



EXTERNAL LED LIGHTING ASSESSMENT REPORT

FOR

PLP - KNOWSLEY

A PROJECT FOR

PLP AND KNOWSLEY UNIT TRUST

AUTHOR: A BATHIE-NEALE
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EXTERNAL LIGHTING – KNOWSLEY
STATUS: PLANNING SUBMITTAL

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Appended Drawings - External Lighting Design, 20-010-EX-001

Appended Result Sheet – Reduction of Obtrusive Light

Appended Data Sheets – Thorlux Products

1.0 INTRODUCTION

1. This external lighting assessment report has been prepared by MBA Consulting Engineers Ltd on behalf of PLP and Knowsley Unit Trust to support the full application for the proposed development.
2. The proposed development comprises the erection of B8 warehouse including ancillary office and welfare floorspace, truckers lounge, gatehouse, access, parking and servicing areas, and associated works and infrastructure'
3. The lighting scheme covers all the external areas incorporating the buildings, including all external areas to the building perimeter, dock doors, car, HGV, cycle and motorbike parking spaces, service yard, access roads, walkways, bus terminal, gatehouse, sprinkler plant, transformer/refuse area, bailer and compactor area.
4. The scheme is based on the use of LED luminaires fixed to columns and the building façades as detailed on the accompanied drawings, 20-010-EX-001.

2.0 LIGHTING SOLUTION

1. The lighting solution has been prepared in accordance with the current Design Standard for Exterior Lighting in conjunction with BS 5489-1:2013, BS EN 13201-2:2015, BS EN 12464-2:2014 and CIBSE LG6 The Outdoor Environment.
2. Care has been taken when selecting the luminaires that ensures the appropriate products will greatly reduce spill light and glare to and around site boundaries and prevent sky glow.
3. Full cut-off luminaires have been selected to minimize obtrusive lighting at the site boundary.
4. Horizontal, "flat" floodlights and LED that are housed in the luminaires canopy have been selected.
5. Best lighting practice design guide lines have been followed in order to achieve the criteria outlined in The Institution of Lighting Professionals: Guidance Notes for the Reduction of Obtrusive Light, 2020, covering Environmental Zones E0 to E4.
6. Proposed luminaires do not have an upward light ratio (ULR) of more than 0% outside of a very small proportion of fittings which have been provided with a 5 degree tilts locally. This is inline with table 7 of the ILP guidance. The scheme has strategically designed in order to meet the criteria of environmental zone E2, Lighting Environment classification of Low Rural District Brightness, please see extracts in table 2 below. The overall performance of the site can be found within the appendix of the report. This shows the site well within the allotted criteria allowances.

Table 2: Environmental zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

7. The environmental zone achieved for E2 as detailed above.

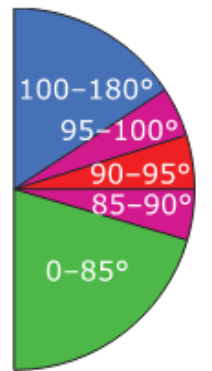
Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on properties.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Table 7 (CIE 150 table 6): Maximum values of upward flux ratio of installation (of four or more luminaires).

Light technical parameter	Type of installation	Environmental zones				
		E0	E1	E2	E3	E4
Upward flux ratio (UFR)/%	Road	n/a	2	5	8	12
	Amenity	n/a	n/a	6	12	35
	Sports	n/a	n/a	2	6	15

8. The proposed Thorlux luminaires generally have a ULR of 0% and drastically reduce the upward spread of light near to and above the horizontal. The most sensitive/critical zones for minimising sky glow are those between 90 and 100 degrees as shown below and referred to as the lower, upward lighting zone (UL).



Indicative diagram

Table 1: The effect on the ability to view the night sky at various angles

Angle of light emitted (degrees)	Sky glow effect	Glare effect
100 – 180	Local	Little
95 – 100	Significant	Some
90 – 95	High	High
85 – 90	Significant	High
0 – 85	Minimal	Some

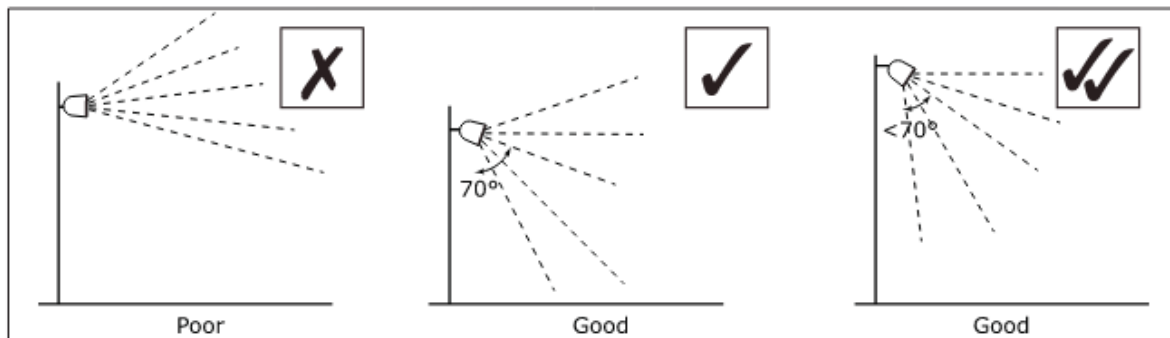


Figure 3 Luminaire aiming angles

9. At the designed mounting heights, the chosen luminaires ensure that greater spacing between luminaires is achieved thus reducing the number of lighting points overall reducing energy use and the carbon footprint of the site.
10. Glare has been kept to a minimum by ensuring that the main beam angle of all the luminaires directed towards any potential observer is not more than 70 degrees.
11. Results of the reduction of obtrusive lighting assessment can be found within the appendix of this document.

3.0 DESIGN STATISTICS

- The following table details the design statistics achieved within the various areas of the development and should be read in conjunction with the external lighting drawing appended to this report.

Design Statistics Table (please refer to the layout drawing for more detail)

STATISTICS				
Description	Symbol	Avg	Min	Min/Avg
BUILDING ENTRANCE [50/0.40]	+	64 lux	55 lux	0.86
BUILDING PERIMETER [10/0.25]	+	27 lux	7 lux	0.26
BUS DEPOT [100/0.40]	+	105 lux	50 lux	0.48
CAR PARKING [20/0.40]	+	20 lux	8 lux	0.40
CYCLE STORE [20/0.40]	+	147 lux	94 lux	0.64
EXTERNAL BREAKOUT SPACE [100/0.40]	+	100 lux	59 lux	0.59
EXTERNAL BREAKOUT SPACE [100/0.40]	+	100 lux	59 lux	0.59
GATEHOUSE [100/0.40]	+	106 lux	89 lux	0.84
HGV ENTRY/EXIT ROAD [100/0.40]	+	102 lux	42 lux	0.41
HGV HOLDING AREA [50/0.40]	+	77 lux	48 lux	0.62
HGV LOADING BAYS [100/0.40]	+	53 lux	22 lux	0.42
HGV SERVICE YARD [25/0.40]	+	26 lux	11 lux	0.42
PLANT AREA 1 [100/0.40]	+	157 lux	131 lux	0.83
PLANT AREA 2 [100/0.40]	+	127 lux	87 lux	0.69
SITE WALKWAY [10/0.25]	+	45 lux	12 lux	0.27

- The results obtained fall in line with the respective guide lines Environmental Zones E2 inclusive as detailed elsewhere in this report.
- As further detailed on the drawing any potential light spill over the boundaries into adjoining areas has been kept to the minimum which is detailed by contour lines on the appended drawing 20-010-EX-001. The contour line clearly details the average spill zone area the results of which are also detailed in the table above. The two lux contour lines show the average spill of 2 lux and 1 lux at 0m AFFL respectively around and in the vicinity of the boundaries of the

site. For general guidance and description only 1 lux of horizontal lighting spill is equivalent or similar to the effect of a completely clear cloudless night with a full moon present.

4. Heights of all the columns and wall mounted luminaires are shown on the drawing and the design table detailed elsewhere in this report.

4.0 CONCLUSION

1. The total lighting solution has been carefully generated to ensure the immediate environment has been protected.
2. The illumination that would normally be free flowing from site boundaries has been restricted and has been further designed to mitigate any potential impact within any ecology zones.
3. Careful consideration has also been taken to ensure no loss of amenity due to glare through shielding of the lamps, choice of luminaires and efficient mounting heights.
4. It should be further noted that the service yards and associated area illumination has been designed to meet operational and security requirements whilst ensuring the design takes into consideration and limit any possible impact on the surrounding amenity and ecological zones.
5. The lighting has been kept to a practical standard using a mixture of efficient high quality building and column mounted luminaires which have been chosen to minimise impact on the natural environment. Full descriptions and details / datasheets of the proposed luminaires are as detailed within the appendix of this report and the drawing 20-010-EX-001.
6. Overall, the proposed development requires appropriate levels of illumination throughout to satisfy the traditional use of the site.

5.0 APPENDIX

COM-ORDER FOR INFORMATION
IN ACCORDANCE WITH THE REQUIREMENTS NORMALLY
APPLICABLE WITH THE TYPES OF WORK DETAIL
NOTED THE FOLLOWING:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSION/DEMOLITION

FURTHER INFORMATION CAN BE FOUND ON
DESIGNER RISK ASSESSMENT NUMBER
IT IS ADVISED THAT ALL WORKS WILL BE CARRIED
OUT BY A CONTRACTOR COMPETENT UNDER COM
2018 REQUIREMENTS IN AN APPROVED SERVICE
STATEMENT

- Notes
- DO NOT SCALE THIS DRAWING.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS AND SPECIFICATIONS.

