

Bartley Wood Business Park Hook

External Lighting Proposals

Issue 2 – Planning

26 May 2021



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REVISIONS

Issue	Description	Date
1	Planning Issue	24/05/21
2	Planning Issue <ul style="list-style-type: none">Updated in line with Barton Willmore comments	26/05/21

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1.0 INTRODUCTION

This External Lighting Proposals Report has been prepared to support the planning application in connection with the proposed demolition of existing buildings and redevelopment of the site to provide 9no. industrial units (Flexible Use Class B1/B8/E(g)(i)-(iii)) and 1no. retail foodstore (Use Class E(a)), together with associated parking, a new vehicular access off Griffin Way South, landscaping and other associated works at Bartley Wood Business Park, Hook.

This report seeks to demonstrate that the complete external lighting proposal has been developed with due consideration given to the following:

- Energy Efficiency
- Night-time Light Pollution
- Impact on Neighbouring Sites
- BREEAM Requirements
- Ecology Considerations

2.0 BRIEF DESCRIPTION OF EXTERNAL LIGHTING PROPOSALS

The proposed external lighting scheme comprises a mixture of building mounted and column mounted luminaires to illuminate car parks, service yards and access road/paths – refer to drawing 0182/E/200 in Appendix 1 for details.

The external lighting scheme shall be designed in accordance with the following:

- CIBSE Lighting Guide LG6 ‘The Outdoor Environment’
- British Standard BS12464-2 ‘Lighting of Work Places – Part 2 Outdoor Work Places’
- British Standard BS5489-1 ‘Code of Practice for the Design of Road Lighting’
- ILP Guidance Notes for the Reduction of Obtrusive Light
- ILP Guidance Notes for Bats and Artificial Lighting in the UK
- BREEAM Requirements (Targeted Credits Hea01 (1 credit), Pol04 (1 credit) & Ene03 (1 credit))

2.1 Business Units

The Business Units access road, service yard and car park lighting shall be by a combination of column and building mounted luminaires as the Holophane ‘D-Series’ (or equal) type fitting column mounted at 6m and the Holophane ‘Wallpack’ (or equal) wall mounted at approx. 6m.

The car park and service yard lighting shall be operated via adjustable timeclock and photocell controls fed from the building’s distribution.

The access road lighting shall be operated via adjustable timeclock and photocell controls fed via a landlord's distribution board. In-addition to the timeclock the columns shall incorporate DALI photo/motion PIR sensor controls.

Via an App based system the sensors have the function to DIM or switch OFF the columns when the access road is not in use i.e no motion detected. Upon detection of motion the luminaires will operate at a pre-programmed dimming level and duration from 1min to 60mins.

The rear of the units are located adjacent to the Hook Common and Bartley Wood woodland and the following measures shall be included as part of the lighting to limit spill into the woodland:

- Shielding via the existing retaining walls and fencing
- Presence detection
- Luminaire selections with 0% upward light ratio and sharp cut-off angles

Refer to Appendix 1 for the external lighting design illumination levels & luminaire schedule and Appendix 3 for data sheets of the proposed luminaires.

Escape Paths

The rear and side escape paths shall be provided with building mounted emergency luminaires as the Holophane 'Denver iD Wall' (or equal) type fitting mounted at approx. 3m. Control of the escape path lighting shall be by presence detector for short-duration escape purposes only.

Loading Bays

Separately switched building mounted LED luminaires as the Thorn 'Leo' type fitting (or equal) shall be located centrally over each loading bay door for short duration unloading of vehicles. The luminaires shall be orientated downwards and shall be controlled from a time-lag switch adjacent to the loading bay door.

Refer to Appendix 2 for loading bay design illumination levels and Appendix 3 for data sheets of the proposed luminaires.

2.2 Retail Foodstore

The Retail Foodstore open area car park and path lighting shall be by column luminaires as the Holophane 'Factor' type fitting column mounted at 6m and building mounted luminaires as the 'Civic Lighting Apollo' mounted at approx. 3m

In addition to the aforementioned car park/path lighting, recessed canopy luminaires as the 'Civic Lighting Flux' shall be mounted within the entrance canopy.

The lighting shall be operated via adjustable timeclock and photocell controls fed from the Retail Foodstores distribution. Presence detection shall be incorporated to areas where intermittent pedestrian & vehicle movement is expected.

2.3 Luminaire Performance

All luminaires shall be high efficiency with reflectors to control upward and obtrusive light onto neighbouring sites. The luminaires will have good light control and sharp cut-off angles to reduce light spillage.

The luminaires proposed for this scheme are 'night-time friendly' with 0% upward light ratio and shall also have a glass front to reduce the visibility of the light source and glare.

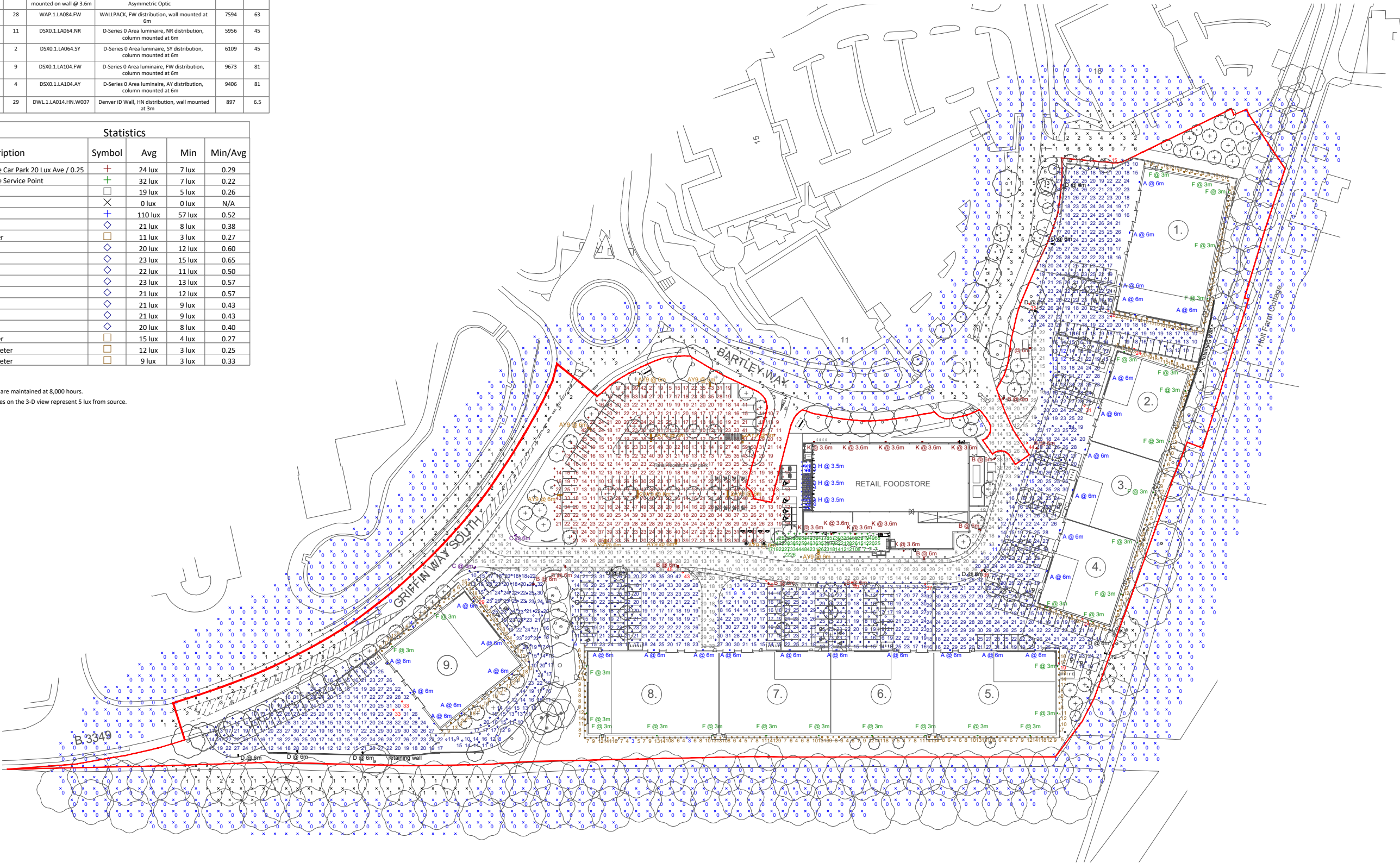
Refer to Appendix 3 for data sheets of the proposed fittings.

APPENDIX 1 – External Lighting Design Illumination Levels

Schedule						
Symbol	Label	Qty	Catalog Number	Description	Lumen Output	Wattage
	AY9	8	FTS.3.LA094.AY	FACTOR SMALL 8606 Lm output c/w AY Asymmetric Optic on 6m Conical Column	8606	66
	2AY9	4	2 x FTS.3.LA094.AY	2 x FACTOR SMALL 8606 Lm output c/w AY Asymmetric Optic on 6m Conical Column	8606	132
	H	3	JEE.5312.157.37	FLUX LED 4000lm under canopy downlight	3986	34.5
	K	10	MTA.5407.157AS.37 mounted on wall @ 3.6m	Apollo LED 31w LED Wall Mounted flg c/w Asymmetric Optic	2220	31
	A	28	WAP.1.LA084.FW	WALLPACK, FW distribution, wall mounted at 6m	7594	63
	B	11	DSX0.1.LA064.NR	D-Series 0 Area luminaire, NR distribution, column mounted at 6m	5956	45
	C	2	DSX0.1.LA064.SY	D-Series 0 Area luminaire, SY distribution, column mounted at 6m	6109	45
	D	9	DSX0.1.LA104.FW	D-Series 0 Area luminaire, FW distribution, column mounted at 6m	9673	81
	E	4	DSX0.1.LA104.AY	D-Series 0 Area luminaire, AY distribution, column mounted at 6m	9406	81
	F	29	DWL.1.LA014.HN.W007	Denver ID Wall, HN distribution, wall mounted at 3m	897	6.5

Statistics				
Description	Symbol	Avg	Min	Min/Avg
Retail Foodstore Car Park 20 Lux Ave / 0.25	+	24 lux	7 lux	0.29
Retail Foodstore Service Point	+	32 lux	7 lux	0.22
Roadway	□	19 lux	5 lux	0.26
Spill Light	×	0 lux	0 lux	N/A
Under Canopy	+	110 lux	57 lux	0.52
Unit 1	◇	21 lux	8 lux	0.38
Unit 1 Perimeter	□	11 lux	3 lux	0.27
Unit 2	◇	20 lux	12 lux	0.60
Unit 3	◇	23 lux	15 lux	0.65
Unit 4	◇	22 lux	11 lux	0.50
Unit 5	◇	23 lux	13 lux	0.57
Unit 6	◇	21 lux	12 lux	0.57
Unit 7	◇	21 lux	9 lux	0.43
Unit 8	◇	21 lux	9 lux	0.43
Unit 9	◇	20 lux	8 lux	0.40
Unit 9 Perimeter	□	15 lux	4 lux	0.27
Units 2-4 Perimeter	□	12 lux	3 lux	0.25
Units 5-8 Perimeter	□	9 lux	3 lux	0.33

- Notes:
- All calculations are maintained at 8,000 hours.
 - The contour lines on the 3-D view represent 5 lux from source.



