# Mental Health Lighting

Made in Britain

Thorlux Lighting

GENERAL INFORMATION


| | | | |
|---|---|---|---|
| Contents | 2 | Emergency Lighting Systems | 15 |
| The Mental Healthcare Lighting Challenge | 2 | Why Buy From Thorlux? | 16 |
| LED Guide | 3 | Smart Choice Financing | 23 |


# Contents

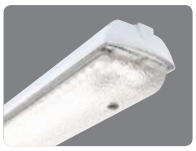


G4 : AL 4

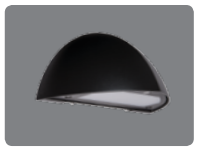

G3 : AL 5


G2 : AL 6


Cobalt : AL 7


A-Line : AL 8


Vandalux 9


Realta Micro 10

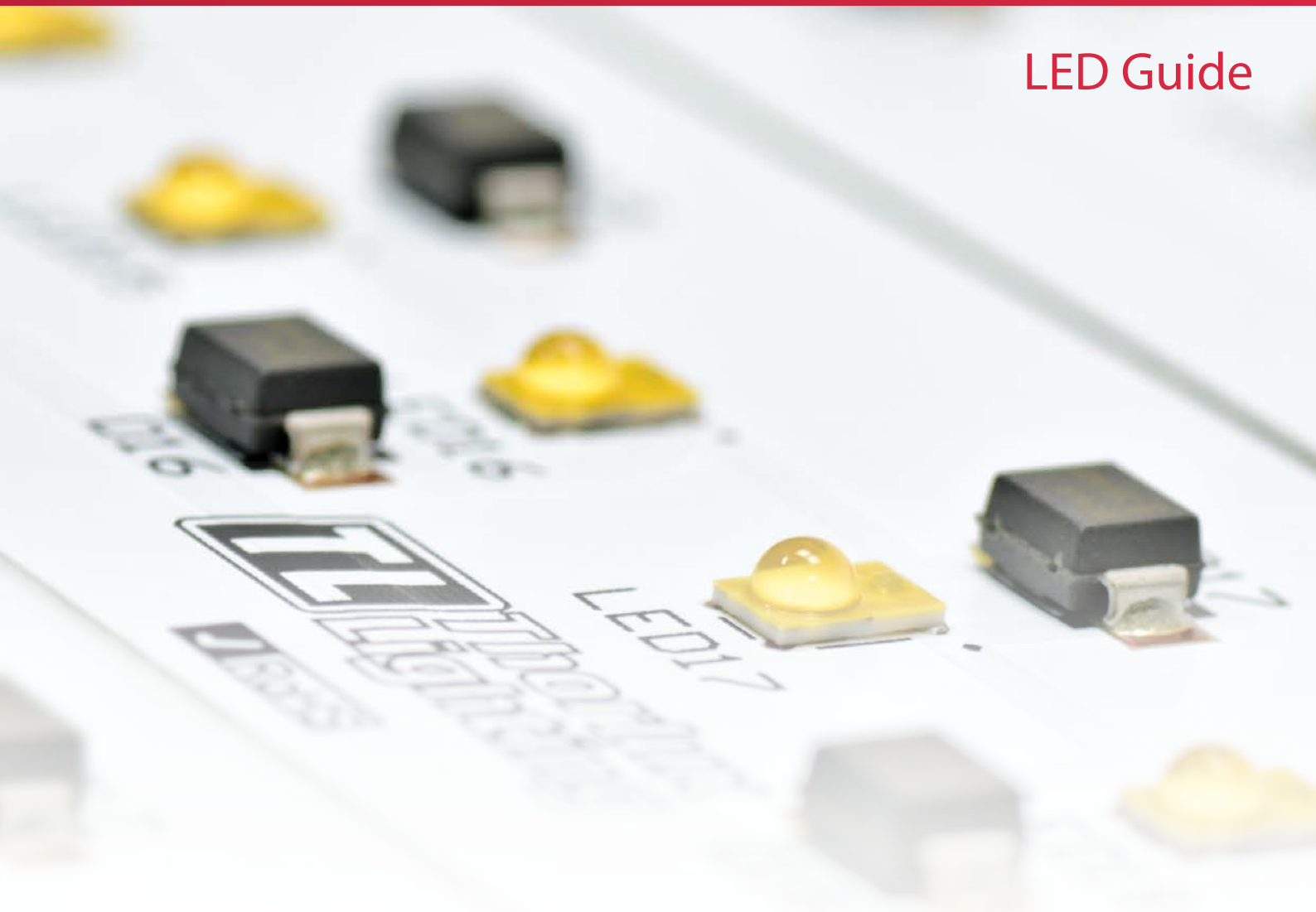

Eco-Touch : AL 11


Realta 12-13


## The Mental Healthcare Lighting Challenge

The principal requirement for Mental Healthcare lighting has historically been to provide safe and secure, anti-ligature luminaires. The modern need is to combine these elements with a design that provides a domestic quality and an ambiance that promotes rehabilitation and recovery, whilst heeding the need for energy efficiency.

# LED Guide



Thorlux designs, manufacturers and tests the vast majority of its own LED electronic systems including the lenses for precise optical control. We carefully consider end of life scenarios, for example, LED failures, solder joint failures and isolated component failures to ensure new designs have on-going system reliability even when individual components fail.

Our 76 year company history, running into thousands of years of combined experience, ensures every aspect of lighting a space is carefully considered - a requirement all the more important as LED lifetimes are now expected to reach 50,000 to 100,000 hours or even more!

LEDs have developed significantly now exceeding the performance of even the best fluorescent solutions. Volume increases have reduced costs, making them the ideal choice in many more applications. Not all LED solutions are the same so Thorlux has introduced a simple marking code into its literature to identify the key performance characteristics of its LED based luminaires - an example is shown below.

LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80+ | 4000 | 60K | P | >85 | R | >0.9 | 63.2 |

**Ra** Indicates colour rendering index (colour quality). A minimum of Ra 80 is recommended for working areas.

**°K** The approximate colour temperature of the light source. There will be a band at which the LEDs are chosen from around this target figure. More accurate information, for specialist applications, is available upon request.

**L70/B10** These figures illustrate the target life expectancy of the LED (for example 60K = 60,000 hour life expectancy) which is a combination of light output degradation (L70 = when the light output has reduced to 70% of its initial level) and lamp failure expectation (B10 = when 10% of the LEDs have failed to meet operational expectations).

