

A powerful, modular road lantern at the forefront of LED technology to offer excellent lighting and through-life performance

- Highly efficient road lantern available in two light distributions and ratings from 55W (4920lm) to 169W (14000lm), covering lighting classes up to ME1
- The same LED module across the range (72 LEDs) at 350mA, 500mA and 700mA (other mA settings and LED numbers on request)
- Standalone dimming, minicell and remote monitoring capabilities for optimised energy use
- Modularity allows through-life performance by simply changing the optical engine and driver as even more efficient systems emerge
- Low and easy maintenance luminaire for a long service life with self-cleaning shape, wide and tool-free canopy opening, and fully removable gear
- Blends perfectly with Oracle HID to meet application and budget requirements
- Dynamic thermal management to withstand up to 50°C operating conditions

## Applications

- Major roads



Fully removable optical engine for ease of maintenance

## Lamp Information

- Lifetime up to 100,000 hours @L70 Ta 25°C
- Lifetime up to 80,000 hours @L80 Ta 25°C
- 55W (3700lm) to 169W (14000lm) see table for further information
- Luminaire efficacy up to 100lm/W (optic efficacy up to 119lm/W)
- Colour temperature 3000K and 4000K (other on request)
- CRI: 70

## Standards



## Lamps

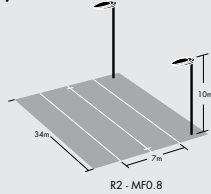


## Energy efficiency

### Example: road refurbishment ME2 lighting class (EN13201)

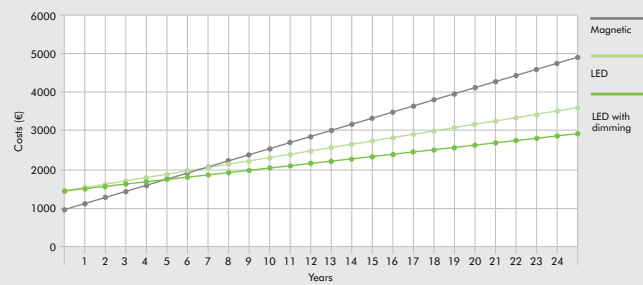
LED road lighting should be seen as an investment, not an expense. While HID technology is efficient, it is subject to ageing and frequently generates a surprisingly high total cost of ownership, which can be many times the initial acquisition cost of the equipment. If all the additional costs required to operate and maintain the lantern during its useful life are taken into account then LED solutions offer significant savings and benefits over HID.

This sample project demonstrates the replacement of 250W HST lanterns (Thorn Triumph2) equipped with magnetic ballasts by Oxane L, with fixed output and very simple 1 step dimming option (50% reduction during 8 hours)



### Total Cost Amortisation Chart (€0.11kWh - including maintenance and cleaning)

In this refurbishment example, keeping the same lighting layout and moving to LED maintains the lighting levels and comfort dictated by the lighting standards and pays back the investment (including replacement of drivers and cleaning cycles) after only 5 years vs HST, which is not the least efficient source on the market.

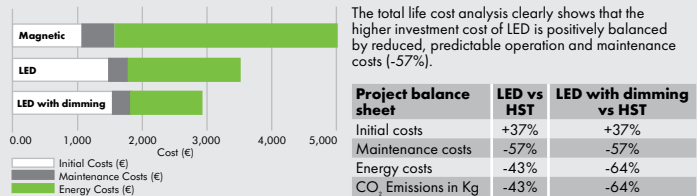


	L <sub>ave</sub> (cd.m <sup>-2</sup> )	U <sub>0</sub>	U <sub>1</sub>	T <sub>i</sub>	SR	W (System)	SLEEC-L W/cd.m <sup>-2</sup> /m <sup>2</sup>
Target	1.5	≥0.40	≥0.70	≤10	≥0.5	-	-
250 HST	1.82	0.57	0.70	6.41	0.72	280.0	0.45
LED	1.51	0.68	0.78	9.76	0.72	173.0	0.34
LED+dim (8hrs 50%)	1.51	0.68	0.78	9.76	0.72	110.0	0.21

### Street Lighting Energy Efficiency Criterion by luminance (SLEEC-L)

The efficiency of the installation is measured by the Street Lighting Energy Efficiency Criterion – in ME2 projects the luminance is considered. The calculation shows that an installation made with Oxane L and a simple dim program can be two times more efficient than an HST installation.