NOTES:

Luminaire Key

TYPE AY & 2AY
Factor Small

TYPE A
Wallpack

TYPE B, C, D & E
D-Series & PIR Sensor

TYPE F
Denver iD Wall c/w Presence Detector

TYPE H
Civic Flux (recessed within the canopy)

TYPE K
Civic Apollo

2

26-05-21

Site plan updated. Planning Issue

DB

1

24-05-21

Planning Issue

DB

Rev

Date

Description

Initials

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Client:

XLB Property & Patron Hook Ltd

Main Contractor:

Protect Title:

Bartley Wood Business Park
Hook

Drawing Title:

External Lighting Layout

Scale:

1:500

Paper Size:

A0

Drawn By:

DB

Checked By:

AB

Drawing Number:

0182 / E / 200

Rev:

2

Drawing Status:

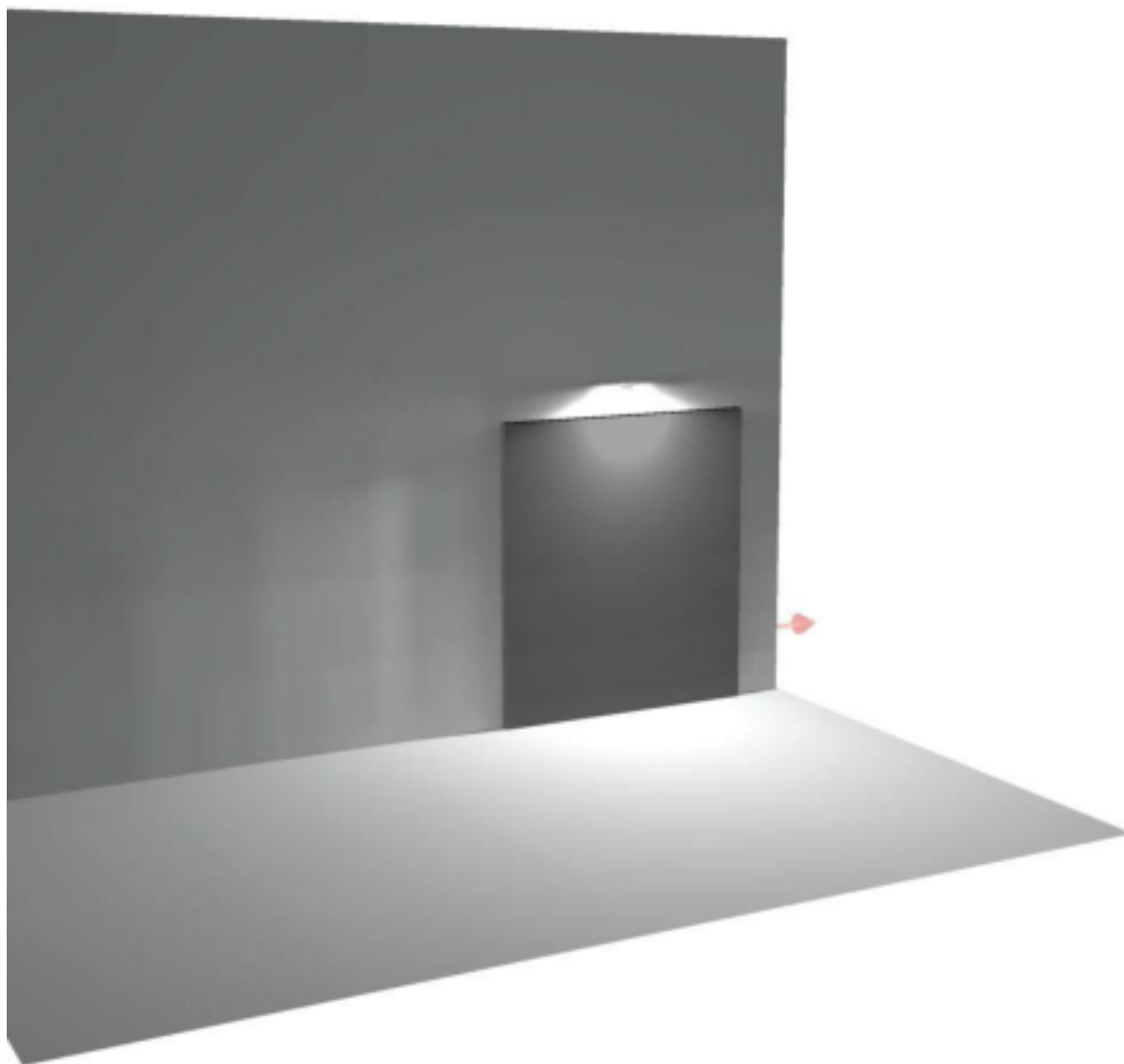
Planning

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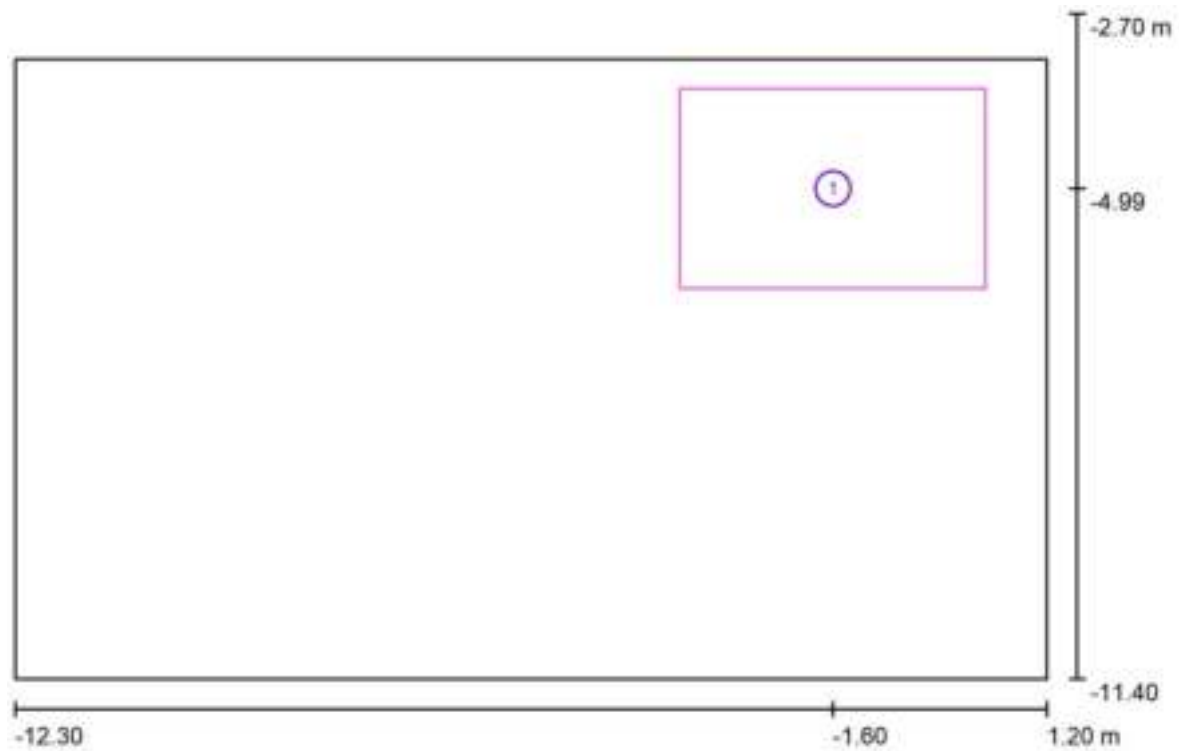
DESIGN INTENT

APPENDIX 2 – Loading Bay Design Illumination Levels

Loading Bay / 3D Rendering



Loading Bay / Calculation surfaces (results overview)



Scale 1 : 99

Calculation Surface List

No.	Designation	Type	Grid	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u_0	E_{min} / E_{max}
1	Loading Bay	perpendicular	64 x 64	58	38	72	0.664	0.529

APPENDIX 3 – Proposed External Luminaires

ACCESS ROAD, SERVICE YARDS & CAR PARKS

Gallery Image & Manufacturers Brochure:



Holophane D-Series Luminaire Column Mounted at approx. 6.0m & DALI Photo/Motion PIR Sensor

SERVICE YARDS & CAR PARKS

Gallery Image & Manufacturers Brochure:



Holophane Wallpack Building Mounted Luminaire at approx. 6.0m

D-SERIES



D-SERIES




HOLOPHANE®

D-SERIES

The modern styling of the **D-Series** is striking yet unobtrusive - making a bold, progressive statement as it blends seamlessly with its environment. **D-Series** takes all the benefits of LED technology and moulds it into a high performance, high efficacy and long life area lighting luminaire.

With its exceptional 'finned' thermal management system, **D-Series** is capable of delivering over 100,000 hours LED module life. Offering a wide range of lumen packages and optical distributions, **D-Series** delivers optimised lighting application designs.

With the integrated ZD4i compatibility **D-Series** delivers a controllable luminaire that helps you realise energy consumption goals and demonstrate environmental responsibility. With its unique optics placed below each LED it ensures light is delivered where it needs to be, providing a uniform Nighttime Friendly environment with minimal light pollution.

Applications

- Amenity Areas
- Car Parks
- Retail Parks
- Truck Yards
- Warehousing
- Exterior Areas

Optics / Light Source

- Lumen packages ranging from 2,000 - 36,000 in 3 different luminaire variants
- Fully soak tested light engines ensuring LED reliability and eliminating early failures.
- 4000K/3000K colour temperature.
- RA 70.

Approvals

Complies with EN60598



IP IP65 luminaire and LED optic

Ta -40°C to +40°C

DSX1



For further information please visit the Holophane website www.holophane.co.uk

AN ENVIABLE REPUTATION THROUGHOUT THE WORLD



When Holophane was founded in 1896 in London, headed by Pelham Trotter, it marked the start of an incredible history that has now seen Holophane become a global business revered throughout the world for its expertise, quality, innovation and excellence in lighting.

Holophane's first product was the famous patented globe in 'white' or 'rose crystal' that sold for around 2 shilling (10p). Today, Holophane continues this proud tradition with our values deeply rooted in the dedication to creating luminaires, with exceptional lighting performance, innovative patented technologies, and delivering added customer value beyond illumination.

What does it mean for our customers?

A Trusted & Reliable UK Manufacturer

From Royalty all the way to small residential projects, Holophane has been a trusted manufacturer over the decades for all manner of projects. You can be sure you are in good hands and can rely on the collective knowledge and expertise we have gathered since our inception in 1896.

Development of Innovative Products

As part of our design philosophy, Holophane are always trying to push boundaries in the development of unique product innovations. As such many of our luminaires hold UK and International design patents.



Products That Deliver Added Value

In today's world, sustainability and added value are becoming increasingly important. As such our products and solutions go further than just lighting. Many of our innovations include integrated smart connected solutions to help customers achieve further energy savings and can also enable remote monitoring.

Delivering excellent customer service

Over our 125-year history we have always been committed to delivering the best service to our customers and supporting in a myriad of ways to ensure the best possible outcomes. This goes as far as offering a free lighting design service to one-off products/ solutions to meet customers unique needs.

THE D-SERIES RANGE 3 LUMINAIRES, ONE COMPLETE PROJECT SOLUTION

The **D-Series** range has been designed not only for super optical quality and performance but also to have a cohesive family aesthetic.

Available in 3 luminaire sizes, the D-Series range offers a full outdoor lighting solution for any environment.



DSX2

30,000 - 36,000 lumens
8m mounting heights and above

DSX1

11,000 - 30,000 lumens
between 6m & 10m mounting heights

DSX0

2,000 to 10,000 lumens
up to 6m mounting heights

PRODUCT FEATURES

Enhanced Performance

The **D-Series** range features the very latest LED technologies. In conjunction with PMMA optics this delivers the best lighting performance coupled with low-energy consumption and high efficacy. This also means D-Series meets BREEAM compliance.