**P/U** Some LED "lamps" comprise a number of LEDs connected in series or in a series/parallel group. If the system is protected (P) then failure of a single LED will not affect others in the group. If the system is unprotected (U) failure of one LED will cause others in the group to extinguish.

**%** This figure illustrates the LED driver efficiency.

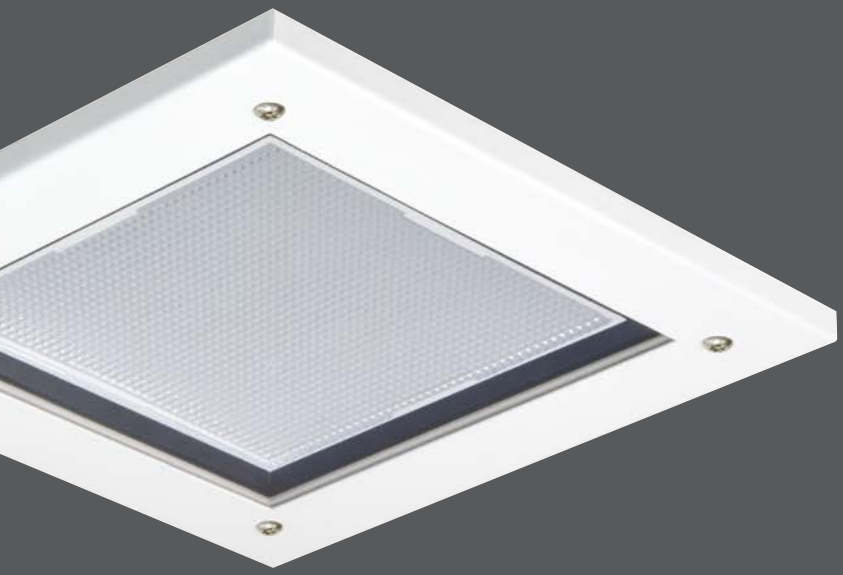
**R/Rx** When the LED fails, some luminaires require replacement in their entirety (Rx) some have replaceable LED "lamp" assemblies (R).

**PF** Indicates LED driver power factor.

**LL/CW** Luminaire lumens per circuit watt, the luminaire efficiency including ALL optical and gear losses. It is very important to compare this figure correctly - other manufacturers may state LED efficiency, for example, which does not include all losses within the system and could therefore be a misleading, much higher figure.

# G4 : AL

## Square LED recessed downlighters



## Specification

- High pressure die-cast frame finished full polyester satin white (RAL 9016)
- Die-cast body/heat sink with through airflow for thermal management
- Injection moulded reflector
- Choice of optics optimised for general area, corridor and low glare (VDT)
- Clear polycarbonate front cover
- Die-cast sprung suspension arms for rapid installation
- Supplied with remote gear unit fitted with 2m lead
- Tamper-resistant pin Torx screw fixings (Requires T20 tool - see Accessories table below)
- Optional reinforcing board with centre cut aperture
- Emergency, AutoTest and Scanlight AT versions using integral, high power 1.5W LED
- 16W and 32W very high efficiency versions
- Fitted with 4000K LEDs

IP20 ABOVE CEILING | IP40 BELOW CEILING | LED | IK10 | CE

## Range

| LED | GENERAL AREA VERSION | CORRIDOR VERSION | LOW GLARE VERSION | APPROX. kg | CIRCUIT |
|---|---|---|---|---|---|
| 16W | **GF 16359** | **GF 16361** | **GF 16363** | 2.6 | L/A |
| 32W | **GF 16360** | **GF 16362** | **GF 16364** | 2.6 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **GF 16359L** etc.

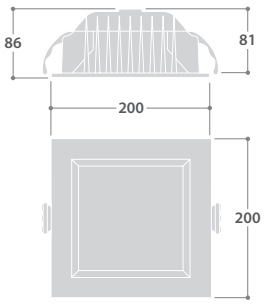
**EMERGENCY VERSION** - prefix catalogue number with:
**EGF - Emergency** / **TGF - AutoTest** / **DGF - Scanlight AT** e.g. **EGT 16359L** etc.
Emergency, AutoTest and Scanlight AT versions add 0.3kg to weights listed.

### LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80+ | 4000 | 60K | P | >85 | R | >0.9 | 66.6 |

For LED characteristics explanation see page 3

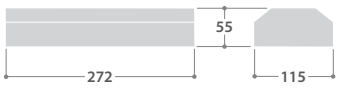
## Dimensions




**Cut-out - 185 x 185**
**Minimum void depth - 115**

**Remote Driver**

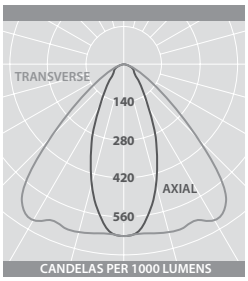

**LED Downlighter Power Unit**




*All dimensions in millimetres*

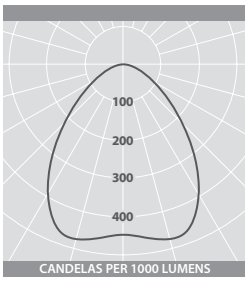
## Photometric Guide

### CORRIDOR



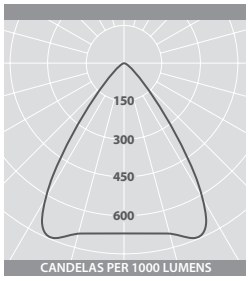

Luminaire Lumen Output
**16W** = 1145lm
**32W** = 2245lm

### GENERAL AREA




Luminaire Lumen Output
**16W** = 1200lm
**32W** = 2340lm

### LOW GLARE




Luminaire Lumen Output
**16W** = 715lm
**32W** = 1400lm

## Accessories

| DESCRIPTION | CAT. No. | APPROX. kg |
|---|---|---|
| 597 x 597mm ceiling reinforcing board *(3mm thick plywood with 185 x 185mm central cut-out)* | **GF 15145** | 0.55 |
| T20 pin Torx bit *(Suitable for magnetic bit holder)* | **KEY 16975** | - |

