

# Warehouse and Logistics

Lighting Application Guide





# Contents

Introduction to Warehouse and Logistics Lighting	06
Internal	10
External	18
Lighting Management Systems	22
Thorlux Quality	30
Projects	34



Product shown - Solow LED





# Experts in Warehouse and Logistics lighting solutions





## Introduction

Thorlux, for over 80 years, has manufactured increasingly sophisticated luminaires in the Birmingham area. Over the last 20 years, the company has focused on high technology products, including the development of its first electronic energy-saving lighting control system in the mid-1990s. Huge investment in design and testing facilities in Worcestershire has now put Thorlux at the forefront of its market sector.

Designers, manufacturers and suppliers of professional lighting systems since 1936.

Check out our social media







## Made in the UK

Thorlux Lighting, the largest company in the FW Thorpe Plc group, is proud that around 97% of its products are manufactured in the UK.



## Lighting Management

The SmartScan lighting management system incorporates building management functions including occupancy profiling and air quality sensing. The addition of Built Environment Analytics also gives users a greater understanding of how their facility performs in operation.



## Building Safety & Compliance

The Thorlux SmartScan wireless emergency testing system ensures full compliance and peace of mind.

Delivering full energy performance reports, emergency lighting status, luminaire status and management of emergency lighting testing dates/times.



## 5 Year Warranty

A genuine warranty with genuine value. A long and stable history reassures Thorlux customers that its warranty is meaningful.



## Low Total Cost of Ownership

Thorlux luminaires are rapid to install, energy efficient, low maintenance and have a long lifespan resulting in a truly cost effective solution over the lifetime of the installation.



## Ease of Maintenance

SmartScan allows the user to view full luminaire status. LED PCBs and modules are replaceable should a failure occur.



## Energy Saving

Thorlux lighting controls combine maintained illuminance, daylight dimming and presence detection to maximise energy savings, in some instances in excess of 70%. SmartScan allows users to monitor their energy performance data and complete operational information for all SmartScan standard and emergency luminaires. This information is displayed on the SmartScan website which can be accessed from anywhere using a computer, laptop, tablet or smart-phone.



## Quality & Reliability

Rigorous product testing is essential in maintaining our reputation for reliability and quality. All Thorlux materials, components, subassemblies and finished products are subject to stringent quality control, as demonstrated by the company's BS EN ISO 9001:2015 (Quality management systems) certification.



## Environmentally Friendly

Thorlux has its own carbon offsetting programme, planting trees on land in Monmouthshire to offset the CO<sub>2</sub> generated from its manufacturing and selling activities.

Solar photovoltaic units are installed on the roof of the Thorlux manufacturing facility and produce 224,470kWh of electricity per annum.

Environmental Certification ISO 14001:2015.

Why Choose Thorlux?





# Introduction to Warehouse and Logistics Lighting

[www.thorlux.com/warehouse-and-logistics](http://www.thorlux.com/warehouse-and-logistics)

Scan here to view the Warehouse and Logistics lighting section on the Thorlux website



## What is a QR code?

Look out for QR codes throughout this brochure, these enable the reader to instantly access the Thorlux Lighting website to gain any additional information.



1

Discover



2

Scan



3

Access



4

Use

Logistics and industrial space has been at a premium for some time and this demand looks set to continue. Developers are under pressure to deliver high grade warehouse units in even shorter timescales.

Building occupiers are expecting units to align with their corporate environmental, social and governance policies which means they are required to be increasingly energy efficient, to reduce carbon emissions, increase employee well-being and improve operational efficiencies.

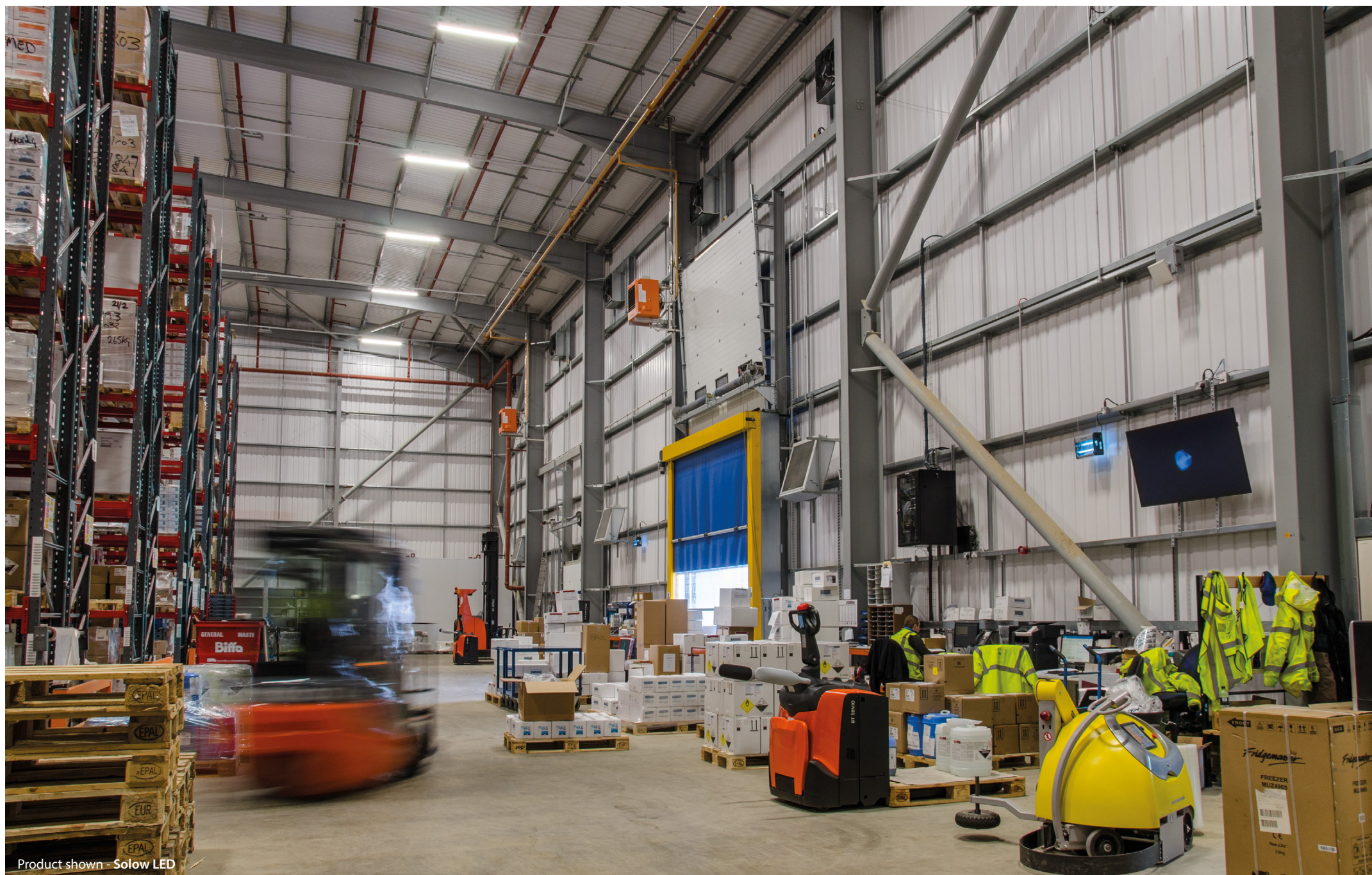
Thorlux are well positioned to assist developers and building occupiers with their ESG obligations, whilst also helping to achieve BREEAM Excellence, compliance with well building standards and much more.

Distribution warehouses come in all shapes and sizes but have a common work process: goods are received, stored and then despatched. The storage period can vary from a few hours to weeks or even months. It is a pre-requisite that goods are not damaged whilst in storage and when required can be located quickly for speedy despatch.

Where high-value goods are stored in bulk, accidental damage needs to be avoided and in areas where pedestrians and fork-lift trucks both operate there is a potential for accidents and serious injury to occur.

Therefore, good lighting is essential to ensure that goods are moved safely and without damage.