Class leading optics

The **D-Series** range has the flexibility of 4 optimised optical distributions. Through using individual bubble optics per LED D-Series controls the light exactly where it's needed. This results in a luminaire that provides best in class spacings and uniformity.

Easy maintenance

The **D-Series** range has an easily accessible gear compartment ensuring fast and simple component changes if required.

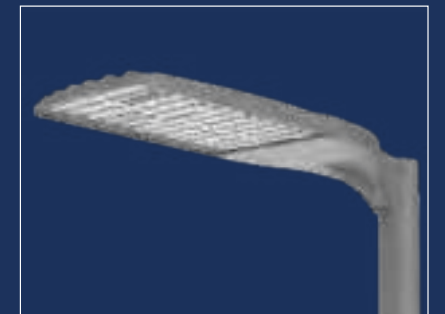
ZD4i
ready

**0%
ULOR**

D-SERIES



DSX1



DSX2

Connected

The **D-Series** range is ZD4i compatible when specified with the 4-pin Zhaga socket options (TZ01 or TZ02) enabling a future proof luminaire that can be used in conjunction with Controlux Air or a expanding ecosystem of third party devices and sensors.

Note: Post Top Bracket for The D-Series range is sold separately. Please enquire with your Holophane representative for the full range of mounting options.



SPECIFICATION

Specification

Single-piece die-cast aluminium housing, that conforms to EN1706 AC-46500, with integral heat sink fins to optimise thermal management through conductive cooling. LED modules are IP65 with individual lenses, and high grade aluminium housing to transfer heat away from the LEDs and dissipate through the finned housing for cooling. The LED driver is mounted in direct contact with the finned housing for cooling to promote low operating temperature and long system life. Housing is completely sealed against moisture and environmental contaminants (IP65). Installation is via the integrated mounting block and integral arm that facilitate a quick and easy installation. 3000K or warmer must be selected for IDA dark sky certification.

Features and benefits

System Longevity

- The D-Series's diecast aluminium housing acts as its primary heat sink. Its longitudinal fins employ conductive cooling techniques to dissipate heat away from the key LED components and driver that extends the life of the luminaire.
- Light engine(s) consist of either 20 or 30 high efficacy LEDs (subject to chosen configuration) mounted to a metal-core circuit board to maximize heat dissipation and promote long life.

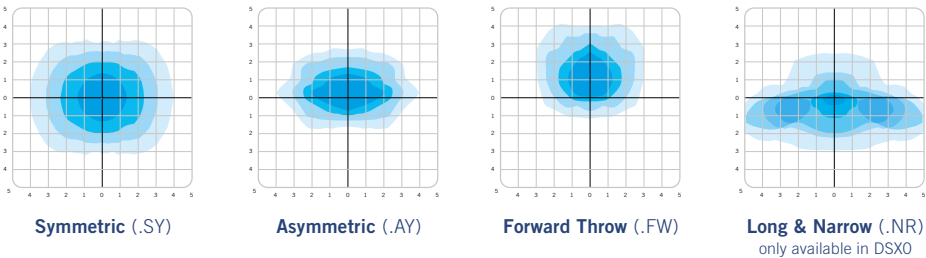
Exceptional Performance

- Offering six lumen packages ranging from 2000 lm to 36,000 lm with efficiencies of up to 143 lpw (Lumens Per Watts).
- Three optimised distributions (asymmetric, symmetric and forward throw) delivered by quality LEDs and bespoke UV stabilised optics.
- LED light engines with 0% ULOR ensuring night time friendly.

Complete Light Package

- Available with ZD4i compatibility for use with range of 3rd-party sensors and devices.
- Fully integrated into Holophane standard column range.

Light Distributions



SPECIFICATION

DIMENSIONS & PERFORMANCE

Typical luminaire performance

Configuration	Delivered Lumens	Circuit Power (W)	Driver output current (mA)	Luminaire total number of LEDs	Luminaire efficacy (lm/W)
DSX0.1.LA02X	c.2,000	15	450	20	133
DSX0.1.LA03X	c.3,000	21	650	20	143
DSX0.1.LA04X	c.4,000	29	450	20	138
DSX0.1.LA05X	c.5,000	37	570	20	135
DSX0.1.LA06X	c.6,000	45	700	20	133
DSX0.1.LA08X	c.8,000	64	990	20	125
DSX0.1.LA10X	c.10,000	81	1250	20	123
DSX1.2.LA11X	c.11,000	105	1050	30	116
DSX1.2.LA16X	c.16,000	131	700	60	126
DSX1.2.LA22X	c.22,000	208	1050	60	113
DSX1.2.LA30X	c.30,000	286	1400	60	105
DSX2.2.LA30X	c.30,000	282	1050	100	115
DSX2.2.LA36X	c.36,000	328	1000	100	121

Weight (with control gear)

DSX 0 8.0 kg
DSX 1 12.2 kg
DSX 2 15.0 kg

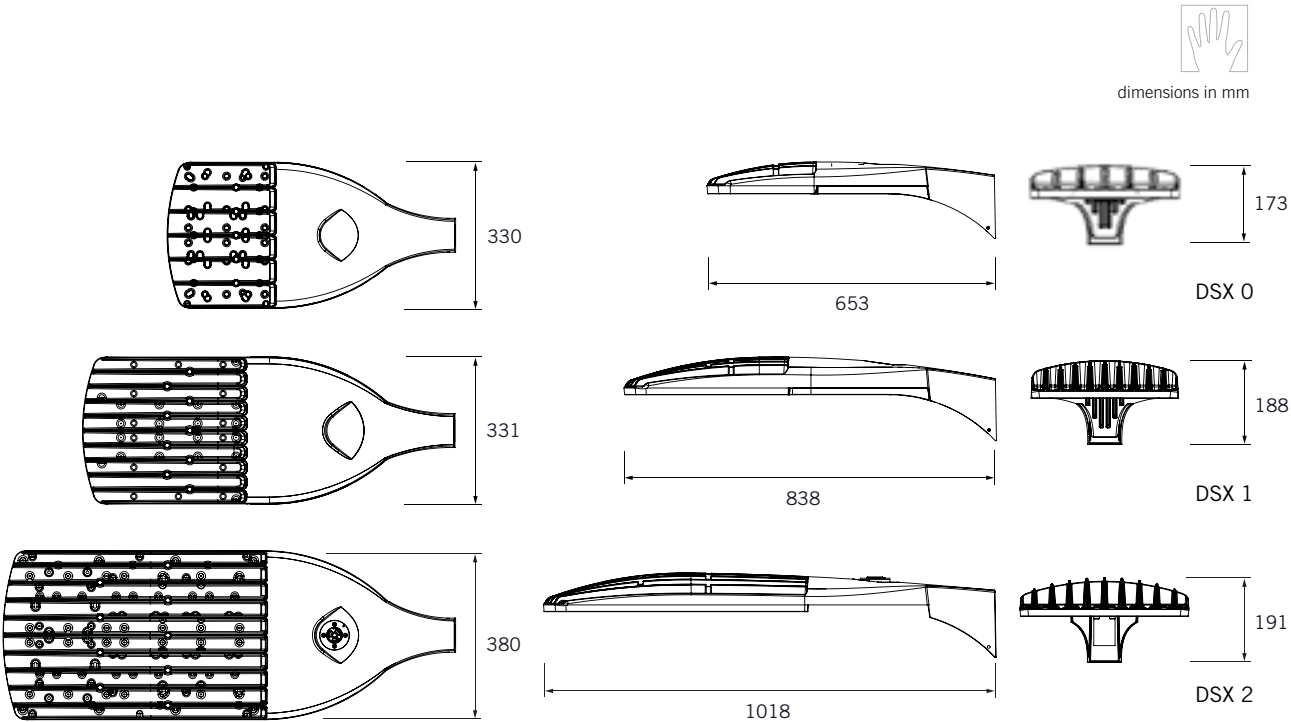
Windage (effective projected area)

DSX 0 0.09 m²
DSX 1 0.09 m²
DSX 2 0.10 m²

TA

-40°C to 40°C

Note: Data is correct at time of print.
* For other life metric data in line with IEC PAS62722-2-1 and 62717 contact your Holophane Representative for details.



WALLPACK™




HOLOPHANE®

BULKHEAD WALLPACK™

The new **WALLPACK™** combines high performance LEDs and optical versatility in a robust, aesthetic design. Designed for mounting heights up to 5m, **WALLPACK™** offers a wall-mounted solution with 0% up-light to fit the needs of harsh environments and applications.

For over 120 years Holophane has enjoyed an enviable reputation throughout the world for expertise, quality and innovation in Lighting. From the earliest days, when the company pioneered its famous glass refractor, the Holophane name has been ever present as a leader in the field of luminaire and lighting design. **WALLPACK** is a continuation of this proud tradition and builds on our heritage of designing wall-mounted and bulkhead luminaires with exceptional optical performance and thermal management which fused together deliver a solution that is future-proof and fully serviceable.

Applications

- Frontages
- Building perimeters
- Loading bays
- Walkways
- Passage ways
- Gateways

Overview

- Available with lumen ranges from 3,000 to 9,000 (delivered lumens).
- Four distribution options (Long & Narrow, Asymmetric, High Beam Asymmetric & Forward Throw)
- 3000K & 4000K options available.
- CRI > 70.
- Efficacies of up to 135lpw.
- Available with integrated control and emergency options (c.600lm in emergency mode).
- System Life – 100,000 Hrs at 25°C

Approvals



Complies with EN60598

IP65

-20°C to +40°C



For further information please visit the Holophane website www.holophane.co.uk

PRODUCT FEATURES



0%
ULOR

Recessed light source

The LED modules in **Wallpack** are recessed into the body giving a 0% ULOR, ensuring project compliance to BREEAM standards.



Performance LEDs and optics

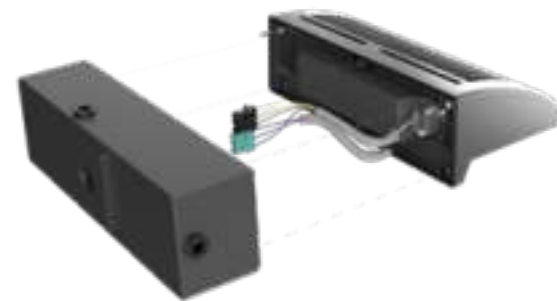
Wallpack is available in lumen packages ranging from 3,000lm to 9,000lm in 3000K or 4000K colour temperatures.

A range of four optimised optical distributions gives flexibility to achieve class leading uniformity and lux levels.



Robust design

Wallpack uses marine grade die-cast aluminium making it suitable for the harshest of industrial environment. The body and LED modules are sealed to IP65.



2-Part housing

Wallpack is constructed in two parts consisting of the LED module and back box. This design make installation easy but also ensures easy maintenance for driver or emergency battery changes.



BULKHEAD WALLPACK™

up to
135
l/pw



SPECIFICATION

Specification

Two-piece die-cast aluminium housing, that conforms to EN1706 AC-46500, with integral heat sink fins to optimise thermal management through conductive cooling. 1 or 2 x10 LED modules are IP65 with individual lenses. The high grade aluminium housing transfers heat away from the LEDs and dissipates heat through the finned housing for cooling.

The LED driver is mounted separately from the LED modules to promote low operating temperature and long system life. Housing is completely sealed against moisture and environmental contaminants (IP65). Luminaire is suitable for wall mounting only. Installation via the rear-housing with cable entry via rear, top, bottom or sides.

3000K or warmer must be selected for IDA dark sky certification.

