# An Introduction to Thorlux Lighting









Innovating sustainable lighting solutions for a brighter future



Thorlux headquarters Redditch

### Introduction

# Thorlux, for over 80 years, has manufactured increasingly sophisticated luminaires in the Birmingham area.

During 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. Thorlux luminaires are subject to stringent quality control, as demonstrated by the company's BS EN ISO 9001:2015 (Quality management systems) certification. Additionally, certification of Thorlux to BS EN ISO 14001:2015 (Environmental management systems) gives the customer assurance that the company manufactures its products in the most environmentally friendly manner.



0

## **Thorlux History**

### A family matter

Frederick William Thorpe founded Thorlux Lighting in Small Heath, Birmingham, in 1936. The company flourished and moved to progressively larger and larger premises in the city - first to Hall Green in 1939, then to Kings Norton in 1963.

FW Thorpe passed away in January 1964. Subsequently, the company went public, although most shares remain with the Thorpe family.

Thorpe's son, Ernest, became company chair in 1981. Under his stewardship, Thorlux moved to its present headquarters in Redditch, Worcestershire, in 1989. Andrew Thorpe, FW Thorpe's grandson, became chair in 2003. Andrew's nephew, James Thorpe, became joint managing director in 2023.

Today, Thorlux and the FW Thorpe Plc Group stand as one of the largest lighting system manufacturers in the UK, employing over eight hundred individuals, with the Thorpe family still involved in the company their forebearer began.









# FW THORPE PLC





**SOLITE** 



**IIGHTRONICS** 

**Famostar** 









## **Our Company Vision**



#### **Our Vision**

To be a leading provider of lighting solutions for commercial and industrial markets, delivering sustainable and innovative lighting products with best in class customer service by our dedicated and skilled workforce.



#### **Our Purpose**

To provide innovative lighting solutions and services that people can rely on.



#### **Our Values**

Family: our employees are our most important asset.
Customer delight: delivering outstanding customer service.
Doing the right thing: making the right decisions for both people and the planet.
Work hard: for each other and our customers.
Innovation: in everything we do.
Planet: reduce our impact on the planet.



### **Thorlux in Numbers**



## **Solutions for all Applications**





## Made in the UK

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

The FW Thorpe Plc group employs over 700 people.





### **5 Year Warranty**

### A genuine warranty with genuine value

Thorlux designs and manufactures its luminaires to the highest standards, ensuring optimal performance and reliability. All Thorlux LED and conventional luminaires are covered by a 5 year warranty (excluding lamps and batteries unless otherwise stated). Customers can therefore purchase Thorlux luminaires with even more confidence.

A long and stable history reassures Thorlux customers that its warranty is meaningful. Many companies offer a pre-sale warranty, but post-sale claims require that the company is still trading.

See terms and conditions for full details.







# In-house LED printed circuit board production



## Latest LED Technology

Thorlux is able to exploit recent advances in LED technology to help meet customer demand for energy-efficient solutions. The company's considerable technical expertise and its ability to invest in manufacturing processes, position it to maximise the opportunities offered by LED technology.

Backed by the group's modern facilities, Thorlux designers and developers have worked over recent years to create LED luminaires to meet customers' operational and aesthetic requirements. Thorlux has made a huge investment in LED technology, including in-house circuit board design, software development, thermal modelling and optical lens design.

To increase the range and performance of its LED luminaires,

Thorlux both designs dedicated LED luminaires from scratch, to optimise optical and thermal performance, and adapts existing conventional products to offer an LED option.

Unlike a traditional light source, a bare LED is a very intense point-source of light which has high glare and emits light in one direction only; therefore optical design is very important. Thorlux takes different approaches to optical design, according to the desired outcome.

Almost all LED products benefit from bespoke LED printed circuit boards (PCBs) designed by the Thorlux electronics team. These PCBs ensure that Thorlux luminaires deliver maximum performance.



## LED System Protection

LEDs are a very efficient light source and are resilient to many conditions that can be detrimental to the lifetime of traditional lamps.

For example, LEDs are largely unaffected by frequent switching, shock or vibration. However, LEDs or their solder joints can infrequently fail. In such circumstances it would be inconvenient if the failure caused significant loss of light, or if the luminaire extinguished completely.

