Public Lighting Report

Proposed Strategic Housing Development,

Former Bailey Gibson Site,

326-328 South Circular Road, Dublin 8

Project No. H613

01 June 2022

OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

Public Lighting Report

NOTICE

DOCUMENT CONTROL & HISTORY

OCSC Job No.: H613	Project Code	Originator Code	Zone Code	Level Code	File Type	Role Type	Number Series	Status/ Suitability Code	Revision
	H613	OCSC	XX	XX	RP	E	0001	S4	P01

Rev.	Status	Authors	Checked	Authorised	Issue Date
P05	S4	BOB	TD	TD	01.06.22
P04	S4	BOB	TD	TD	12.05.22
P03	S4	BOB	MH	MH	14.01.22
P02	S4	BOB	MH	MH	15.05.20
P01	S4	BOB	MH	MH	15.01.20

Table of Contents

1. INTRODUCTION

This application relates to a proposed mixed-use strategic housing development (SHD) on a site of approx. 5.5 hectares in Dublin 8. It includes all of the former Bailey Gibson site and a small portion of the former Player Wills site, both of which are owned by the Applicant, CWTC Multi Family ICAV acting solely in respect of its sub fun DTBR SCR1 Fund. The balance of the proposed development site relates to land owned by Dublin City Council (DCC) known locally as the 'Boys Brigade pitch' and part of the St. Teresa's Gardens site, together with DCC controlled public roads.

The application area is predominately within Strategic Development Regeneration Area (SDRA) 12, St. Teresa's Gardens & Environs as identified in the Dublin City Development Plan 2016-2022. The part of the proposed development site not within SDRA 12 relate to works proposed in the public roads surrounding the site, South Circular Road, Donore Avenue and Rehoboth Place.

A comprehensive description of the proposed development is set out in the Planning Statement. The Statutory Notices should also be referenced.

Briefly, it is proposed to demolish the existing vacant buildings and structures on the Bailey Gibson site to make way for development of 345 new homes across 5 blocks, BG 1 - BG 5, ranging in height from 2-7 storeys. The residential blocks will be contained within the Bailey Gibson site. The typology is predominantly apartments with 4 townhouses proposed in block BG5.

This is a mixed tenure scheme, with 292 units proposed as Build to Rent (BtR) across blocks BG1-BG3 and 53 units proposed as Build to Sell (BtS) in blocks BG4 and BG5. It is proposed to deliver 34 social and affordable homes as part of the overall total.

All apartments have private amenity space. At ground floor this is in the form of terraces and on upper levels, balconies. Each of BG1-BG4 have communal amenity areas either as a courtyard or podium area.

Tenant amenities and facilities are proposed in the BtR blocks and include a gym, co-working space, kitchen/lounge areas, concierge, and waste facilities.

Over 2 hectares of public open space including a multi-sport play pitch, a playground, 'St. Teresa's Playground', a boulevard, 'St. Teresa's Boulevard', a park, 'Players Park', a plaza, 'Rehoboth Plaza'.

The proposed non-residential uses include in blocks BG1 and BG2 commercial units that have the capacity to support daily living needs e.g., a shop, pharmacy and professional services. A creche with capacity for approx. 60 children. In block BG2 the design includes floorspace for a café/restaurant/bar.

In total there are 89 car parking spaces allocated to the proposed apartments and all are contained within the Bailey Gibson site. Apart from 1 space at podium level, the parking is contained within a basement. Additionally, 10 'Go Car' spaces are proposed at podium level for residents use only. Each of the 4 townhouses has 1 on-curtilage car parking space.

Visitor parking is at street level and the proposed sport pitch will be serviced separately by new spaces on the public roads. The scheme includes set down parking for the creche, a loading bay for deliveries and coach parking area.

Provision is made for disabled parking, electric vehicle charging, a car sharing scheme and motorcycle parking.

784 spaces are proposed for cycle parking including secure residents parking, visitor parking and spaces for cargo bicycles.

Other works include the development of a network of streets across the proposed development site that will link with other sites within SDRA 12 and into the wider street network of Dublin 8. Improvement works within existing local streets to facilitate access and safe movement.