Features and benefits

Exceptional Performance

- Lumen packages from 3,000 - 9,000 lumens with efficacies of up to 135 lumens per Watt.
- 4 optimised optical distributions (Asymmetric, Asymmetric Long, Long & Narrow and Forward Throw) delivered by quality LEDS and bespoke UV stabilised PMMA optics.
- LED light engines with 0% ULOR ensuring night time friendly and BREEAM compliant

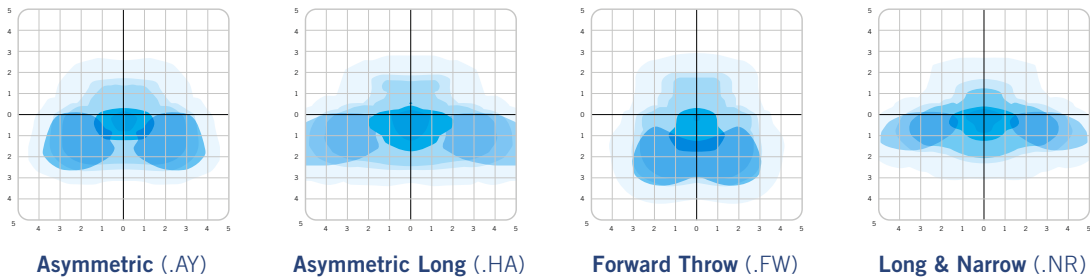
Easy Installation & Maintenance

- 2-part housing aids easy installation and access for maintenance if replacing drivers or emergency batteries.
- Multiple cable entry points including rear, top, bottom and side ensures flexible options depending on project requirements.

Fully Controllable

- Integrated controls options including, 5/7-pin NEMA sockets and D4i integration via the TZ01/TZ02 option. Compatibility with a range of 3rd party photocells, devices and sensors.
- Integrated 1hr & 3hr emergency options.

Light Distributions



SPECIFICATION

CONTROLS



The **D4i architecture** provides a future-proof foundation that enables users to build on whenever their site/project is ready to opt into new advances in technology. It is designed to work with industry-recognised, futureproof drivers and sensors that have the potential to increase energy efficiency and collect different types of data. By having Wallpack D4i ready customers can upgrade/adjust the controllability of their lighting and gather valuable data whenever they are ready.

Customer Benefits

Increased Energy Savings

Sensors and devices can be used to optimise luminaires to give greater energy savings and provide light only when it is required.

Flexibility

The D4i architecture enables the interchanging and upgrading of sensor and device options should and when the end-user pleases.

Future Proof

End-users have access to an ever expanding eco-system or devices and sensors through 3rd-part suppliers. The D4i architecture is an industry recognised platform.

Note: Please ensure that the selected IoT device is compatible and suitable for the respective luminaire. All installation should be completed in compliance with the respective devices installation instructions (and limitations). Holophane cannot be held responsible for the operation of its luminaires with third party devices.



TZ01



TZ02



IOT.TZ.TSZC
For use with TZ01



IOT.TZ.EAS
For use with TZ01



IOT.TZ.PIR
For use with TZ02



IOT.TZ.CA
For use with TZ01

The PrecisionHALO is Lucy Zodion's latest photocell innovation that packs a number of features into its small, compact design. Optimised for the latest generation of LED Streetlights, the PrecisionHALO works alongside Zhaga drivers and connectors.

EasyAir SNO110 is ideally suited for outdoor applications and is intended for individual pole control and configuration. It automatically connects to the Global Navigation Satellite System (GNSS) to obtain date and time information in real time. On/off switching as well as a 5-step DynaDimmer scheduling based on date and time can be configured using Bluetooth communication. Therefore, this device can easily replace a photocell or LineSwitch-based control mechanism.


The FDP-301 Wattstopper is an IP66 sensor, suitable for outdoor applications where presence detection is needed. It features a PIR combined with and integrated photocell and requires a luminaire with an intelligent driver, such as the Philips SR and a Zhaga 4-pin socket. It can be programmed to enable presence detection below a certain lux level eliminating the need for extra photocells or custom solutions, largely simplifying the installation. It is ideal for Parking Areas, Warehouses, Distribution Centres, or even High Bay Indoor Spaces. It is programmable via Bluetooth, with a simple smartphone app available on Google Play store or on App store.

CONTROLUX AIR is a wireless technology that offers intelligent lighting with reductions in energy consumption of up to 80%. It optimises energy savings thanks to the individual control of light sources. It controls, monitors and manages street lighting, reporting consumptions, operating hours or system faults.



ORDERING
DETAILS

Code	Luminaire (required)										
WAP	Wallpack										
Code	Series (required)										
.1	Series 1										
Code	Lamp Type (required)										
.LA034	LED light engine producing c.3,000 lm with a nominal 4000K colour temperature										
.LA044	LED light engine producing c.4,000 lm with a nominal 4000K colour temperature										
.LA054	LED light engine producing c.5,000 lm with a nominal 4000K colour temperature										
.LA064	LED light engine producing c.6,000 lm with a nominal 4000K colour temperature										
.LA084	LED light engine producing c.8,000 lm with a nominal 4000K colour temperature										
.LA094	LED light engine producing c.9,000 lm with a nominal 4000K colour temperature										
.LA033	LED light engine producing c.3,000 lm with a nominal 3000K colour temperature										
.LA043	LED light engine producing c.4,000 lm with a nominal 3000K colour temperature										
.LA053	LED light engine producing c.5,000 lm with a nominal 3000K colour temperature										
.LA063	LED light engine producing c.6,000 lm with a nominal 3000K colour temperature										
.LA083	LED light engine producing c.8,000 lm with a nominal 3000K colour temperature										
.LA093	LED light engine producing c.9,000 lm with a nominal 3000K colour temperature										
Code	Distribution (required)										
.AY	Asymmetric										
.HA	Asymmetric Long										
.FW	Forward Throw										
.NR	Long & Narrow										
Code	Colour (required)										
.C1	Smooth White (RAL9016)										
.C4	Graphite (RAL 7011)										
.C6	Smooth Grey (RAL7035)										
.C7	Black (RAL9005)										
.C9	Metallic Silver (RAL9006)										
.RAL****	RAL Colour (Customer choice)										
Code	Paint Finish (option)										
.C	Enhanced paint finish										
Code	Photocell (option)										
.T5	Complete with 5-pin dimming NEMA ANSI C136.41 socket										
.T7	Complete with 7-pin dimming NEMA ANSI C136.41 socket										
.T5T	Complete with 5-pin dimming NEMA ANSI C136.41 socket with weather proof locking top										
.T7T	Complete with 7-pin dimming NEMA ANSI C136.41 socket with weather proof locking top										
.TZ01	Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node supplied by others) with weather proof locking top*†										
.TZ02	Complete with 4-Pin Zhaga Socket - 'Bottom' (suitable node/presence detector supplied by others) with weather proof locking top*†										
Code	Emergency (option)										
.EM1	Self-contained (self-test) 1hr maintained emergency battery and invertor. Output c,600 lumens										
.EM3	Self-contained (self-test) 3hr maintained emergency battery and invertor. Output c,600 lumens										
Code	Dimming Outputs (option)										
.LRD	DALI										
.LRT*****	Dimming as per customer requirements										
Code	Control gear (option)										
.CL7	LED Programmed to deliver 70% lumen flow over the life of the luminaire										
.CL8	LED Programmed to deliver 80% lumen flow over the life of the luminaire										
.CL9	LED Programmed to deliver 90% lumen flow over the life of the luminaire										
Code	Voltage (option)										
.C-PROTEC	With 10kV / 10kA surge protection**										
Code	Cable entry (option)										
.CTR	Conduit Thread Reducer Adapter from 3/4 inch NPT to 20mm (2 supplied in box)										
WAP	.1	.LA034	.AY	.C1	.C	.T5	.EM1	.LRD	.CL7	.C-PROTEC	.CTR
Example											



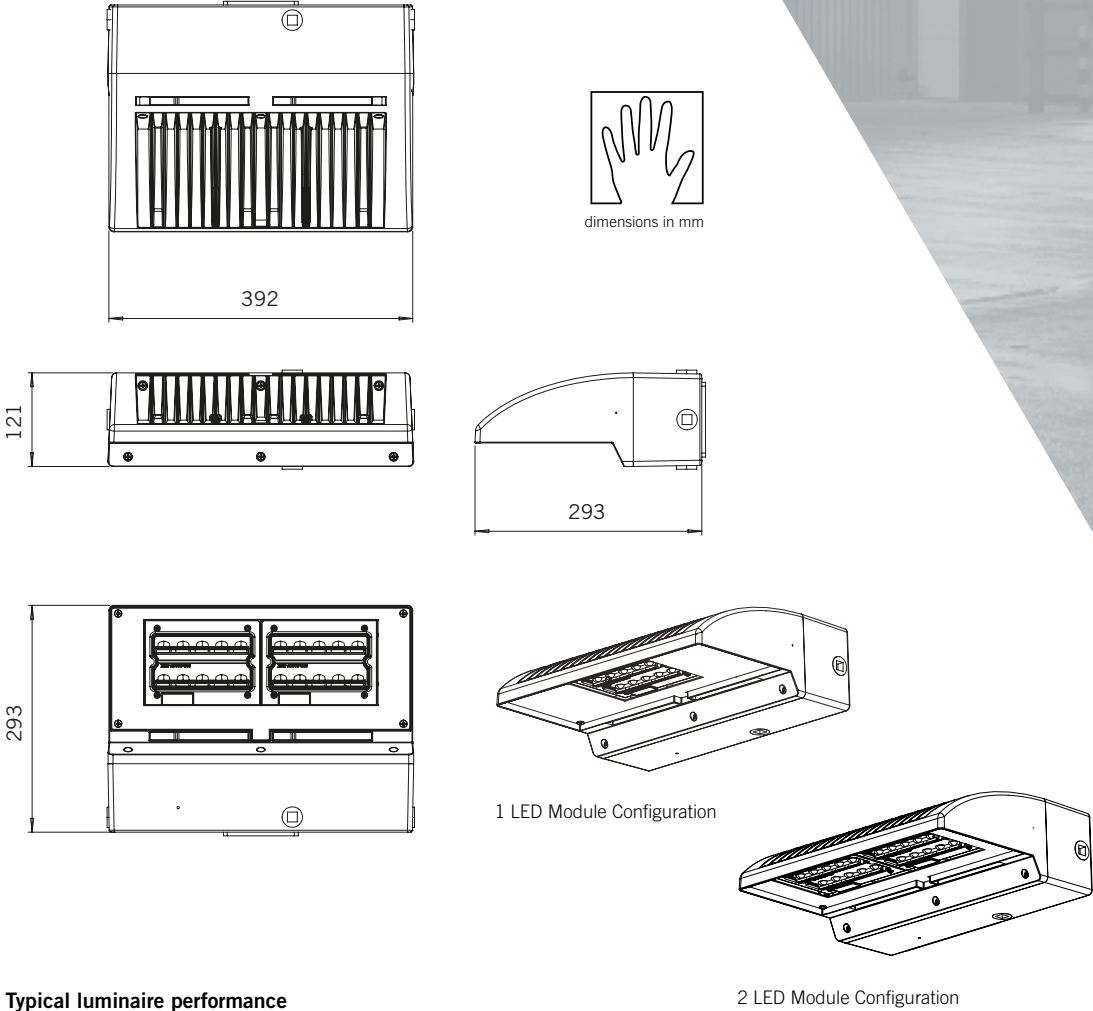
* TZ01 & TZ02 option not available with .LA093 or .LA094. † Not available with .LRD. ** Not available in conjunction with EM1 or EM3.

Accessories

WAP.CTR Conduit Thread Reducer Adapter from 3/4 inch NPT to 20mm.

