

# Land at Meadow Road Reading

## External Lighting Proposals

Issue 2 – Planning

08<sup>th</sup> July 2025



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**REVISIONS**

| Issue | Description | Date       |
|-------|-------------|------------|
| 1     | Draft       | 10/06/2025 |
| 2     | Planning    | 08/07/2025 |

Latest amendments highlighted red in document.

## **CONTENTS**

### **1.0 INTRODUCTION**

### **2.0 BRIEF DESCRIPTION OF EXTERNAL LIGHTING PROPOSALS**

### **APPENDICIES**

**APPENDIX 1 – External Lighting Design Illumination Levels**

**APPENDIX 2 – Loading Bay Design Illumination Levels**

**APPENDIX 3 – Proposed External Luminaires & Lighting Controls**

## **1.0 INTRODUCTION**

This External Lighting Proposals Report has been prepared to support the planning application in connection with the proposed development of 11no. new business units at the Land at Meadow Road, Reading.

This report seeks to demonstrate that the external lighting proposals have been developed with due consideration given to the following:

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

## **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 the access road, on-site car parks, service yard areas and paths.

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))

Access road lighting shall be provided by column mounted luminaires as the Holophane 'D-Series' type fitting (or equal). The column mounted luminaires shall be mounted on 6.0m columns.

Service yard and car park lighting shall be provided by a combination of column and building mounted luminaires as the Holophane 'D-Series' (or equal). The column mounted luminaires shall be mounted on 6.0m columns and the building mounted luminaires at approx. 6.0m.

Path and building entrance lighting shall be provided by building mounted luminaires as the Holophane 'Denver iD' type fitting (or equal). The building mounted luminaires shall be mounted at approx. 3.0m.

The access road, car park and service yard lighting shall be operated via adjustable time and photocell controls. The luminaires shall also incorporate DALI photo/motion PIR sensor controls. Via a programmable system these sensors have the function to DIM or switch OFF the luminaires when the car park and service yard 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 perimeter path and building entrance lighting shall be PIR photo/motion sensor controlled.

All luminaires shall be high efficiency LED type, with reflectors to control upward and obtrusive light onto neighbouring sites.

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.

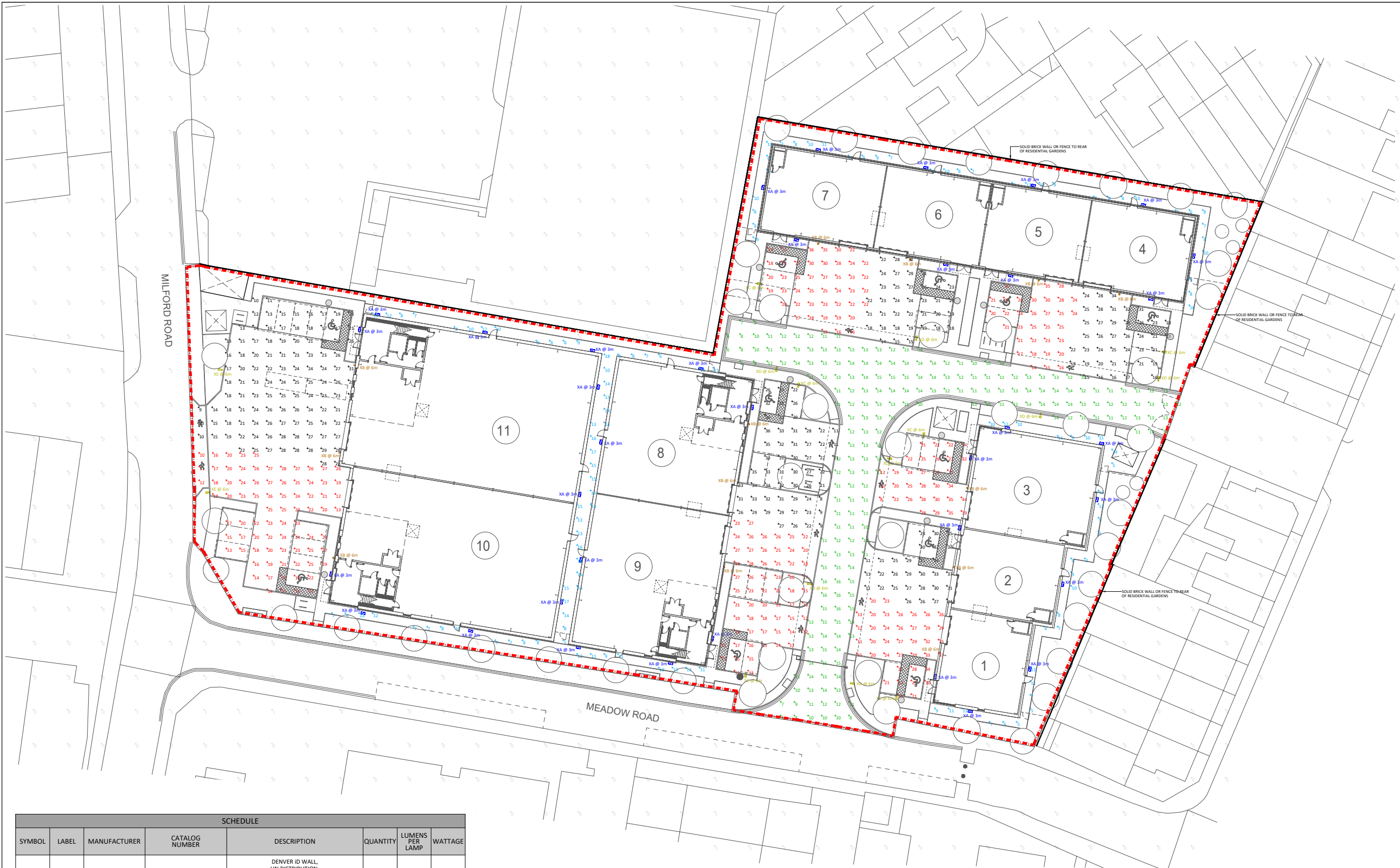
Refer to Appendix 1 for the external lighting design illumination levels & luminaire schedule and Appendix 3 for data sheets of proposed fittings.