Product shown - Solow LED

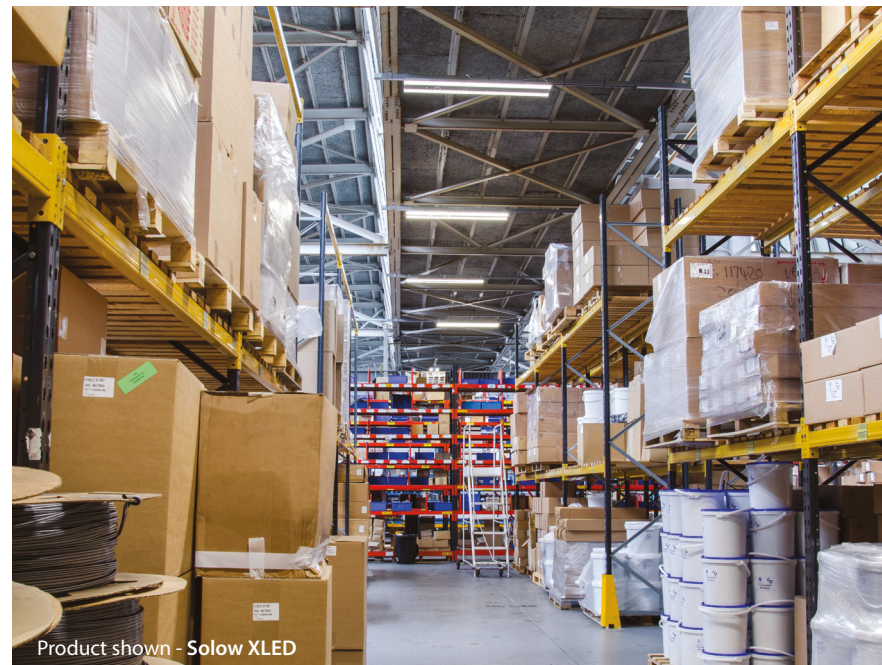


# Delivering the perfect light is key



Product shown - Solow LED







## INTERNAL

# Warehouse, Open and Racking Areas

With mounting heights now reaching up to 21m, dedicated, high performance optics are required to ensure an efficient lighting design. Modern warehouses will often have large areas of the roof that allow daylight to pass through, making lighting control essential. With the use of integral sensors, artificial illumination is only used when needed, saving the client energy and money whilst also reducing carbon emissions.

In areas with racking it is especially important to guarantee good levels of vertical illumination.

Whilst there are often high levels of automation within these facilities it is still important to be able to read a label on a carton or pallet.

For recommended lux levels please see CIBSE : SLL Lighting Guide 1 - The Industrial Environment (2012, updated 2018)



For emergency  
lighting guidance  
please see page 29

## Thorlux recommends

### Luminaires

#### Kanby XL

High efficiency LED luminaires  
for industry

IP20

#### Visio

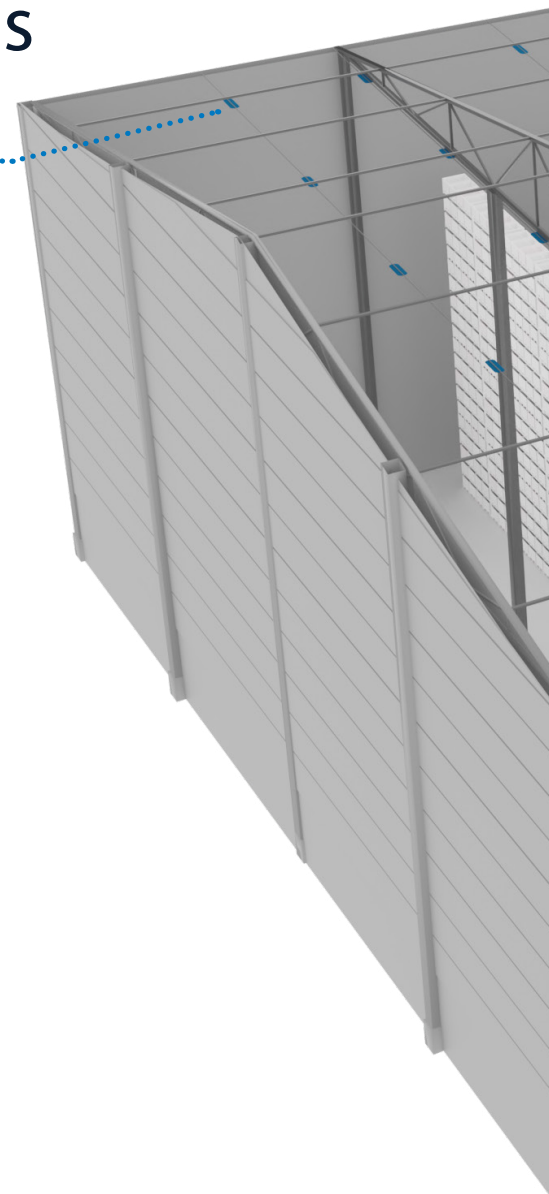
Superior performance high and low bay  
LED luminaires

IP20 IK07

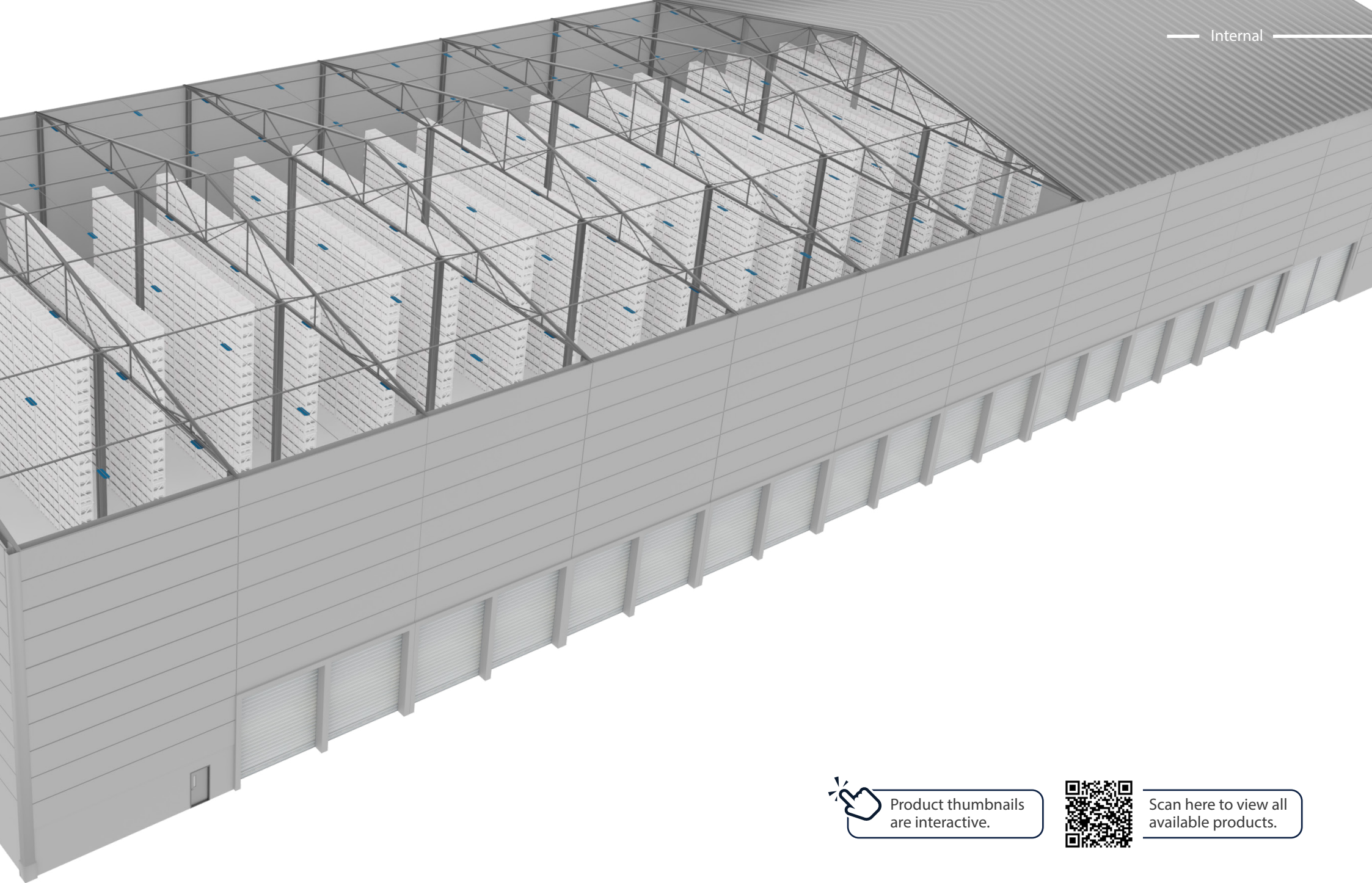
#### Zipline

Self-contained pre-wired trunking  
and LED lighting system

IP20







Product thumbnails  
are interactive.