LUMINAIRE SCHEDULE						
Symbol	Label	Qty	Catalog Number	Description	Lamp	Watts
	G2	24	THORLUX Starbeam Large 96 LED	Column Mounted @ 10m 0° Tilt	1 x 27,470 Lumens 4,000K Colour Temp CR80 135 Lm/W	203
	G2B	15	THORLUX Starbeam Large 96 LED	Column Mounted @ 10m 0° Tilt	1 x 26,070 Lumens 4,000K Colour Temp CR80 128 Lm/W	203
	J1.2	2	THORLUX Starbeam Small 48 LED	Column Mounted @ 10m 0° Tilt	2 x 19,035 Lumens 4,000K Colour Temp CR80 146 Lm/W	260
	J1B	1	THORLUX Starbeam Large 96 LED	Column Mounted @ 10m 5° Tilt	1 x 18,040 Lumens 4,000K Colour Temp CR80 137 Lm/W	131
	J2B	31	THORLUX Starbeam Large 96 LED	Column Mounted @ 10m 5° Tilt	1 x 27,340 Lumens 4,000K Colour Temp CR80 130 Lm/W	203
	G2	11	THORLUX Juno D 30-PLY [JUN18532]	Column Mounted @ 10m 0° Tilt	1 x 31,920 Lumens 4,000K Colour Temp CR80 120 Lm/W	265
	G3	5	THORLUX Juno D 30-PLY [JUN18533]	Column Mounted @ 10m 0° Tilt	1 x 39,940 Lumens 4,000K Colour Temp CR80 114 Lm/W	360
	R2	1	THORLUX Juno D 30-PLY [JUN18535]	Column Mounted @ 10m 0° Tilt	1 x 16,280 Lumens 4,000K Colour Temp CR80 131 Lm/W	144
	G1.w	2	THORLUX Starbeam Small 48 LED	Wall Mounted @ 6m 0° Bracket Tilt	1 x 17,435 Lumens 4,000K Colour Temp CR80 133 Lm/W	131
	G2.w	16	THORLUX Starbeam Large 96 LED	Wall Mounted @ 10m 0° Bracket Tilt	1 x 27,470 Lumens 4,000K Colour Temp CR80 131 Lm/W	203
	S.w	71	THORLUX Starbeam Small 48 LED	Wall Mounted @ 5m 0° Bracket Tilt	1 x 2,835 lumens 4,000K Colour Temp CR80	23
	T.w	2	THORLUX Realis Bulbhead	Wall Mounted @ 4m 0° Bracket Tilt	1 x 1,300 lumens 4,000K Colour Temp CR80	8
	U.w	27	THORLUX Realis Bulbhead	Wall Mounted @ 5m 0° Bracket Tilt	1 x 2,700 lumens 4,000K Colour Temp CR80	22
	U2.w	2	THORLUX Realis Bulbhead	Wall Mounted @ 5m 0° Bracket Tilt	1 x 4,850 lumens 4,000K Colour Temp CR80	38
	ZR	1	THORLUX Aspect 3 ZR-Lens	Column Mounted @ 6m 0° Bracket Tilt	1 x 10,130 lumens 5,700K Colour Temp CR80	95
	ZL	1	THORLUX Aspect 3 ZL-Lens	Column Mounted @ 6m 0° Bracket Tilt	1 x 10,130 lumens 5,700K Colour Temp CR80	95
	ZR.w	2	THORLUX Aspect 3 ZR-Lens	Wall Mounted @ 6m 0° Bracket Tilt	1 x 10,130 lumens 5,700K Colour Temp CR80	95
	ZL.w	2	THORLUX Aspect 3 ZL-Lens	Wall Mounted @ 6m 0° Bracket Tilt	1 x 10,130 lumens 5,700K Colour Temp CR80	95
	X1	4	THORLUX Passway Bollard Area Optic	1m Bollard with FlexBase	1 x 1,450 Lumens 4,000K Colour Temp CR80	21
	Z1	11	THORLUX Thornproof	Surface Mounted	1 x 5,035 Lumens 4,000K Colour Temp CR80 139 Lm/W	36
	Em-Ex	24	THORLUX Lasc-IG	Surface Mounted	2W LED	2
	V1	32	THORLUX Vantage	Surface Mounted @ 4m	1 x 5,060 Lumens 4,000K Colour Temp CR80	61

STATISTICS				
Description	Symbol	Avg	Min	Min/Avg
BUILDING ENTRANCE [500:40]	+	64 lux	55 lux	0.86
BUILDING PERIMETER [100:25]	+	27 lux	7 lux	0.26
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HGV SERVICE YARD [250:40]	+	26 lux	11 lux	0.42
PLANT AREA 1 [1000:40]	+	157 lux	131 lux	0.83
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SITE WALKWAY [100:25]	+	45 lux	12 lux	0.27

POWER DENSITY STATISTICS		
Name	# Luminaires	Total Watts
External Electrical Loading	263	28501.0 W

T4	02.06.21	ISSUED FOR TENDER	ABN
T3	16.11.20	ISSUED FOR TENDER	ABN
T2	16.10.20	ISSUED FOR TENDER	ABN
T1	16.09.20	ISSUED FOR TENDER	ABN
Rev	Date	Amendments	Appr'd
Client			



Project PLP - KNOWSLEY

Title EXTERNAL LIGHTING LAYOUT

Drawing No 20-010-EX-001 Rev. T4

Status TENDER

Scale 1:750 @A0

Date FEB 2020

Designed by ABN

Drawn by JG

mba CONSULTING ENGINEERS

Maple House, Woodlands Business Park, Lifford Wood West, Milton Keynes, MK14 6GS T 01908 500099



B R E E A M
- R E D U C T I O N O F O B T R U S I V E L I G H T -

Obtrusive light can be substantially reduced without detriment to the lighting task, as both a lighting manufacturer and supplier Thorlux is committed to reduction by design.

Sky Glow, Obtrusive Glare and Light Trespass are all forms of Obtrusive light and contribute to unnecessary waste in electrical consumption, the emission of greenhouse gases and public nuisance.

ILE guidance notes for the reduction of obtrusive light (2020) can be found at www.ile.org.uk

Local Planning Authorities (LPA's) as part of their development framework produce individual policies relating to external lighting, the relevant documentation should be sought for compliance.

The information provided within this document is representative of the lighting design provided by Thorlux and is intended to be used within this context.

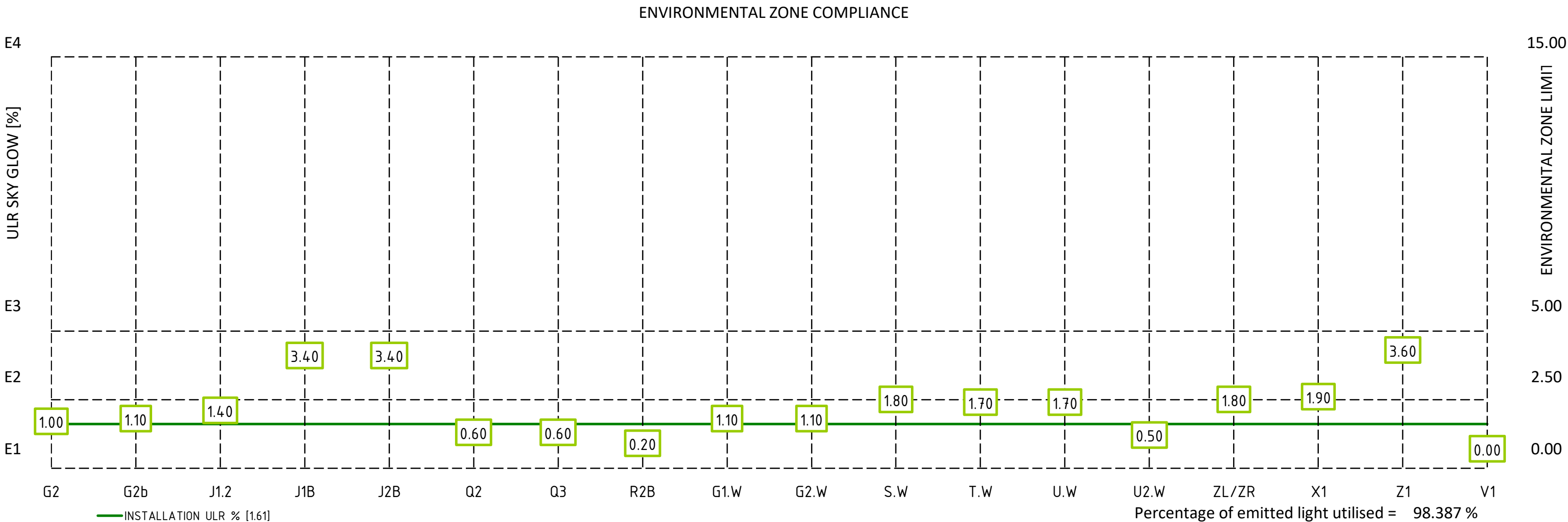
PROJECT NUMBER		PROJECT NAME					AREA DETAILS		ENVIRONMENTAL ZONE				
530330		PLP (Amazon) Knowsley					Complete Site		E2: Low District Brightness Areas				
REF	OPTIC	PRODUCT	TILT	NUMBER	LUMENS	CIRCUIT	LUMENS PER	COLOUR	LIGHT OUTPUT RATIO		DELIVERED	TOTAL	ULR
#	DETAILS	DETAILS	(°)	OF FITTINGS	PER FITTING	WATTS	CIRCUIT WATT	INDEX [CRI]	LOR [%]	ULOR [%]	LUMENS	ULOR LUMENS	SKY GLOW [%]
G2	GA2 - AREA	LED	0	24	27,337	208	131.43	70.00	100.0	1.00	656,088	6,561	1.00
G2b	GA2 - AREA	LED	0	15	26,070	208	125.34	70.00	100.0	1.10	391,050	4,302	1.10
J1.2	GR5 - ROADWAY	LED	5	4	19,035	130	146.42	70.00	100.0	1.40	76,140	1,066	1.40
J1B	GR5 - ROADWAY	LED	5	1	18,040	130	138.77	70.00	100.0	3.40	18,040	613	3.40
J2B	GR5 - ROADWAY	LED	5	31	27,340	208	131.44	70.00	100.0	3.40	847,540	28,816	3.40
Q2	SY - SYMMETRICAL	LED	0	11	31,920	265	120.45	70.00	100.0	0.60	351,120	2,107	0.60
Q3	SY - SYMMETRICAL	LED	0	5	39,940	350	114.11	70.00	100.0	0.60	199,700	1,198	0.60
R2B	AY - ASYMMETRICAL	LED	0	1	16,280	114	142.81	70.00	100.0	0.20	16,280	33	0.20
G1.W	GA2 - AREA	LED	5	2	15,929	130	122.53	70.00	100.0	1.10	31,858	350	1.10
G2.W	GA2 - AREA	LED	5	16	27,337	208	131.43	70.00	100.0	1.10	437,392	4,811	1.10
S.W	FLOOD	LED	5	71	2,835	23	123.26	70.00	100.0	1.80	201,285	3,623	1.80
T.W	WIDE	LED	0	2	1,300	8	162.50	70.00	100.0	1.70	2,600	44	1.70
U.W	WIDE	LED	0	27	2,700	22	122.73	70.00	100.0	1.70	72,900	1,239	1.70
U2.W	AREA	LED	0	2	4,850	38	127.63	70.00	100.0	0.50	9,700	49	0.50
ZL/ZR	Crossing Optic	LED	0	6	10,130	95	106.63	70.00	100.0	1.80	60,780	1,094	1.80
X1	SY - SYMMETRICAL	LED	0	4	1,450	21	69.05	70.00	100.0	1.90	5,800	110	1.90
Z1	THOROPROOF	LED	0	11	5,035	36	139.86	70.00	100.0	3.60	55,385	1,994	3.60
V1	VENTEGO SURFACE	LED	0	32	5,060	61	82.95	70.00	100.0	0.00	161,920	0	0.00
ACCESS WAY & PATHS >							50	INSTALLATION ULR % =					1.613
CAR-PARKS & ROADS >							70	E2 SPECIFICATION <					2.50
ENE 03 VERDICT =							PASS	E2 VERDICT =					PASS

Values shown in red fall below ILE recommended guidelines for obtrusive light, Thorlux recommends the use of an alternative luminaire or appropriate glare contol accessory.

Please contact your regional sales engineer for more information regarding luminaire controls and their use in reducing obtrusive light and conserving energy.

For certain applications some lighting schemes will require the deliberate and careful use of upward light - e.g. ground recessed / mounted luminaires - to which these limits cannot apply.

However, care should be taken to minimise any upward waste light by the proper application of suitably directional luminaires and light controlling attachments.



ASPECTZEBRA

"to highlight crossings with clearly defined contrast & provide excellent vertical illumination of pedestrians"



IP66 Ingress Protection



I Electrical Class



IK10 Impact Resistance



-20°C Minimum Ambient



9.2kg (131W) Weight



45°C Maximum Ambient



0.068m² (131W) Wind Area



LED Light Source

ASPECT ZEBRA

System Power	Zebra Left	Zebra Right	CCT	Lumen Output	CRI	System Efficiency
68w	✓	✓	5700k	7430lm	>70	109lm/w
95w	✓	✓	5700k	10,130lm	>70	106lm/w
131w	✓	✓	5700k	13,510lm	>70	103lm/w



TRTLIGHTING



A specific internal louvre and lens arrangement provides the desired 'Left' and 'Right' distribution according to the project geometry.