Note: The specifications of the Holophane luminaire, all descriptions, illustrations, drawings and specifications in the Holophane catalogue and website represent only general particulars of the goods to which they apply and shall not form part of any contract. The company reserves the right to change specifications at its discretion without prior notification or public announcement.

DIMENSIONS
& PERFORMANCE



Typical luminaire performance

Configuration	Delivered Lumens	LED Modules	Power Usage (W)	Luminaire Efficacy (lpw)	Rated Life of LED Module (L70B50 @tq 25°C)
WAP.LA034	c.3,000	1	23	131	100,000 hrs
WAP.LA044	c.4,000	1	33	125	100,000 hrs
WAP.LA054	c.5,000	1**	42	118	100,000 hrs
WAP.LA064	c.6,000	1**	45	135	100,000 hrs
WAP.LA084	c.8,000	2	63	128	100,000 hrs
WAP.LA094	c.9,000	2	81	121	100,000 hrs

** 2 modules if with TZ01/TZ02 option

Weight kg

WAP	10
-----	----

Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturers data) and luminaire power of +/- 5%.

ESCAPE PATHS

Gallery Image & Manufacturers Brochure:



Holophane Denver iD Wall Luminaire c/w Presence Detector Building Mounted at approx. 3.0m

LOADING BAYS

Gallery Image & Manufacturers Brochure:



ThornEco 'Leo' Building Mounted above Loading Bay Doors

DENVERTM iD WALL



DENVER
iD WALL




HOLOPHANE[®]

REGISTERED EUROPEAN DESIGN
PATENTED DESIGN

WALL DENVER™ iD

The Denver iD: Wall combines a cohesive family aesthetic with an unrivalled system performance - perfect for creating the ideal design-inspired landscape.

Featuring a patented Transition Zone the Denver iD: Wall offers improved visual comfort and lower perceived glare; perfect for the unique requirements of pedestrian-friendly amenity spaces.

Coupled with the latests LED technologies, smart controls integration and class-leading optical performance the new Denver iD: Wall truly brings together form and a feature rich luminaire system.

The Denver iD: Family consists of Pole, Wall and Bollard luminaires, offering the complete solution to your next outdoor environment.

For over 125 years Holophane has enjoyed an enviable reputation throughout the world for expertise, quality and innovation in Lighting. From the earliest days, when the company pioneered its famous glass refractor, the Holophane name has been ever present as a leader in the field of luminaire and lighting design. **Denver iD: Wall** is a continuation of this proud tradition and builds on our heritage of designing luminaires with exceptional optical performance and thermal management which fused together deliver a solution that is future-proof and fully serviceable.

Applications

- Amenity Areas
- Campuses
- Retail Parks
- Car Parks
- Landscaped Areas
- Offices
- Walkways
- Perimeter areas

Overview

- Available with lumen ranges from 700 to 4,000 (delivered lumens).
- 5 optimised optical distributions suitable for a variety of environments.
- 2700K, 3000K & 4000K options available.
- CRI > 70.
- Available with integrated control and emergency options (c.300 lm in emergency mode).
- Ease of installation via modular design.
- Spacings of 15m to 20m at 3m mounting height with 5 lux average.

Approvals



Complies with EN60598

IP65 and IK10

-20°C to +45°C



For further information please visit the Holophane website www.holophane.co.uk

PRODUCT FEATURES

Class Leading Performance

Denver iD: Wall features the very latest LED technologies and bespoke individual PMMA optical lenses. These have been optimised to provide the best spacings possible on lighting schemes whilst ensuring low-energy consumption.



Easily maintainable

Denver iD: Wall has an easily removable and replaceable LED module. This enables at anytime for the module to be replaced in case of unlikely failures or upgraded.

This helps to extend the overall system life and sustainability of the luminaire.



WALL DENVER™ iD



2-part housing

Denver iD: Wall is constructed in two parts consisting of the Front casting combined with the LED module and back box. This design makes installation easy but also ensures easy maintenance for driver or emergency battery changes.

Cable entry and termination is via 2 x 20mm IP65 membrane cable glands.

Connected

Denver iD: Wall is ZD4i compatible when specified with the 4-pin Zhaga socket options (TZ01) enabling a future proof luminaire that can be used in conjunction with Controlux Air or a expanding ecosystem of third party devices and sensors.



With option
.B, PIRO & PIR1

TRANSITION ZONE

Patented Transition Glare

An intermediary zone between the 'bright LEDs' and dark night sky. Individual LEDs can often give a pixelation effect and be uncomfortable to the observer. The Transition Zone's angled white surface helps give the effect of a large lit area/light source and thus creating a smoother lit effect.

This is important, especially in pedestrian-friendly amenity spaces, to stop LED dazzle and create a more visually comfortable environment.

Patented Transition Zone - Performance

The patented Transition Zone's angled white surface helps to further reflect/control high angle light in a more precise way that may otherwise have been wasted in a luminaire not using a transition zone.

Hydrophilic Properties

The glass in Denver iD: Pole has hydrophilic properties which attracts water particles. However, there are benefits for outdoor luminaires.

Hydrophilic glass encourages water droplets to combine together to 'sheet' and run off the surface easily, minimizing the effect on emitted light. Conversely, whilst Hydrophobic glass encourages beading of water on the surface, it does not encourage water particles to combine and run off. This can effect overall light output negatively.

High Transparency Glass

The glass used in Denver iD: Pole is over 99% transparent ensuring that no light output is compromised. Additionally, this means that less light emitted at higher angles is not wasted and thus improves overall performance of the luminaire.

Recessed LEDs

The LED boards in Denver iD: Pole are recessed into the LED module. This helps to prevent unnecessary up light.

TRANSITION ZONE

INSTALLATION AND MAINTENANCE

Installation

Denver iD: Wall offers numerous ways of mounting the luminaire. This can be done either directly with the standard product or with a range of back boxes for uneven wall surfaces (dependent on option choice).

Maintainability

In the unlikely situation when an LED module has become damaged or prematurely failed the LED module can be easily removed and replaced in situ.

Additionally, drivers and emergency batteries are easily accessed via the gear compartment.

Upgradability

As LED technology ever improves and LEDs become more efficient the LED modules also have the ability to be upgraded in situ. This enables the luminaire to be future proof and can take advantage of any performance gains.

Sustainability

With the ability to replace major components the **Denver iD: Wall** ensures a longer more sustainable luminaire system life.

At the end-of life the majority of the components can be recycled via recycling centres such as Lumicom.



Standard



Back Box
.B



Deep PIR Back Box
.PIRO or .PIR1



Deep PIR Back Box with
multiple cable entry
.PIRO/.PIR1 + .B

SPECIFICATION

Specification

Holophane Denver iD: Wall consists of a 2-part body and a removable LED module manufactured from LM6 marine grade die-cast aluminium with integrated thermal management properties. The LED module optical arrangement consists of LEDs with individual PMMA optical lenses surrounded by a patented white Transition Zone to reduce perceived glare. This is sealed behind high-transparency 'hydrophilic' glass. Both luminaire body and LED module are sealed to IP65 and rated IK10. Drivers and LED are mounted separately from each other to promote low operating temperatures and long system life. Mounting of the luminaire is facilitated by mounting the back casting of luminaire to suitable surface. Cable entry and termination to the luminaire is via an 2 x IP65 20mm cable gland. Access to the luminaire is via 2 x nuts.

3000K or warmer must be selected for IDA dark sky certification.

Features and benefits

Exceptional Performance

- Lumen packages from 700 - 4,000 lumens with efficacies of up to 130 lumens per Watt.
- 5 optimised optical distributions (Symmetric, Asymmetric, Long & Narrow and High Beam Long & Narrow) delivered by quality LEDs with individual lenses behind a high-transparency hydrophilic glass cover.
- Patented Transition Zone helps to achieve improved visual comfort and lower perceived glare.

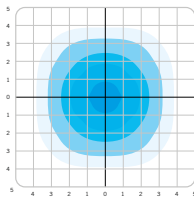
Easy Installation & Maintenance

- 2-part body construction ensures ease of installation of the luminaire to a suitable surface.
- A removable/upgradeable LED module and easy access to gear compartment ensures that key components can be removed and replaced if required.

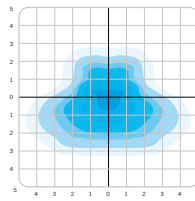
Fully Controllable

- Integrated ZD4i compatibility via the TZ01 option. Compatibility with a range of 3rd party photocells, devices and sensors.
- Integrated 1hr & 3hr emergency options.
- Compatible with Controlux Air.
- Developed with fully integrated presence detectors.

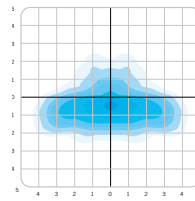
Light Distributions



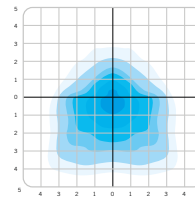
Symmetric (.SY)



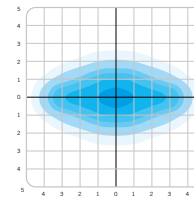
Asymmetric (.AY)



Long & Narrow (.NR)



Forward Throw (.FW)



High Beam Long
& Narrow (.HN)

MAINTENANCE

SPECIFICATION

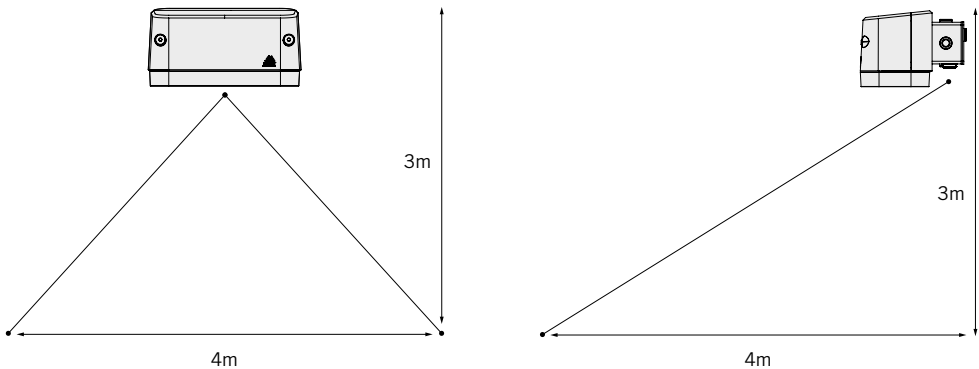
CONTROLS

Integrated Presence Sensors

Denver iD: Wall is available with a range of integrated controls and PIR options to suit project requirements. This ranges from simple on/off switching to dimming. All PIRs require an additional Back-Box which is included within the option.

PIRO Option
Passive Infrared Sensor. Switches off luminaire when no occupancy detected after 10 minutes.

PIR1 Option
Passive Infrared Sensor. Dims luminaire to 30% when no occupancy detected after 10 minutes.



CONTROLS

ZD4i

The **ZD4i architecture** provides a future-proof foundation that enables users to build on whenever their site/project is ready to opt into new advances in technology. It is designed to work with industry-recognised, futureproof drivers and sensors that have the potential to increase energy efficiency. By having **Denver iD ZD4i** ready customers can upgrade/adjust the controllability of their lighting and gather valuable data whenever they are ready.

Customer Benefits

Increased Energy Savings
Sensors and devices can be used to optimise luminaires to give greater energy savings and provide light only when it is required.

Flexibility
The ZD4i architecture enables the interchanging and upgrading of sensor and device options should and when the end-user pleases.

Future Proof
End-users have access to an ever expanding eco-system of devices and sensors through 3rd-party suppliers. The ZD4i architecture is an industry recognised platform.