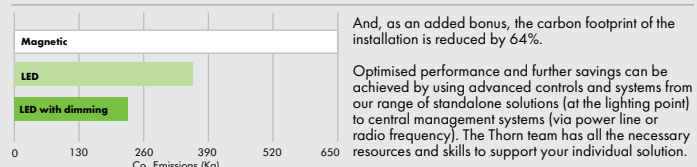
### Total Life Cost



The total life cost analysis clearly shows that the higher investment cost of LED is positively balanced by reduced, predictable operation and maintenance costs (-57%).

Project balance sheet	LED vs HST	LED with dimming vs HST
Initial costs	+37%	+37%
Maintenance costs	-57%	-57%
Energy costs	-43%	-64%
CO <sub>2</sub> Emissions in Kg	-43%	-64%

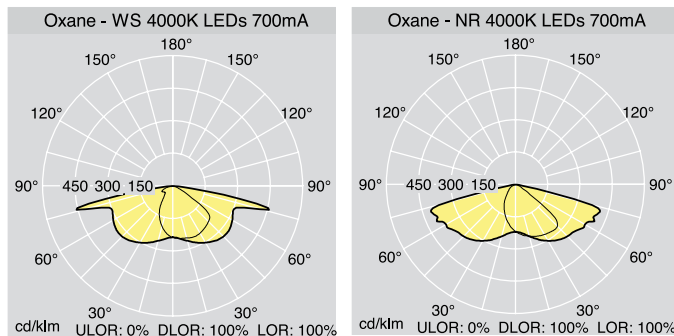
### CO<sub>2</sub> Emissions per year (Kg)



And, as an added bonus, the carbon footprint of the installation is reduced by 64%.

Optimised performance and further savings can be achieved by using advanced controls and systems from our range of standalone solutions (at the lighting point) to central management systems (via power line or radio frequency). The Thorn team has all the necessary resources and skills to support your individual solution.

## Overview



## Lumen outputs

- The indicated lumen outputs are for the luminaire and can be used for calculations
- The power consumption indicated is for the complete system
- All versions are available with simple standalone dimming systems or more advanced controls with monitoring functions
- Narrow Road (NR) and Wide Street (WS) light distributions are available for all versions

Nominal Lm*	System W*	No. of LEDs	Driving current	Optical efficacy*	Luminaire Lm*	Luminaire efficacy*
5857 lm	55W	48	350mA	106 Lm/W	4920 lm	89 Lm/W
6167 lm	62W	36	500mA	100 Lm/W	5180 lm	84 Lm/W
7476 lm	67W	60	350mA	112 Lm/W	6280 lm	94 Lm/W
8000 lm	80W	48	500mA	100 Lm/W	6720 lm	84 Lm/W
8131 lm	85W	36	700mA	96 Lm/W	6830 lm	80 Lm/W
9750 lm	82W	72	350mA	119 Lm/W	8190 lm	100 Lm/W
10202 lm	97W	60	500mA	105 Lm/W	8570 lm	88 Lm/W
10548 lm	111W	48	700mA	95 Lm/W	8860 lm	80 Lm/W
13000 lm	115W	72	500mA	113 Lm/W	10920 lm	95 Lm/W
13429 lm	137W	60	700mA	98 Lm/W	11280 lm	82 Lm/W
16743 lm	169W	72	700mA	99 Lm/W	14064 lm	83 Lm/W

\*Narrow Road (NR) light distribution

## Materials/Finish

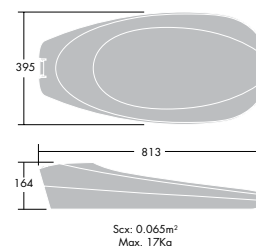
Body and Spigot: die-cast aluminium, powder coated texturised light grey (close to RAL9006)  
Enclosures: toughened glass, self-cleaning treatment on request  
Screws and closing set: stainless steel

## Installation/Mounting

Rotating spigot secured by 2 screws with safety bolts  
Post-top mounting:  
Ø60/76mm x 80mm long spigot. Tilted to 5°  
Lateral mounting:  
CL1 - Ø34/42/48/60mm x 120mm. Tilted to 0°  
CL2 - Ø48/60mm x 120mm long (Ø34/42 reducer as accessory)  
Cable gland for Ø8 to 13mm cable.  
Delivered ready to install in 1 box.

## Specification

Easy to install and maintain LED luminaire designed to offer effective and reliable lighting performances with combined thermal and optical system. Ratings from 55W (4920lm) to 169W (14000lm), suitable for main road lighting applications up to ME1. As Thorn Oxane L.