# G3 : AL

## Circular LED recessed downlighters

## Specification

- High pressure die-cast ring finished full polyester satin white (RAL 9016)
- Extruded aluminium heat sink
- Injection moulded reflector
- Choice of clear or satin polycarbonate front cover
- Supplied with remote gear unit fitted with 2m lead
- Tamper-resistant pin Torx screw fixings (Requires T20 tool - see Accessories table below)
- Optional reinforcing board with centre cut aperture
- Emergency, AutoTest and Scanlight AT versions using integral, high power 1.5W LED
- 12W and 24W very high efficiency versions
- Fitted with 4000K LEDs

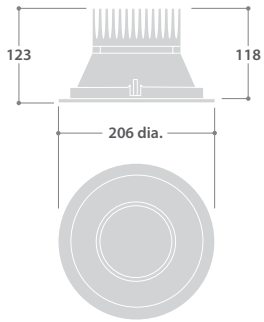
IP20 ABOVE CEILING | IP65 BELOW CEILING | LED | IK10 | CE

### LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80+ | 4000 | 60K | P | >85 | R | >0.9 | 76.8 |

For LED characteristics explanation see page 3

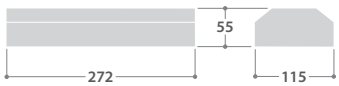
## Dimensions




Cut-out - 180 dia.
Minimum void depth - 115

Remote Driver


LED Downlighter Power Unit




*All dimensions in millimetres*

## Range

| LED | CLEAR VERSION | SATIN VERSION | APPROX. kg | CIRCUIT |
|---|---|---|---|---|
| 12W | **GT 16550** | **GT 16552** | 3.0 | L/A |
| 24W | **GT 16551** | **GT 16553** | 3.0 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **GT 16550L** etc.

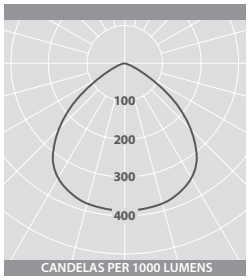
**EMERGENCY VERSION** - prefix catalogue number with:
**EGT - Emergency** / **TGT - AutoTest** / **DGT - Scanlight AT**
e.g. **EGT 16550L** etc.
Emergency, AutoTest and Scanlight AT versions add 0.3kg to weights listed.

## Accessories

| DESCRIPTION | CAT. No. | APPROX. kg |
|---|---|---|
| 597 x 597mm ceiling reinforcing board *(3mm thick plywood with 185mm diameter central cut-out)* | **GT 11970** | 0.55 |
| T20 pin Torx bit *(Suitable for magnetic bit holder)* | **KEY 16975** | - |

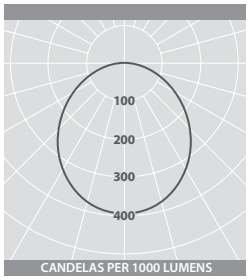
## Photometric Guide

### CLEAR POLYCARBONATE




Luminaire Lumen Output
**12W** = 915lm
**24W** = 1785lm

### SATIN POLYCARBONATE




Luminaire Lumen Output
**12W** = 813lm
**24W** = 1586lm

# G2 : AL

Recessed low wattage LED downlighters with remote control gear

## Specification

- High pressure die-cast bezel finished full polyester satin white (RAL 9016)
- Injection moulded polycarbonate body housing
- Choice of prismatic polycarbonate or satin polycarbonate lens
- Remote phosphor mixing chamber
- Supplied with remote gear unit fitted with 2m lead
- Tamper-resistant pin Torx screw fixings (Requires T10 tool - see Accessory table below)
- Fitted with 4000K LEDs

IP20 ABOVE CEILING | IP43 BELOW CEILING | LED | IK09 | CE

LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80+ | 4000 | 60K | P | >85 | R | >0.9 | 50.3 |

For LED characteristics explanation see page 3

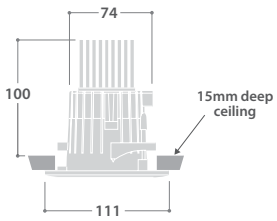
## Range

| LED | SATIN POLYCARBONATE VERSION | PRISMATIC POLYCARBONATE VERSION | APPROX. kg | CIRCUIT |
|---|---|---|---|---|
| 6W | **GU 16834** | **GU 16835** | 0.5 | L/A |
| 12W | **GU 16836** | **GU 16837** | 0.5 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **GU 16834L** etc.

**EMERGENCY VERSION** - prefix catalogue number with:
**EGU - Emergency** / **TGU - AutoTest** / **DGU - Scanlight AT** e.g. **EGU 16834LT** etc.
Emergency, AutoTest and Scanlight AT versions add 0.4kg to weights listed.

## Dimensions



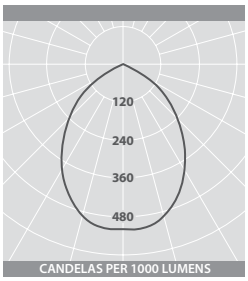

**Cut out - 89 dia.**

**Minimum void depth for emergency and AutoTest versions - 165**

*All dimensions in millimetres*

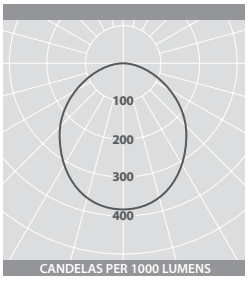
## Photometric Guide

**PRISMATIC LENS**




Luminaire Lumen Output
**6W** = 380lm
**12W** = 755lm

**POLYCARBONATE LENS**




Luminaire Lumen Output
**6W** = 315lm
**12W** = 626lm

## Accessory

| DESCRIPTION | CAT. No. |
|---|---|
| T10 pin Torx bit<br>*(Suitable for magnetic bit holder)* | **KEY 16974** |

# Cobalt : AL

## Circular surface LED luminaires

## Specification

- Strong die-cast aluminium body and spun aluminium cover frame finished full polyester satin white (RAL 9016) as standard
- Silver finish option
- Satin polycarbonate front cover
- Tamper-resistant pin Torx screw fixings (Requires T30 tool - see Accessory table below)
- Fitted with 4000K LEDs

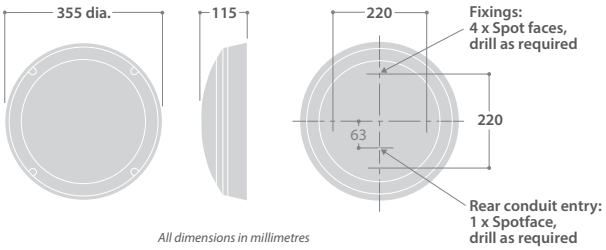
IP66 LED IK10 CE

### LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80 | 4000 | 60K | P | >90 | R | 0.95 | 63.5 |

For LED characteristics explanation see page 3

## Dimensions




*All dimensions in millimetres*

## Range

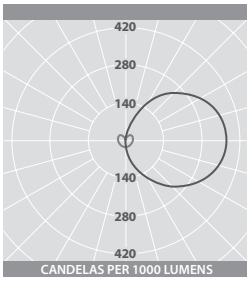
| LED | CAT. No. | APPROX. kg | CIRCUIT |
|---|---|---|---|
| 16W | **CT 16114** | 3.4 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **CT 16114L** etc.