Scan here to view all  
available products.



## INTERNAL

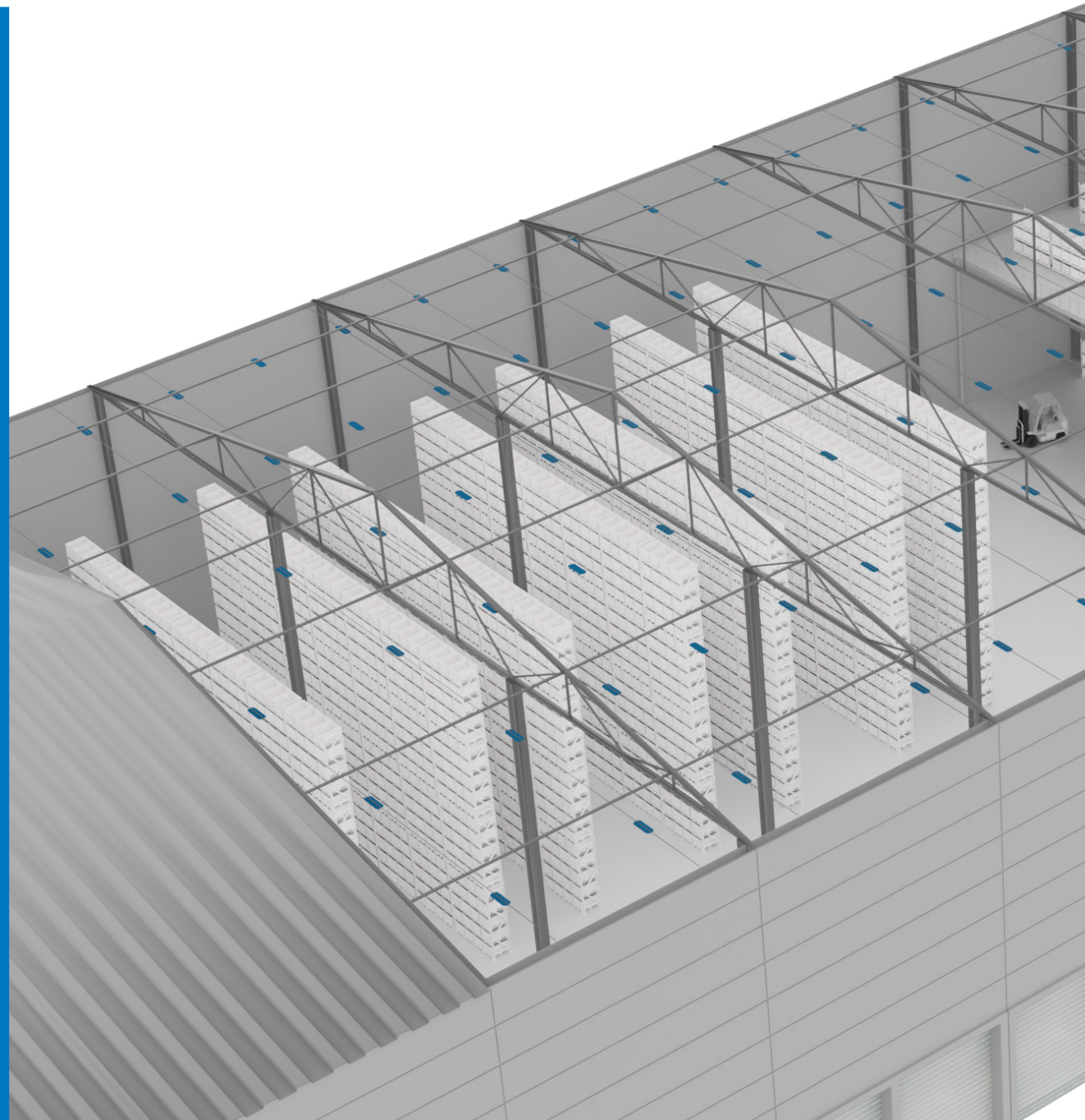
# Mezzanine Floors, Open and Racking Areas

Mezzanine floors are a good way to utilise floor space and it is not uncommon to see multiple levels in modern warehouses. Mounting heights are significantly reduced so wider optics are required. The density of fittings is also likely to increase so mounting luminaires to self-contained pre-wired trunking can speed up installation time, whilst also allowing for flexibility should the layout of the space change.

For recommended lux levels please see CIBSE : SLL Lighting Guide 1 - The Industrial Environment (2012, updated 2018)



For emergency  
lighting guidance  
please see page 29





# Thorlux recommends

## Luminaires

### Kanby XL

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### Zipline

Self-contained pre-wired trunking  
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available products.



## INTERNAL

# General Office Areas

The office space within warehouses is often designed to be modular so that it can be changed as needed. Historically offices have had recessed ceilings, however greater emphasis is now being placed on creating visually stimulating and interesting places to work. Employee well-being is valued more than it has ever been, and employee retention is essential in such a competitive and rapidly growing sector. This means that office designs are becoming less uniform. Hot-desking and break-out spaces are being incorporated, and this necessitates changing the way offices are lit.

For recommended lux levels please see CIBSE : SLL Lighting Guide 1 - The Industrial Environment (2012, updated 2018)



For emergency lighting guidance please see page 29

## Thorlux recommends

### Luminaires

#### Flexview

Recessed picture luminaire with dual light engine

IP20

#### Hi-Bar

Individual or continuous linear LED luminaires

IP40

#### Hi-Style LED

High performance recessed LED luminaires with either opal or low glare LG7:2015 optics