Ancillary development works includes the construction of electricity substations, meter rooms, plant rooms at basement level, waste storage areas, solar photovoltaics, drainage, landscaping, and lighting.

The report considers the lighting design as developed by O'Connor Sutton Cronin (OCSC), and should be read in conjunction with OCSC drawing number.
H613-OCSC-ZZ-XX-DR-E-0001

The drawing is provided to demonstrate:

- Compliance with DCC public lighting standards for areas to be taken in charge,
- Sets out design criteria for areas remaining under control of the management company.

This predicted performance of the external lighting installations has been assessed in detail using Lighting Simulation software Lighting Reality.

Standards and guidelines in relation to the lighting design are:

- BS 5489-1-2013
- I.S. EN 13201-2-2015
- Dublin City Council Public Lighting General Specification 2016.
- CIBSE Lighting Guide 4: Sports Lighting
- The SLL Lighting Handbook 2018

The electrical services for the external lighting installation will be designed in accordance with IS: 10101.

2. THE DESIGN

The lighting design has been developed with the following principal considerations:

- Provide adequate illumination to contribute towards the safe use of the main access/feeder road and adjoining footpaths by both vehicles, cycles and pedestrians.
- Provide adequate illumination to the sports pitch for proper use in relation to guidance set out by CIBSE
- Provide adequate illumination to junctions with the development.
- Achieve compliance with Part M of building regulations "Access for People with Disabilities"
- Provide the required illumination with minimum energy use.
- To control the lighting to prevent energy wastage.

2.1 Areas taken in charge by DCC.

All lighting within the area to be taken in charge is to be powered from the existing public lighting supply on South Circular Road, via a new lighting minipillar to meet DCC specification.

The lighting class to I.S. EN 13201-2-2015 selected for the design is Lighting Class P3

The road lighting luminaires to be LED, 4000k CCT, LM80 >15 years using TM21-11 test results, driver current < 750mA, minimum IK08 impact resistance, at least IP65 ingress protection, as required by DCC specification.

The road lighting shall be by individual electronic solid state photocell per luminaire, with test switch in column base, to DCC specification.

Lighting columns shall be tubular type, galvanised steel, fully in accordance with DCC standard specification.

All wiring to be to DCC standard specification and to IS: 10101.

Calculation results are presented in the Appendix A.

Manufacturer's data sheets for the selected luminaires are attached to this document as Appendix B.

2.2 Areas proposed to remain under control of the management company.

All lighting within the area is to be powered from the metered landlord supply via sub-distribution boards as required and to comply with IS: 10101.

All access routes shall comply with TGD M 2010 "Access for people with disabilities", e.g. 20 lux for level and 100 lux for steps and ramps.

The luminaires proposed for these areas are combination of column mounted and low level bollard lights.

All wiring to be to DCC standard specification and to IS: 10101.

The desired lighting design may also be achieved by other luminaires and the final lighting installation may use other luminaires, with modified positioning and aiming to achieve the same result. Manufacturers' stated performance characteristics are subject to change. Any changes to be agreed with DCC Road Lighting Department.

2.3 Areas Relating to Playing Pitch

All lighting within the playing pitch has been designed in accordance with SLL 2018 and CIBSE Lighting Guide 4: Sports Lighting. The following points have been met in the lighting design of the pitch as a minimum:

- >70 CRI
- 500 lux average
- >0.7 Uniformity
- 55 Glare Rating

In addition, obtrusive lighting has been kept to a minimum with the design reaching a maximum of 1 lux at the nearest roadway area. The floodlights used in the calculation are manufactured in a way which prevents the lighting of the pitch having any detrimental effect of the surrounding residential area. Further measures can even be considered such as installing cowls on the floodlights if necessary in the future.

2.4 Lighting Ecology

The lighting scheme has been designed to adhere to the following lighting characteristics:

- The minimum level of appropriate/required lighting level will be provided within the developed/residential areas;
- Light fittings will be fitted with low intensity, horizontal cut-off LED light fittings employing a narrow directional light or cowled light. This will avoid the effect of light spill arising within the residential area;
- No light spill into biodiversity areas. In particular there will be no light spill from the development area onto the woodland area to the north;
- The lighting includes dimming by 30% post curfew hours;
- Light fittings and associated lighting will be directed away from areas of open space;
- No floodlighting will be used in the development other than the area within the sports pitch;

The lighting design adheres to the following standard guidance:

- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland, 2010);
- Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2018).