PowerSet

The PowerSet module option allows on site power adjustment providing maximum flexibility both in-situ and for stock holding.

Each module accommodates the selection of any one of the range of UMSUG coded system powers for the Aspect Mini.

ASPECTZEBRA

SPECIFICATION

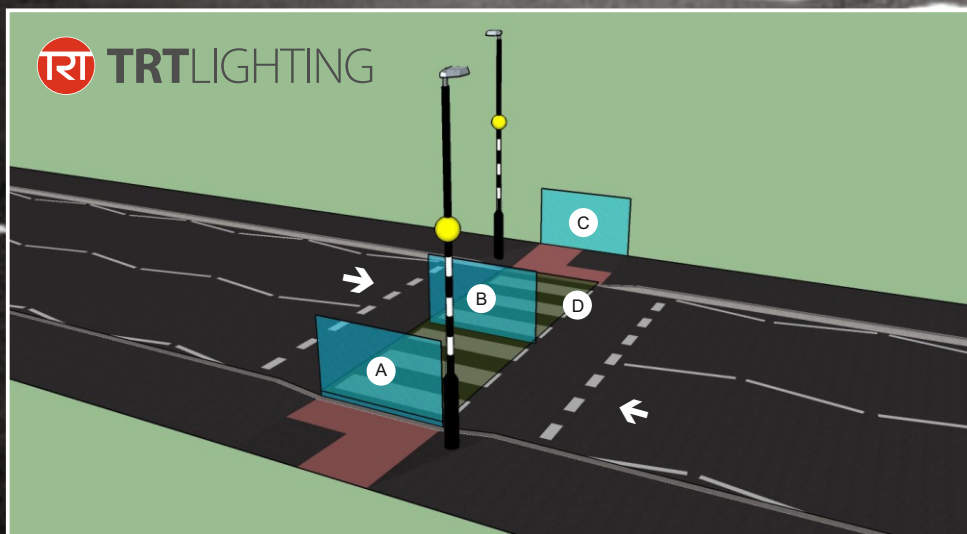
- LED colour temperature of 5700k
- Colour Rendering Index >70
- 100,000 hour lifetime (LED & Driver)
- Up to 109lm/W
- Power Factor >0.96 at full load
- High quality pressure die cast LM6 aluminium heat sink & gear compartment
- Post top mounting of 76mm or 60mm with reducer
- Post top inclination of 0, +5 and +10
- Side entry mounting of 34mm, 42mm & 60mm with reducer
- Side entry inclination of -10, -5, 0, +5 & +10
- Wide variety of colour finishes
- Dali, 1-10V, CMS or Part Night Dimming compatible
- Dim level 10-100%
- Polycarbonate Cover (UV Stabilised)
- UMSUG codes available for the full product range

ELECTRICAL CHARACTERISTICS

Product	Aspect Zebra PowerSet (68W, 95W & 131W Selectable Wattage)
LED CCT	5700k
LED CRI	>70 as standard
Lumen Output (@ Ta=15°C)	68W: 7,430lm / 95W: 10,130lm / 131W: 13,510lm
Lumen Maintenance	L90, B50 - 100,000 hours
Drive Current	700mA
Driver Efficiency	>90% at full load (230V)
Power Factor	>0.98 at full load
Luminaire Efficacy	>109lm/W
Operational Voltage	220-240VACrms
Operating Frequency	50/60Hz
Inrush Current (230V) (Apk/50%-uS)	All Versions: 125A/115uS
Supply Current (240V)	68W: 0.283A max. / 95W: 0.395A max. / 131W: 0.55A max.
Basic Surge Protection	4kV/4kV (Comm/Diff)
Additional Surge Protection (on request)	10kV/10kA
Lighting Controls Options	Mini Cell, NEMA Cell, CLO, PND or CMS compatible
Dimming Protocols	DALI and 1-10V compatible
Dim Level	10-100%

MECHANICAL CHARACTERISTICS

Housing Material	High pressure die cast aluminium
Lens Material	PMMA
Housing Finish	Chromate free pre treatment Polyester powder coat Grey (RAL9006) Black (RAL9017) Other RAL colours on request
Ingress Protection Rating	IP66
Weight	9.2kg
Wind Area	0.068m ²
Impact Resistance Rating	IK10 (Polycarbonate)
Mounting Methods	Post top 60mm or 76mm Side entry 34mm, 42mm, 60mm or 76mm Wall mounted with dedicated bracket
Mounting Inclination	-10°, -5°, 0°, 5° & 10°
Photometric Centre	450mm (to centre of PCB)



(Arrow denotes direction of traffic)

TR12 for Zebras:

**A - Front of Kerb
(Vertical Grid)**
2 times road average

**B - Centre of Crossing
(Vertical Grid)**
2 times road average

**C - Rear of Waiting Area
(Vertical Grid)**
1.5 times road average

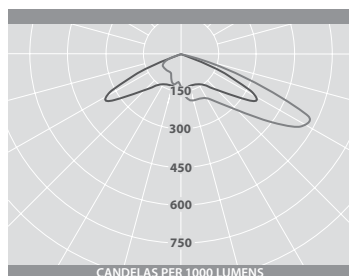
**D - Crossing Carpet
(Horizontal Illuminance)**
3.5 times average for road and 60% Uo

www.trtlighting.co.uk
Tel: +44 (0)1527 919 650
Email: info@trtlighting.co.uk



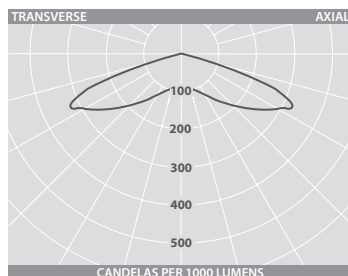


PHOTOMETRIC GUIDE



ASYMMETRIC DISTRIBUTION

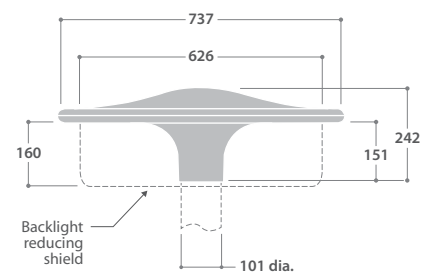
Luminaire Lumen Output:
 99W = 12515lm
 132W = 16280lm
 166W = 19750lm



SYMMETRIC DISTRIBUTION

Luminaire Lumen Output:
 177W = 24020lm
 246W = 31920lm
 326W = 39940lm

DIMENSIONS





HIGH PERFORMANCE LED POLE TOP LUMINAIRES



WINDAGE - 0.06m²

SPECIFICATION

- Strong high pressure die-cast aluminium top and column mount finished full polyester powder coat silver (RAL9006)
- High-impact UV stabilised polycarbonate cover
- Smooth wipe clean surfaces, no dust traps
- Integral high efficiency drivers
- Extremely efficient and long system life up to 100,000 hours
- Acrylic high efficiency LED lenses
- Fits 101mm columns as standard
- Fitted with 12m flying lead
- Photocell option
- Fitted with 4000K LEDs

LED CHARACTERISTICS

CRI	70+
COLOUR TEMPERATURE	4000K
RATED LIFE (HOURS)	100K - L80/B10
PROTECTION	LUX GUARD
DRIVER EFFICIENCY	90%
REPLACEABLE	YES
POWER FACTOR	>0.90

LL/CW 121.9

For LED characteristics explanation see www.thorlux.com/led-guide

RANGE

LED	SYMMETRIC DISTRIBUTION	ASYMMETRIC DISTRIBUTION	APPROX. kg
99W		JUN 18634L	17.0
132W		JUN 18635L	17.0
166W		JUN 18636L	17.0
177W	JUN 18631L		17.0
246W	JUN 18632L		17.0
326W	JUN 18633L		17.0

CIRCUIT TYPE - L - non-dimming (LED)

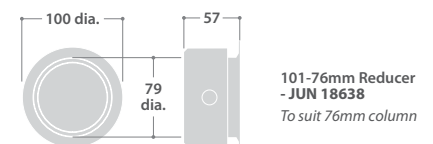
OPTIONS

DESCRIPTION	SUFFIX	EXAMPLE
Photocell	PC	JUN 18631LPC

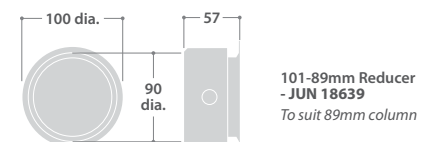
ACCESSORIES

DESCRIPTION	CAT. No.
Backlight reducing shield kit	JUN 18637
101mm to 76mm reducer	JUN 18638
101mm to 89mm reducer	JUN 18639

REDUCERS



101-76mm Reducer
- JUN 18638
To suit 76mm column



101-89mm Reducer
- JUN 18639
To suit 89mm column



With downlight

LEGEND KITS

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

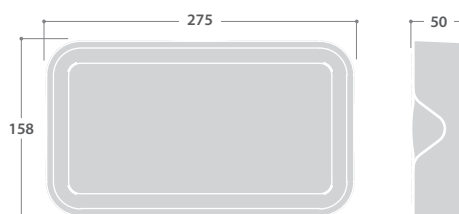


EURO Self Adhesive Legend Kit - Cat. No. LXP 17612*



* Order separately from luminaire

DIMENSIONS





LED EMERGENCY LUMINAIRES WITH DEDICATED SMARTSCAN WIRELESS TECHNOLOGY VERSIONS

IP65 IK10 CE LED

SPECIFICATION

- Polycarbonate body finished white (RAL9016)
- Clear polycarbonate cover
- Uses long life LEDs
- Three hour, maintained emergency operation
- Simple to install, full status reporting SmartScan wireless communication versions
- Low power consumption (3.5W total)
- Integral downlight option for exit illumination
- Optional self-adhesive legend kit
- Status indicator shows operational condition
- Reliable Nickel Metal Hydride (NiMH) battery technology

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

SmartScan Wireless Standards Compliance:

Europe: EN 300 220-1 V2.4.1
/ EN 301 489-3 V1.6.1

Australasia: ACMA 2014 Radio
Communication Standard 2014

Thorlux Patented Wireless
Technology - GB2575724



* SmartScan
versions only

RANGE

LED	CAT. No.	DESCRIPTION	APPROX. kg	TYPE
SmartScan				
2W	WLX 17696	Standard	1.0	Maintained ▲
2W	WLX 17697	With integral downlight	1.0	Maintained ▲
AutoTest				
2W	TLX 17696	Standard	1.0	Maintained ▲
2W	TLX 17697	With integral downlight	1.0	Maintained ▲
Emergency				
2W	ELX 17696	Standard	1.0	Maintained ▲
2W	ELX 17697	With integral downlight	1.0	Maintained ▲

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

SPARES

DESCRIPTION	CAT. No.	APPROX. kg
Nickel Metal Hydride (NiMH) battery	EMB 618	0.15

End of life SmartScan batteries can be returned to Thorlux for recycling.

SmartScan Configurations



Find out more at www.thorlux.com/smartscan



Passway

**High performance bollard luminaires
with superior light distribution**

TL **Thorlux
Lighting**

Introducing Passway

The Passway is a lighting bollard designed to protect itself and those around it.