IP20 ABOVE CEILING

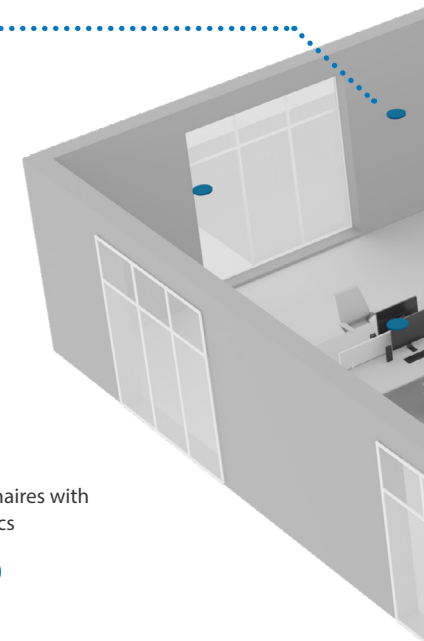
IP40 BELOW CEILING

#### Radiance

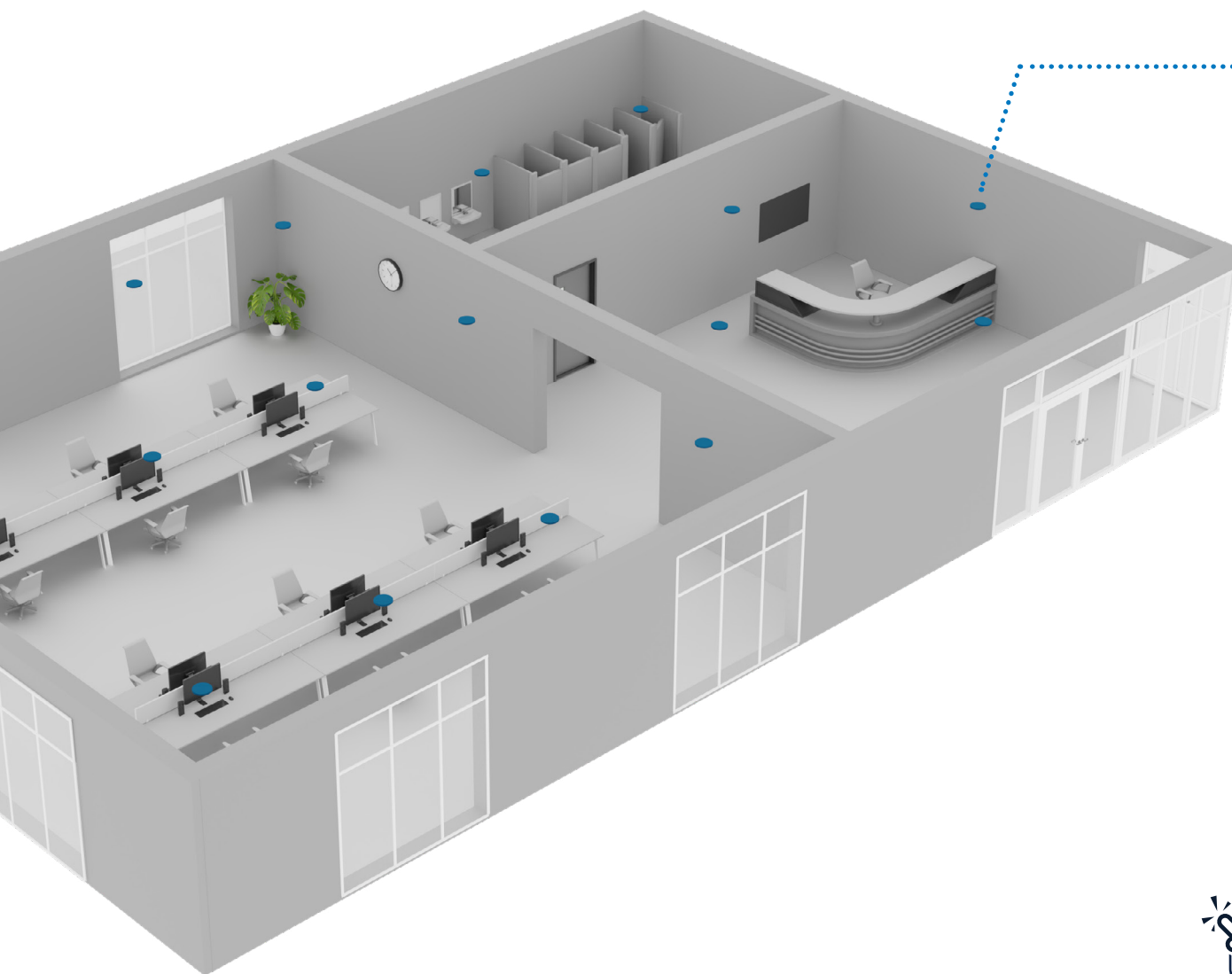
Recessed LED edge-lit luminaire with polycarbonate diffuser

IP20 ABOVE CEILING

IP44 BELOW CEILING







## Luminaires

### Clara 180

Wall mounted LED up and downlighters

IP40

### G3

Circular LED recessed downlighter

IP20 ABOVE CEILING

IP40 BELOW CEILING

IP65 BELOW CEILING  
(IP65 version only)

### G3 PRO

Enhanced circular recessed downlighters

IP20 ABOVE CEILING

IP40 BELOW CEILING

### Kast

Wall mounted up and downlighters

IP40 IK10



Product thumbnails are interactive.



Scan here to view all available products.



## INTERNAL

# Cold Stores

Cold stores have special requirements that dictate the choice of light source and luminaire type. Refrigeration units are often ceiling mounted, and this can result in the temperature at high level being lower than that at floor level. At low temperatures LED light sources are not subject to the issues of poor strike and low output associated with fluorescent and discharge lamps so are the natural choice.

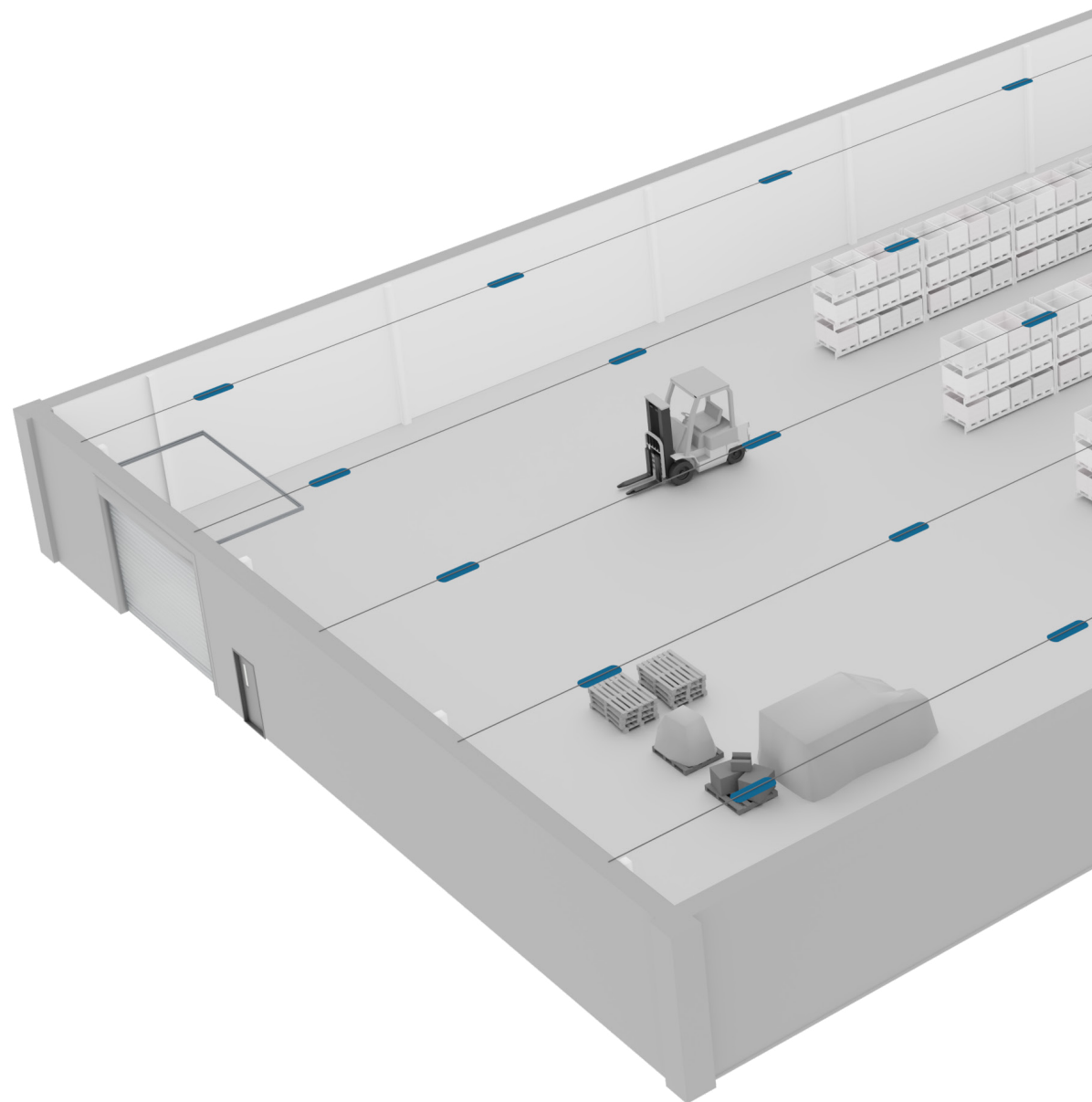
Many cold stores use humidity control, but the way it is used will depend upon what is being stored. Some foodstuffs require high relative humidity to preserve the quality and moisture content of the food whilst others fare better with lower relative humidity levels. High humidity can also lead to condensation and ice forming on surfaces, including luminaires and the ceiling around them.

Cold environments create specific issues for emergency lighting because the batteries used for self-contained emergency lighting do not function well at low temperatures. One potential solution is to use an IP rated emergency luminaire and remotely mount the batteries outside the cold store.

