser, there is no need for a specific App or piece of software.

Remote Access

Records can be accessed remotely with a username and password.

Off-site Storage

Energy performance data, emergency lighting testing records, "as fitted " drawings, commissioning certificates and all the essential emergency lighting documentation is stored remotely on the web server but can be accessed by anyone who has a username and password.





Smart Luminaires



Smart Sensors have been re-engineered with a socket on the back. During production, to convert a Smart Sensor into a SmartScan Sensor, we simply plug in a wireless transceiver.

SmartScan Sensor

- Grouped presence or absence detection
- Individual maintained illuminance/daylight dimming and switching
- Individual manual dimming
- Scene setting
- Energy performance monitoring
- Full programmability







Emergency Luminaires

A range of stand-alone emergency luminaires are available with integral wireless connectivity suitable for most application requirements. In addition, a limited selection of wireless emergency versions of our standard ranges are available too. (see page 15)







- Downlighter LED array
 illuminates the exit door
- Ceiling, wall, cantilever or suspension fixing to cater for all locations
- Fast-change battery replacement reduces maintenance time and cost

😔 Lexi-65

- IP65 luminaire with optional legends
- Downlighter LED array illuminates the exit door
- Will also accept surface conduit style wiring



😔 Firefly

- Superb optical performance means fewer luminaires are needed
- ECO-Power Pack fast-change pluggable battery reduces maintenance time and cost



- Superb optical performance means fewer luminaires are needed
- Identical performance to the recessed version
- Will also accept surface conduit style wiring



can be fitted on large installations) Transmits Smart energy performance and

Control Products

Transmits Smart energy performance and emergency lighting status reports to the SmartScan web server

SmartScan

Monitors and controls

up to 500 SmartScan

luminaires. (More Gateways

Gateway

Controls emergency lighting testing dates/times

Controls external lighting
 switching times

SmartScan Touch

• Touch sensitive buttons and user friendly interface

Thorlux

- On-off and scene setting controls
- ECO (automatic energy saving) commissioned mode

SmartScene Handset

- On-off, individual dimming and scene setting controls
- ECO (automatic energy saving) commissioned mode
- Locking key kit available if required

SmartScan Programmer

- Used for commissioning
- Simple and fast setting of operational parameters from ground level

SmartScan Hub

- Allows the integration of non-Smart luminaires
- Practically any type of luminaire (up to 5A total current) can be connected
- Luminaires are switched according to wireless presence and scene commands









Selecting SmartScan Luminaires





Lexi



DIMENSIONS



OPTIONAL MOUNTING KITS All other methods (as shown) supplied as standard

| DESCRIPTION | CAT. No. | APPROX. kg |
|-------------------------|----------|---------------|
| Suspension mounting kit | LX 17421 | 0.2 |

SPARES

| DESCRIPTION | CAT. No. | APPROX. kg |
|--|----------|---------------|
| Nickel Metal Hydride (NiMH) battery | EMB 617 | 0.15 |

MOUNTING OPTIONS













Lexi

EMERGENCY EXIT SIGNS WITH SMARTSCAN WIRELESS COMMUNICATION



SPECIFICATION

- Polycarbonate body finished white (RAL9016) with acrylic legend panel
- Silver bezel option
- Uses long life LEDs
- Three hour, maintained emergency operation
- Stand-alone self-test and full SmartScan wireless communication compatible
- Low power consumption (1.7W total)
- · Ceiling, wall or cantilever mounted
- Optional wire suspension kit
- Integral downlight for exit illumination
- Choice of legends
- Status indicator shows operational condition
- External battery compartment (requires tool access) provides fast battery replacement
- Reliable Nickel Metal Hydride (NiMH) battery technology

At Platform 1 SmartScan emergency luminaires may self-test at any time. Consequently, caution should be exercised in situations where this may be inconvenient (such as hotel rooms or hospital wards). At Platform 2 specific testing times can be set via the SmartScan website (SmartScan Gateway required).

| 0.4 | | - |
|-----|----|-----|
| RΔ | MC | se. |
| | | - |

| ISO 7010 LEGEND | CAT. No | EURO LEGEND | CAT. No | APPROX. kg | ТҮРЕ |
|--------------------|-----------|----------------|-----------|---------------|--------------|
| A | WLX 17463 | D | WLX 17460 | 1.0 | Maintained ▲ |
| B | WLX 17464 | E | WLX 17461 | 1.0 | Maintained ▲ |
| C | WLX 17465 | F | WLX 17462 | 1.0 | Maintained ▲ |

▲ Wire link may be removed to enable non-maintained operation

FINISH OPTIONS - suffix catalogue number with: SV3 - Silver e.g. WLX 17463 SV3 etc.