**SILVER OPTION** - add suffix **SV3** e.g. **CT 16114LSV3** etc.

**EMERGENCY VERSION** - prefix catalogue number with:
**ECT - Emergency** / **TCT - AutoTest** / **DCT - Scanlight AT**
e.g. **ECT 16114L** etc.
Emergency, AutoTest and Scanlight AT versions add 0.3kg to weights listed.

## Photometric Guide




Luminaire Lumen Output
**16W** = 1397lm

## Accessory

| DESCRIPTION | CAT. No. |
|---|---|
| T30 pin Torx bit<br>*(Suitable for magnetic bit holder)* | **KEY 16977** |

# A-Line : AL

Multi-purpose, corrosion-resistant LED luminaires

## Specification

- Robust and durable extruded aluminium body with die-cast ends finished full polyester, non-yellowing white
- Body dissipates heat, ensuring long control gear life in higher ambient temperatures
- High impact-resistant textures, flame retardant polycarbonate cover
- Tamper-resistant cover screws (Tool supplied)
- Removable gear tray, hangs on safety straps for easy maintenance
- Available with 1W LED night light
- Fitted with 4000K LEDs

IP65 LED IK10 CE

LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80+ | 4000 | 60K | P | >85 | R | >0.95 | 97.9 |

For LED characteristics explanation see page 3

## Range

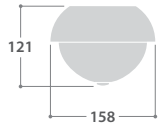
| NOMINAL SIZE (mm) | LAMP | CAT. No. | LENGTH (mm) | APPROX. kg | CIRCUIT |
|---|---|---|---|---|---|
| 1500 | 29W LED | **AL 16111** | 1598 | 8.1 | L/A |
| | 58W LED | **AL 16110** | | 8.1 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **AL 16111L** etc.

**EMERGENCY VERSION** - prefix catalogue number with:
**EAL - Emergency** / **TAL - AutoTest** / **DAL - Scanlight AT** e.g. **EAL 16111L** etc.
Emergency, AutoTest and Scanlight AT versions add 0.3kg to weights listed.

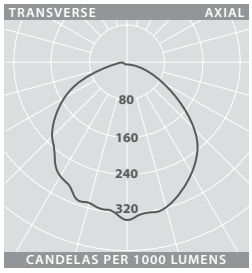
**INTEGRAL NIGHT LIGHT VERSION** - suffix catalogue number with:
**N** e.g. **AL 16111LN** etc.

## Dimensions




*All dimensions in millimetres*

## Photometric Guide




Luminaire Lumen Output
**29W** = 3050lm
**58W** = 6100lm

# Vandalux

## LED vandal-resistant sealed luminaires

## Specification

- 1.0mm steel body finished full polyester powder coated textured black
- 1.5mm steel front cover frame retained with tamper-resistant captive fixings (key supplied)
- White finish option
- Satin diffusing, 5mm thick polycarbonate front cover
- Continuous mounting available using infills
- Complies with M.O.D. JSP482 Document for 'Category C' areas
- High impact strength - IK10
- Tamper-resistant pin hex screw fixings (Requires tool - see Accessories table below)
- Safe cell prison versions available (see below)
- Fitted with 4000K LEDs

IP65 LED IK10 CE

## Accessories

| DESCRIPTION | CAT. No. | APPROX. kg |
|---|---|---|
| 1500mm Infill (for use with continuous mounting) | **VN 13327** | 13.6 |
| Key for 3mm tamper-resistant screws | **KEY 13328** | |

*Infill* - **VN 13327**

## Range

| NOMINAL SIZE (mm) | LED | CAT. No. | APPROX. kg | CIRCUIT |
|---|---|---|---|---|
| 1500 | 34W | **VN 15758** | 13.0 | L/A |
| | 74W | **VN 15759** | 13.2 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **VN 15758L** etc.

**WHITE OPTION** - add suffix **W3** e.g. **VN 15758LW3** etc.

**EMERGENCY VERSION** - prefix catalogue number with:
**EVN - Emergency** / **TVN - AutoTest** / **DVN - Scanlight AT** e.g. **EVN 15758L** etc.
Emergency, AutoTest and Scanlight AT versions add 0.3kg to weights listed.

### LED Characteristics

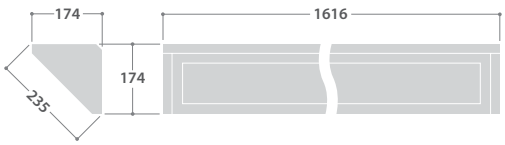
| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80+ | 4000 | 60K | P | 90 | R | >0.95 | 75.4 |

For LED characteristics explanation see page 3

### SAFE CELL

**Version available to special order with National Offender Management Service (NOMS) approval for use in Prison "Safer Cells". Contact our Sales Department for details**

## Dimensions

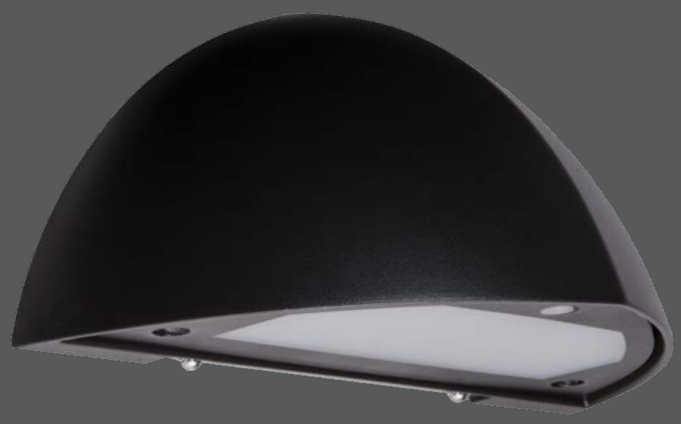



**NOTE: Supply entries and fixing points to be drilled on site**
**IP65 integrity must be maintained**

*All dimensions in millimetres*

# Realta Micro

## Low light level, wall mounted luminaires



*Silver version*

## Specification

- Graphite full polyester powder finish
- Silver or white options
- White polyester powder coated internal gear tray/reflector
- Strong die-cast LM24 aluminium body
- One piece injection moulded UV stabilised polycarbonate cover
- Compact fluorescent or LED lamp sources
- Hex fixings for cover and wall bracket
- Fitted with 4000K lamp or LEDs