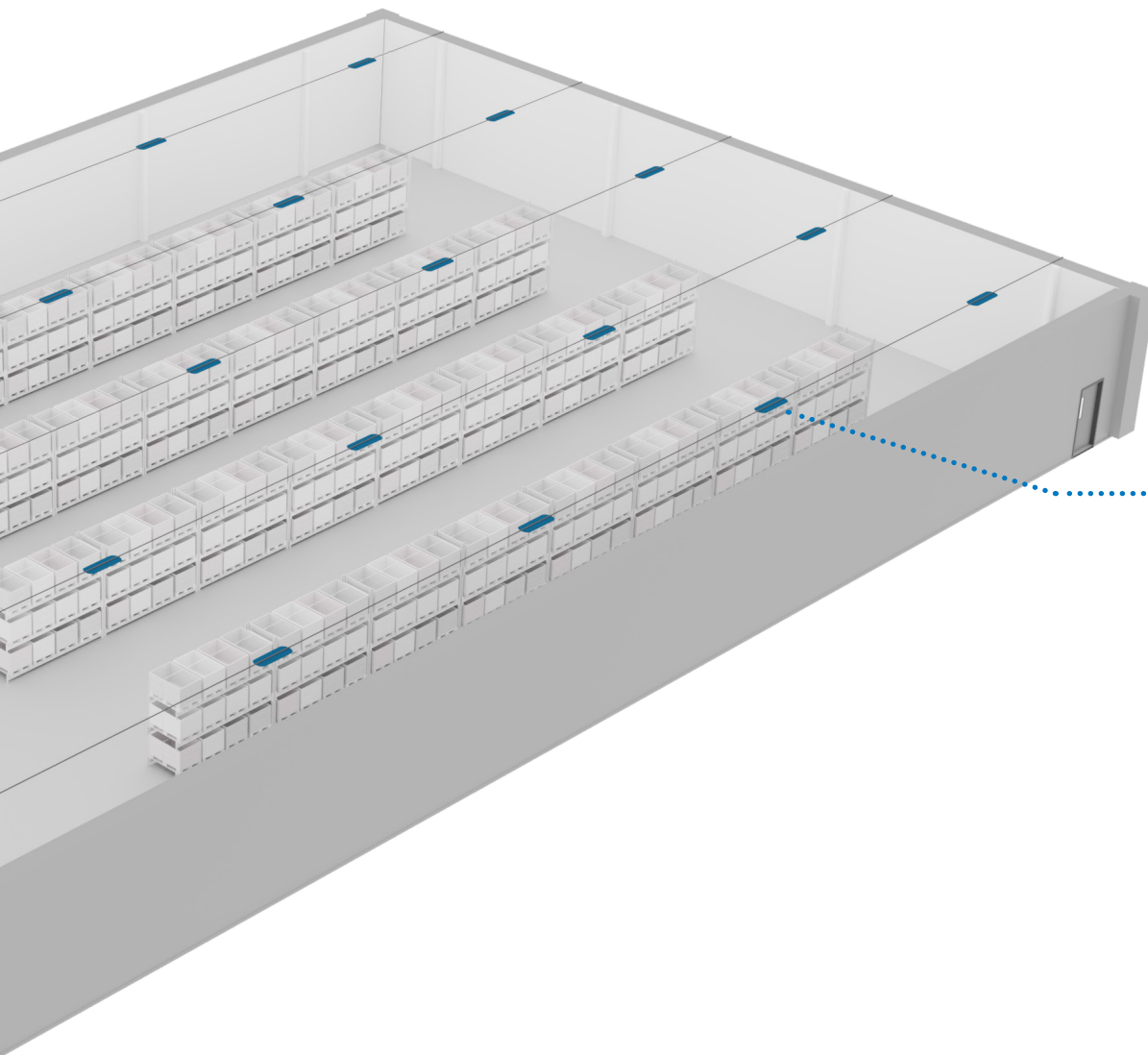
For recommended lux levels please see CIBSE : SLL Lighting Guide 1 - The Industrial Environment (2012, updated 2018)



For emergency  
lighting guidance  
please see page 29







# Thorlux recommends

## Luminaires

### Kanby XL

High efficiency LED luminaires for industry

IP20

### Visio Pro

LED luminaires for arduous environments

IP66 IK10



Product thumbnails are interactive.



Scan here to view all available products.



## EXTERNAL

# Loading Bays and Service Yard

Distribution facilities are often 24/7 operations. Large articulated vehicles may be manoeuvring at night, so good glare-free lighting is essential to allow this to take place safely. Obstructions and walkways for pedestrians should be clearly lit and identified. At the same time, light pollution is a continuing problem, so lighting should be selected which minimises spill lighting and upward light.

Floodlighting is required at high level to illuminate large 'service yard' areas. Floodlights should be mounted at sufficient height to provide good overall illumination levels and a high degree of uniformity. Depending on the height of the building, dedicated illumination of the loading bays can also be required at low level just above the doors.

For recommended lux levels please see CIBSE : SLL Lighting Guide 1 - The Industrial Environment (2012, updated 2018)



For emergency lighting guidance please see page 29

## Thorlux recommends

### Luminaires

#### Realta

High performance luminaires designed to minimise light pollution and energy consumption

IP66 IK10++ / IK10 / IK06

#### Starbeam

LED floodlights and street lights

IP66 IK10

#### Starflood

High performance mini LED floodlights

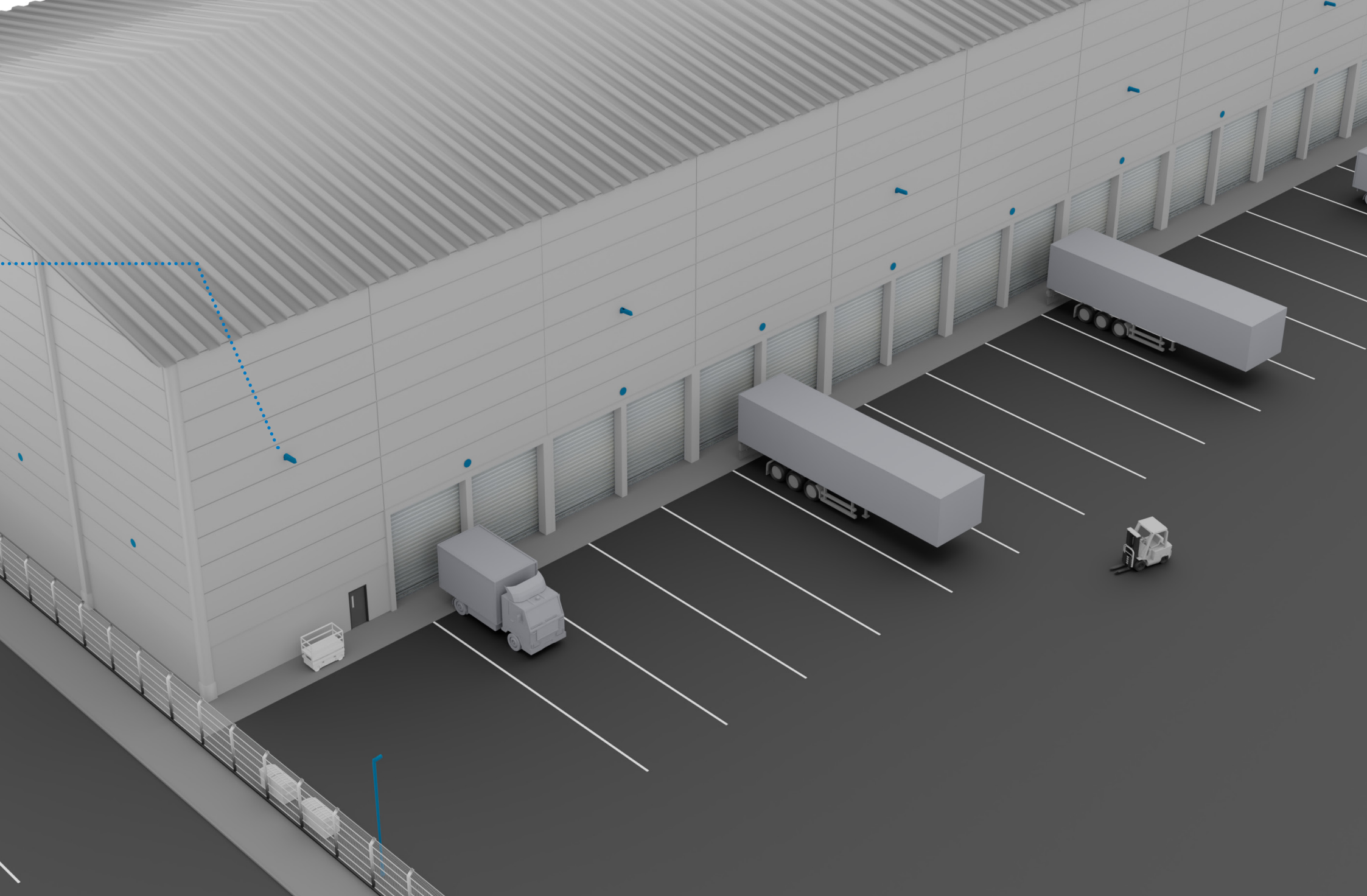
IP66 IK10



Product thumbnails are interactive.