LEGEND OPTIONS





EURO Single Sided



* Suitable for wall mount applications. Legend can be inserted as arrow left or arrow right.

SmartScan Wireless Standards Compliance:

Europe: EN 300 220-1 V2.4.1 / EN 301 489-3 V1.6.1 Australasia: ACMA 2014 Radio Communication Standard 2014 Thorlux Patented Wireless Technology - GB2575724









Lexi-65





LEGEND KITS

ISO 7010 Self Adhesive Legend Kit - Cat. No. LXP 17613*



EURO Self Adhesive Legend Kit - Cat. No. LXP 17612*



* Order separately from luminaire

DIMENSIONS







Lexi-65

LED EMERGENCY LUMINAIRES WITH SMARTSCAN WIRELESS COMMUNICATION



SPECIFICATION

- Polycarbonate body finished white (RAL9016)
- Clear polycarbonate cover
- Uses long life LEDs
- Three hour, maintained emergency operation
- Stand-alone self-test and full SmartScan wireless communication compatible
- Low power consumption (1.7W total)
- Integral downlight option for exit illumination
- Optional self-adhesive legend kit
- Status indicator shows operational condition
- Reliable Nickel Metal Hydride (NiMH) battery technology

At Platform 1 SmartScan emergency luminaires may self-test at any time. Consequently, caution should be exercised in situations where this may be inconvenient (such as hotel rooms or hospital wards). At Platform 2 specific testing times can be set via the SmartScan website (SmartScan Gateway required).

RANGE

| LED | CAT. No. | DESCRIPTION | APPROX. kg | TYPE |
|-----|-----------|-------------------------|---------------|--------------|
| 1W | WLX 17696 | Standard | 1.0 | Maintained ▲ |
| 1W | WLX 17697 | With integral downlight | 1.0 | Maintained ▲ |

▲ Wire link may be removed to enable non-maintained operation

SPARES

| DESCRIPTION | CAT. No. | APPROX. kg |
|--|----------|---------------|
| Nickel Metal Hydride (NiMH) battery | EMB 617 | 0.15 |

SmartScan Wireless Standards Compliance: Europe: EN 300 220-1 V2.4.1 / EN 301 489-3 V1.6.1 Australasia: ACMA 2014 Radio Communication Standard 2014 Thorlux Patented Wireless Technology - GB2575724





Firefly

EMERGENCY LIGHTING PERFORMANCE GUIDE

TYPICAL SPACING FOR AREA LENS

A A Mounting Height O.5 lux minimum

Mounting Height 1 lux minimum (on centre line)

TYPICAL SPACING FOR CORRIDOR (ESCAPE ROUTE) LENS

TYPICAL SPACING FOR OPEN AREAS (STANDARD VERSION)



SPACING TABLE

| MOUNTING HEIGHT (m) | A (m) | B (m) | |
|-------------------------|----------|----------|--|
| 2.0 | 3.8 | 8.5 | |
| 2.5 | 4.2 | 9.8 | |
| 3.0 | 4.6 | 11.0 | |
| 3.5 | 4.9 | 12.0 | |
| 4.0 | 5.0 | 12.8 | |
| | | | |
| Maintenance factor 0.90 | | | |

PHOTOMETRIC GUIDE



| SPACING TAI | BLE | |
|-------------|-----|---|
| MOUNTING | А | В |

(m)

7.5 17.9

8.7

9.2

4.8 21.9

4.9 21.5

(m)

20.8

23.3

HEIGHT (m)