The data is subject to change due to the continuous progress of LED characteristics.

To check the effect on Oxane luminaires, please contact us or visit our website.

## Ordering Guide

Supplied complete with LEDs.

Description	Weight (Kg)	SAP Code	Description	Weight (Kg)	SAP Code
<b>Oxane L Narrow Road light distribution CL2</b>			<b>Oxane L Narrow Road light distribution CL1</b>		
OXANE L 48L35 NR EFL 740 CL2	16.6	96263616	OXANE L 48L35 NR EFL 740 CL1	16.8	96263614
OXANE L 36L50 NR EFL 740 CL2	16.6	96263576	OXANE L 36L50 NR EFL 740 CL1	16.8	96263574
OXANE L 60L35 NR EFL 740 CL2	16.7	96263656	OXANE L 60L35 NR EFL 740 CL1	16.9	96263654
OXANE L 48L50 NR EFL 740 CL2	16.6	96263604	OXANE L 48L50 NR EFL 740 CL1	16.8	96263602
OXANE L 72L35 NR EFL 740 CL2	16.7	96263696	OXANE L 72L35 NR EFL 740 CL1	16.9	96263694
OXANE L 36L70 NR EFL 740 CL2	16.6	96263565	OXANE L 36L70 NR EFL 740 CL1	16.8	96263563
OXANE L 36L70 NR EFL 730 CL2	16.6	96264552	OXANE L 60L50 NR EFL 740 CL1	17.6	96263642
OXANE L 60L50 NR EFL 740 CL2	17.4	96263644	OXANE L 48L70 NR EFL 740 CL1	17.5	96263591
OXANE L 48L70 NR EFL 740 CL2	17.4	96263593	OXANE L 72L50 NR EFL 740 CL1	17.6	96263682
OXANE L 48L70 NR EFL 730 CL2	17.4	96264546	OXANE L 60L70 NR EFL 740 CL1	17.6	96263631
OXANE L 72L50 NR EFL 740 CL2	17.4	96263684	OXANE L 72L70 NR EFL 740 CL1	17.6	96263671
OXANE L 60L70 NR EFL 740 CL2	17.4	96263633	<b>Oxane L Narrow Road light distribution CL1 with minicell</b>		
OXANE L 60L70 NR EFL 730 CL2	17.4	96264548	OXANE L 48L35 NR EFL 740 CL1 PM	17.1	96263615
OXANE L 72L70 NR EFL 740 CL2	17.4	96263673	OXANE L 36L50 NR EFL 740 CL1 PM	17.1	96263575
OXANE L 72L70 NR EFL 730 CL2	17.4	96264550	OXANE L 60L35 NR EFL 740 CL1 PM	17.2	96263655
<b>Oxane L Narrow Road light distribution stepdim CL2</b>			OXANE L 48L50 NR EFL 740 CL1 PM	17.1	96263603
OXANE L 48L35 BP NR EFL 740 CL2	16.6	96263622	OXANE L 72L35 NR EFL 740 CL1 PM	17.2	96263695
OXANE L 36L50 BP NR EFL 740 CL2	16.6	96263582	OXANE L 36L70 NR EFL 740 CL1 PM	17.1	96263564
OXANE L 60L35 BP NR EFL 740 CL2	16.7	96263662	OXANE L 60L50 NR EFL 740 CL1 PM	17.9	96263643
OXANE L 48L50 BP NR EFL 740 CL2	16.6	96263610	OXANE L 48L70 NR EFL 740 CL1 PM	17.8	96263592
OXANE L 72L35 BP NR EFL 740 CL2	16.7	96263702	OXANE L 72L50 NR EFL 740 CL1 PM	17.9	96263683
OXANE L 36L70 BP NR EFL 740 CL2	16.6	96263566	OXANE L 60L70 NR EFL 740 CL1 PM	17.9	96263632
OXANE L 36L70 BP NR EFL 730 CL2	16.6	96264553	OXANE L 72L70 NR EFL 740 CL1 PM	17.9	96263672
OXANE L 60L50 BP NR EFL 740 CL2	17.4	96263650	<b>Oxane L Narrow Road light distribution stepdim CL1</b>		