Scan here to view all available products.





## EXTERNAL

# Access Roads, Car Park and Building Perimeter

Operations will often run late into the night making the lighting essential for employee safety and building security. Mounting positions are not as limited as within the service yard so architectural lighting can be selected to enhance the look of the building.

Spill light and upward light should still be minimised.

For recommended lux levels please see CIBSE : SLL Lighting Guide 1 - The Industrial Environment (2012, updated 2018)



For emergency  
lighting guidance  
please see page 29



# Thorlux recommends

## Luminaires

### Juno A

LED pole top amenity luminaires

IP66 IK10

### Juno B

High performance LED pole top luminaires

IP66 IK10

### Juno C

LED area floodlights

IP66 IK10

### Juno D

High performance LED pole top luminaires

IP66 IK10

### Passway

High performance bollard luminaires with excellent light distribution

IP66 IK10

### Realta

High performance luminaires designed to minimise light pollution and energy consumption

IP66 IK10++ / IK10 / IK06

### Starbeam

LED floodlights and street lights

IP66 IK10

### Starflood

High performance mini LED floodlights

IP66 IK10



Product thumbnails are interactive.



Scan here to view all available products.



# Lighting Management Systems

Thorlux offers a comprehensive range of lighting management systems from basic presence detection, through to full wireless control and monitoring systems.



### SmartScan Internal

A sophisticated lighting management system for indoor applications based on reliable wireless communications offering fully programmable control combined with energy and status reporting. Complementary building services technologies can be integrated.



### SmartScan External

A sophisticated lighting management system for external applications based on reliable wireless communications offering time and presence detection control, full energy and status reporting.



### SmartScan Radar

Mounted directly to the LED light engine, integral to the luminaire and is designed for applications where the luminaire aesthetics and impact rating are important factors.



### Smart

Combining presence detection, maintained illuminance and daylight based dimming for individual or groups of luminaires using simple wired communications.



### ECO

Simple energy saving controls that offer good energy savings for individual or small groups of luminaires

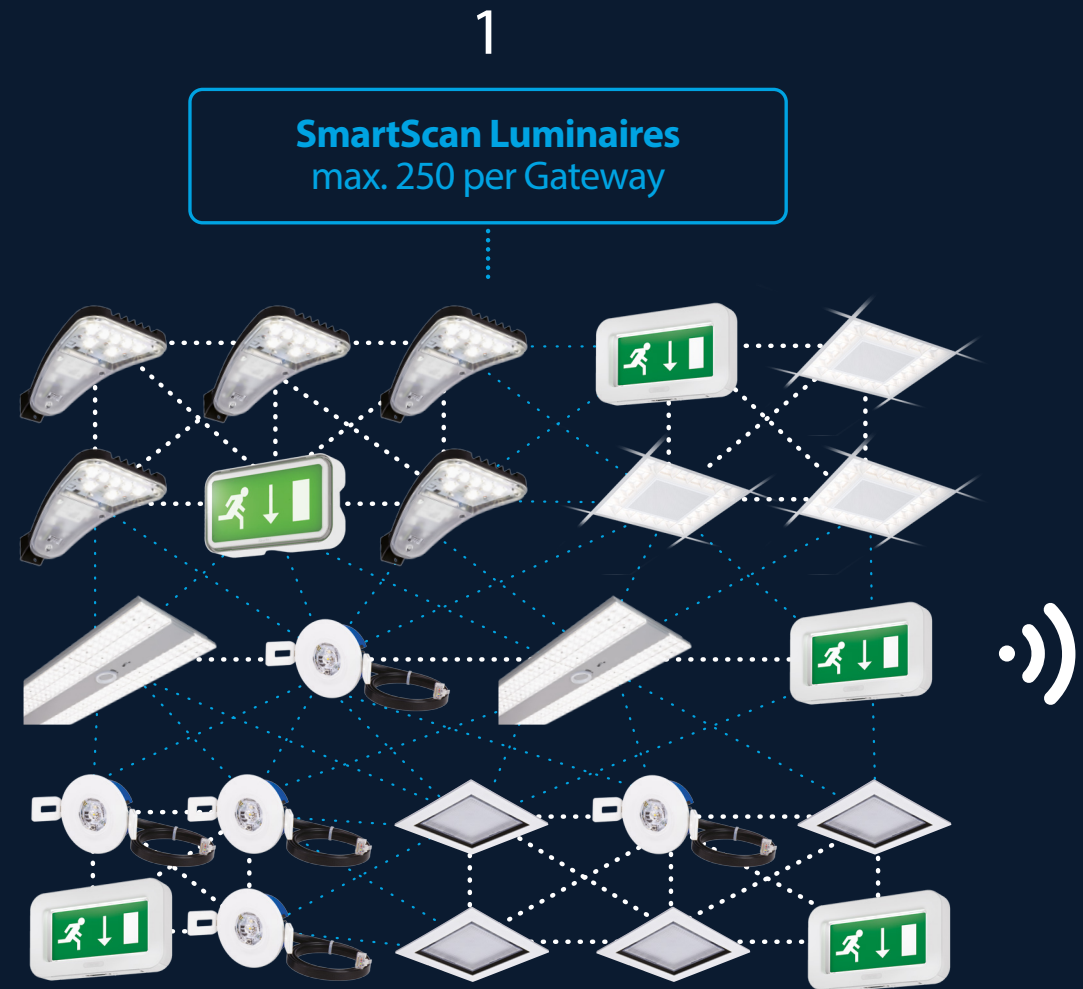




# Lighting Management Systems

Within warehouse applications lighting can be a significant part of the energy consumption. The SmartScan lighting management system makes the most of maintained illuminance, daylight dimming and presence detection to ensure optimum energy savings, often measured in real applications to exceed 70%. SmartScan also monitors the performance of all luminaires so any fault can be reported promptly to the maintenance teams.

- 1 Compatible SmartScan Internal, SmartScan Radar, SmartScan External and SmartScan Emergency luminaires wirelessly communicate with each other.
- 2 The Gateway transmits energy performance and status reports for standard and emergency luminaires to the SmartScan web server.
- 3 Users can view status and operational information on any Internet enabled device.





Scan here to view Lighting Management Systems.

2

3

SmartScan  
Gateway

SmartScan  
Web Servers

Your  
Device





# What is Built Environment Analytics?

A comparatively recent requirement is to combine data from different building systems to inform analysis of building performance.