#### 2.2.1 Loading Bays

Separately switched building mounted LED luminaires as the Holophane 'POL1' 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 proposed fittings.

## **APPENDIX 1 – External Lighting Design Illumination Levels**



- NOTES:
1. ALL CALCULATIONS ARE MAINTAINED AT 2,000 HOURS.
  2. THE CONTOUR LINES ON THE 3-D VIEW REPRESENT 5 LUX FROM SOURCE.
  3. ALL ILLUMINANCE VALUES SHOWN ARE THE RESULT OF THEORETICAL COMPUTER CALCULATIONS, SUMMATED BY LUMINAIRES POSITIONED IN A FIXED RELATIONSHIP TO EACH OTHER AND THE STATISTICAL ZONE.
  4. IN PRACTICE THE VALUES MAY VARY DUE TO TOLERANCES IN COLUMN INSTALLATION, LUMINAIRE ORIENTATION, SURFACE REFLECTANCE AND FLUCTUATIONS IN POWER SUPPLY (VOLTAGE).
  5. RESULTS PROVIDED WITHIN THIS DESIGN ARE DERIVED FROM PRODUCT SPECIFIC PHOTOMETRY. THE SUBSTITUTION OF ALTERNATIVE LUMINAIRES WILL NOT PRODUCE COMPARABLE RESULTS.