IP66 LED TC-S CE IK10++

LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 80 | 4000 | 60K | P | 80 | R | 0.5 | 60.6 |

For LED characteristics explanation see page 3

## Range

| | LAMP | CAT. No. | | APPROX. kg |
|---|---|---|---|---|
| MAINS | 3W LED | **RL 13543L** | | 1.3 |
| | 6W LED | **RL 16607L** | | 1.5 |

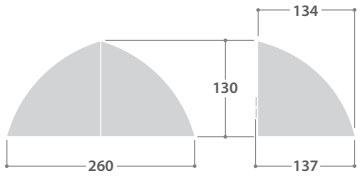
| | LAMP | MAINTAINED | NON MAINTAINED | APPROX. kg |
|---|---|---|---|---|
| EMERGENCY | 5W TC-S | | **ERL 13542** | 1.3 |
| AUTOTEST | 3W LED ▲ | **TRL 13543L** | | 1.3 |
| | 6W LED | **TRL 16607L** | **TRL16608** | 1.5 |
| SCANLIGHT AT | 3W LED ▲ | **DRL 13543L** | | 1.3 |
| | 6W LED | **DRL 16607L** | **DRL16608** | 1.5 |

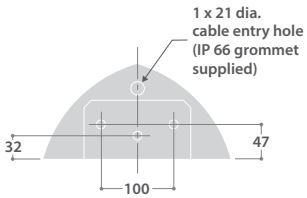
**CIRCUIT TYPE - L - non-dimming (LED)**

**COLOUR OPTIONS** - Silver add suffix **SV3** e.g. **RL 13543LSV3** etc.
White add suffix **W12** e.g. **RL 13543LW12** etc.

▲ Can be wired during installation for maintained or non-maintained operation

## Dimensions




*All dimensions in millimetres*

## Accessory

| DESCRIPTION | CAT. No. | APPROX. kg |
|---|---|---|
| Wall mounting kit for 20mm conduit *(side entry only)* | **RL 15419** | 0.4 |

**COLOUR OPTIONS** - Silver add suffix **SV3** e.g. **RL 15419SV3** etc.
White add suffix **W12** e.g. **RL 15419W12** etc.

# Eco-Touch : AL

## Stylish DSI/DALI wall mounted manual dimming controller

A stylish anti-ligature wall-mounted controller designed to promote convenient and flexible control of lighting in mental health environments.

ECO-Touch : AL is a sophisticated but simple touch sensitive controller providing on, off and dimming control of luminaires fitted with DSI ballasts (Thorlux product catalogue numbers suffixed **T**) or DALI ballasts (suffixed **A**).


### Features

A touch sensitive slider allows the user to dim luminaires to suit their preferences.

Tamper-resistant pin Torx screw fixings (Supplied with T10 tool)

#### SUITABLE CONTROL GEAR TYPES

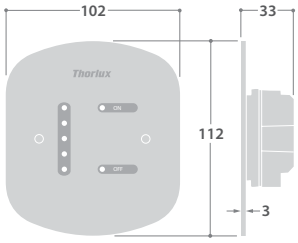
ECO-Touch : AL has a DSI/DALI selector switch.
Both types cannot be mixed on the same circuit.
Maximum 25 ballasts.

#### INSTALLATION NOTES

Standard United Kingdom surface or recessed single-gang switch box (recommended depth of 45mm).

IK10

### Dimensions




*All dimensions in millimetres*

### Range

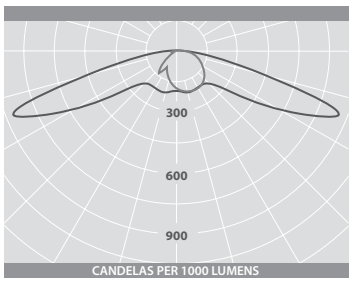
| DESCRIPTION | CAT. No. | APPROX. kg |
|---|---|---|
| ECO-Touch : AL | **ECO 16578** | 0.10 |

Add '**T**' suffix to luminaire catalogue number for DSI ballast
or '**A**' suffix to luminaire catalogue number for DALI ballast

## Photometric Guide

### POLYCARBONATE COVER - 18W LED (Wide Distribution)

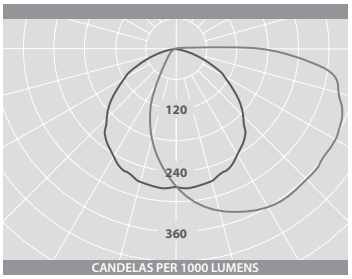
D.L.O.R. 98% U.L.O.R. 2%




Luminaire Lumen Output
**18W** = 1430lm

### POLYCARBONATE COVER - 32W LED (Area Distribution)

D.L.O.R. 98% U.L.O.R. 2%



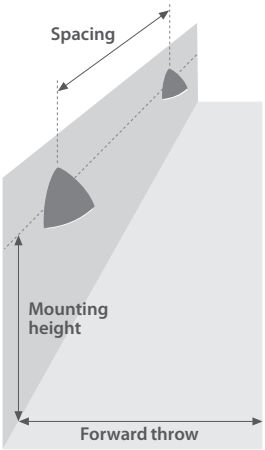

Luminaire Lumen Output
**32W** = 2700lm

## Performance Guide

**Photometric Performance** -
18W LED with polycarbonate cover

| SPACING | AVERAGE ILLUMINANCE | UNIFORMITY (min/av) |
|---|---|---|
| **3m mounting height** - 3m forward throw | | |
| 10m ctrs | 18 lux | 0.53 |
| 15m ctrs | 12 lux | 0.49 |
| 20m ctrs | 10 lux | 0.35 |
| **4m mounting height** - 4m forward throw | | |
| 10m ctrs | 15 lux | 0.64 |
| 15m ctrs | 9 lux | 0.55 |
| 20m ctrs | 7 lux | 0.49 |
| **5m mounting height** - 5m forward throw | | |
| 10m ctrs | 10 lux | 0.56 |
| 15m ctrs | 7 lux | 0.49 |
| 20m ctrs | 5 lux | 0.55 |