Also:

- Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011);

APPENDIX A. CALCULATION RESULTS.

DATE:	**15 January 2020**
DESIGNER:	**Barry O'Brien**
PROJECT No:	**H613**
PROJECT NAME:	**Bailey Gibson Public Lighting**

Outdoor Lighting Report

PREPARED BY:

O'Connor Sutton Cronin
9 Prussia Street,
Stoneybatter,
Dublin 7.

e-mail: sales@lightingreality.com
website: www.lightingreality.com

n:\projects\h-jobs\h613\1.0 wip\de\calc\lighting calculations\bailey gibson site lighting.rtma

DATE: 15 January 2020 **DESIGNER: Barry O'Brien**
PROJECT No: H613 **PROJECT NAME: Bailey Gibson Public Lighting**

Layout Report

General Data

Dimensions in Metres Angles in Degrees
Grid Origin 144.9m x 316.9m
Area 204.3m x 184.5m
Sample Spacing 1.00m x 1.00m

Luminaires

Luminaire A Data

Supplier	Thorn UK
Type	Isaro PRO - 12 x Neutral White 4000K LED 5 00mA - NR Optic
Lamp(s)	LED 4000 K
LampFlux(klm)/Colour	2.67 4000/70
File Name	IP12L50NR740G35_DC.LDT
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	602.6, 98.0, 0.0
No. in Project	20

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	A	190.73	349.42	6.00	187.00	0.00	0.00	1.00			
2	A	185.93	383.20	6.00	187.00	0.00	0.00	1.00			
3	A	183.89	403.78	6.00	184.00	0.00	0.00	1.00			
4	A	201.38	406.25	6.00	90.00	0.00	0.00	1.00			
5	A	241.42	405.90	6.00	72.00	0.00	0.00	1.00			
6	A	244.63	383.48	6.00	11.00	0.00	0.00	1.00			
7	A	248.87	352.72	6.00	3.00	0.00	0.00	1.00			
8	A	243.27	432.32	6.00	359.00	0.00	0.00	1.00			
9	A	242.94	464.68	6.00	2.00	0.00	0.00	1.00			
10	A	253.20	464.55	6.00	179.00	0.00	0.00	1.00			
11	A	251.60	491.49	6.00	168.00	0.00	0.00	1.00			
12	A	228.38	496.54	6.00	273.00	0.00	0.00	1.00			
13	A	198.04	496.22	6.00	267.00	0.00	0.00	1.00			
14	A	176.20	491.88	6.00	354.00	0.00	0.00	1.00			
15	A	173.09	468.82	6.00	1.00	0.00	0.00	1.00			
16	A	181.17	432.33	6.00	180.00	0.00	0.00	1.00			
17	A	163.81	426.53	6.00	69.00	0.00	0.00	1.00			
18	A	265.76	433.81	6.00	93.00	0.00	0.00	1.00			
19	A	299.72	436.18	6.00	104.00	0.00	0.00	1.00			
20	A	224.82	406.38	6.00	86.00	0.00	0.00	1.00			

Lighting Reality Ltd. Park Business Centre, Wood Lane, Erdington, Birmingham, B24 9QR UK e-mail: sales@lightingreality.com website: www.lightingreality.com

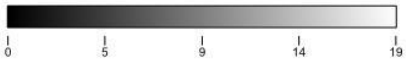
2

DATE: 15 January 2020 DESIGNER: Barry O'Brien
PROJECT No: H613 PROJECT NAME: Bailey Gibson Public Lighting

lightingreality PRO

Horizontal Illuminance (lux)

Grid 1



Results

Eav	7.61
Emin	1.50
Emax	18.80
Emin/Emax	0.08
Emin/Eav	0.20

Lighting Reality Ltd. Park Business Centre, Wood Lane, Erdington, Birmingham, B24 9QR UK e-mail: sales@lightingreality.com website: www.lightingreality.com

3

Exterior Scene 1 / Soccer 273p / Value Chart (E, Perpendicular)