Note: Please ensure that the selected IoT device is compatible and suitable for the respective luminaire. All installation should be completed in compliance with the respective devices installation instructions (and limitations). Holophane cannot be held responsible for the operation of its luminaires with third party devices.



IOT.TZ.CA
For use with TZ01



IOT.TZ.TSZC
For use with TZ01



IOT.TZ.EAS
For use with TZ01

CONTROLUX AIR is a wireless technology that offers intelligent lighting with reductions in energy consumption of up to 80%. It optimises energy savings thanks to the individual control of light sources. It controls, monitors and manages street lighting, reporting consumptions, operating hours or system faults.



The PrecizionHALO is Lucy Zodion's latest photocell innovation that packs a number of features into its small, compact design. Optimised for the latest generation of LED Streetlights, the PrecizionHALO works alongside Zhaga drivers and connectors.

EasyAir SNO110 is ideally suited for outdoor applications and is intended for individual pole control and configuration. It automatically connects to the Global Navigation Satellite System (GNSS) to obtain date and time information in real time. On/off switching as well as a 5-step DynaDimmer scheduling based on date and time can be configured using Bluetooth communication. Therefore, this device can easily replace a photocell or LineSwitch-based control mechanism.

Code	Luminaire (required)							
DWL	Denver iD Wall							
Code	Series (required)							
.1	Series 1							
Code	Lamp Type (required)							
.LA012	LED light engine producing c.1,000 lm with a nominal 2700K colour temperature							
.LA022	LED light engine producing c.2,000 lm with a nominal 2700K colour temperature							
.LA032	LED light engine producing c.3,000 lm with a nominal 2700K colour temperature							
.LA042	LED light engine producing c.4,000 lm with a nominal 2700K colour temperature							
.LA013	LED light engine producing c.1,000 lm with a nominal 3000K colour temperature							
.LA023	LED light engine producing c.2,000 lm with a nominal 3000K colour temperature							
.LA033	LED light engine producing c.3,000 lm with a nominal 3000K colour temperature							
.LA043	LED light engine producing c.4,000 lm with a nominal 3000K colour temperature							
.LA014	LED light engine producing c.1,000 lm with a nominal 4000K colour temperature							
.LA024	LED light engine producing c.2,000 lm with a nominal 4000K colour temperature							
.LA034	LED light engine producing c.3,000 lm with a nominal 4000K colour temperature							
.LA044	LED light engine producing c.4,000 lm with a nominal 4000K colour temperature							
Code	Distribution (required)							
.SY	Symmetric							
.AY	Asymmetric							
.NR	Long and Narrow light distribution							
.FW	Forward Throw							
.HN	High Beam Long and Narrow light distribution							
Code	Colour (required)							
.C1	Smooth White (RAL9016)							
.C4	Graphite (RAL 7011)							
.C6	Smooth Grey (RAL7035)							
.C7	Black (RAL9005)							
.C9	Metallic Silver (RAL9006)							
.RAL****	RAL Colour (Customer choice)							
Code	Paint Finish (option)							
.C	Enhanced Paint Finish							
Code	Voltage Electrical Class (option)							
.CII	Class II							
Code	Photocell (option)							
.TSZ	Complete with miniature 70 lux factory fitted photocell. (Zodion SS12)							
Code	Controls (option)							
.TZ01	Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node supplied by others) with weather proof locking cap							
.PIR0	Passive Infrared Sensor. Switches off luminaire when no occupancy detected after 10 minutes							
.PIR1	Passive Infrared Sensor. Dims luminaire to 30% when no occupancy detected after 10 minutes							
Code	Emergency (option)							
.EM1	1hr maintained integrated emergency. Self-test							
.EM3	3hr maintained integrated emergency. Self-test							
Code	Dimming Outputs (option)							
.LRD	LED Regulable Dali							
.LRT56	Pre-set to dim to 50% between 12am to 6am							
.LRT66	Pre-set to dim to 60% between 12am to 6am							
.LRT76	Pre-set to dim to 70% between 12am to 6am							
.LRT*****	Customer specified pre-set dimming							
Code	Control Gear - 4 (option)							
.CL7	Programmed to deliver 70% of the initial lumens over the life of the luminaire							
.CL8	Programmed to deliver 80% of the initial lumens over the life of the luminaire							
.CL9	Programmed to deliver 90% of the initial lumens over the life of the luminaire							
Code	Cable Entry (option)							
.B	Cable backbox for side, top and bottom cable entry							
Code	Screws - 21 (option)							
.V1	Vandal-resistant screws							
DBD	.LA012	.SY	.C1	.C	.CII	.TSZ	.TZ01	
Example								

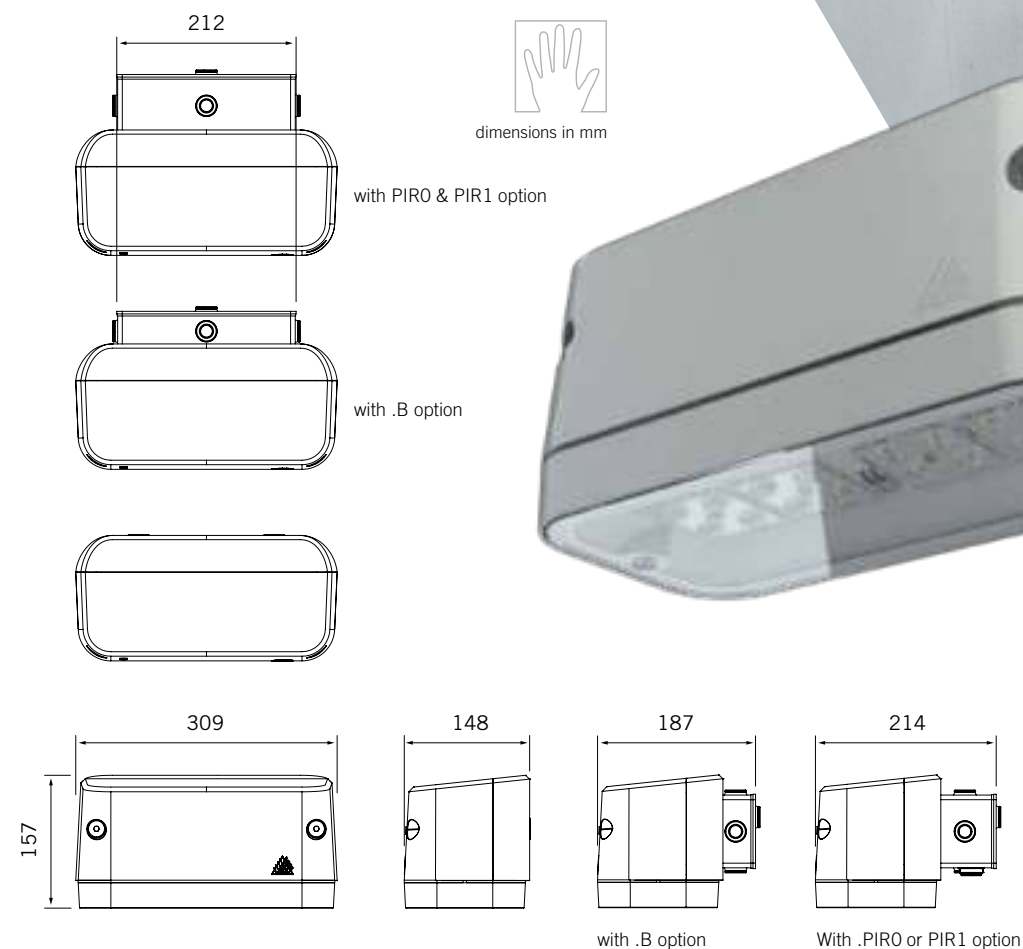
Note: TSZ not compatible with TZ01/PIR0/PIR1.

accessories

Code	
DWL.VK	Vandal Key
DWL.FLS	Front Light Shield
DWL.BB	Back box
DWL.PM	Pole mount adapter

Note: The specifications of the Holophone luminaire, all descriptions, illustrations, drawings and specifications in the Holophone catalogue and website represent only general particulars of the goods to which they apply and shall not form part of any contract. The company reserves the right to change specifications at its discretion without prior notification or public announcement.

DIMENSIONS & PERFORMANCE



Typical luminaire performance

Configuration	Delivered Lumens	Circuit Power (W)	Driver output current (mA)	Luminaire total no. of LEDs	Luminaire Efficacy (lm/W)
DWL-LA01X	c.1,000	7	200	8	127
DWL-LA02X	c.1,500	12	360	8	135
DWL-LA03X	c.2,500	18	650	8	137
DWL-LA04X	c.4,000	25	475	16	153

Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturers data) and luminaire power of +/- 5%.

Weight

DWL 6.5 kg

GIVING YOUR OUTDOOR SPACE ITS OWN IDENTITY

WELCOME



LED Floodlight

High power LED Floodlight with asymmetrical light distribution - ideal for building facades and footpaths. Compact and streamline design. Climate membrane for automatic climate regulation inside the floodlight. Surge protection up to 10kV. Pre-wired with mains cable (3m). Integrated photocell.

Body: Aluminium die-cast (<5% copper)

Bracket: Steel, gray (RAL 9006)

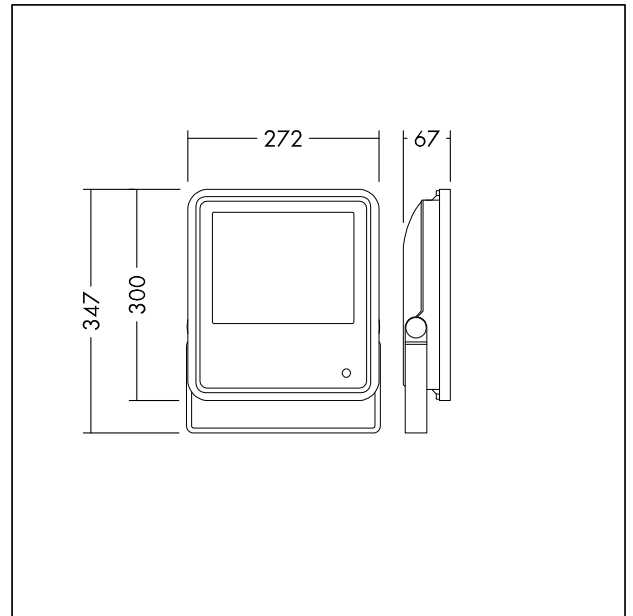
Cover: Tempered glass

Lens: PC

Weight: 4,1kg



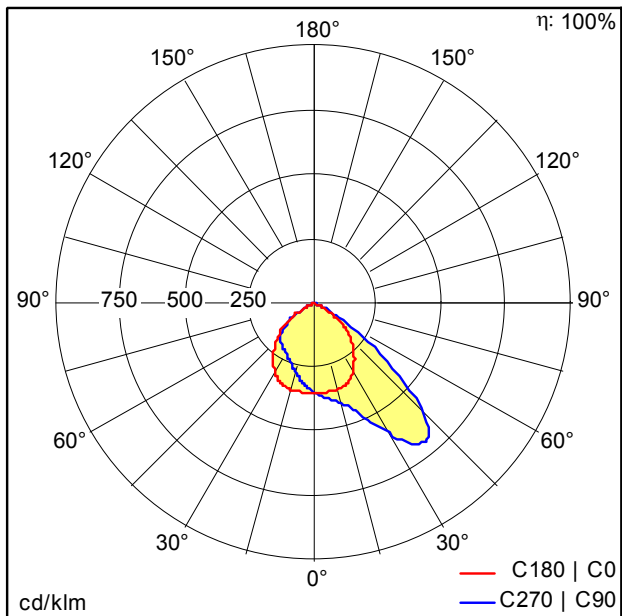
TE_LEO_F_75.jpg



TE_LEO_M_75.wmf

Light Distribution

STD - standard



TE_LEO_LED_FL_IP66_75W_830_PC.Idt

- Light Source: LED
- Luminaire luminous flux*: 7500 lm
- Luminaire efficacy*: 100 lm/W
- Colour Rendering Index min.: 80
- Correlated colour temperature: 3000 Kelvin
- Chromaticity tolerance (initial MacAdam): 5
- Rated median useful life*:
L70 50000h at 25°C
- Ballast: 1x LED_Con
- Luminaire input power*: 75 W Power factor = 0.9
- Dimming: Fixed output

All values marked with an * are rated values. Luminous flux and connected electrical load are subject to an initial tolerance of +/- 10%. Unless stated otherwise, the values apply to an ambient temperature of 25°C.