In many luminaires LEDs are linked in series whereby a current flows through each LED in turn. Should an LED or solder joint fail, a whole row of LEDs, or in fact all LEDs, may extinguish. Thorlux has designed specific protective measures to prevent such a condition.

### There are two methods of LED system protection used by Thorlux



#### **LED Protect**

Certain high lumen output Thorlux luminaires use high power LEDs, for example the Starbeam floodlight.

In this type of luminaire LEDs are connected in a series string and failure of an LED or its solder joint can cause an open circuit and all LEDs in the string to extinguish. Thorlux adds PLED protectors to the majority of these luminaire types (see LED Characteristics data on each product page).

PLED protectors provide an electronic alternative path for the current to flow in the case of LED or solder joint failure ensuring all remaining LEDs stay illuminated at the correct power. This is an invaluable feature guaranteeing that a luminaire continues to provide light, even in the case of nuisance LED failures, and reduces the maintenance costs of a project.





CIRCUIT

PROTECT





#### LUX Guard

LUX Guard by Thorlux, is a patented current sharing PCB and circuit design philosophy. If an LED fails then its current is shared via neighbouring circuits, with each LED's brightness increasing slightly to compensate. LUX Guard ensures that a luminaire continues to provide its designed lumen performance, even in the case of nuisance LED failures, and reduces the maintenance costs of a project.



					5 in series 11 in parallel parallel				100% OUTPUT		
	•	•	•	•	•	•	•	•	•	•	•
SERIES	+10%	+10%	+10%	FAILED LED	+10%	+10%	+10%	+10%	+10%	+10%	+10%
	•	•	•	•	•	•	•	•	•	•	•





#### WIRELESS LIGHTING MANAGEMENT SYSTEM

#### SmartScan is a revolutionary wireless lighting management system that maximises energy savings and automates emergency lighting testing and record keeping.

The system allows users to monitor their energy performance data and complete operational information for all SmartScan standard and emergency luminaires. Information is displayed on the SmartScan Website which can be accessed from anywhere using a computer, laptop, tablet or smartphone. The clear graphical user interface provides an overview of the whole site, through to the performance and operation of an individual luminaire.



#### SmartScan can be tailored to suit specific requirements.

#### It can be used for:

- Energy saving control
- Automatic emergency lighting testing\*
- Energy monitoring
- Emergency test results
- Luminaire status reports
- Air quality sensing
- Occupancy profiling
- \* 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).



#### Emergency

#### **Platform One**

Luminaires operate on a stand-alone basis:

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

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

Projects initially installed to Platform 1 can easily be upgraded later to Platform 2 by installing a SmartScan Gateway.

#### **Platform Two**

The luminaires are simply wirelessly linked into a Gateway which collects and transmits their energy performance data and complete operational information, for all SmartScan luminaires, to the SmartScan Website for viewing using tablets, smartphones, laptops and computers.

The SmartScan Gateway simply requires a 230V mains supply to operate as all communication is via a secure MQTT GSM connection.

# Ш

#### **Maintained Illuminance**

The SmartScan lighting management system allows luminaires to be dimmed to the required lighting level therefore avoiding over lighting and reducing energy consumption. This initial lighting level is sustained throughout the maintenance cycle by gradually increasing power, thereby maintaining the correct lumen output.



### **Daylight Dimming**

When daylight enters a room the SmartScan lighting management system will take this light into account and gradually dim the luminaires, saving energy whilst maintaining the required light level. As daylight increases, luminaire output decreases and luminaires may even switch off, minimising energy usage. The result is further savings in addition to those achieved by maintained illuminance.



#### **Presence Detection**

SmartScan Sensors are used to detect movement to turn the luminaires on. After a predetermined time of no movement the luminaires will turn off, saving energy. The sensors can be programmed for absence mode whereby the luminaires are not initially turned on automatically by movement, but manually by the user with a switch; the sensor will then monitor movement to turn the luminaires off automatically after a pre-determined time.



### Reduced Installation Costs

The SmartScan Gateway and SmartScan luminaires simply require a 230V mains supply. So there is no need for data cables, additional power supplies or control modules.