437	532	411	415	401	384	419	466	501	613	620	596	492	457	412	386	414	430	432	561	449
444	512	529	508	495	458	489	539	584	596	593	579	570	533	486	459	497	531	546	515	438
508	558	657	570	512	504	499	552	617	646	663	626	604	532	491	504	517	572	639	570	490
501	539	586	560	498	510	505	508	576	637	660	615	558	498	497	513	505	529	579	540	479
428	466	490	524	487	458	467	493	512	559	565	544	500	481	464	463	478	510	500	470	416
417	470	490	488	455	407	415	455	500	543	549	532	486	440	406	394	438	483	496	474	418
411	473	487	468	436	393	391	434	494	549	556	538	481	420	376	367	406	459	487	475	418
416	469	491	486	454	405	413	452	501	541	549	536	496	449	407	383	413	460	479	458	417
424	462	489	520	482	455	461	486	515	554	564	556	516	487	461	447	446	475	491	451	423
495	531	579	553	492	502	495	500	574	637	658	642	581	500	495	494	469	508	580	532	491
508	555	649	563	504	493	488	535	602	645	655	649	602	545	492	477	475	506	580	551	500
444	509	528	500	482	445	475	531	568	585	595	588	575	536	476	437	465	477	484	485	439
445	535	410	408	392	370	399	444	487	601	595	609	487	440	395	367	387	406	396	473	432

39.42 m

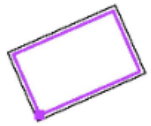
-39.42

-64.94

64.94 m

Values in Lux, Scale 1 : 929

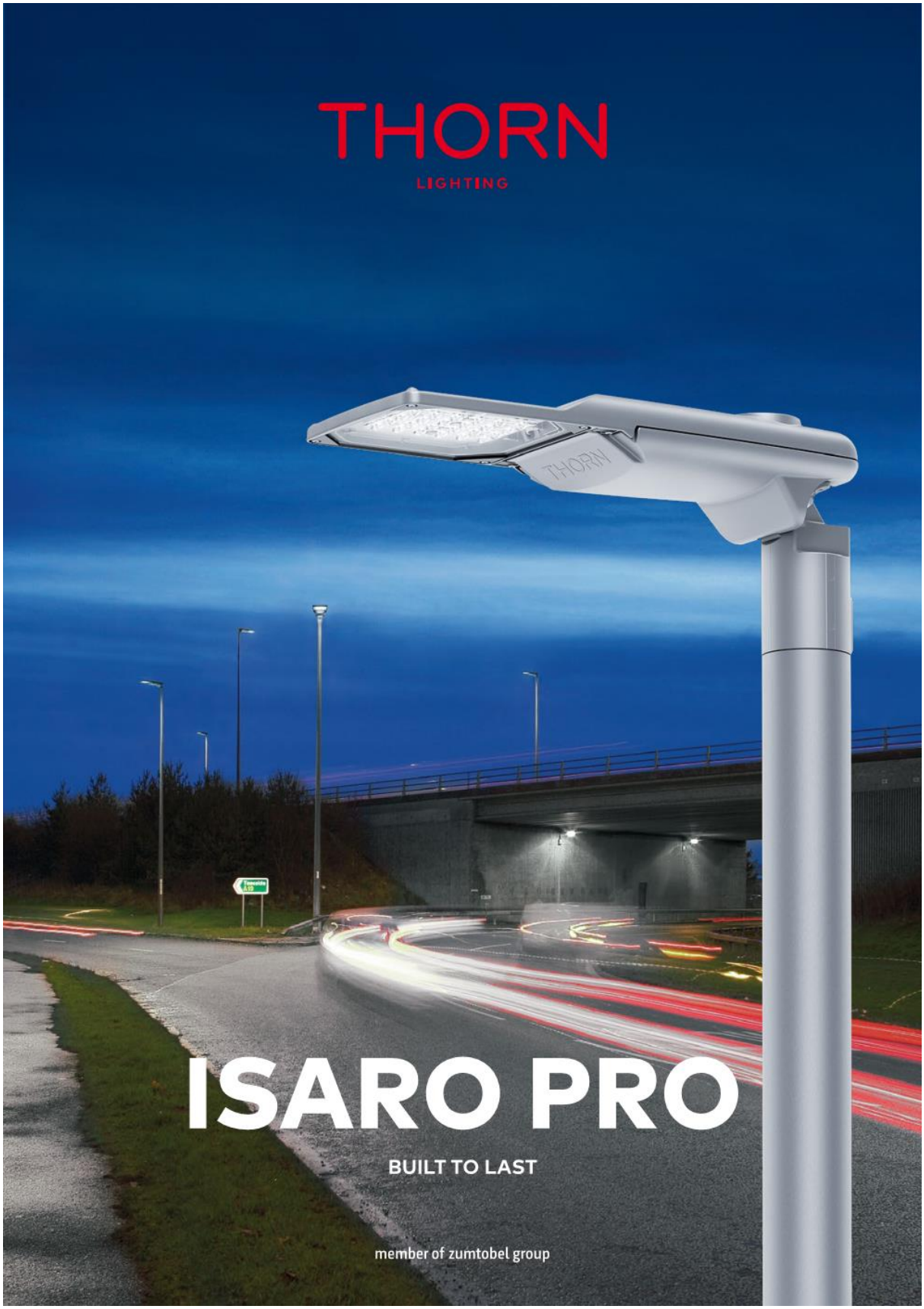
Position of surface in external scene:
Marked point: (67.128 m, 60.623 m, 0.000 m)