OXANE L 48L70 BP NR EFL 740 CL2	17.4	96263594	OXANE L 48L35 BP NR EFL 740 CL1	16.8	96263620
OXANE L 48L70 BP NR EFL 730 CL2	17.4	96264547	OXANE L 36L50 BP NR EFL 740 CL1	16.8	96263580
OXANE L 72L50 BP NR EFL 740 CL2	17.4	96263690	OXANE L 60L35 BP NR EFL 740 CL1	16.9	96263660
OXANE L 60L70 BP NR EFL 740 CL2	17.4	96263634	OXANE L 48L50 BP NR EFL 740 CL1	16.8	96263608
OXANE L 60L70 BP NR EFL 730 CL2	17.4	96264549	OXANE L 72L35 BP NR EFL 740 CL1	16.9	96263700
OXANE L 72L70 BP NR EFL 740 CL2	17.4	96263674	OXANE L 36L70 BP NR EFL 740 CL1	16.8	96263568
OXANE L 72L70 BP NR EFL 730 CL2	17.4	96264551	OXANE L 60L50 BP NR EFL 740 CL1	17.6	96263648
<b>Oxane L Wide Street light distribution CL2</b>			OXANE L 48L70 BP NR EFL 740 CL1	17.5	96263596
OXANE L 48L35 WS EFL 740 CL2	16.7	96263613	OXANE L 72L50 BP NR EFL 740 CL1	17.6	96263688
OXANE L 36L50 WS EFL 740 CL2	16.6	96263573	OXANE L 60L70 BP NR EFL 740 CL1	17.6	96263636
OXANE L 60L35 WS EFL 740 CL2	16.7	96263653	OXANE L 72L70 BP NR EFL 740 CL1	17.6	96263676
OXANE L 48L50 WS EFL 740 CL2	16.7	96263601	<b>Oxane L Narrow Road light distribution stepdim CL1 with minicell</b>		
OXANE L 72L35 WS EFL 740 CL2	16.7	96263693	OXANE L 48L35 BP NR EFL 740 CL1 PM	17.1	96263621
OXANE L 36L70 WS EFL 740 CL2	16.6	96263561	OXANE L 36L50 BP NR EFL 740 CL1 PM	17.1	96263581
OXANE L 60L50 WS EFL 740 CL2	17.4	96263641	OXANE L 60L35 BP NR EFL 740 CL1 PM	17.2	96263661
OXANE L 48L70 WS EFL 740 CL2	17.4	96263589	OXANE L 48L50 BP NR EFL 740 CL1 PM	17.1	96263609
OXANE L 72L50 WS EFL 740 CL2	17.4	96263681	OXANE L 72L35 BP NR EFL 740 CL1 PM	17.2	96263701
OXANE L 60L70 WS EFL 740 CL2	17.4	96263629	OXANE L 36L70 BP NR EFL 740 CL1 PM	17.1	96263569
OXANE L 72L70 WS EFL 740 CL2	17.4	96263669	OXANE L 60L50 BP NR EFL 740 CL1 PM	17.9	96263649
<b>Oxane L Wide Street light distribution stepdim CL2</b>			OXANE L 48L70 BP NR EFL 740 CL1 PM	17.8	96263597
OXANE L 48L35 BP WS EFL 740 CL2	16.7	96263619	OXANE L 72L50 BP NR EFL 740 CL1 PM	17.9	96263689
OXANE L 36L50 BP WS EFL 740 CL2	16.6	96263579	OXANE L 60L70 BP NR EFL 740 CL1 PM	17.9	96263637
OXANE L 60L35 BP WS EFL 740 CL2	16.7	96263659	OXANE L 72L70 BP NR EFL 740 CL1 PM	17.9	96263677
OXANE L 48L50 BP WS EFL 740 CL2	16.7	96263607			
OXANE L 72L35 BP WS EFL 740 CL2	16.7	96263699			
OXANE L 36L70 BP WS EFL 740 CL2	16.6	96263570			
OXANE L 60L50 BP WS EFL 740 CL2	17.4	96263647			
OXANE L 48L70 BP WS EFL 740 CL2	17.4	96263598			
OXANE L 72L50 BP WS EFL 740 CL2	17.4	96263687			
OXANE L 60L70 BP WS EFL 740 CL2	17.4	96263638			
OXANE L 72L70 BP WS EFL 740 CL2	17.4	96263678			