LUMINAIRE KEY



TYPE XA  
Denver ID Wall



TYPE XB  
D-Series Wall Mounted



TYPE XC, XD and XE  
D-Series Column Mounted

DESIGN INTENT

| SCHEDULE |       |                          |                                        |                                                                                                                                                               |          |                 |
|----------|-------|--------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|
| SYMBOL   | LABEL | MANUFACTURER             | CATALOG NUMBER                         | DESCRIPTION                                                                                                                                                   | QUANTITY | LUMENS PER LAMP |
|          | XA    | HOLOPHANE EUROPE LIMITED | DWL.1.LA013.HN.W007                    | DENVER ID WALL, HN DISTRIBUTION, WALL MOUNT @ 3.0m, INTEGRATED LIGHTING CONTROL 'SIMPLE', 3-HOUR MAINTAINED INTEGRATED EMERGENCY CIBSE TM66 CEAM RATING '2.6' | 36       | 840             |
|          | XB    | HOLOPHANE EUROPE LIMITED | DSX0.4.LA083.FW (TZ)                   | D-SERIES 0 AREA LUMINAIRE, FW DISTRIBUTION, WALL MOUNT @ 6m, INTEGRATED LIGHTING CONTROL 'CONNECTED', CIBSE TM66 CEAM RATING '2.6'                            | 13       | 7552            |
|          | XC    | HOLOPHANE EUROPE LIMITED | DSX0.4.LA033.FW (TZ)                   | D-SERIES 0 AREA LUMINAIRE, FWE DISTRIBUTION, COLUMN MOUNTED @ 6m, INTEGRATED LIGHTING CONTROL 'CONNECTED', CIBSE TM66 CEAM RATING '2.6'                       | 6        | 2852            |
|          | XD    | HOLOPHANE EUROPE LIMITED | DSX0.4.LA053.AY (TZ)                   | D-SERIES 0 AREA LUMINAIRE, AY DISTRIBUTION, COLUMN MOUNTED @ 6m, INTEGRATED LIGHTING CONTROL 'CONNECTED', CIBSE TM66 CEAM RATING '2.6'                        | 7        | 4651            |
|          | XE    | HOLOPHANE EUROPE LIMITED | DSX0.4.LA053.AY (DSX0.20 LED.BLS) (TZ) | D-SERIES 0 AREA LUMINAIRE, AY DISTRIBUTION, COLUMN MOUNTED @ 6m, INTEGRATED LIGHTING CONTROL 'CONNECTED', CIBSE TM66 CEAM RATING '2.6' BACK LIGHT SHIELD      | 2        | 4031            |
| WATTAGE  |       |                          |                                        |                                                                                                                                                               |          |                 |

| STATISTICS               |        |        |        |         |
|--------------------------|--------|--------|--------|---------|
| DESCRIPTION              | SYMBOL | AVG    | MIN    | MIN/AVG |
| Paths                    | +      | 11 LUX | 5 LUX  | 0.45    |
| 5 LUX / 0.25 Uo          | +      | 9 LUX  | 3 LUX  | 0.33    |
| Paths                    | +      | 9 LUX  | 6 LUX  | 0.67    |
| 5 LUX / 0.25 Uo          | +      | 12 LUX | 6 LUX  | 0.50    |
| Road                     | +      | 23 LUX | 15 LUX | 0.65    |
| 10 LUX / 0.25 Uo         | +      | 23 LUX | 14 LUX | 0.61    |
| Service Yards / Carparks | +      | 22 LUX | 14 LUX | 0.64    |
| 20 LUX / 0.25 Uo         | +      | 23 LUX | 15 LUX | 0.65    |
| Service Yards / Carparks | +      | 20 LUX | 12 LUX | 0.60    |
| 20 LUX / 0.25 Uo         | +      | 21 LUX | 9 LUX  | 0.43    |
| Service Yards / Carparks | +      | 21 LUX | 10 LUX | 0.48    |
| 20 LUX / 0.25 Uo         | +      | 0 LUX  | 0 LUX  | N/A     |
| Spill                    | +      | 0 LUX  | 0 LUX  | N/A     |

| STATISTICS continued..... |        |        |        |         |
|---------------------------|--------|--------|--------|---------|
| DESCRIPTION               | SYMBOL | AVG    | MIN    | MIN/AVG |
| Service Yards / Carparks  | +      | 26 LUX | 8 LUX  | 0.31    |
| 20 LUX / 0.25 Uo          | +      | 27 LUX | 11 LUX | 0.41    |
| Service Yards / Carparks  | +      | 25 LUX | 11 LUX | 0.44    |
| 20 LUX / 0.25 Uo          | +      | 27 LUX | 8 LUX  | 0.30    |
| Service Yards / Carparks  | +      | 20 LUX | 12 LUX | 0.60    |
| 20 LUX / 0.25 Uo          | +      | 21 LUX | 9 LUX  | 0.43    |
| Service Yards / Carparks  | +      | 21 LUX | 10 LUX | 0.48    |
| 20 LUX / 0.25 Uo          | +      | 0 LUX  | 0 LUX  | N/A     |
| Spill                     | +      | 0 LUX  | 0 LUX  | N/A     |