Grid: 21 x 13 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
500	367	663	0.73	0.55

APPENDIX B MAUNFACTURERS DATA SHEET.


THORN
LIGHTING
THORN
ISARO PRO
BUILT TO LAST
member of zumtobel group


CONTRACTOR FRIENDLY
Isaro Pro is designed to make life easy for contractors. With internal components easily accessed from above without the need for tools, maintenance couldn't be simpler. It is available pre-wired and its automatic disconnect function means maintenance is safe.
THORN
R-PEC® OPTIC
Isaro Pro features the best in class optical performance of the R-PEC® optic. R-PEC® offers several precision light distributions, achieving wide column spacing, excellent uniformity plus no waste or obtrusive light.
TILTING TECHNOLOGY
Very versatile installation thanks to our tilting technology where using the same spigot you can achieve lateral (-15°/+15°) and top (0°/+20°) mounting with a wide choice of angles, by steps of 5°.

ISARO PRO CONFIGURATION GUIDE

IP	12L	70	740	NR	CLO	BPS550	HFX	SP	CL1	N7	RF	T60F	W6	R9006	
Range	LED	mA	CCT/CRI	Optic	CLO	Diming	DALI	Fuse	Safety	Photocell	Comm	Spigot	Wiring	Colour	
														Optional	
														RALxxx	Different RAL possibility
														Optional	
													XX m	Several lengths of wires	
													Optional		
												L42E		Pre-fitted 42 mm spigot lateral 0°	
												L60E		Pre-fitted 60 mm spigot lateral 0°	
												T60F		Pre-fitted 60 mm spigot post top +5°	
												T76F		Pre-fitted 76 mm spigot post top +5°	
												M42		42 mm spigot non-fitted for freedom of position	
												M60		60 mm spigot non-fitted for freedom of position	
												M76		76 mm spigot non-fitted for freedom of position	
												Optional			
											RF	RF Incity			
											Optional				
										N3		3 pin NEMA socket			
										N7		7 pin NEMA socket			
										Z4		4 pin ZAGHA socket			
										PM		Minicell			
									CL1	Class I electrical (earthed)					
									CL2	Class II electrical (double insulated)					
									Optional						
								SP	10 kV multi pulse surge protection						
								Optional							
							HFX	DALI Dimmable							
							Optional								
						BPL	Bi Power Power Line								
						LRT	Light Reduction Twin Phases								
						BPSX	Bi-Power switchable with different diming profiles								
						BPX	Bi-Power with different diming profils								
						Optional									
					CLO	Constant Light Output									
				R-PEC®	All R-PEC® optics available										
			730	CRI 70 – 3000 K											
			740	CRI 70 – 4000 K											
			830	CRI 80 – 3000 K											
			840	CRI 80 – 4000 K											
		ALO	Adjustable lumen output												
		35													
		to	350 mA to 1050 mA												
		105													
	12L														
	to	From 12 LEDs													
	72L	to 72 LEDs													
IP	Isaro Pro														