FIGURES ARE BASED ON INITIAL LUMENS




**e.g.** At 3m mounting height and 10m centres: 18 lux average horizontal illuminance at ground level

## Accessory

| DESCRIPTION | CAT. No. |
|---|---|
| Key for 4mm tamper-resistant screws | **KEY 7979** |

# Realta

## LED vandal-resistant sealed luminaires

## Specification

- Graphite full polyester powder finish. Silver option
- Strong die-cast LM2 aluminium body
- High efficiency prismatic polycarbonate front refractor
- Wide distribution (18W LED) or area distribution (32W LED) options
- Highly specular, multi-faceted injection moulded vacuum metallised reflector
- Excellent distribution with less than 2% upward light component
- Optional photocell control
- Conventionally switched and Smart External versions
- Tamper-resistant pin hex screw fixings (Requires tool - see Accessories table below)
- Fitted with 5000K LEDs (18W) and 5700K LEDs (32W)

IP66 LED IK10++ CE

*Wide distribution*

*Area distribution*

*Realta Design Registration Number 3024955*

18W LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 65 | 5000 | 60K | P | >85 | R | >0.95 | 61.9 |

32W LED Characteristics

| Ra | °K | L70/B10 | P/U | % | R/Rx | PF | LL/CW |
|---|---|---|---|---|---|---|---|
| 65 | 5700 | 60K | P | >88 | R | >0.95 | 73.0 |

For LED characteristics explanation see page 3

*Single luminaire pole mounting attachment* - **RL 13759**

*Twin luminaire pole mounting attachment* - **RL 14175**

## Range

| LED | WIDE DISTRIBUTION | AREA DISTRIBUTION | APPROX. kg | CIRCUIT |
|---|---|---|---|---|
| 18W | **RL 14436T** | | 3.8 | L/A |
| 32W | | **RL 15849T** | 3.9 | L/A |

**CIRCUIT TYPE** - suffix catalogue number with:
**L - non-dimming (LED)** / **A - dimming (DALI)** e.g. **RL 14436LT** etc.

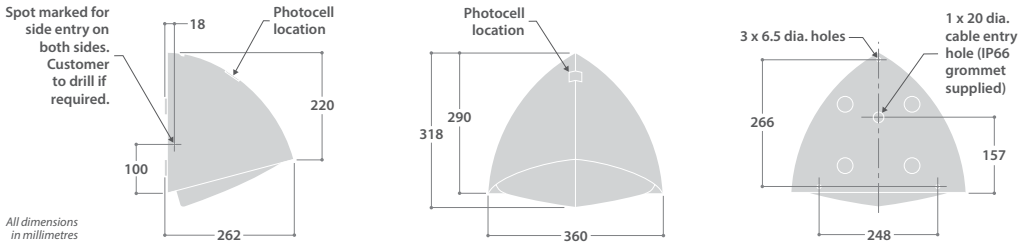
**SILVER OPTION** - add suffix **SV3** e.g. **RL 14436LTSV3** etc.

**EMERGENCY VERSION** - prefix catalogue number with:
**ERL - Emergency** / **TRL - AutoTest** / **DRL - Scanlight AT** e.g. **ERL 14436LT** etc.
Emergency, AutoTest and Scanlight AT versions add 0.4kg to weights listed

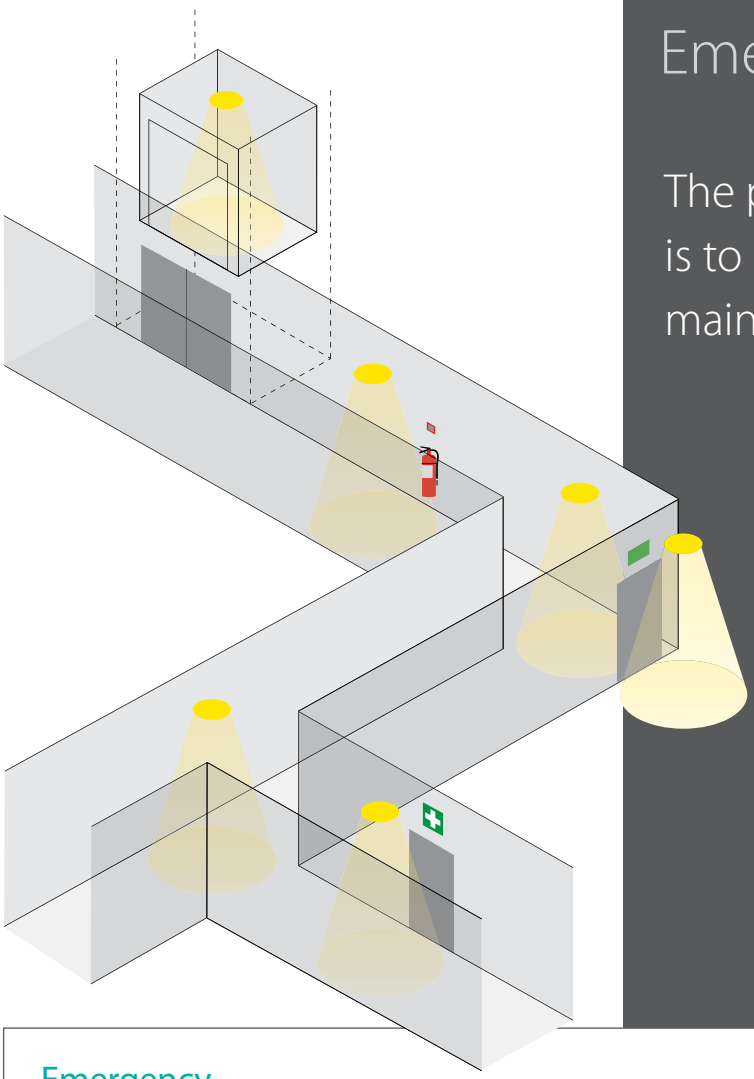
## Options

| DESCRIPTION | SUFFIX | EXAMPLE |
|---|---|---|
| Photocell | **PC** | **RL 14436LTPC** |

## Dimensions



# Emergency Lighting Systems



## The purpose of emergency lighting is to provide light in the event of a mains or local power supply failure.

The emergency lighting design must take into account the following:

- **Escape route signs**
- **Stairs so that each flight receives direct light**
- **Changes in level**
- **Changes of escape route direction**
- **Corridor intersections**
- **First aid posts**
- **Fire alarm call points or pieces of fire fighting equipment**
- **External areas in the immediate vicinity of final exits**
- **Moving stairways and walkways**
- **Toilet facilities exceeding 8m² or any multiple closet facility without borrowed light**
- **Toilet facilities for disabled use**
- **Motor generator, control and plant rooms**
- **All other areas as deemed by the Risk Assessment**

## Emergency

### Stand-alone Standard Emergency

A range of individually engineered or modified standard luminaires meeting all relevant emergency luminaire standards but requiring manual testing and maintenance regimes to ensure continued product integrity.