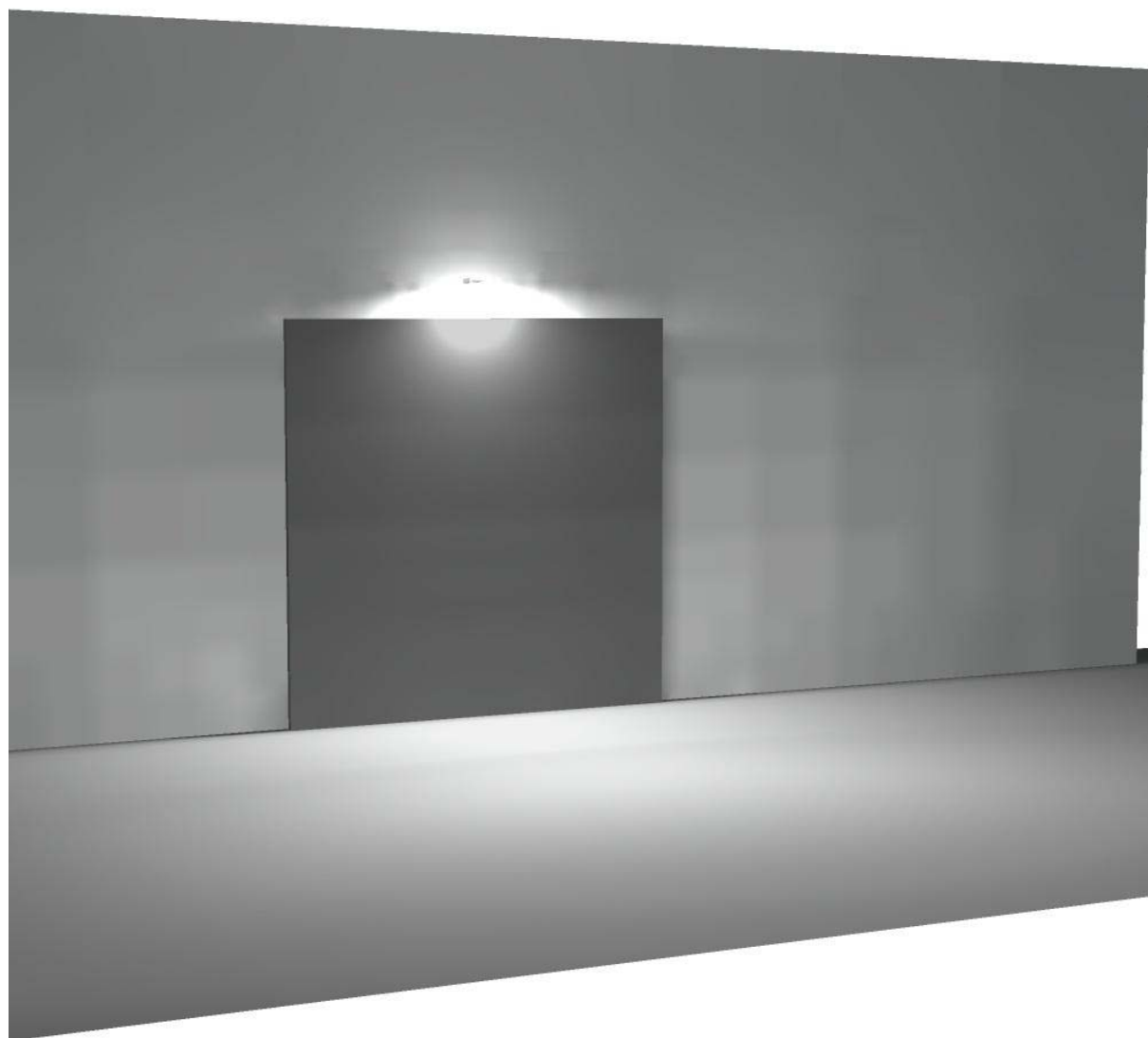
|                                                                                                                                                                                                                                                                                                                     |                   |                  |                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|-------------------|
| 1                                                                                                                                                                                                                                                                                                                   | 10-06-25          | Planning Issue   | LKB               |
| Rev                                                                                                                                                                                                                                                                                                                 | Date              | Description      | Initials          |
| SB PARTNERSHIP                                                                                                                                                                                                                                                                                                      |                   |                  |                   |
| SHEPHERD BROMBLEY PARTNERSHIP<br>Unit 28 Baspoint Business Centre<br>4 Winton Valley Road<br>Winchester<br>Hampshire<br>SO23 9LD<br>Tel: 01962 832656<br>Web: www.shepherdbrombley.co.uk                                                                                                                            |                   |                  |                   |
| Client:<br>V7 Asset Management                                                                                                                                                                                                                                                                                      |                   |                  |                   |
| Main Contractor:                                                                                                                                                                                                                                                                                                    |                   |                  |                   |
| Project Title:<br>Meadow Road Reading                                                                                                                                                                                                                                                                               |                   |                  |                   |
| Drawing Title:<br>External Lighting Layout                                                                                                                                                                                                                                                                          |                   |                  |                   |
| Scale:<br>1:200                                                                                                                                                                                                                                                                                                     | Paper Size:<br>A0 | Drawn By:<br>LKB | Checked By:<br>DB |
| Drawing Number:<br>0306 / E / 200                                                                                                                                                                                                                                                                                   |                   |                  | Rev:<br>1         |
| Drawing Status:<br>Planning                                                                                                                                                                                                                                                                                         |                   |                  |                   |
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## **APPENDIX 2 – Loading Bay Design Illumination Levels**