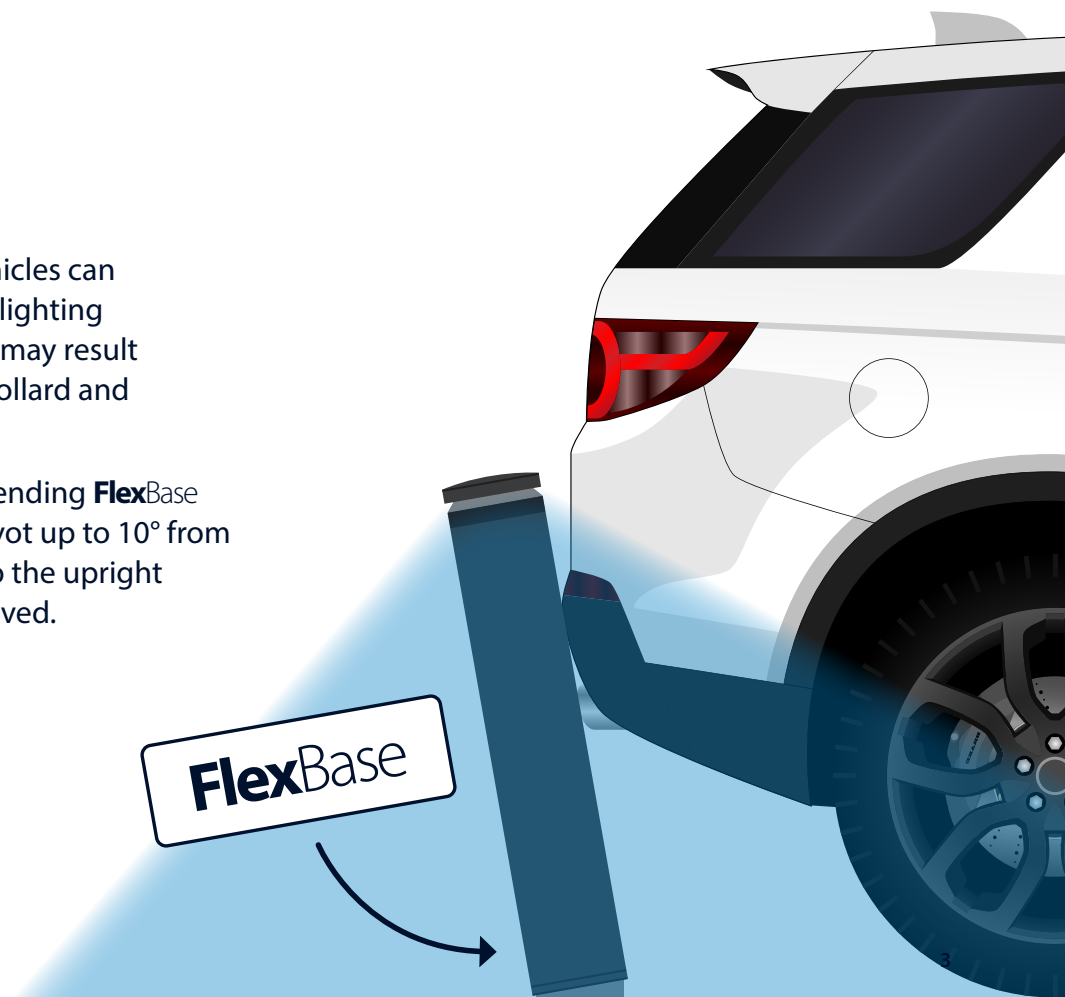
A contemporary, highly robust and optically refined LED bollard with an abundance of unique features.



Bump resistant

Slight knocks from parking vehicles can compromise the structure of a lighting bollard. Any low speed impact may result in irreparable damage to the bollard and spoil the aesthetics.

The Passway features patent pending **FlexBase** technology. This allows it to pivot up to 10° from the vertical, gently returning to the upright position once the force is removed.



The diagram shows the rear right corner of a white car, including the taillight and rear wheel. A blue lighting bollard is positioned next to the car, tilted away from it at an angle. A white rectangular label with the text 'FlexBase' is connected to the bollard by a curved arrow, indicating the pivot point of the technology.

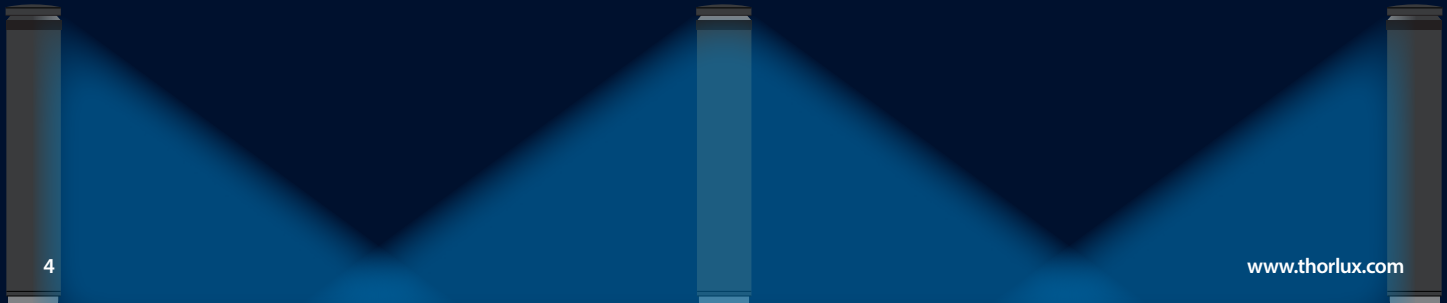
FlexBase

State of the art optics

Contained within the IP66, IK10 head unit, custom designed, high performance optics direct the light exactly where it is needed. A dedicated lens for each LED ensures the most efficient distribution of light resulting in highly impressive luminaire spacings whilst still maintaining uniformity.

A choice of two distribution options are available. The area distribution provides 360° light output whilst the pathway distribution gives 180°.

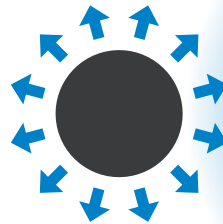
All versions have less than 2% upward light component making Passway suitable for rural as well as urban environments.



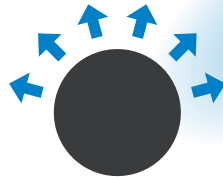
On-site adjustable distribution

The on-board optical selector switch provides on-site adjustment between area and pathway distributions.

When selecting the pathway distribution, only one side of the Passway illuminates producing a 180° light output; simplifying ordering and providing flexibility during installation.



**Area
Distribution**



**Pathway
Distribution**

Maximise spacings and use fewer luminaires

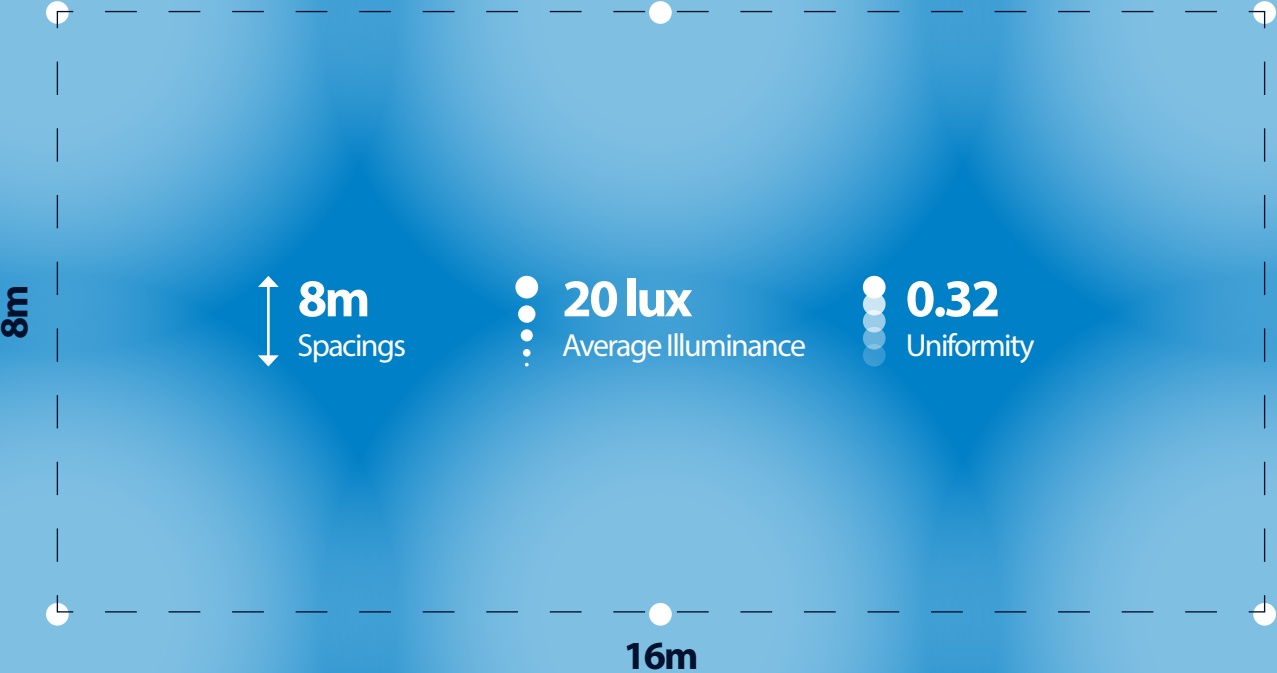
The high performance optics allow the Passway to be spaced further apart than conventional bollards, requiring fewer luminaires to light a space.

Uniformity of light is often problematic when using a bollard solution, usually resulting in close spacings and over lighting. Due to the unique beam pattern of the Passway, high uniformity is still maintained even when spaced up to 9m apart.

Pathway Example



Area Example



Guiding the way in an emergency

The Passway is available with integral emergency and wireless SmartScan Emergency control gear to light the way to fire assembly points outside a building.

The SmartScan Emergency testing system also automatically tests the status of the luminaire and components in accordance with BS 5266-8:2004 and can report back to the SmartScan website when installed with a SmartScan Gateway.