### Simple and Fast Commissioning

Using a single robust handheld infra-red programmer luminaires can be very quickly and easily commissioned, and all operational settings can be fine-tuned in the future if desired. All system and luminaire settings can also be programmed via the SmartScan Website, allowing simple changes via a user-friendly interface.



### **ColourActive Lighting**

Thorlux ColourActive luminaires produce specially formulated artificial light that replicates the natural cycle of daylight, intended to promote a person's well-being, mood and health. Varying the colour temperature of artificial lighting to emulate daylight can help sustain a person's circadian rhythm.

Using modern LED light sources, luminaires and controls, the natural daylight cycle can be replicated improving lighting conditions with potentially positive benefits.



#### Colour Temperature Control

Thorlux ColourActive high performance LED luminaires incorporate dual populated PCBs where LEDs with two different colour temperatures (3000K and 6500K) are combined.

The Thorlux designed and manufactured technology utilises twin lighting circuits within each luminaire to vary the output to produce colour temperatures of either 3000K, 6500K or any value in between. High quality medium power LEDs, placed on a circuit board with integral heat sinking, provide a high efficiency solution.

#### Advanced Controls

SmartScan wireless mesh network technology provides signals to control the ColourActive luminaires to provide both manual and automatic control of colour temperature.

The ColourActive Gateway communicates with the luminaires throughout the day, providing automatic, seamless transitions between colour temperatures.

Manual control is provided by a range of wall mounted touch sensitive plates and smart phone apps.



3000°K

6500°K



## Thorlux illuminates London landmark

The Elizabeth Tower, better known as Big Ben, is one of the most recognisable landmarks in the world. Standing at 96 metres (316 feet) high, the clock tower overlooks the Palace of Westminster.

Thorlux is proud to have been involved with the five-year Elizabeth Tower renovation and conservation programme. Thorlux provided luminaires and wireless lighting controls for rooms and service areas, as well as bespoke fixtures for the famous clock faces and the Ayrton Light lantern which tops the tower.

# Illuminating the Great Clock Faces

Surveys were first undertaken, and successful trials proved that the LED solution would make no difference to the appearance of the clock faces.

The final design was developed and supplied, with the four clock faces being illuminated by 228 luminaires and over 55,000 individual LED chips. This also provided a 60% energy saving.





WY.

### Upgrading the Ayrton Light

The challenge was to provide a solution in keeping with the history of the structure while modernising the light and reducing its environmental impact.

The bespoke fixture for the Ayrton Light provides an intense downward beam of light through 360 degrees. A series of stacked 'light rings' provide the required effect in a compact size to fit inside the lantern structure. The final solution was then designed and engineered by Thorlux with a custom mounting bracket.



**Thorlux** Lighting









# FW THORPE PLC

## Independently assessed as carbon neutral since 2012

The FW Thorpe Group of companies\* has been officially recognised as being carbon neutral, with systems of reduction, measurement and certified offsetting in place, since 2012. This decade-long status has been independently assessed by a third party in accordance with ISO 14064-1, an international standard for the quantification and reporting of greenhouse gas (GHG) emissions and removals. Meeting this standard provides independent assurance of the Group's long-standing commitment to sustainability across all of its operations worldwide.

\*Group companies acquired since 2012 have been assessed only since their date of acquisition.



### **Carbon offsetting**

In 2009, FW Thorpe Plc purchased 215 acres of farmland in Wales. To date, 179,412 trees have been planted. Based on the Group's calculated emissions, it has been confirmed that enough trees have been planted for FW Thorpe Plc to have been carbon neutral since 2012.

The carbon capture tree-planting scheme (quality-assured by the governmentbacked Woodland Carbon Code) is independently certified to ISO 14064-3 and ISO 14065 standards. The Woodland Carbon Code is an independent standard, devised by a group led by the UK Forestry Commission, to certify that woodland creation projects can accurately measure how much carbon is captured and stored.

www.woodlandcarboncode.org.uk



The MET Office planting trees on their visit to Devauden.