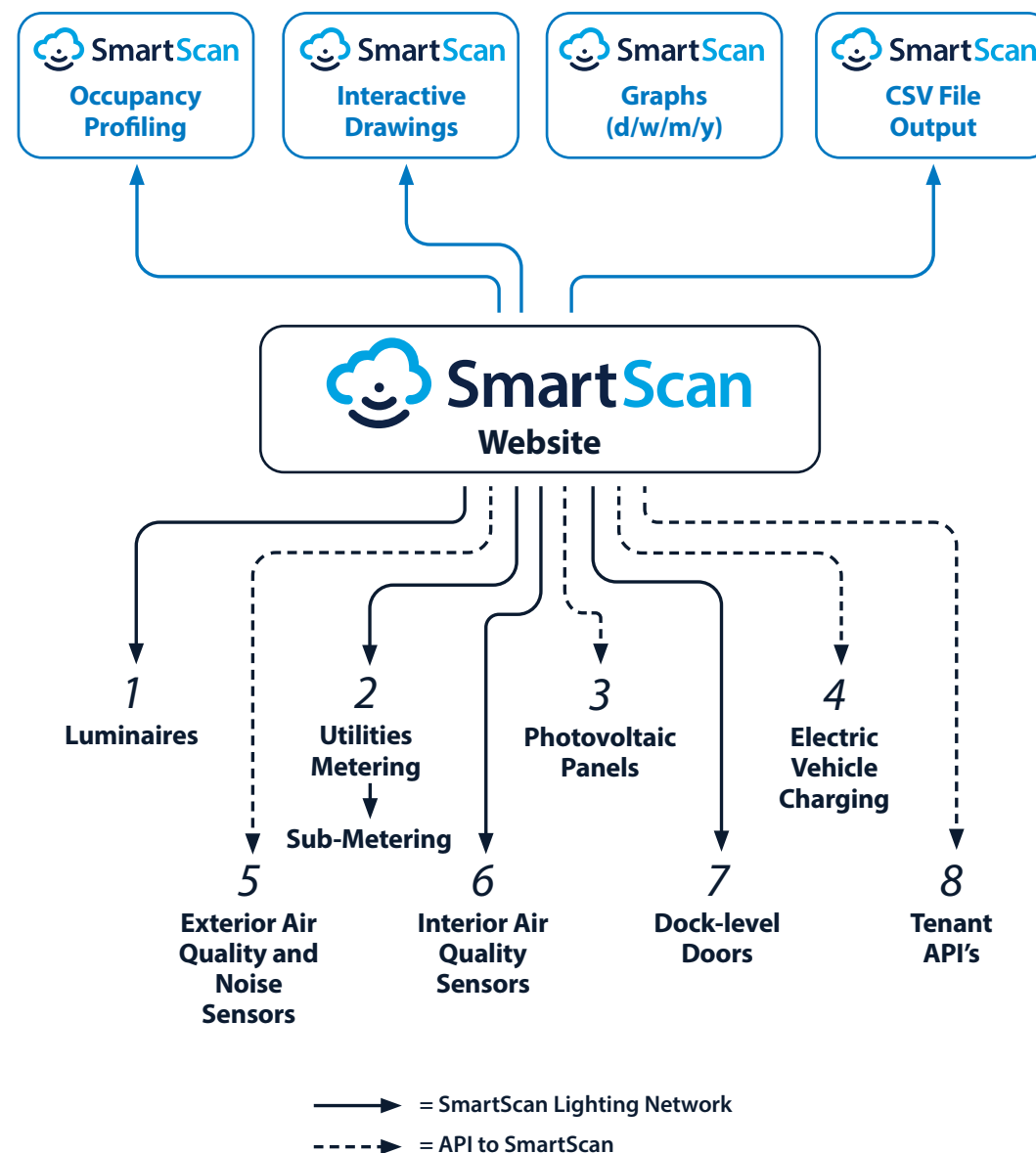
To accommodate this Thorlux have developed the Built Environment Analytics platform. This unique system uses either locally obtained data from sensors and devices or APIs to collate data into one portal where different data sets can be analysed.

The result is a software-based platform and portal that utilises the SmartScan software portal to provide tenant enhancements by: -

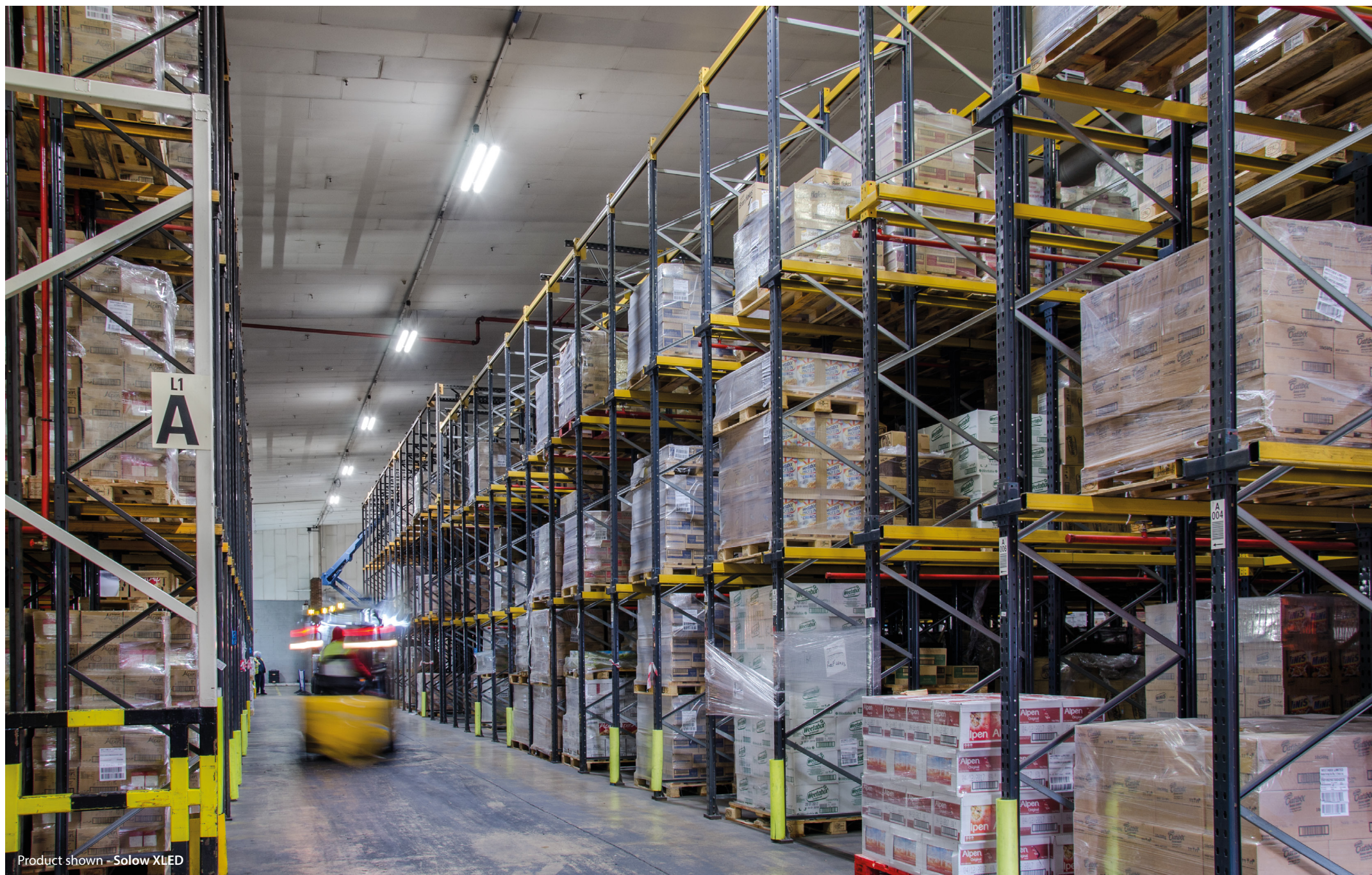
Integral sensors within the luminaires enables movement detection below every point independent of output (i.e. off). Luminaires dim and turn on/off based on daylight level and movement.

Utilising the lighting network to carry other service or asset communications removes unnecessary network duplication costs.

Installing specialist sensors, dataloggers and volt-free contacts onto other assets or services that contain pre-written APIs (Application Programming Interface) enabling the SmartScan portal to include this data capture for analytics.







Product shown - Solow XLED



# Emergency Lighting

The extent and nature of the emergency lighting required in warehouse applications is determined by the type of occupancy, the size and complexity of the site and the work undertaken. The mounting height of emergency luminaires is a major consideration. Access for maintenance will be needed, so ideally luminaires should be installed at manageable mounting heights, for example, on walls or clamped onto pillars using Dexion or similar brackets.