Multiple installation configurations

Root Mounting

Rigid fix



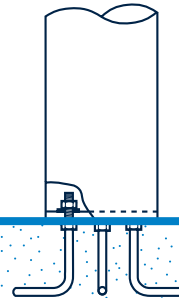
Surface Mounting

With **FlexBase** technology

Direct Mount



J-Bolt Mount Kit



Root Mount Kit



Passway range

Root Mounting



Root Mounting - High Power

Area - 22W
Pathway - 11W

887mm

1137mm

Root Mounting - Low Power

Area - 12W
Pathway - 6W

887mm

1137mm

Surface Mounting



Surface Mounting - High Power

Area - 22W
Pathway - 11W

887mm

1137mm

Surface Mounting - Low Power

Area - 12W
Pathway - 6W

887mm

1137mm

DIMENSIONS



HIGH PERFORMANCE BOLLARD LUMAIRES WITH SUPERIOR LIGHT DISTRIBUTION



SPECIFICATION

- Extruded aluminum body with die-cast aluminum head unit
- Graphite full polyester powder finish
- Superb photometric performance for wide spacings and excellent uniformity
- Less than 2% upward light component
- Surface or root mounting options
- Surface options include patent pending FlexBase technology for bump resistance
- Integral emergency and SmartScan wireless emergency options
- Extremely long life, up to 100,000 hours
- Fitted with 4000K LEDs

LED CHARACTERISTICS

CRI	70+
COLOUR TEMPERATURE	4000K
RATED LIFE (HOURS)	100K - L70/B10
PROTECTION	LUX GUARD
DRIVER EFFICIENCY	>60%
REPLACEABLE	YES
POWER FACTOR	>0.75

LL/CW **62.5**

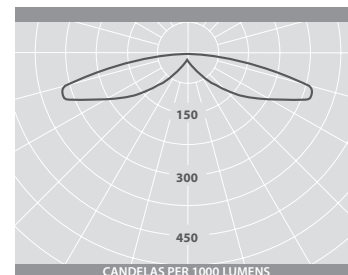
For LED characteristics explanation see
www.thorlux.com/led-guide

SmartScan Configurations



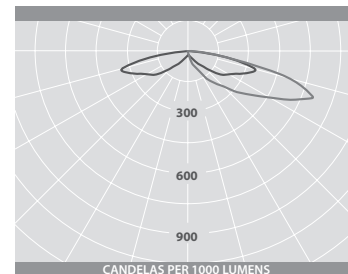
Find out more at www.thorlux.com/smartsan

PHOTOMETRIC GUIDE



AREA DISTRIBUTION

Luminaire Lumen Output:
12W = 875lm
22W = 1495lm



PATHWAY DISTRIBUTION

Luminaire Lumen Output:
6W = 450lm
11W = 780lm



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

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E thorlux@thorlux.co.uk
W www.thorlux.com

Direct UK Sales Line: 01527 583222

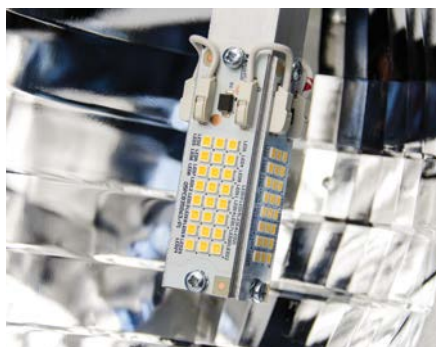
Thorlux Carbon Offsetting Project:
www.thorlux.com/trees

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.





LEDbar



The patented LEDbar substitutes the conventional Realta lamp source with an 8W LED lamp package. The aluminium bar dissipates the heat generated by the LEDs for optimum performance.

WIDE DISTRIBUTION LED CHARACTERISTICS

CRI	80
COLOUR TEMPERATURE	4000K/5700K
RATED LIFE (HOURS)	67K - L80/B10
PROTECTION	LUX GUARD
DRIVER EFFICIENCY	>80%
REPLACEABLE	YES
POWER FACTOR	>0.95
LL/CW	120.0

AREA DISTRIBUTION LED CHARACTERISTICS

CRI	70+
COLOUR TEMPERATURE	4000K/5700K
RATED LIFE (HOURS)	100K - L90/B10
PROTECTION	LED PROTECT
DRIVER EFFICIENCY	>85%
REPLACEABLE	YES
POWER FACTOR	>0.95
LL/CW	127.6

For LED characteristics explanation see www.thorlux.com/led-guide



Smart External version



Area distribution

Wide distribution

Realta Design Registration Number 3024955

HIGH PERFORMANCE LUMINAIRES
DESIGNED TO MINIMISE LIGHT
POLLUTION AND ENERGY
CONSUMPTION

IP66 IK10++ / IK10 / IK06 CE LED

SPECIFICATION

- Graphite full polyester powder finish. Silver option
- Strong die-cast LM2 aluminium body
- High efficiency prismatic polycarbonate or borosilicate glass front refractor
- Wide distribution (8W) or area distribution (20W, 34W and 42W) options
- Highly specular, multi-faceted injection moulded vacuum metallised reflector on wide distribution versions
- Excellent distribution with less than 2% upward light component
- Optional photocell control
- Smart External versions with intelligent lighting control for use up to 6 metres mounting height
- SmartScan wireless technology removes the need for control cabling. Ideal for retro-fit
- Fitted with 4000K or 5700K LEDs

SmartScan Configurations



Find out more at www.thorlux.com/smartscan

RANGE

	LED	WIDE DISTRIBUTION	AREA DISTRIBUTION	APPROX. kg
SMART EXTERNAL	IK10 Polycarbonate Cover			
	8W - 4000K	RL 19069SS		3.9
	20W - 4000K		RL 19110SS	4.0
	34W - 4000K		RL 19111SS	4.0
	42W - 4000K		RL 19112SS	4.0
	8W - 5700K	RL 19070SS		3.9
	20W - 5700K		RL 19113SS	4.0
	34W - 5700K		RL 19114SS	4.0
STANDARD	42W - 5700K		RL 19115SS	4.0
	IK10++ Polycarbonate Cover			
	8W - 4000K	RL 19071L		3.8
	20W - 4000K		RL 19116L	3.9
	34W - 4000K		RL 19117L	3.9
	42W - 4000K		RL 19118L	3.9
	8W - 5700K	RL 19072L		3.8
	20W - 5700K		RL 19119L	3.9
	34W - 5700K		RL 19120L	3.9
	42W - 5700K		RL 19121L	3.9
	IK06 Glass Cover			
	8W - 4000K	RL 19073L		4.6
	8W - 5700K	RL 19074L		4.6

CIRCUIT TYPE -

SMART EXTERNAL SS - SmartScan
STANDARD L - non-dimming (LED)

SILVER OPTION - add suffix **SV3** e.g. **RL 19069SSSV3** etc.

EMERGENCY VERSION - prefix catalogue number with:

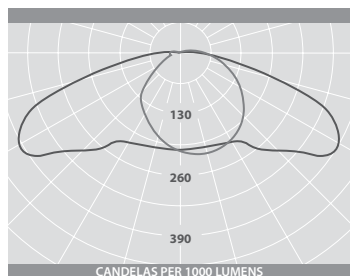
ERL - Emergency / **TRL** - AutoTest (Not available when selecting the 'SS' suffix)

WRL - SmartScan

e.g. **WRL 19069SS** etc.

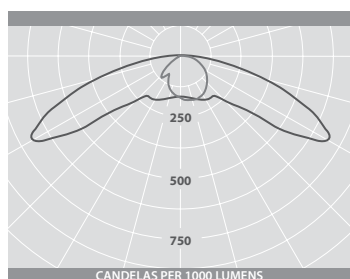
Add 0.4kg to weights listed

PHOTOMETRIC GUIDE



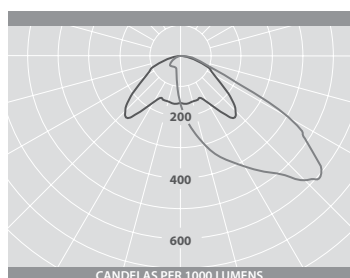
GLASS COVER (Wide Distribution)

Luminaire Lumen Output:
8W = 1175lm



POLYCARBONATE COVER (Wide Distribution)

Luminaire Lumen Output:
8W = 1320lm



POLYCARBONATE COVER (Area Distribution)

Luminaire Lumen Output:
20W = 2840lm
34W = 4850lm
42W = 5635lm



Single luminaire pole mounting attachment



Twin luminaire pole mounting attachment

ACCESSORIES

DESCRIPTION	CAT. No.	APPROX. kg
Single luminaire pole mounting attachment (for 60mm dia. poles)	RL 13759	1.6
Twin luminaire pole mounting attachment (for 60mm dia. poles)	RL 14175	2.6
76/60mm dia. spigot adaptor (for retro-fit on 76mm dia. columns)	RL 11184	0.8

OPTIONS

DESCRIPTION	SUFFIX	EXAMPLE
Photocell (standard versions only)	PC	RL 19071LPC
Tamper resistant screws ♦	T	RL 19071LT

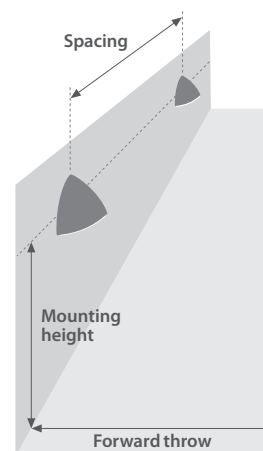
♦ To fasten tamper resistant screws order special screwdriver **KEY 10008**

PERFORMANCE GUIDE - Wide Distribution

Photometric Performance -
8W LED with polycarbonate cover

SPACING	AVERAGE ILLUMINANCE	UNIFORMITY (min/av)
3m mounting height - 3m forward throw		
10m ctrs	22 lux	0.48
15m ctrs	15 lux	0.47
20m ctrs	11 lux	0.22
4m mounting height - 4m forward throw		
10m ctrs	17 lux	0.48
15m ctrs	11 lux	0.45
20m ctrs	8 lux	0.47
5m mounting height - 5m forward throw		
10m ctrs	13 lux	0.42
15m ctrs	9 lux	0.48
20m ctrs	7 lux	0.45

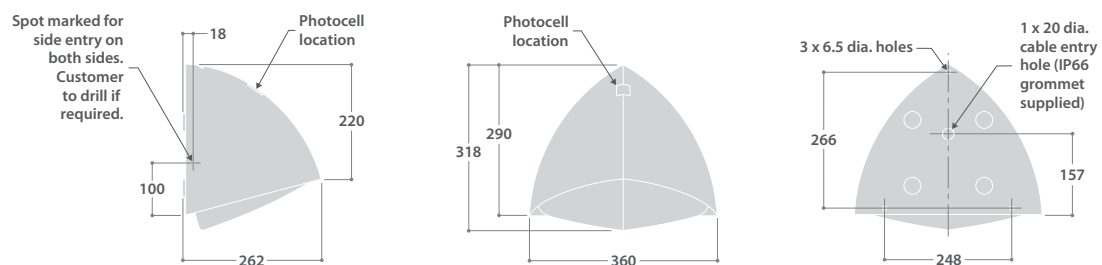
FIGURES ARE BASED ON INITIAL LUMENS



e.g. At 3m mounting height and 10m centres: 22 lux average horizontal illuminance at ground level



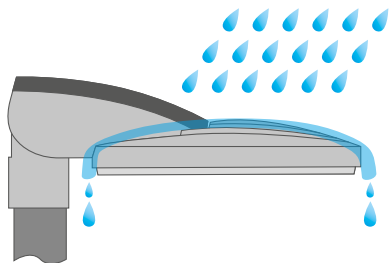
DIMENSIONS



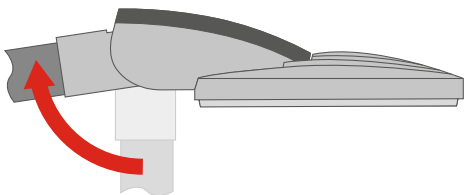
STARBEAM



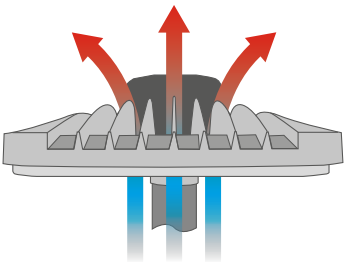
The Starbeam range of precision engineered LED area floodlights and streetlights takes external lighting to a new dimension in terms of efficiency (up to 112 luminaire lumens per circuit watt) and longevity (up to 100,000 hours). This is achieved through significant investment in high quality die-cast heat sinks and in house manufactured printed circuit boards positioning the very latest top brand LEDs within precise acrylic lenses. A range of power levels, two optical distribution types and two body sizes provides every option necessary for car park, general amenity and road lighting applications.