## Standards

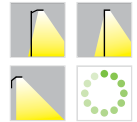


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T<sub>a</sub>-25  
+35

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## Lamps

55-  
169W

Description	Weight (Kg)	SAP Code
<b>Oxane L Wide Street light distribution CL1</b>		
OXANE L 48L35 WS EFL 740 CL1	16.8	96263611
OXANE L 36L50 WS EFL 740 CL1	16.8	96263571
OXANE L 60L35 WS EFL 740 CL1	16.9	96263651
OXANE L 48L50 WS EFL 740 CL1	16.8	96263599
OXANE L 72L35 WS EFL 740 CL1	16.9	96263691
OXANE L 36L70 WS EFL 740 CL1	16.8	96263559
OXANE L 60L50 WS EFL 740 CL1	17.6	96263639
OXANE L 48L70 WS EFL 740 CL1	17.6	96263587
OXANE L 72L50 WS EFL 740 CL1	17.6	96263679
OXANE L 60L70 WS EFL 740 CL1	17.6	96263627
OXANE L 72L70 WS EFL 740 CL1	17.6	96263667
<b>Oxane L Wide Street light distribution CL1 with minicell</b>		
OXANE L 48L35 WS EFL 740 CL1 PM	17.1	96263612
OXANE L 36L50 WS EFL 740 CL1 PM	17.1	96263572
OXANE L 60L35 WS EFL 740 CL1 PM	17.2	96263652
OXANE L 48L50 WS EFL 740 CL1 PM	17.1	96263600
OXANE L 72L35 WS EFL 740 CL1 PM	17.2	96263692
OXANE L 36L70 WS EFL 740 CL1 PM	17.1	96263560
OXANE L 60L50 WS EFL 740 CL1 PM	17.9	96263640
OXANE L 48L70 WS EFL 740 CL1 PM	17.9	96263588
OXANE L 72L50 WS EFL 740 CL1 PM	17.9	96263680
OXANE L 60L70 WS EFL 740 CL1 PM	17.9	96263628
OXANE L 72L70 WS EFL 740 CL1 PM	17.9	96263668
<b>Oxane L Wide Street light distribution stepdim CL1</b>		
OXANE L 48L35 BP WS EFL 740 CL1	16.8	96263617
OXANE L 36L50 BP WS EFL 740 CL1	16.8	96263577
OXANE L 60L35 BP WS EFL 740 CL1	16.9	96263657
OXANE L 48L50 BP WS EFL 740 CL1	16.8	96263605
OXANE L 72L35 BP WS EFL 740 CL1	16.9	96263697
OXANE L 36L70 BP WS EFL 740 CL1	16.8	96263562
OXANE L 60L50 BP WS EFL 740 CL1	17.6	96263645
OXANE L 48L70 BP WS EFL 740 CL1	17.6	96263590
OXANE L 72L50 BP WS EFL 740 CL1	17.6	96263685
OXANE L 60L70 BP WS EFL 740 CL1	17.6	96263630
OXANE L 72L70 BP WS EFL 740 CL1	17.6	96263670
<b>Oxane L Wide Street light distribution stepdim CL1 with minicell</b>		
OXANE L 48L35 BP WS EFL 740 CL1 PM	17.1	96263618
OXANE L 36L50 BP WS EFL 740 CL1 PM	17.1	96263578
OXANE L 60L35 BP WS EFL 740 CL1 PM	17.2	96263658
OXANE L 48L50 BP WS EFL 740 CL1 PM	17.1	96263606
OXANE L 72L35 BP WS EFL 740 CL1 PM	17.2	96263698
OXANE L 36L70 BP WS EFL 740 CL1 PM	17.1	96263567
OXANE L 60L50 BP WS EFL 740 CL1 PM	17.9	96263646
OXANE L 48L70 BP WS EFL 740 CL1 PM	17.9	96263595
OXANE L 72L50 BP WS EFL 740 CL1 PM	17.9	96263686
OXANE L 60L70 BP WS EFL 740 CL1 PM	17.9	96263635
OXANE L 72L70 BP WS EFL 740 CL1 PM	17.9	96263675
<b>Accessory</b>		
OXANE MA34/42 NPA	0.80	59005490
72L70 Number of LEDs (72 LEDs) and driving current (700mA)		
BP Bi power during 8hrs at 50% of the flux		
NR Narrow Road light distribution		
WS Wide Street light distribution		
EFL Flat glass enclosure		
PM Integrate minicell		
CL1 Class I electrical		
CL2 Class II electrical		
740 IRC: 70 with Colour temperature: 4000K		
730 IRC: 70 with Colour temperature: 3000K		