## AutoTest

### Stand-alone Emergency

AutoTest emergency luminaires not only meet the basic requirements of standard emergency lighting products but include the Thorlux AutoTest automatic self-test system. AutoTest products only require visual inspection as the integral luminaire status LED advises the operational status of the luminaire and the type of fault, should a fault have occurred.

## Scanlight AT

### Grouped systems with off-site monitoring capability

The Scanlight AT system offers the benefits of AutoTest but with the added convenience of single point local small group monitoring of up to 30 luminaires, single point multi-group monitoring of up to 7500 luminaires or single or multi-site web based monitoring. Scanlight AT systems are ideally non-maintained systems based on the use of recessed LED downlighters and LED exit and ancillary luminaires. This system is offered in a number of platforms from local user responsibility through to Thorlux monitoring and maintenance. Truly fit and forget emergency lighting.

Thorlux Headquarters, Redditch

# Why Buy From Thorlux?

Thorlux, from its technically sophisticated facilities in the UK, designs and manufactures a comprehensive range of professional lighting and control systems, including energy-efficient solutions. When choosing Thorlux for architectural, commercial, floodlighting, industrial, hazardous area or tunnel applications, you can be confident of receiving:

- **Professional, competent advice from a long-established UK company**
- **A choice of lighting and control systems subject to stringent quality control (BS EN ISO 9001:2008)**
- **Excellent customer service and a 5-year warranty**

Thorlux, for nearly 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.

Thorlux luminaires are subject to stringent quality control, as demonstrated by the company's **BS EN ISO 9001:2008** ***(Quality management systems)*** accreditation. Additionally, accreditation of Thorlux to **BS EN ISO 14001:2004** ***(Environmental management systems)*** gives the customer assurance that the company manufactures its products in the most environmentally friendly manner.

# Made in Britain

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

The F.W. Thorpe Plc group employs over 500 people. In 2011/12, the group paid over **£11 million** in tax to the UK government - an amount which supports UK local authorities and jobs within them.

By manufacturing in the UK, Thorlux can meet urgent customer demands without the need to transport products by air to the UK, which would involve additional financial and environmental costs.

# 5 Year Warranty

Thorlux designs and manufactures its luminaires to the highest standards, ensuring optimal performance and reliability. All Thorlux LED and conventional luminaires delivered after the 1st January 2013 are covered by a 5 year warranty (excluding lamps and batteries). 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.*

# 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 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 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.

In-house LED Printed Circuit Board Production

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:

- **LED's, as with lamps, can sit behind a controller or diffuser which will help to spread the light over a wider area, providing a uniform light**
- **Having multiple LEDs on a luminaire provides the option of having individual optics for each LED**
- **Blue light LEDs in combination with a remote phosphor disc and a mixing chamber made from highly reflective material can maximise efficiency, with the added benefit of diffusing the light over a wider area, thus reducing glare from the LED itself**

Almost all Thorlux 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.

# Thorlux Product Testing

In-house Goniophotometer

Rigorous product testing is essential in maintaining a reputation for reliability and quality.

The Thorlux third-party accredited photometric laboratory enables the company to obtain the best optical performance from its luminaires. In addition, customers can be sure that photometric data provided by Thorlux is accurate.

In the photometric test laboratory, a sophisticated goniophotometer gives fast and reliable measurements of the light distribution from luminaires. An integrating sphere equipped with spectral analyser accurately measures light quality, efficiency and colour temperature.

Other in-house testing covers environmental and electrical parameters including extreme ambient temperatures, dust/water ingress, electromagnetic compatibility and current harmonics, in accordance with relevant European standards.

All test equipment is subject to regular in-house maintenance and calibration, with external third party calibration at regular intervals to ensure accuracy of data.

# Thorlux Company Accreditations


Declaration of Conformity

CE

## Thorlux Certificates of Conformity

Thorlux products are manufactured to the most stringent quality control standards in the most environmentally friendly manner.

Certificates of Conformity are available stating that Thorlux luminaires have been tested to and comply with the relevant international standards for the manufacture and testing of luminaires and related products. The standards used are:

| | |
|---|---|
| **EN 55015** | **Limits and measurement of radio disturbance** |
| **EN 61547** | **Electromagnetic compatibility immunity requirements** |
| **EN 61000-3-2** | **Limits for harmonic current emissions** |
| **EN 60598-1** | **Luminaires: general requirements and tests** |
| **EN 60598-2-1** | **Fixed general purpose luminaires** |
| **EN 60598-2-22** | **Luminaires for emergency lighting** |

Each certificate also confirms that products are manufactured to an approved ISO 9001 quality system, and that products are fully tested before despatch. Tests include those for safety earth circuit continuity, high voltage electrical strength, full circuit functionality including dimming, and current drawn. Specialist in-house protection circuitry is employed to prevent damage to equipment under test conditions.

The accreditations to ISO 9001 and ISO 14001, coupled with the in-house testing to BS standards, are clear statements that Thorlux cares about the quality of its products and about the environment.

## How to specify your lighting supplier:

1. The supplier shall have ISO 9001 (Quality) independent assessment and accreditation.
2. The supplier shall be responsible for its environmental activities and demonstrate genuine concern. This shall be proven by independent assessment and accreditation to ISO 14001.
3. The supplier shall provide Certificates of Conformity demonstrating compliance with European legislation directives 2006/95/EC, 2004/108/EC and 2011/65/EU.
4. Photometric test information shall be available from equipment which is independently assessed.
5. The supplier shall offer a commissioning service, provided by its own trained technicians. A commissioning certificate shall be provided.
6. 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.
7. Products and services shall be backed by a comprehensive 5-year warranty - the supplier will have an established history and track record.