1. "Free draining" curved heat sink eliminates ponding of fluids



2. Integral adjustable mounting spigot allows easy retrofit on to a wide range of columns and brackets whilst maintaining 0° elevation



3. Heat dissipation fins combined with air flow between heat sink and gear compartment extends control gear lifetime



Smart External area distribution version



Smart External roadway distribution version

OPTIONS

DESCRIPTION	SUFFIX	EXAMPLE
Photocell	PC	SB 17553LPC

ACCESSORIES - see page 5



LED AREA FLOODLIGHTS AND STREET LIGHTS

IP66 IP65 SMART
VERSION IK10 CE LED

WINDAGE - small: 0.06m² large: 0.07m²

SPECIFICATION

- Die-cast aluminium body and gear compartment finished polyester silver RAL9006
- Die-cast aluminium, fast release gear compartment lid finished polyester graphite
- Polycarbonate cover and acrylic high efficiency LED lenses
- Area or roadway optical distributions
- Integral high efficiency driver
- Extremely efficient and long system life up to 100,000 hours
- Suitable for ambient temperatures up to 50°C (excluding 197W versions)
- Smart External versions with intelligent lighting control for use up to 12 metres mounting height
- SmartScan wireless technology removes the need for control cabling. Ideal for retro-fit
- Pole top 76mm as standard, adjustable through 90°
- Wall mounting bracket accessory
- Wide range of mounting options (see page 5 for details)
- Photocell option
- Fitted with 4000K LEDs

LED CHARACTERISTICS

CRI	70+
COLOUR TEMPERATURE	4000K
RATED LIFE (HOURS)	100K - L90/B10
PROTECTION	LED PROTECT
DRIVER EFFICIENCY	>90%
REPLACEABLE	YES
POWER FACTOR	>0.9
LL/CW	112.0

For LED characteristics explanation see
www.thorlux.com/led-guide

SmartScan Configurations



Find out more at www.thorlux.com/smartsan



RANGE

	LED	AREA DISTRIBUTION	ROADWAY DISTRIBUTION	APPROX. kg
SMART EXTERNAL	Small Version			
	31W - 4000K	SB 18340SS	SB 18345SS	8.2
	62W - 4000K	SB 18341SS	SB 18346SS	8.2
	88W - 4000K	SB 19661SS	SB 19664SS	8.2
	123W - 4000K	SB 19662SS	SB 19665SS	8.2
	Large Version			
	161W - 4000K	SB 18344SS	SB 18349SS	9.4
	197W - 4000K	SB 19663SS	SB 19666SS	9.4
STANDARD	Small Version			
	31W - 4000K	SB 17553L	SB 17561L	8.0
	62W - 4000K	SB 17554L	SB 17562L	8.0
	88W - 4000K	SB 19667L	SB 19670L	8.0
	123W - 4000K	SB 19668L	SB 19671L	8.0
	Large Version			
	161W - 4000K	SB 18350L	SB 18351L	9.2
	197W - 4000K	SB 19669L	SB 19672L	9.2

CIRCUIT TYPE -

SMART EXTERNAL	SS - SmartScan
STANDARD	L - non-dimming (LED)

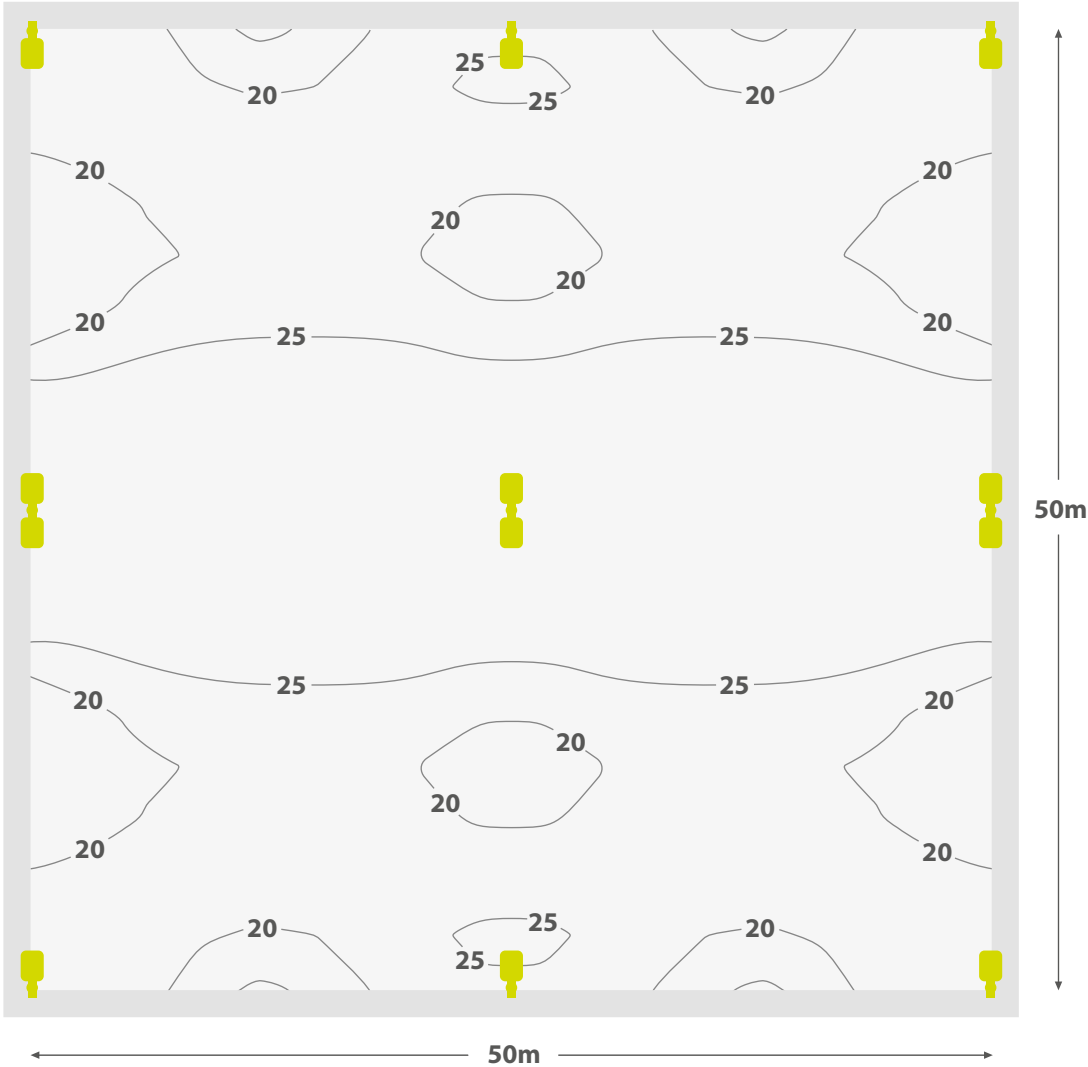
EMERGENCY VERSION (31W, 62W & 88W) - prefix catalogue number with:
WSB - SmartScan (Only available when selecting the 'SS' suffix) e.g. **WSB 18340SS** etc.
Add 0.3kg to weights listed.

NOTE: - Emergency versions not suitable for high ambient temperatures
- Glass version available to special order

TYPICAL SPACING GUIDE

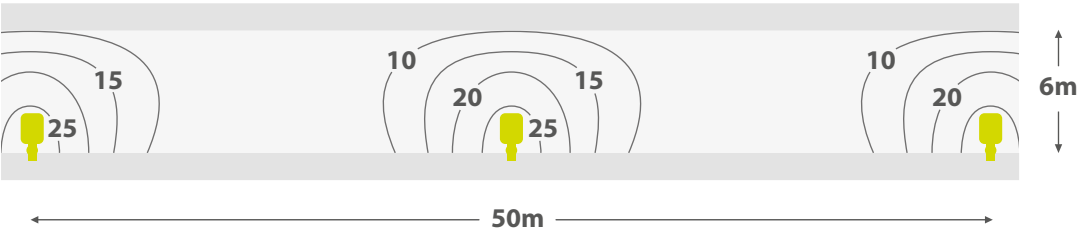
AREA DISTRIBUTION

88W LED / 8m mounting height / 25 x 25m spacing - Average illuminance = 25 lux / Uniformity = 0.63

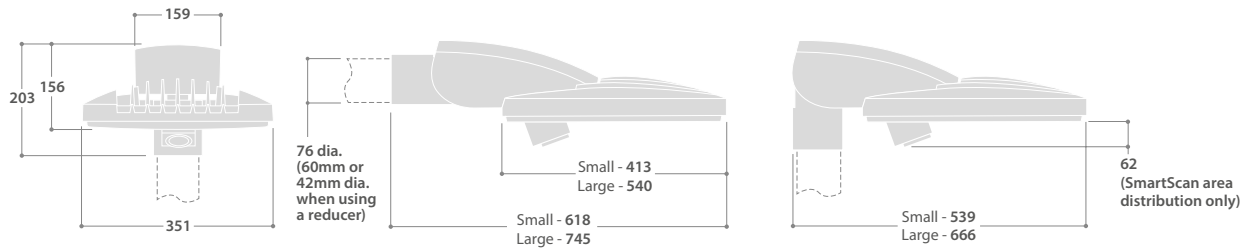


ROADWAY DISTRIBUTION

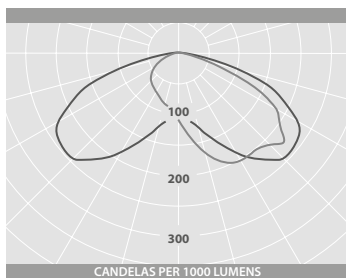
31W LED / 6m mounting height / 25m spacing - Average illuminance = 12 lux / Uniformity = 0.43



DIMENSIONS

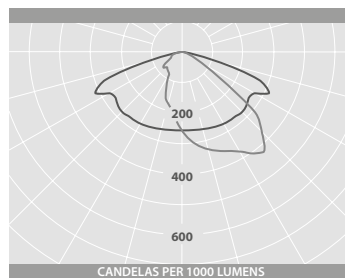


PHOTOMETRIC GUIDE



AREA DISTRIBUTION

Luminaire Lumen Output:
 31W = 3500lm
 62W = 6750lm
 88W = 10150lm
 123W = 13550lm
 161W = 17250lm
 197W = 21200lm