Operator  
Telephone  
Fax  
e-Mail

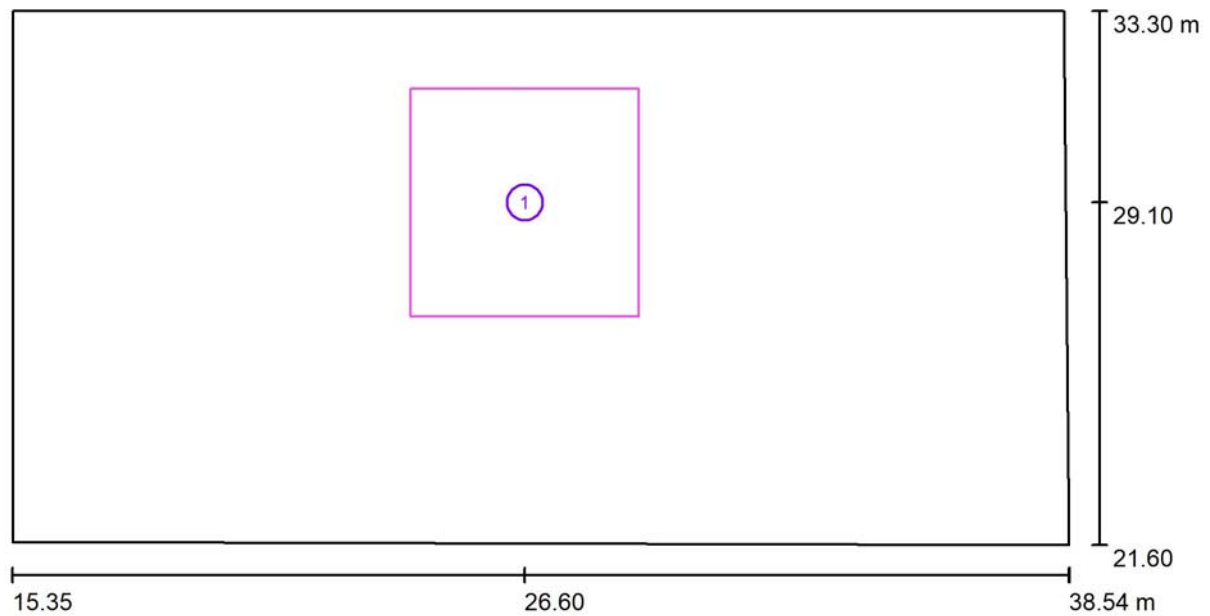
## Loading Bay 2 / 3D Rendering





Operator  
Telephone  
Fax  
e-Mail

## Loading Bay 2 / Calculation surfaces (results overview)



Scale 1 : 166

### 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 Area | perpendicular | 64 x 64 | 33            | 21             | 44             | 0.643 | 0.493               |

### APPENDIX 3 – Proposed External Luminaires & Lighting Controls

#### **PATHS & BUILDING ENTRANCES:**



#### **TYPE XA**

*Holophane Denver iD Wall Luminaire c/w Integral Emergency Pack & PIR Photo/Motion Sensor Building Mounted at approx. 3.0m*

#### **ACCESS ROAD, SERVICE YARD & CAR PARK:**



#### **TYPE XB**

*Holophane D-Series Luminaire Building Mounted at 6.0m & c/w DALI Photo/Motion PIR Sensor*



**TYPE XC, XD & XE**

*Holophane D-Series Luminaire Column Mounted at  
6.0m & c/w DALI Photo/Motion PIR Sensor*

**LOADING BAYS:**



*Holophane POL1 Luminaire  
Building Mounted at approx. 5.0m (above loading doors)*

## LIGHTING CONTROLS:



### Sequence of Operation

1. **Dimming:** When motion is detected within the sensor's coverage area, the sensor sends a signal to ramp the load up to the selectable High Mode level unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go to the selectable Low Mode level based on the signal from the sensor. If desired, a cut off time delay (preset 1min to 60min) will trigger to turn the lights OFF.
2. **Dusk to dawn photo/motion control:** When photocell on/off is enabled, and the ambient light falls below the photocell setpoint, the sensor ramps the load up to the selectable High Mode level. If no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go to the selectable Low Mode level. If the cut off time delay is disabled, the load will remain on, at High or Low level, based on motion detection, until the ambient light increases above the photocell setpoint.