Configure the ideal product solution with myProduct. The myProduct configurator allows you to easily configure a luminaire according to your needs. **Try it now at http://www.thornlighting.com/myproduct**

Isaro Pro S

Isaro Pro M

Up to 10 kV Single Pulse as standard
Up to 21 300 lm
Up to 160 lm/W
Up to 100 000 h L90 B10 @25°C

IK09 IP66 25°C 35°C* 50°C*

* ambient temperature available depending on lumen output

Accessories
IK10 accessory
Back, front and side louvres

Material
Full Die cast Aluminium and flat glass

Standards

THORN
LIGHTING

5 YEAR GUARANTEE

As a globally leading luminaire manufacturer, Thorn Lighting provides a five-year warranty for its complete product range within all European Countries.
THORNLIGHTING.COM/GUARANTEE

Publication No. 96644360 (INT) Publication Date: 11/18

THORNLIGHTING.COM/ISRP

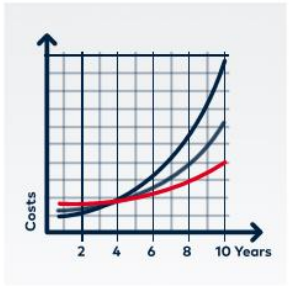

ISARO PRO
THORN
SMART LIGHTING
Isaro Pro incorporates many control solutions such as InCity, our state-of-the-art intelligent outdoor lighting system: save energy, provide light only when and where it is required and control the whole system from a simple dashboard. Combine it with our expert service team, and you'll get revolutionary lighting without the risk.
BEST IN CLASS ROAD AND STREET OPTICS
STREET ORIENTED DISTRIBUTION
Street Comfort (SC)
Wide Street (WS)
Extra Wide Street (EWS)
Extra Wide Street Comfort (EWC)
Wide Street Comfort (WSC)
Extensive Street (ES)
ROAD ORIENTED DISTRIBUTION
Extra Narrow Road (ENR)
Narrow Road (NR)
Tight Road (TR)
Road Comfort (RC)
Wide Road (WR)
Wet Road (RWT)
ROAD ORIENTED DISTRIBUTION
PEDESTRIAN CROSSING
Extra Wide Road (EWR)
Staggered Road (SR)
Pedestrian Crossing (IVS)

Built to last

Isaro Pro is built to withstand almost everything that nature and the outdoor environment can throw at it. With an IP66 rating for ingress protection and IK09 for impact, the luminaire also has strong corrosion resistance and vibration resistance. There are few applications Isaro Pro can't handle.

Corrosion resistant

Thanks to the best in class alloy and the specific fixing system treatment, Isaro Pro has strong corrosion resistance and easliy reaches Category 5 (C5 – very high corrosivity) according to ISO 9223 – Corrosion of metal and alloys.



Great ROI potential

Isaro Pro's long life (up to 100 000 h) and efficacy of up to 160 lm/W in addition to a wide choice of controls (radio frequency, daylight sensor and others) mean that overall cost of ownership is low, ensuring a quick ROI (Return of Investment) but also allowing operators to make significant long-term savings. The ability to easily add or replace internal components including the driver, LEDs and controls, means the luminaire is truly futureproof.

- Existing 70 W SON HID
- ISARO PRO 12LED WS
- ISARO PRO 12LED WS + Light management

A FUTURE PROOF SOLUTION

Made of top-quality alloy, Isaro Pro is built to withstand all conditions, and to cope with physical impact and vibration. With a lifetime up to 100 000 hours, it guarantees years of reliable performance, ensuring a low-cost of ownership. And with connectivity built in, it's a truly futureproof solution. As well as being robust, this modern lantern is slim, sleek and performs brilliantly. With light output of up to 21 300 lm with 2 sizes, Isaro Pro is powerful enough to handle roads & streets, residential areas, car parks and walking/cycling paths. Because every application is different, Isaro Pro uses Thorn's unique R-PEC® optic to offer unprecedented optical flexibility. A choice of several precise light distributions is available for highly efficient and comfortable light, exactly where it is needed, whether lighting a residential street, a busy road or a pedestrian crossing.