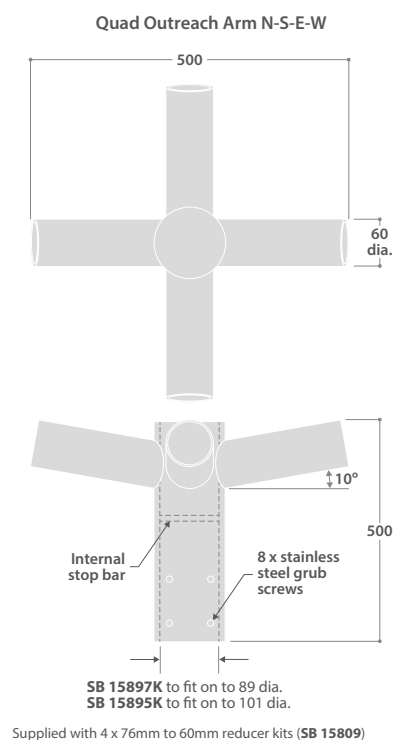
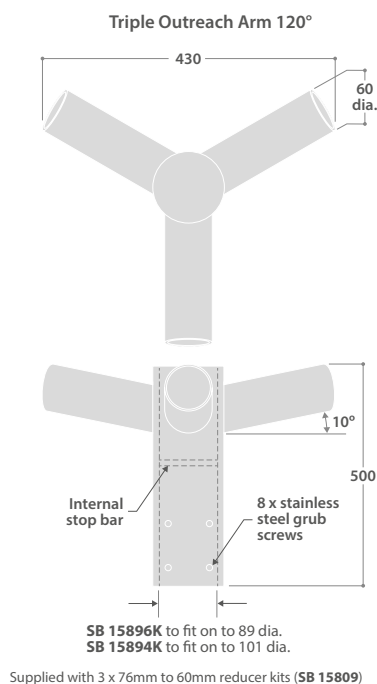
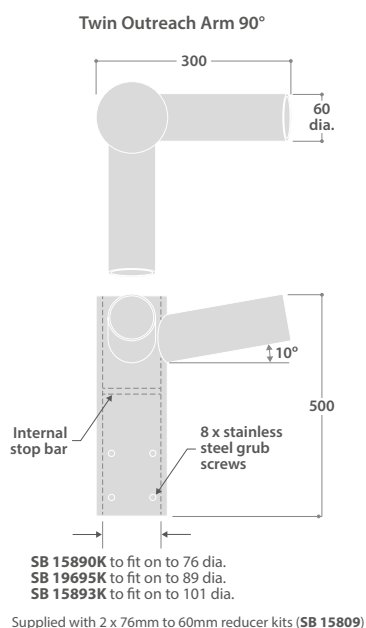
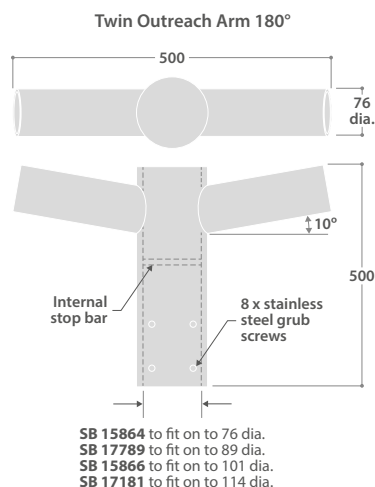
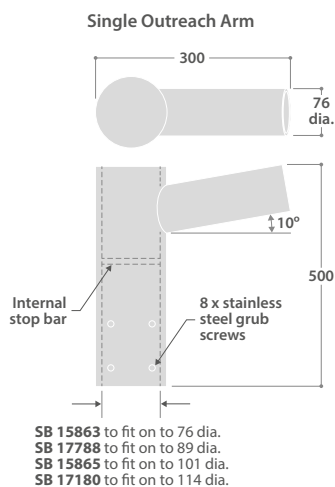


ROADWAY DISTRIBUTION

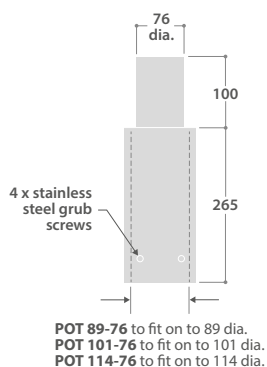
Luminaire Lumen Output:
 31W = 3700lm
 62W = 7100lm
 88W = 10700lm
 123W = 14250lm
 161W = 18150lm
 197W = 22300lm



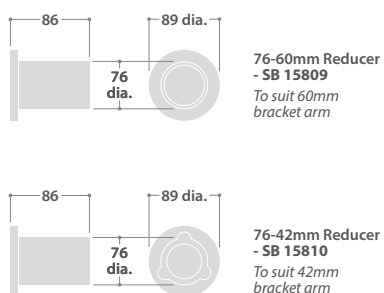
COLUMN MOUNTING OPTIONS



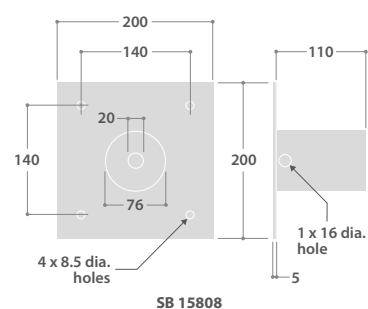
COLUMN ADAPTORS



BRACKET ARM REDUCERS



WALL MOUNTING BRACKET



For further mounting and bracket options please contact our Technical Department

STARBEAM COLUMNS

COLUMNS SPECIFICATION

- Stepped tubular galvanised steel columns, to BS EN 40-2:2004
- Mounting accessories are hot dip galvanised to BS EN ISO 1461:2009
- Black bitumen external coating to root
- Supplied with wooden baseboard for mounting cable connection accessories
- Accessories are easily fixed with stainless steel grub screws and have an internal stop to ensure cable exit

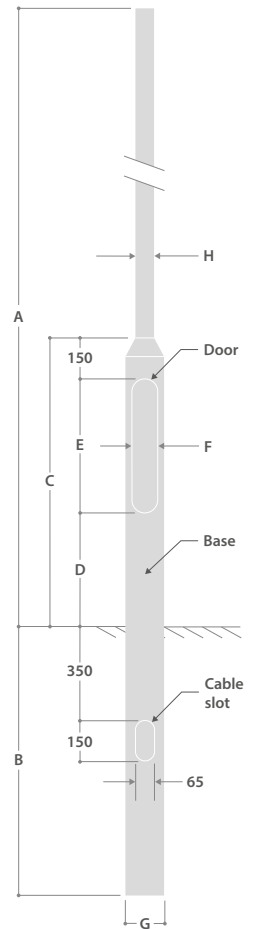
UK DELIVERY

Columns are delivered to site at a pre-arranged time. An off-loading service is not included and it is the responsibility of the client (or client's agent) for the safe undertaking of this requirement. A fork lift truck is recommended to minimise manual handling.

COLUMN RANGE

NOMINAL HEIGHT	CAT. No.	PLANTING DEPTH	BASE HEIGHT	DOOR HEIGHT	DOOR DIMENSIONS		BASE DIAMETER	SHAFT DIAMETER	APPROX. kg	BASEBOARD SIZE
A		B	C	D	E	F	G	H		
Single and Twin Starbeam Standard Columns										
4m	FC4	800	925	300	500	100	140	76	33	89 (w) x 500 (h)
5m	FC5	800	925	300	500	100	140	76	40	89 (w) x 500 (h)
6m	FC6	1000	925	300	500	100	140	76	44	89 (w) x 500 (h)
8m	FC8	1200	1200	400	600	115	168	114 ■	100	89 (w) x 600 (h)
10m	FC10	1500	1300	500	600	115	168	114 ■	142	89 (w) x 600 (h)
Triple and Quad Starbeam Medium Duty Columns										
4m	FC4/89	800	1280	300	600	115	168	89	60	89 (w) x 500 (h)
5m	FC5/89	800	1280	300	600	115	168	89	64	89 (w) x 500 (h)
6m	FC6/89	1000	1280	300	600	115	168	89	68	89 (w) x 500 (h)
8m	FC8	1200	1200	400	600	115	168	114 ■	100	89 (w) x 600 (h)
10m	FC10	1500	1300	500	600	115	168	114 ■	142	89 (w) x 600 (h)

■ Reduced at top to 101mm to accept accessories

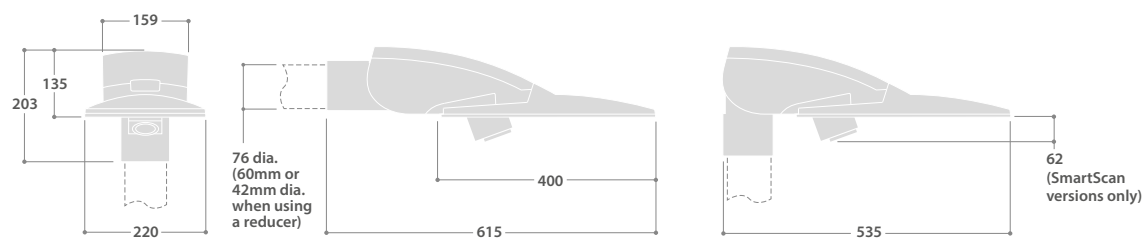


ORDERING INFORMATION

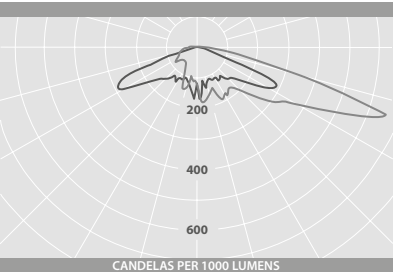
	SINGLE COLUMN MOUNT	SINGLE OUTREACH ARM	TWIN OUTREACH ARM 180°	TWIN OUTREACH ARM 90°	TRIPLE OUTREACH ARM 120°	QUAD OUTREACH ARM N-S-E-W
Mounting Height	Column Adaptor	Column Bracket	Column Bracket	Column Bracket	Column Bracket	Column Bracket
4m	FC4	FC4 SB 15863	FC4 SB 15864	FC4 SB 15890K	FC4/89 SB 15896K	FC4/89 SB 15897K
5m	FC5	FC5 SB 15863	FC5 SB 15864	FC5 SB 15890K	FC5/89 SB 15896K	FC5/89 SB 15897K
6m	FC6	FC6 SB 15863	FC6 SB 15864	FC6 SB 15890K	FC6/89 SB 15896K	FC6/89 SB 15897K
8m	FC8 POT 114-76	FC8 SB 15865	FC8 SB 15866	FC8 SB 15893K	FC8 SB 15894K	FC8 SB 15895K
10m	FC10 POT 114-76	FC10 SB 15865	FC10 SB 15866	FC10 SB 15893K	FC10 SB 15894K	FC10 SB 15895K

STARBEAM ECO

DIMENSIONS

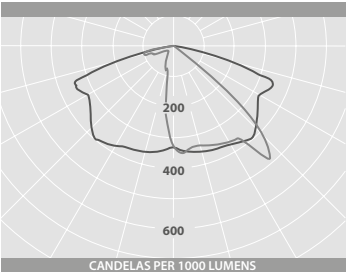


PHOTOMETRIC GUIDE



AREA DISTRIBUTION

Luminaire Lumen Output:
31W = 4135lm
48W = 6745lm



ROADWAY DISTRIBUTION

Luminaire Lumen Output:
31W = 4225lm
48W = 6890lm

OPTIONS

DESCRIPTION	SUFFIX	EXAMPLE
Photocell	PC	SB 19677LPC

ACCESSORIES - see page 3





LED FLOODLIGHTS AND STREET LIGHTS

IP66 IP65 SMART VERSION IK08 CE LED

WINDAGE - 0.06m²

SPECIFICATION

- Die-cast aluminium body and gear compartment finished polyester silver RAL 9006
- Die-cast aluminium, fast release gear compartment lid finished polyester graphite
- Acrylic high efficiency LED lenses
- Area or roadway optical distributions
- Integral high efficiency driver
- Extremely efficient and long system life up to 100,000 hours
- Smart External versions with intelligent lighting control for use up to 12 metres mounting height
- SmartScan wireless technology removes the need for control cabling. Ideal for retro-fit
- Pole top 76mm as standard, adjustable through 90°
- Wall mounting bracket accessory
- Wide range of mounting options (see page 3 for details)
- Photocell option
- Fitted with 4000K LEDs

LED CHARACTERISTICS

CRI	70+
COLOUR TEMPERATURE	4000K
RATED LIFE (HOURS)	100K - L90/B10
PROTECTION	LED PROTECT
DRIVER EFFICIENCY	>90%
REPLACEABLE	YES
POWER FACTOR	>0.9
LL/CW	135.1

For LED characteristics explanation see www.thorlux.com/led-guide

RANGE

	LED	AREA DISTRIBUTION	ROADWAY DISTRIBUTION	APPROX. kg
SMART EXTERNAL	31W	SB 19673SS	SB 19675SS	5.0
	48W	SB 19674SS	SB 19676SS	5.2
STANDARD	31W	SB 19677L	SB 19679L	4.8
	48W	SB 19678L	SB 19680L	5.0

CIRCUIT TYPE -

SMART EXTERNAL SS - SmartScan
STANDARD L - non-dimming (LED)

EMERGENCY VERSION - prefix catalogue number with:

WSB - SmartScan (Only available when selecting the 'SS' suffix) e.g. WSB 19673SS etc. Add 0.3kg to weights listed.