RETAIL FOODSTORE

Gallery Image & Manufacturers Brochure:



Holophane Factor Small Column Mounted Luminaire Mounted at 6.0m



Civic Lighting Apollo Building Mounted at approx. 3m



Civic Lighting Flux Mounted within the Entrance Canopy



AcuityBrands.
Expanding the boundaries of lighting™



FACTOR™
FACTOR™
SMALL



factor™ & factor™ small

FACTORTM

FACTORTM

SMALL



Optical Performance
Heat Management
Long System Life
Reduced Maintenance



FACTOR™ and **FACTOR Small™** from Holophane, are dedicated LED luminaires that deliver a variety of efficient lumen per watt packages with excellent optical performance. With their precision engineered optics and sleek body design - perfect for dissipating heat away from the LEDs and extending the luminaire life, FACTOR & FACTOR Small give the complete cost saving solution for street lighting environments. With a range of delivered lumen packages equivalent from 35W to 150W ceramic metal halide lamps, FACTOR & FACTOR Small deliver efficient sustainable lighting solutions that have the flexibility to meet today's and tomorrow's lighting requirements.

FACTOR & FACTOR Small's design ensures cool operation that keeps it running for the long haul.

optics / light source

- > Lumen package of between 2,000 - 25,000 lumens
- > Three lighting distribution options

applications

- > S-Class, ME-Class, Pedestrian Areas, Residential Areas and Car Parks

approvals

Complies with EN60598

CE

IP65 light engines

TA: Rated for -40°C to 40°C

For further information please visit the Holophane website
www.holophane.co.uk



Typical Luminaire Performance

Configuration	Delivered Lumens	Power Consumption	Drive Current	Rated Life of LED Module (L70B50 @Tq 15°C)*
---------------	------------------	-------------------	---------------	---

FACTOR

FTR.LA144	c. 14000	97W	525mA	100,000+ hrs
FTR.LA174	c. 17000	130W	700mA	100,000+ hrs
FTR.LA254	c. 25000	208W	1050mA	100,000+ hrs

FACTOR Small

FTS.2.LA02X	c. 2000	17W	525mA	100,000+ hrs
FTS.2.LA03X	c. 3000	23W	700mA	100,000+ hrs
FTS.3.LA05X	c. 5000	35W	525mA	100,000+ hrs
FTS.2.LA06X	c. 6000	47W	700mA	100,000+ hrs
FTS.3.LA09X	c. 9000	66W	1050mA	100,000+ hrs
FTS.3.LA10X	c. 10,000	78W	1225mA	100,000+ hrs
FTS.2.LA07X	c. 7000	52W	525mA	100,000+ hrs
FTS.2.LA084	c. 8000	70W	700mA	100,000+ hrs
FTS.3.LA11X	c. 11000	82W	850mA	100,000+ hrs
FTS.2.LA12X	c. 12000	100W	1050mA	100,000+ hrs

Note: Data is correct at time of print.

* For other life metric data in line with IEC PAS62722-2-1 and 62717 contact your Holophane Representative for details.



Two sizes to deliver a variety of lumen packages



Tool less trigger latch entry



10 LED Board – LA024 & LA034 versions



External fins to dissipate heat

specification

The 'finned' luminaire body, designed to dissipate heat, is manufactured from high pressure die cast aluminium that conforms to EN1706 AC-46500. A die cast aluminium door with tool less trigger latch allows access to the gear compartment concealing the IP65 control gear and connectors. The IP65 LED optical modules, with individual lenses, are mounted directly to the cast aluminium housing and wired in series. A thermal transfer interface is sandwiched between the LED module(s) and high grade aluminium housing to transfer heat away from the LEDs and dissipate through the 'finned' housing for cooling. FACTOR & FACTOR Small have been specifically designed for side entry mounting suitable for 42mm side entry. Option of 60mm version is available with code .SE60. 3000K or warmer must be selected for IDA dark sky certification.

features and benefits

Sleek Design with tool-less access

- > FACTOR & FACTOR Small's diecast aluminium housing acts as its primary heat sink. Its longitudinal fins employ conductive cooling techniques to dissipate heat away from the key LED components and extend luminaire life.
- > A die-cast trigger latch allows easy tool less access into the luminaire during installation and maintenance visits.

Exceptional Performance

- > Offering four lumen packages ranging from 2,000lm to 25,000lm with efficiencies of up to 139lpw (Lumens Per Watts).
- > Two optimised roadway distributions (asymmetric, forward throw and long & narrow) delivered by quality LEDs and bespoke UV stabilised optics
- > LED light engines with 0% ULOR ensuring night time friendly.

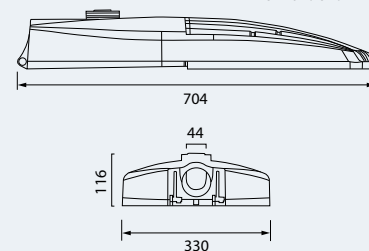
Fully Maintainable Performance

- > Single tool-less latch access to the luminaire ensures straightforward entry to the luminaire at installation and maintenance.
- > Unique IP65 rated LED light engines that are interchangeable ensuring a futureproof and maintainable LED luminaire.

Factor (FTR)

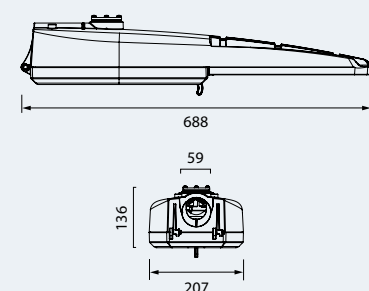


dimensions in mm



Factor is suitable for 42mm side entry as standard. The option of 60mm side entry is available with option code .SE60.

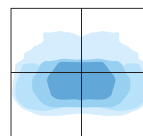
Factor Small (FTS)



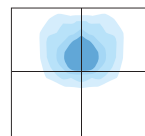
Factor Small is suitable for 42mm side entry as standard. The option of 34mm or 60mm side entry is available with option codes .SE34 or .SE60.

light distribution

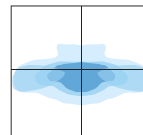
Asymmetric



Forward Throw



Long & Narrow



weight

Factor	12.0 kg
Factor Small	7.0 kg

windage (effective projected area)

Factor	0.084 m ²
Factor Small	0.071 m ²

Note: The specifications of the Holophane luminaire and columns represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue and website represent only general particulars of the goods to which they apply and shall not form part of any contract. The company reserves the right to change specifications at its discretion without prior notification or public announcement.

ordering details : luminaire

Code	Factor Luminaire								
FTR									
	Code	Lamp Type (required)							
	.LA144	LED light engine producing c.14,000 lm with a nominal 4000°K colour temperature							
	.LA174	LED light engine producing c.17,000 lm with a nominal 4000°K colour temperature							
	.LA254	LED light engine producing c.25,000 lm with a nominal 4000°K colour temperature							
	Code	Light Distribution (required)							
	.SY	Symmetrical							
	.AY	Asymmetric							
	.FW	Forward Throw							
	.NR	Long and Narrow							
	Code	Colour (required)							
	.C1	White (RAL9016)							
	.C4	Graphite (RAL7011)							
	.C6	Grey (RAL7035)							
	.C7	Black (RAL9005)							
	.C9	Metallic Silver (RAL9006)							
	.RAL****	(customer choice)							
	Code	Options							
	.T1	Complete with NEMA socket. (To accept standard NEMA Photocell, available from Holophane)							
	.TSZ	Complete with miniature 70 lux factory fitted photocell. (Zodion SS12)							
	.TSZA	Complete with miniature 55 lux factory fitted photocell. (Zodion SS12A)							
	.TSZB	Complete with miniature 35 lux factory fitted photocell. (Zodion SS12B)							
	.T5	Complete with 5-pin dimming NEMA ANSI C136.41 socket (suitable photocell/node supplied by others) without locking top							
	.T7	Complete with 7-pin dimming NEMA ANSI C136.41 socket (suitable photocell/node supplied by others) without locking top							
	.T5T	Complete with 5-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top							
	.T7T	Complete with 7-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top							
	Code	Fixing Method (optional)							
	.SE60	60mm side entry mounting							
	Code	Control Gear (optional)							
	.CL7	Programmed to deliver 70% of the initial lumens over the life of the luminaire							
	.CL8	Programmed to deliver 80% of the initial lumens over the life of the luminaire							
	.CL9	Programmed to deliver 90% of the initial lumens over the life of the luminaire							
	.D2	DALI HF electronic control gear							
	Code	Dimming Outputs (optional)							
	.LRT56	pre-set to dim to 50% between 12am to 6am							
	.LRT66	pre-set to dim to 60% between 12am to 6am							
	.LRT76	pre-set to dim to 70% between 12am to 6am							
	Code	Cable Entry (optional) max length catered for							
	.FF10S	10 metres of 1.5mm ² 3 core cable "flex" for side entry mounting							
	.FS10S	10 metres of flat twin & earth 2.5mm ² for side entry mounting							
	.F510S	10 metres of 1.5mm ² 5 core cable "flex" for side entry mounting							
Example	FTR	.LA144	.AY	.C1	.TSZ	.SE60	.CL7	.LRT56	.FF10S

Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturers data) and luminaire power of +/- 5%.