Emergency luminaires should meet the same standard of ingress protection as the general lighting. High and low ambient temperatures can be an issue for batteries in self-contained and maintained luminaires, please contact our technical office for advice.

Thorlux offers a comprehensive range of emergency lighting control solutions from standalone emergency, through to full wireless control and monitoring systems.

## The emergency lighting design must take into account the following:

- Escape route signs
- Stairs so that each flight receives direct light
- Changes in floor level
- Changes of escape route direction
- Corridor intersections
- First aid posts
- Fire alarm call points or pieces of fire fighting equipment
- Outside the final exit door and to a place of safety
- Moving stairways and walkways
- Toilet facilities exceeding 8m<sup>2</sup> or any multiple closet facility without borrowed light
- Toilet facilities for disabled use
- Motor generator, control and plant rooms
- Manual release controls for electronically locked doors
- Escape equipment for disabled people
- Refuges and call points, including disabled toilet call positions
- All other areas as deemed by the Risk Assessment



### SmartScan Emergency

Self-testing emergency luminaires with integral battery for 3 hour emergency operation. Wireless communication and web connectivity for automatic scheduled testing, luminaire status and test history reporting.



### AutoTest

Self-testing emergency luminaires with integral battery for 3 hour emergency operation.



### Emergency

Emergency luminaires with integral battery for 3 hour emergency operation.

# Thorlux recommends

**i** The majority of Thorlux luminaires are available with an integral emergency option including high output non-maintained luminaires ideal for greater mounting heights.

## Exit signage

### Lexi

Edge-lit emergency exit signs with SmartScan wireless communication version

IP40

### Lexi-65

IP65 LED emergency luminaires with SmartScan wireless communication version

IP65 IK10

## External exit signage

### Mini-8

Small LED emergency bulkhead luminaires

IP65

### Realta Micro

Low light level, wall mounted luminaires

IP66 IK10++

## Escape route

### Firefly

Emergency luminaires for recessed mounting with SmartScan wireless communication version

IP65 DOWNLIGHTER (BELOW CEILING)

IP40 DOWNLIGHTER (ABOVE CEILING)

### Firefly Surface

Emergency luminaires for surface mounting with SmartScan wireless communication version

IP54 SQUARE VERSION

IP66 CIRCULAR VERSION



Product thumbnails are interactive.



Scan here to view all available products.



# Our comprehensive lighting and service solutions

Our lighting solutions give you the peace of mind that Thorlux will manage your project from start to finish; from survey and lighting design through to installation and maintenance, supporting you through the life of the installation.



Product shown - Solow XLED



## Planning and Surveying

Thorlux will undertake surveys and record performance data in order to evaluate existing lighting installations. The information collected on-site will inform an optimised lighting design as well as the potential energy and maintenance savings.



## Lighting Design

Our award-winning Lighting Design department will prepare lighting scheme proposals to meet the unique needs of each project including energy saving controls where appropriate. Cost effective lighting, low cost of ownership and user comfort are three key elements accounted for in our designs. For those wishing to produce their own lighting schemes, we are partners with both DIALux and Relux. These lighting design software packages and our corresponding luminaire databases are available to download free of charge from our website.



## Supply

Over 97% of all Thorlux products are designed and manufactured in its UK factory based in Redditch Worcestershire. This provides excellent flexibility to fast track orders and supply products to special order or deadlines.



## Installation

Thorlux has an integrated installation and commissioning capability using a combination of in-house teams and a network of specialist partners who are trained on all aspects of Thorlux products. We ensure a rigorous selection process and ongoing quality control and training methods to ensure our specialist partners are of the highest standard.



## Commissioning

Thorlux offers a professional on-site commissioning service to ensure that products are configured to provide the desired performance and return on investment. Commissioning begins with identifying the end-user's project requirements and ends with ensuring that the installed systems satisfy these requirements. Commissioning of lighting is now an integral part of the requirements for new buildings and major refurbishments under Building Regulations Part L.



## User Training

During or after handover of the lighting systems to the client, Thorlux can train facility personnel on the proper operation and maintenance of the lighting and the control system. Trained staff who fully understand the controls are less likely to attempt to override or bypass the system.



## Technical Support

The Thorlux Technical Services department is ready to answer all queries regarding Thorlux products and the use of these products in specific environments.



# 5 Year Warranty

A genuine warranty with genuine value

The Thorlux range of luminaires is designed, manufactured and distributed by Thorlux, a division of the FW Thorpe PLC group. FW Thorpe PLC is listed on the London Stock Exchange. See the corporate website at [www.fwthorpe.co.uk](http://www.fwthorpe.co.uk)

Thorlux luminaires have been manufactured continuously in the UK since 1936, the year Frederick William Thorpe founded the company.

In 2018-19, the revenue of FW Thorpe PLC was £110m, of which £66m was generated by Thorlux luminaires and control systems.

The Thorlux product warranty offered to customers covers a period of 5 years, with no get-out clauses concerning the number of burning hours or maintenance requirements, and no convoluted registration process.



## This warranty is enhanced by the following key factors:

- FW Thorpe PLC has a robust balance sheet, with net assets in excess of £100m (2020)
- More than £50m in cash reserves provide the ability for Thorlux to support any future warranty liabilities
- FW Thorpe PLC has a stable ownership structure, with over 60% of the business owned by founding family members and management
- Investment in product research and development is continual - £1.8m invested per annum
- Thorlux product failure rates are consistently below 0.1%, with over 2,000 luminaires individually tested and shipped every day
- Critical components are supplied by market-leading global suppliers

- A dedicated team of our own employed local service engineers respond to any customer issues quickly and effectively, not only in the UK but overseas too
- Products are manufactured in the UK therefore spares are readily available
- As Thorlux is a listed company, stringent conditions require it to be fully audited by a third party. In recent years this has been PricewaterhouseCoopers LLP (PwC), one of the top four audit and advisory firms globally. Auditors of listed companies follow rigorous international guidelines, ensuring that the financial details such companies publish (such as those above) are accurate and can be relied upon.

Thorlux must prove that it will be able to pay any claims made according to its warranty conditions during the warranty period. Provision is made in each year's accounts, effectively putting aside profit from current orders for use in the future if required.

This is a key aspect of being a listed company that other smaller businesses are not required, and maybe not capable of doing. Thorlux customers should be reassured that a Thorlux warranty means something: at Thorlux, we are capable of meeting our obligations.

Some other companies offer long warranties but do not have the financial assets to withstand a sizeable warranty claim. Thorlux encourages customers to consider this scenario when purchasing other companies' products with extended warranty offers.

Michael Allcock - Chairman

Please refer to [www.thorlux.co.uk/terms](http://www.thorlux.co.uk/terms) for full details of our terms and conditions of sale.



Product shown - Solow XLED

## How To Specify Your Lighting Supplier

1. The supplier shall have ISO 9001 (Quality Management Systems) independent assessment and certification.
2. The supplier shall be responsible for its environmental activities and demonstrate genuine concern. This shall be proven by independent assessment and certification to ISO 14001 (Environmental Management Systems).
3. The supplier shall prioritise the welfare of the workforce and visitors to site with independent assessment and certification to ISO 45001 (Occupational Health and Safety Management Systems).
4. The supplier shall provide Certificates of Conformity demonstrating compliance with European legislation directives 2006/95/EC, 2004/108/EC and 2011/65/EU.5. Photometric test information shall be available from equipment which is independently assessed.
6. The supplier shall offer a commissioning service, provided by its own trained technicians. A commissioning certificate shall be provided.
7. All products will be fully tested before despatch to include safety earth circuit continuity, high voltage electrical strength testing, full circuit functionality including dimming, and checks on current drawn.
8. Products and services shall be backed by a comprehensive 5-year warranty - the supplier will have an established history and track record.



## Project Veka



Product shown - Solow XLED



Product shown - Solow XLED



Product shown - Solow XLED



Scan here to  
view projects.



# Project Avon Cosmetics







Designers, manufacturers and suppliers  
of professional lighting systems

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

A DIVISION OF FW THORPE PLC

**Thorlux Carbon Offsetting Project:**  
[www.thorlux.com/trees](http://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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