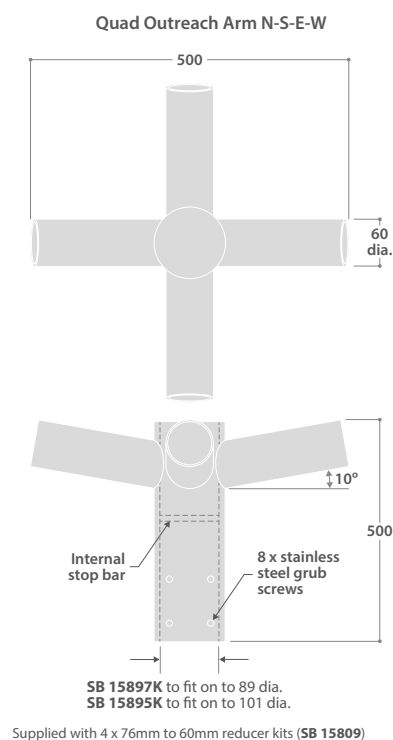
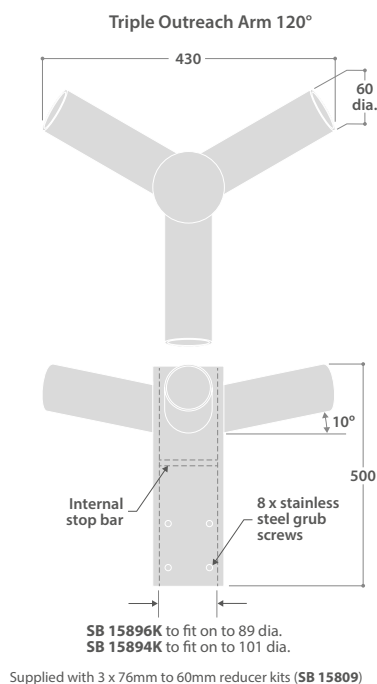
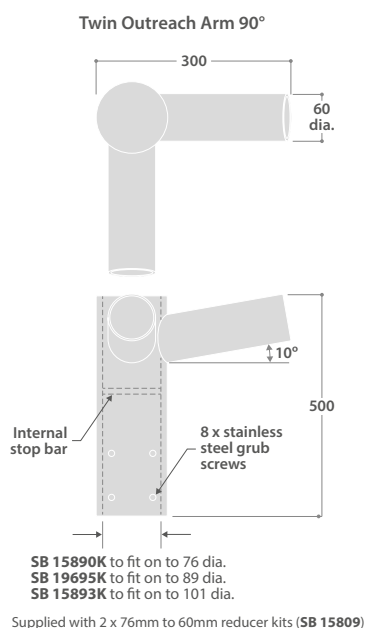
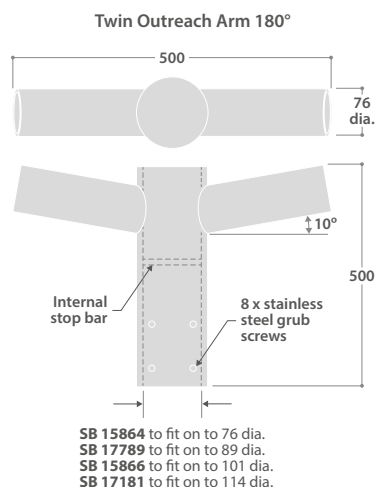
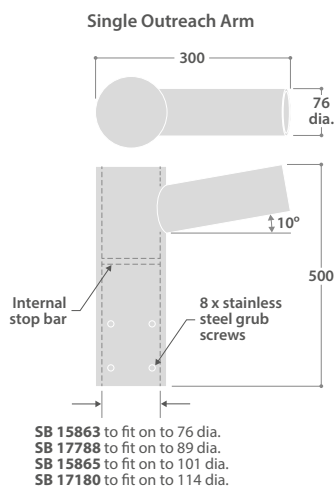


SmartScan Configurations

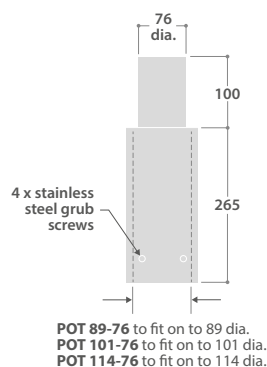


Find out more at www.thorlux.com/smartsan

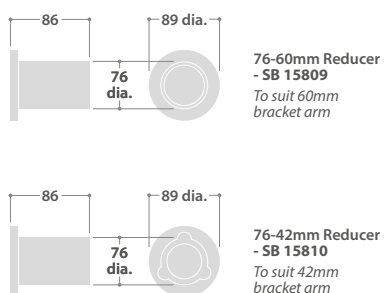
COLUMN MOUNTING OPTIONS



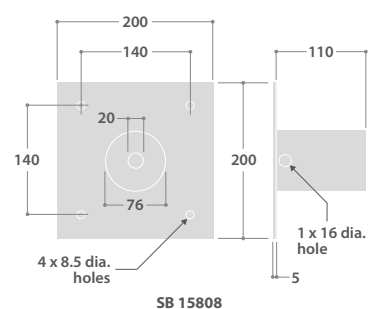
COLUMN ADAPTORS



BRACKET ARM REDUCERS



WALL MOUNTING BRACKET



For further mounting and bracket options please contact our Technical Department

STARBEAM ECO COLUMNS

COLUMNS SPECIFICATION

- Stepped tubular galvanised steel columns, to BS EN 40-2:2004
- Mounting accessories are hot dip galvanised to BS EN ISO 1461:2009
- Black bitumen external coating to root
- Supplied with wooden baseboard for mounting cable connection accessories
- Accessories are easily fixed with stainless steel grub screws and have an internal stop to ensure cable exit

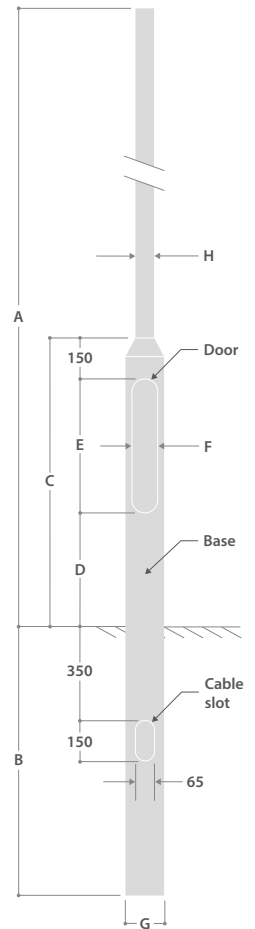
UK DELIVERY

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COLUMN RANGE

NOMINAL HEIGHT	CAT. No.	PLANTING DEPTH	BASE HEIGHT	DOOR HEIGHT	DOOR DIMENSIONS		BASE DIAMETER	SHAFT DIAMETER	APPROX. kg	BASEBOARD SIZE
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5m	FC5	800	925	300	500	100	140	76	40	89 (w) x 500 (h)
6m	FC6	1000	925	300	500	100	140	76	44	89 (w) x 500 (h)
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10m	FC10	1500	1300	500	600	115	168	114 ■	142	89 (w) x 600 (h)
Triple and Quad Starbeam Medium Duty Columns										
4m	FC4/89	800	1280	300	600	115	168	89	60	89 (w) x 500 (h)
5m	FC5/89	800	1280	300	600	115	168	89	64	89 (w) x 500 (h)
6m	FC6/89	1000	1280	300	600	115	168	89	68	89 (w) x 500 (h)
8m	FC8	1200	1200	400	600	115	168	114 ■	100	89 (w) x 600 (h)
10m	FC10	1500	1300	500	600	115	168	114 ■	142	89 (w) x 600 (h)

■ Reduced at top to 101mm to accept accessories



ORDERING INFORMATION

	SINGLE COLUMN MOUNT	SINGLE OUTREACH ARM	TWIN OUTREACH ARM 180°	TWIN OUTREACH ARM 90°	TRIPLE OUTREACH ARM 120°	QUAD OUTREACH ARM N-S-E-W
Mounting Height	Column Adaptor	Column Bracket	Column Bracket	Column Bracket	Column Bracket	Column Bracket
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5m	FC5	FC5 SB 15863	FC5 SB 15864	FC5 SB 15890K	FC5/89 SB 15896K	FC5/89 SB 15897K
6m	FC6	FC6 SB 15863	FC6 SB 15864	FC6 SB 15890K	FC6/89 SB 15896K	FC6/89 SB 15897K
8m	FC8 POT 114-76	FC8 SB 15865	FC8 SB 15866	FC8 SB 15893K	FC8 SB 15894K	FC8 SB 15895K
10m	FC10 POT 114-76	FC10 SB 15865	FC10 SB 15866	FC10 SB 15893K	FC10 SB 15894K	FC10 SB 15895K



TAMPER, IMPACT AND LIGATURE-RESISTANT SURFACE LED LUMINAIRES

IP65 IK10++ CE LED

SPECIFICATION

- Robust and durable extruded aluminium body finished white (RAL 9010)
- Die-cast aluminium end caps finished white (RAL 9010)
- Clear prismatic polycarbonate lens
- Body dissipates heat, ensuring long control gear life in higher ambient temperatures
- Suitable for both individual and in-line mounting
- Complies with food production standards IFS, HACCP and BRC
- Fitted with 4000K LEDs

LED CHARACTERISTICS

CRI	80
COLOUR TEMPERATURE	4000K
RATED LIFE (HOURS)	50K - L70/B10
PROTECTION	-
DRIVER EFFICIENCY	>85%
REPLACEABLE	YES
POWER FACTOR	>0.95
LL/CW	83.0

For LED characteristics explanation see
www.thorlux.com/led-guide

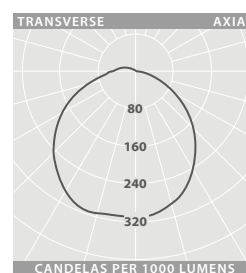
RANGE

LENGTH (mm)	LED	CAT. No.	APPROX. kg	CIRCUIT
697	19W	VT 17215	5.0	L/A
1307	56W	VT 17216	9.0	L/A

CIRCUIT TYPE - suffix catalogue number with:
L - non-dimming (LED) / **A** - dimming (DALI) e.g. **VT 17215L** etc.

EMERGENCY VERSION (56W version only) - prefix catalogue number with:
EVT - Emergency e.g. **EVT 17216L** etc.
Emergency versions add 0.3kg to weights listed.

PHOTOMETRIC GUIDE



Luminaire Lumen Output
19W = 1635lm
56W = 5060lm

DIMENSIONS