2.0

2.5

3.0

3.5

4.0

Maintenance factor 0.90

PHOTOMETRIC GUIDE



SPACING TABLE

| MOUNTING HEIGHT (m) | A (m) | B (m) | |
|-------------------------|----------|----------|--|
| 2.0 | 3.5 | 6.9 | |
| 2.5 | 4.0 | 8.0 | |
| 3.0 | 4.6 | 9.0 | |
| 3.5 | 4.9 | 10.0 | |
| 4.0 | 5.0 | 10.9 | |
| | | | |
| Maintenance factor 0.90 | | | |

PHOTOMETRIC GUIDE







Firefly

EMERGENCY LUMINAIRES FOR RECESSED MOUNTING WITH SMARTSCAN WIRELESS COMMUNICATION



SPECIFICATION

- Thermally conductive nylon body, polycarbonate bezel finished white (RAL9016)
- Small size unobtrusive
- Three hour, non-maintained emergency operation
- Stand-alone self-test and full SmartScan wireless communication compatible
- May be positioned for maximum effect
- Reliable LED technology
- Low standby power consumption (1.7W total)
- Status indicator shows operational condition
- Superb photometric performance
- Easily replaceable Nickel Metal Hydride (NiMH) ECO-Power Pack battery

At Platform 1 SmartScan emergency luminaires may self-test at any time. Consequently, caution should be exercised in situations where this may be inconvenient (such as hotel rooms or hospital wards). At Platform 2 specific testing times can be set via the SmartScan website (SmartScan Gateway required).

RANGE

| DISTRIBUTION | CAT. No. | APPROX. kg | TYPE |
|--------------|-----------|---------------|----------------|
| Area | WFF 17490 | 0.6 | Non-maintained |
| Corridor | WFF 17491 | 0.6 | Non-maintained |
| Standard | WFF 17492 | 0.6 | Non-maintained |
| | | | |

Add suffix '**TEE**' for pre-fitted plug & socket connections and flying lead (3m) for use with Thorlux LCM Modular Wiring Systems (SMART & SMART LCM) e.g. **WFF 17490 TEE**. See Fig. 1.



SPARES

| DESCRIPTION | CAT. No. | APPROX. kg |
|------------------------|----------|---------------|
| ECO-Power Pack battery | PP 17402 | 0.33 |

ACCESSORY

| DESCRIPTION | CAT. No. |
|---|-----------|
| T-bar mounting bracket for Control Module and ECO-Power Pack | SLA 13101 |



Firefly



DIMENSIONS



Control Module and ECO-Power Pack Combined



Control Module and ECO-Power Pack are articulated for easy placement through a small cut hole. The two items may be clipped on top of each other for space saving.

Hole size cut-out = 60 dia Minimum void depth (when passing Control Module and ECO-Power Pack through cut-out) = 145mm

CONNECTIONS AND STRAIN RELIEF









Firefly Surface

EMERGENCY LUMINAIRES FOR SURFACE MOUNTING WITH SMARTSCAN WIRELESS COMMUNICATION



SPECIFICATION

- Polycarbonate body finished white (RAL9016)
- Three hour, non-maintained emergency operation
- Stand-alone self-test and full SmartScan wireless communication compatible
- Reliable LED technology
- Low standby power consumption (1.7W total)
- Status indicator shows operational condition
- Superb photometric performance
- Reliable Nickel Metal Hydride (NiMH) battery technology

At Platform 1 SmartScan emergency luminaires may self-test at any time. Consequently, caution should be exercised in situations where this may be inconvenient (such as hotel rooms or hospital wards). At Platform 2 specific testing times can be set via the SmartScan website (SmartScan Gateway required).