# 2021

In 2011 Welsh Minister John Griffiths visited our carbon offsetting project in Devauden, Wales, to plant a tree. Ten years later and Mike Allcock, FW Thorpe Plc Chairman, was back to check on its progress.

# Renewable electricity generation

2011

The Group has installed solar PV units on the roofs of most of its UK manufacturing facilities, as well as at Lightronics in the Netherlands. Further significant investment has been approved by the board to install additional solar PV units both in the UK at the main Thorlux facility and in the Netherlands facilities. These solar PV units will further reduce consumption from traditional electricity sources, enabling the Group to generate 40–50% of its own electricity usage when the project is completed.

All remaining significant electricity consumption is now derived from renewable sources.

### **Future ambition**

FW Thorpe Plc is working with an independent thirdparty specialist to calculate its scope 3 emissions. Scope 3 emissions include all indirect emissions from activities of the Group, from sources that it does not own or control. The aim is to set ambitious sciencebased targets aligned with limiting global warming to 1.5°C above pre-industrial levels and the Group ultimately becoming net zero. 3138

solar photovoltaic panels 1 million kWh

system generation

36%

of total load provision





#### Group company targets

- All Group companies, if not already, will be certified in 2022 to the international standards ISO 14001 (Environmental Management Systems), ISO 45001 (Occupational Health and Safety Management Systems) and ISO 9001 (Quality Management Systems).
- All Group companies will be required to meet ambitious targets to reduce waste to landfill.
- New product design is to follow an FW Thorpe Plc agreed Circular Design Strategy, ensuring products last even longer, use sustainable materials in their construction and are easier to reuse, refurbish or recycle at the end of their lifetime.
- All Group delivery vehicles are to be a minimum of Euro 6 compliant.

- All Group companies are to provide electric vehicle (EV) charging stations at the workplace.
- All Group companies will target zero plastic bag and zero bubble wrap usage in its factories.
- All finished goods packaging is to be supplied from Forest Stewardship Council (FSC) or equivalent sources. Group companies will offer a return and reuse service for product packaging.
- All Group employees are to be trained in environmental initiatives.



#### **Chairman's comment**

"FW Thorpe Plc has a long-standing commitment to tackling global environmental challenges, principally through its core business of manufacturing energy efficient lighting equipment. The company has a genuine desire to become a more sustainable business.

"Over the last two decades, at FW Thorpe we have sought to address our carbon impact by working towards carbon neutrality for our manufacturing and distribution operations. It gives me huge pleasure that our hard work and ambitions have paid off in achieving our carbon neutral status both now and historically.

"But our work doesn't stop here. By assessing our carbon impact right across our manufacturing and value chain then setting science-based targets in line with the Paris Agreement on climate change, our goal is ultimately to reach zero carbon status well before the UK's target for achieving net zero carbon emissions by 2050. Watch this space."

**Mike Allcock** FW Thorpe Group Chairman

















and the family

÷....



Easy LED Oy Meriniitynkatu 11 FI-24100 Salo, FINLAND p. 02 737 44 20, info@easyled.fi



#### 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 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.

#### Thorlux Lighting

Merse Road North Moons Moat Redditch Worcestershire B98 9HH England

T +44 (0)1527 583200 F +44 (0)1527 584177 E thorlux@thorlux.co.uk W www.thorlux.com

Direct UK Sales Line: 01527 583222

#### Thorlux Lighting Ireland

Unit G6 Riverview Business Park Nangor Road Gallanstown Dublin 12 Ireland

T +353 (0)1 460 4608
 F +353 (0)1 460 4609
 E thorlux@thorlux.ie
 W www.thorlux.ie

#### Thorlux Lighting Australasia Pty Ltd. 31 Cross Street Brookvale Sydney NSW 2100 Australia

1300 04 32 32
 +61 (0)2 9907 1261
 thorlux@thorlux.com.au
 www.thorlux.com.au

Registered No. ABN 139 400 507

#### Thorlux Lighting Deutschland Eurotec-Ring 15 47445 Moers

47445 Moers
Deutschland
▼ +49 (0)2841 39366-10

F +49 (0)2841 39366-10
 F +49 (0)2841 39366-11
 E thorlux@thorlux.de
 W www.thorlux.de