## Thorlux ISO 9001:2008 Certification

FM 10913

ISO 9001:2008 specifies the criteria for a company-wide quality management system. Using ISO 9001:2008 helps Thorlux ensure that its customers get consistently good quality products and services.

Thorlux has implemented procedures for designing and developing products using process control, to ensure consistency of manufacturing. All manufactured products are subject to full testing procedures covering both functional and, very importantly, electrical safety. Records of all production tests as well as all design and development tests are kept for future reference.

Internal auditing ensures that quality management procedures are appropriate and maintained. Any issues can be dealt with through continual improvement. Corrective action is also followed with preventative action to improve the process and eliminate any chance of a reoccurrence.

Compliance with ISO 9001 is externally audited by a third party.

## Thorlux ISO 14001:2004 Certification

EMS 532104

ISO 14001:2004 sets out the criteria for an effective environmental management system. Being accredited to ISO 14001:2004 assures customers that Thorlux measures and reduces its environmental impacts and complies with environmental legislation.

Compliance with ISO 14001 has put a focus on product design. Thorlux uses the most efficient materials and components, reducing the environmental impact through the life of each luminaire.

The manufacturing process is constantly monitored to improve resource efficiency and reduce waste. Any waste generated, including end-of-life components, is subject to ethical disposal or recycling.

Thorlux's UK operation is carbon offset via an independently endorsed, government approved, company controlled scheme.

## 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.

The company also offers a professional on-site commissioning service to ensure that products are configured to provide the desired performance and return on investment. For this service, Thorlux employs its own fully trained personnel.

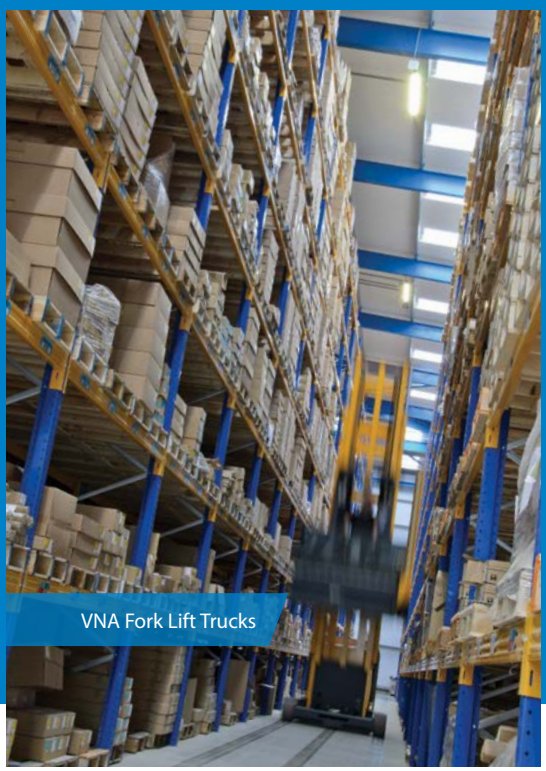
# Investing for the Future

Thorlux has recently opened a new 2400m² warehouse and distribution centre at its headquarters in Redditch, UK.

In line with the company's environmental policy, the building has clear roof lights to benefit from natural light, and insulated cladding to improve thermal efficiency. A steel-fibre-reinforced super-flat floor ensures that fork lift trucks can operate at full speed in total safety. Lighting is achieved with the latest Smart controlled Solow LED fittings. A passive infrared sensor detection system, maintained illuminance and daylight harvesting ensure that a minimum of energy is consumed.

To allow efficient picking of finished goods, two 1.5-tonne capacity "man-up" very narrow aisle fork lift trucks will raise the warehouse order pickers to the highest pallet locations to pick individual fittings, without the need to bring full pallets down to floor level. For safety, a personal protection system automatically stops the fork lift truck if a person or object is detected nearby.

The new Thorlux warehouse enables core product ranges to be stocked and made available for speedy delivery using Thorlux vehicles in the majority of cases.



VNA Fork Lift Trucks

# Carbon Offsetting

Thorlux is committed to minimising the environmental impact of both its manufacturing processes and its products. However, even with the most responsible approach, some carbon dioxide ($CO_2$) will be released into the atmosphere as an indirect result of factory and selling activities and customers' use of luminaires.

In 2009, Thorlux established an ambitious carbon-offsetting scheme to help compensate for these emissions. The company has chosen to plant trees. Why trees? Trees and other plants absorb $CO_2$ during photosynthesis. One tree grown to maturity in open space can absorb approximately 1 tonne of $CO_2$ over its lifetime. A forest covering many acres can effectively lock up $CO_2$, creating a 'carbon sink'.

The scheme is now accredited under the Woodland Carbon Code. On its own land in Monmouthshire, Wales, Thorlux has to date planted 70,000 trees *(Winter 2014)*.

# With energy savings in excess of 70% and Smart Choice funding, your Thorlux lighting upgrade really can pay for itself

SmartChoice

Funding for Energy Efficient Mental Healthcare Lighting

**Smart Choice** removes a significant barrier to wider adoption of energy efficient lighting in Mental Healthcare establishments by eliminating the need for an upfront capital investment. Costs can be spread over an agreed term allowing for savings in energy to match or exceed payments.

## Key Benefits

- Funding provided directly by Thorlux Lighting (No third party involvement)
- No upfront capital payment
- 5 year Thorlux warranty
- No complicated approval process
- Flexible payment profile

Subject to terms and conditions

## How does it work?

### Four Step Process

The following four step process is carried out by a Thorlux Lighting engineer to maximise energy savings and return on investment:

1. Survey of proposed site
2. Development of a suitable lighting and control scheme
3. Calculation of the return on investment from the scheme
4. Agreement of term and payment profile

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

INDUSTRIAL LUMINAIRES
COMMERCIAL LUMINAIRES
FLOODLIGHTING LUMINAIRES
ARCHITECTURAL LUMINAIRES
CONTROLS AND SYSTEMS
TUNNEL LIGHTING SYSTEMS
ROADWAY LIGHTING

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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ISO 9001 Quality Management
ISO 14001 Environmental Management
FM 10913 EMS 532104