APPLICATION AREAS

BUILT TO LAST

This robust and high-performance LED lantern brings comfort and safety to any road or street. Pressure to reduce energy costs and carbon emissions for outdoor lighting is stronger than ever. High-quality LED street lanterns offer a great solution, thanks to clever design, highly efficient light sources, long life and smart controls.

90 YEARS
EST. 1928


THORN

PHILIPS
Lighting

OptiVision MVP507

MVP507 MHN-FC2000W/740 400V MB SI

OPTIVISION - MASTER MHN-FC - 2000 W - Medium beam

Optivision is an asymmetric downlighting luminaire that combines compact dimensions with very high efficiency. Available with narrow, medium and wide beams for flexibility in application, it provides excellent control of spill light and limitation of glare and upward leakage of light. Optivision can accommodate metal-halide lamps for good color rendering or high-pressure sodium lamps for economical operation.;Excellent spill-light control, limitation of glare and upward leakage of light is secured by asymmetric optics that achieve peak intensity at 60º and a sharp cut-off of light at 80º. The MHN-LA/FC lamps guarantee pleasant and natural color rendering and comfortable atmosphere.

Product data

General information	
Number of light sources	1 pc
Lamp family code	MHN-FC [MASTER MHN-FC]
Lamp power	2000 W
Light source color	740 neutral white
Kombipack	Lamp(s) included
Number of gear units	-
Gear	-
Optical cover/lens type	Flat glass
Luminaire light beam spread	-
Control interface	-
Connection	Screw connector
Cable	-
Protection class IEC	Safety class I
Flammability mark	-
CE mark	CE mark

ENEC mark	-
Ball impact resistance mark	Ball Impact Resistance mark
Warranty period	1 years
Mechanical accessories	-
Optic type outdoor	Medium beam
Constant light output	No
EU RoHS compliant	Yes
Serviceability class	Class A, luminaire is equipped with serviceable parts (when applicable). LED board, driver, control units, surge protection device, optics, front cover and mechanical parts
Product family code	MVP507 [OPTIVISION]

Light technical	
Standard tilt angle posttop	-

Datasheet, 2022, May 9

data subject to change

OptiVision MVP507

Standard tilt angle side entry	-

Operating and electrical

Lamp supply voltage	400 V [400]
Input Voltage	400 V
Input Frequency	50 to 60 Hz
Ignitor	Series

Controls and dimming

Dimmable	No

Mechanical and housing

Housing Material	Aluminum
Reflector material	Aluminum
Optic material	Aluminum
Optical cover/lens material	-
Fixation material	Steel
Mounting device	Mounting bracket adjustable
Optical cover/lens shape	-
Optical cover/lens finish	-
Overall height	386 mm
Effective projected area	0.16 m^2
Color	Aluminum
Dimensions (Height x Width x Depth)	386 x NaN x NaN mm (15.2 x NaN x NaN in)

Approval and application

Ingress protection code	IP65 [Dust penetration-protected, jet-proof]
Mech. impact protection code	IK08 [5 J vandal-protected]
Surge Protection (Common/Differential)	-

Initial performance (IEC compliant)

Init. Corr. Color Temperature	4000 K
Init. Color Rendering Index	>70

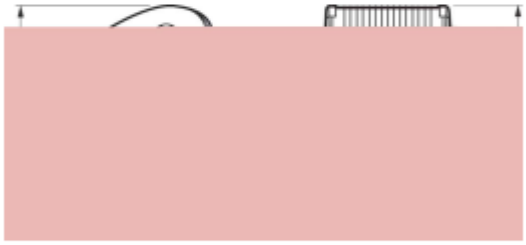
Application conditions

Ambient temperature range	-30 to +35 °C
Maximum dim level	Not applicable

Product data

Full product code	872790029135300
Order product name	MVP507 MHN-FC2000W/740 400V MB SI
EAN/UPC - Product	8727900291353
Order code	910403747412
Numerator - Quantity Per Pack	1
Numerator - Packs per outer box	1
Material Nr. (12NC)	910403747412
Net Weight (Piece)	17.200 kg

Dimensional drawing



MVP507 MHN-FC2000W/740 400V MB SI