SmartScan Wireless Standards Compliance:

Europe: EN 300 220-1 V2.4.1 / EN 301 489-3 V1.6.1 Australasia: ACMA 2014 Radio Communication Standard 2014 Thorlux Patented Wireless Technology - GB2575724

RANGE

| DISTRIBUTION | CAT. No. | APPROX. kg | TYPE |
|--------------|-----------|---------------|----------------|
| Area | WFF 17493 | 0.5 | Non-maintained |
| Corridor | WFF 17494 | 0.5 | Non-maintained |
| Standard | WFF 17495 | 0.5 | Non-maintained |

SPARES

| DESCRIPTION | CAT. No. | APPROX. kg |
|--|----------|---------------|
| Nickel Metal Hydride (NiMH) battery | EMB 617 | 0.15 |

DIMENSIONS





Area version

Photometric Performance see Firefly luminaire (page 20)



Corridor version

SmartScan Gateway





RANGE

| D | ESCRIPTION | CAT. No. | APPROX. kg |
|----|------------------|----------|---------------|
| Sr | nartScan Gateway | SS 17486 | 1.0 |

DIMENSIONS



MASTER CONTROL AND WEB INTERFACE WITH SMARTSCAN WIRELESS COMMUNICATION



SPECIFICATION

- Polycarbonate body finished white (RAL9016), silicone keypad
- Central control for up to 500
 Smart and emergency luminaires.
 Extra Gateways can be fitted to
 accommodate more luminaires
- Central control for multiple groups
- Allows user to initiate tests
- Password protected
- Communicates with the SmartScan website using GSM mobile telecommunications
- Test times / dates set up using the SmartScan website

SmartScan Wireless Standards Compliance:

Europe: EN 300 220-1 V2.4.1 / EN 301 489-3 V1.6.1 Australasia: ACMA 2014 Radio Communication Standard 2014 Thorlux Patented Wireless Technology - GB2575724



SmartScan Touch

SmartScan Scene

Simple and flexible scene control is provided by the SmartScan Touch wall plate or SmartScan Scene remote control handset.



Thorlux

iahtina

| | | | Mains |
|---------------|----------------------|--|---------------|
| | 87 | → +5 | |
| | N | OTE: Back box single gang depth min. 45mm | |
| RANGE | | | |
| DESCRIPTION | | CAT. No. | APPROX. kg |
| SmartScan Tou | ich - regular | SS 17700 | 0.08 |

SS 17701

SS 17702

0.08

0.08

SmartScan Touch - teaching

SmartScan Touch - meeting





RANGE

| DESCRIPTION | CAT. No. | APPROX. kg |
|--|-----------|---------------|
| SmartScan Scene handset - regular | LCM 14816 | 0.08 |
| SmartScan Scene handset - teaching | LCM 14817 | 0.08 |
| SmartScan Scene handset - meeting | LCM 14818 | 0.08 |
| Locking Key Kit | ECO 9724 | - |



SmartScan Programmer

SmartScan Hub

Simple and fast setting of operational parameters from ground level.



| RANGE |
|-------|
|-------|

| DESCRIPTION | CAT. No. | APPROX. kg |
|---------------------------------------|-------------|---------------|
| SmartScan Programmer - Smart Internal | LCM 10777SS | 0.6 |
| SmartScan Programmer - Smart External | SC 14228SS | 0.6 |

Allows integration of non-Smart luminaires into the SmartScan system.



RANGE

| DESCRIPTION | CAT. No. | APPROX. kg |
|--------------------------------------|-------------|---------------|
| SmartScan Hub - Conventionally wired | SS 17718 | 0.86 |
| SmartScan Hub - Modular wired | SS 17718TEE | 0.86 |

Non-Smart luminaires can be plugged into the Smart Hub using a factory fitted 1m connection lead (suffix luminaire catalogue number with **SHL**). For further details see **www.thorlux.com/smart**



ACCESSORIES



3-way luminaire to Hub connection lead stripped at one end **0.75mm**² (for non factory fitted luminaires) 3m - LCM 14822



3-way Hub extension lead **0.75mm**² 3m - LCM 14823



Circuit splitter





SmartScan Specification

Each luminaire shall be equipped with an 'intelligent' electronic sensor providing movement detection, light level sensing and an infra-red receiver for programming and remote control. Luminaires shall be capable of being linked together to form motion groups. Linking shall be possible using a two core bus or wirelessly using an 868/922 MHz transceiver. Movement detected by one sensor will be signalled to all other sensors in its group. No bus power supply or other ancillary control devices will be required to facilitate such operation.

Sensors shall be capable of 'absence' mode operation in conjunction with a scene control plate or infra-red handset.