Code

FTS Factor Small

Code Prefix (optional)

.2 Series 2

.3 Series 3

Code Lamp Type (required)

.LA024	LED light engine producing c.2,000 lm with a nominal 4000K colour temperature
.LA034	LED light engine producing c.3,000 lm with a nominal 4000K colour temperature
.LA054	LED light engine producing c.5,000 lm with a nominal 4000K colour temperature*
.LA064	LED light engine producing c.6,000 lm with a nominal 4000K colour temperature
.LA074	LED light engine producing c.7,000 lm with a nominal 4000K colour temperature
.LA084	LED light engine producing c.8,000 lm with a nominal 4000K colour temperature
.LA094	LED light engine producing c.9,000 lm with a nominal 4000K colour temperature
.LA104	LED light engine producing c.10,000 lm with a nominal 4000K colour temperature*
.LA114	LED light engine producing c.11,000 lm with a nominal 4000K colour temperature*
.LA124	LED light engine producing c.12,000 lm with a nominal 4000K colour temperature
.LA023	LED light engine producing c.2,000 lm with a nominal 3000K colour temperature
.LA033	LED light engine producing c.3,000 lm with a nominal 3000K colour temperature
.LA053	LED light engine producing c.5,000 lm with a nominal 3000K colour temperature*
.LA063	LED light engine producing c.6,000 lm with a nominal 3000K colour temperature
.LA073	LED light engine producing c.7,000 lm with a nominal 3000K colour temperature
.LA083	LED light engine producing c.8,000 lm with a nominal 3000K colour temperature
.LA093	LED light engine producing c.9,000 lm with a nominal 3000K colour temperature
.LA103	LED light engine producing c.10,000 lm with a nominal 3000K colour temperature*
.LA113	LED light engine producing c.11,000 lm with a nominal 3000K colour temperature*
.LA123	LED light engine producing c.12,000 lm with a nominal 3000K colour temperature

Code Light Distribution (required)

.SY Symmetrical

.AY Asymmetric

.FW Forward Throw

.NR Long and Narrow

Code Colour (required)

.C1 Smooth White (RAL9016)

.C4 Graphite (RAL7011)

.C6 Grey (RAL7035)

.C7 Black (RAL9005)

.C9 Metallic Silver (RAL9006)

.RAL**** (customer choice)

Code Options

.T1	Complete with NEMA socket. (To accept standard NEMA Photocell, available from Holophane)
.TSZ	Complete with miniature 70 lux factory fitted photocell. (Zodion SS12)
.TSZA	Complete with miniature 55 lux factory fitted photocell. (Zodion SS12A)
.TSZB	Complete with miniature 35 lux factory fitted photocell. (Zodion SS12B)
.T5	Complete with 5-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) without locking top
.T7	Complete with 7-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) without locking top
.T5T	Complete with 5-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top
.T7T	Complete with 7-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top

Code Fixing Method (optional)

.SE60 60mm side entry mounting

.SE34 34mm side entry mounting

Code Control Gear (optional)

.CL7 Programmed to deliver 70% of the initial lumens over the life of the luminaire

.CL8 Programmed to deliver 80% of the initial lumens over the life of the luminaire

.CL9 Programmed to deliver 90% of the initial lumens over the life of the luminaire

.D2 DALI HF electronic control gear

Code Dimming Outputs (optional)

.LRT56 pre-set to dim to 50% between 12am to 6am

.LRT66 pre-set to dim to 60% between 12am to 6am

.LRT76 pre-set to dim to 70% between 12am to 6am

Code Cable Entry (optional) max length catered for

 .FF10S 10 metres of 1.5mm² 3 core cable "flex" for side entry mounting

 .FS10S 10 metres of flat twin & earth 2.5mm² for side entry mounting

 .F510S 10 metres of 1.5mm² 5 core cable "flex" for side entry mounting

Example

FTS .2.LA024 .AY .C1 .T1 .SE60 .CL7 .LRT56 .FF10S

Note: Factor and Factor Small are offered with 42mm side entry as standard. * Only available with Series 3 (.3)

Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturers data) and luminaire power of +/- 5%.



MTA.5404.157.37

26,3W/230V 3000lm

Apollo Led, 26,3W, 4000K, asimmetrico, driver included. Grigio chiaro opaco.



Apollo LED 26,3W 4000K, asymmetric, driver included. Clear matt grey.

Apollo Led, 26,3W blanc 4000K, 3000lm, asymétrique, couleur gris clair opaque

Apollo Led, 26,3W weiß 4000K, 3000lm, asymmetrisch, matt Hellgrau

Apollo Led, 26,3W blanco 4000K, 3000lm, asimétrico, color gris claro mate

Colori / colours / couleurs / farben / colores:

37 Grigio Chiaro Opaco / Clear Matte Grey / Gris Clair Opaque / Klare Und Matte Grau / Gris Claro Opaco

Apollo risulta ideale per l'illuminazione di facciate, percorsi in esterni e luoghi in cui sia richiesto un elevato grado di protezione. È un apparecchio da parete principalmente studiato per installazione in esterni, la sua forma essenziale lo rende adatto a molte ambientazioni diverse, dalle domestiche ai grandi spazi architettonici. La struttura è in fusione di alluminio verniciato a polveri epossipoliesteri. vetro temperato trasparente. LED: tono luce bianco 4000K o 3000K, emissione diretta e diretta/indiretta, simmetrica o asimmetrica.

"Apollo is ideal to enlighten facades, external pathways and environments where an high IP rate is needed. It is a wall lighting fitting mainly studied for outdoor use and its essential shape makes it adapt to many different environments, from domestic ones to the big architectural buildings. The structure is in die cast aluminum powder coated.

LED: 4000K or 3000K white light tone, emission direct and direct / indirect, symmetric or asymmetric.

"La série Apollo est idéale pour l'éclairage de façades, parcours extérieur et tous lieux qui nécessitent un indice de protection élevé. Cette applique murale étudiée pour tous type d'éclairage externe est adaptable à toutes les ambiances, du domestique aux grands espaces architecturaux. Structure en fonte d'aluminium peinte à la poudre polyester.

LED: ton blanc 4000K ou 3000K, l'émission directe et directe / indirecte, symétrique ou asymétrique.

Apollo ist ideal für die Erleuchtung der Fassaden, externen Wegeführungen und in Umgebungen, in denen eine hohe IP Schutzart gefragt ist.

Diese WandLeuchte ist hauptsächlich für Aussenanbau und mit ihrem wesentlichen Form passt sich gut in verschiedenen Umwelten, von heimischen Umgebung zu architektonischen Gebäude.

Gehäuse aus pulverbeschichteten Aluminium-Druckguss.

LED: 4000K oder 3000K weißes Licht Ton, die Ausgabe direkt und direkt / indirekt, symmetrisch oder asymmetrisch.

"

"Apollo resulta ideal para iluminación de fachadas, viales de exterior y lugares donde se requiera un elevado grado de protección.

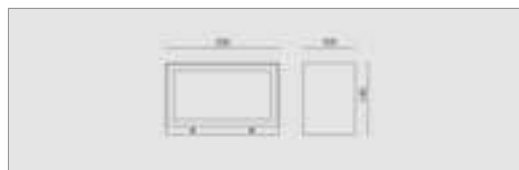
Es un aparato de pared principalmente estudiado para instalaciones exteriores, su forma esencial permite su instalación en diversos ambientes, tanto en residencial como en grandes espacios arquitectónicos.

La nueva línea Mini Apollo se caracteriza por su pequeño tamaño y las versiones con o sin gafas.

La estructura es de fundición de aluminio pintada epoxi.

El trabajo realizado sobre el cristal permite su perfecto posicionamiento a testa sobre el marco.

LED: 4000K o 3000K tono de luz blanca, la emisión directa y directa / indirecta, simétrica o asimétrica.





JEE.5312.157.02

34,5W

Flux LED, 220x220x128mm, 34,5W, 4000K, driver incluso, bianco. Sabbiato.

Flux LED, 220x220x128mm, 34,5W, 4000K, driver included, white. Sanded.

Version de 165x165 mm, avec LED blanc naturel 4000K. Driver 350 mA inclus. Blanc.

Version 165x165 mm, mit naturweißen LED 4000K. Driver 350mA eingeschlossen. Weiss.

Versión de 165x165 mm, con LED blanco natural 4000K. Driver 350 mA incluido. Blanco.

Colori / colours / couleurs / farben / colores:

02 Bianco Ral9010 / White Ral9010 / Blanc Ral9010 / Weiß Ral9010 / Blanco Ral9010

Flux è una collezione di apparecchi da incasso interamente realizzati in metallo. L'essenzialità e la razionalità delle forme rendono perfetta l'integrazione di questi modelli in ambienti caratterizzati da un arredamento moderno. Flux vanta numerose versioni, che ne moltiplicano la possibilità di utilizzo. Flux LED: ospitano 16 o 24 LED, con un grado di protezione IP43. La luce prodotta risulta diffusa e gradevole, e la sua versatilità lo rende adatto ad ambienti dalle diverse dimensioni. La cornice di chiusura è in pressofusione di alluminio verniciato. struttura in lamiera di acciaio e ottica speculare in alluminio e ad alto rendimento. Flux LED: è disponibile in 2 modelli, il primo da 16 LED ed il secondo da 24 LED, entrambi nelle tonalità bianco caldo 3000K e bianco naturale 4000K. Grado di protezione IP43 (IP44 su richiesta). Alimentatore a 350 mA fornito di serie con l'apparecchio. Fori per l'incasso identici a quelli esistenti per i modelli Flux 2x18W e 2x26W. Dissipatore in alluminio estruso incluso.

Flux collection is composed of recessed lighting fittings entirely made in steel. The plain and rational shapes make the integration of these models as perfect in environments characterized by modern furniture. Flux LED: the new versions host 16 or 24 LEDs, with an IP43 protection degree. It produces a diffused and enjoyable light and its versatility makes it adapt to environments having the most different dimensions. The closing frame is made of coated die-cast aluminum. Aluminum specular optic with structure in steel-sheet with high output. Flux LED: it's available in two models, the first for 16 LED and the second for 24 LED, both in the tones warm white 3000K and natural white 4000K. Protection degree IP43 (IP44 on demand). Extruded aluminum heat-sink and 350 mA driver are included in the fitting. Holes to recess the fitting identical to the Flux 2x18 and 2x26W.

La série Flux comporte désormais des encastrés réalisés en métal. Son design simple et discret rend le Flux idéal pour une installation moderne. Le Flux est disponible en autres versions qui multiplient les possibilités. Flux LED: les nouvelles versions avec 16 ou 24 LED, IP43. La lumière diffuse est agréable et sa polyvalence la rend appropriée pour tous types d'activités. Le châssis de fermeture est en fonte d'aluminium peint. Optique spéculaire en aluminium haute performance Flux LED: est disponible en deux modèles, 16 et 24 LED, en température de couleur chaude (3000K) ou neutre (4000K). IP43 (IP44 sur demande). Alimentation 350 mA fournie avec l'appareil. Les diamètres d'encastrement sont identiques à ceux des modèles existants en 2x18W et 2x26W.

Erneutes Model der Versionen für Leuchtstofflampen, ist die neue Einbauleuchte Flux. Der essentielle Form der Kollektion Flux macht dieses Modell sehr geeignet für modernen Umgebungen. Als Deckenversion auch verfügbar und dank der vielen Zubehör bietet sie mehrere Möglichkeiten zur Installation. Flux Led: ist eine Einbauleuchte für Innerbereich. Es entsteht ein diffuses und angenehmes Licht und Ihre Vielseitigkeit macht es ideal für Umgebungen mit den verschiedensten Dimensionen wie Büros und Flure, sondern auch Bekleidungsgeschäfte oder Schönheitssalons. Abschlussrahmen aus pulverbeschichtetem Aluminium-Druckguss. Flux LED: ist verfügbar in zwei Modellen, mit 16 LEDs und 24 LEDs, beide in den Tönen warmweiß 3000K und naturweiß 4000K. Struktur mit Schissrahmen aus druckgegossenem Aluminium, Schutzart IP43 (IP44 auf Anfrage). Ableiter aus Fließpressaluminium eingeschlossen. Driver 350mA mit der Leuchte ausgestattet. Löcher für die Anbau sind gleich wie die schon bestenden Modellen Flux 2x18 und 2x26W.

La colección Flux está constituida por aparatos para empotrar totalmente metálicos. La esencialidad y la racionalidad de las formas de la colección Flux hacen perfecta la integración de estos modelos en ambientes característicos de la decoración moderna. Flux tiene numerosas versiones que multiplican la posibilidad de utilización. Flux LED: disponible en dos modelos, de 16 LED y 24 LED. Produce una luz difusa y agradable. Su versatilidad lo hace indicado en ambientes de las más diversas dimensiones, como oficinas, pasillos, tiendas de moda o salones de belleza. Flux LED: está disponible en dos modelos, el primero de 16 LED y el segundo de 24 LED, ambos en las tonalidades blanc o cálido 3000K y blanco natural 4000K. Estructura con marco de cierre en aluminio inyectado, grado de protección IP43 (IP44 sobre pedido). Disipador de aluminio extruido incluido. Alimentador a 350mA incluido de serie en el aparato. Dimensiones de empotramiento idénticas a las existentes para los modelos Flux 2x18W y 2x26W.