Each sensor shall provide individual dimming of the luminaire and maintain a set illumination level. Grouped dimming shall not be acceptable for daylight control. Sensors shall be fully programmable and reconfigurable using a hand held infra-red programmer. The programmer shall be capable of reading back and displaying current sensor settings and power/maintenance monitoring information from individual luminaires. Monitoring can be reset by the user. Sensors to be capable of operating DALI and DSI digital ballasts.

Emergency luminaires shall be self-test with built in wireless capability, operating on the same wireless network as the standard intelligent luminaires. Tests can be initiated using an infra-red programmer as well as retrieving emergency operational status information.

The system shall be monitored by a central wireless Gateway. This device will upload system status and energy performance to a website for users to view in a graphical format.

Wireless connectivity

Luminaires shall be capable of being inter-connected wirelessly. Operational frequency shall be 868/922 MHz with low data rates less than 1%. The system shall work on a mesh networking principle and be capable of adding link addresses across a building providing a corridor hold function. The link addressing shall be independent from the group addressing. Programmable settings can be altered from floor level using an infra-red programming device.

'Touch' scene control

Sensors shall be capable of responding to scene controls from a wall-mounted touch sensitive control plate or a hand-held remote controller. Each sensor shall be individually programmed and reconfigurable for each scene.

The system shall be capable of setting either fixed scenes which are a percentage of full output, or automatic scenes which will maintain an illumination level expressed as a percentage of the standard light level setting.

Scene control plates shall be of the capacitive sensing type. Each function shall have a status LED which will display the current system status. Scene plates shall be printed to suit the application, and matching infra-red remote controllers shall also be available. Remote controllers should be supplied with wall brackets and optional locking mechanisms.

Each control group shall be capable of using multiple scene control plates and its current setting will automatically display on all scene plates. When the area is vacated the whole system should automatically revert to 'ECO' energy saving mode.

Addition of non-intelligent 'slave' luminaires

The system shall be capable of switching non-intelligent 'slave' luminaires based upon movement detection of the main group of intelligent luminaires and shall be capable of being reconfigured for all conditions - i.e. normal (automatic/ECO) operation, scene and vacant conditions.

Emergency luminaires

Emergency luminaires shall be self-contained LED type, capable of communicating status via the wireless mesh network to the Gateway.

System test times and other parameters shall be programmed via the website, this information shall be automatically downloaded to the Gateway. The Gateway shall control all emergency testing and reporting automatically.

Website system monitoring

All luminaires shall report status to the Gateway once per day. This will include failure status and energy performance data. These records shall be uploaded to a website periodically where the data will be stored securely and displayed in graphical format.

The website will also store supporting site documentation including 'as fitted' drawings, commissioning certificates and any other documentation required by the end user.

Environmental credentials

The manufacturer shall be independently certified to ISO14001. The manufacturer's processes shall be carbon offset via a quantifiable carbon offsetting scheme and shall include emissions from the lighting manufacturer's vehicles used for delivery and other project associated mileage.

Short specification text

Intelligent luminaires to be fitted with integral Smart sensor providing daylight harvesting, maintained illuminance, presence/absence detection and scene setting. The system shall be capable of group presence communication ensuring luminaires can illuminate in groups and with individual scene setting control using 868/922 MHz wireless mesh connectivity with building wide link address capability. System to include seemless integration of wireless emergency lighting luminaires. All aspects are to be programmable from floor level using an infra-red remote control programmer. The system to provide daily maintenance status reports and energy performance data for viewing on remote website with the capability to store drawings and documentation.

Download specification text from: www.thorlux.com/smartscantext





Designers, manufacturers and suppliers of professional lighting systems

INDUSTRIAL LUMINAIRES COMMERCIAL LUMINAIRES FLOODLIGHTING LUMINAIRES ARCHITECTURAL LUMINAIRES HEALTHCARE LUMINAIRES HAZARDOUS AREA LUMINAIRES CONTROLS AND SYSTEMS

A DIVISION OF F.W. THORPE PLC

Thorlux Carbon Offsetting Project: www.thorlux.com/trees

The information given in this catalogue is typical and must not be interpreted as a guarantee of individual product performance and/or characteristics. We reserve the right to alter specifications and designs without prior notice.

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