## LOADING BAYS:



### Operation

1. **Switched:** Operation of the lighting via a time-lag switch. The switch has selectable durations from 2 minutes to 3 hours. The purpose of the loading bay lighting is for short-duration unloading and the time-lag switches shall be set to 6 minutes.

**MANUFACTURERS DATA SHEETS:**

# DENVER<sup>TM</sup> iD WALL



DENVER  
**iD** WALL



  
**HOLOPHANE<sup>®</sup>**

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
- Landscaped Areas
- Campuses
- Offices
- Retail Parks
- Walkways
- Car Parks
- 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

CE UK

Complies with EN60598

IP65 and IK10

-20°C to +45°C



For further information please visit the Holophane website [www.holophane.co.uk](http://www.holophane.co.uk)

## AN ENVIABLE REPUTATION THROUGHOUT THE WORLD

**125 years of**  
**Innovation & Excellence**

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.

## A COHESIVE FAMILY

The **Denver iD** range was designed to have a cohesive family aesthetic to give consistency across a project and achieve a luminaire identity.

From the commonality of the LED modules to the sleek and simple lines, Denver iD gives your outdoor space its own identity.

Scan the QR codes for information on

**Denver iD: Pole & Denver iD: Bollard.**

**DENVER**  
**iD POLE**



**DENVER**  
**iD WALL**



**DENVER**  
**iD BOLLARD**



## 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.



With option  
.B, PIR0 & PIR1

# 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.



## 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 of 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

## THERMAL MANAGEMENT

The reliability and performance of an LED luminaire is dependent on a combination of factors. Keeping the temperature of the drivers, LEDs and electronic components as low as possible is critical to maintaining the luminaire's efficiency.

One of Holophane's key luminaire design principles ensures that **Denver ID: Wall** utilises all three heat transfer principles of conduction, convection and radiation.



### Conduction

Taking heat away from electronic components, LEDs and drivers.

**Denver ID: Wall's** driver and LEDs are mounted directly to the LM6 Aluminium to promote efficient transfer of heat.



### Convection

From luminaire heat sink chassis and LED module to ambient air.

**Denver ID: Wall's** driver and LEDs are mounted separately to avoid compound heating of components. In addition there is a protective thermal membrane between the LED module and gear housing.



### Radiation

Surface finish and form designed to maximise heat radiation.

**Denver ID: Wall's** large flat surface area helps to promote cooling through radiation.



# THERMAL MANAGEMENT

## 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  
.P1R0 or .P1R1



Deep PIR Back Box with  
multiple cable entry  
.P1R0/P1R1 + 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.

### 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.

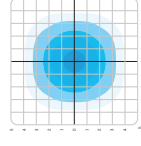
#### Easy Installation & Maintenance

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

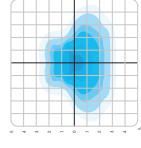
#### Fully Controllable

- 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.

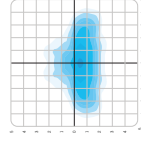
### Light Distributions



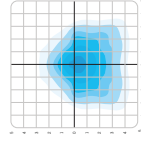
Symmetric (SY)



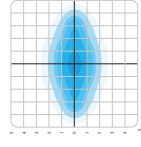
Asymmetric (AY)



Long & Narrow (NR)



Forward Throw (FW)



High Beam Long  
& Narrow (HN)

# MAINTENANCE

# CONTROLS

## Integrated Presence Sensors

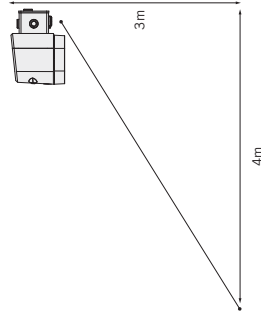
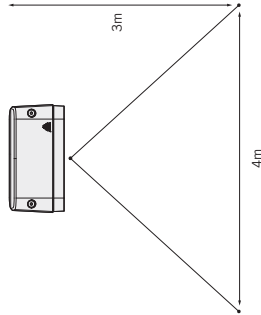
**Denver ID: Wall** is available with a range of integrated controls and PIR options to suit project requirements. This ranges from simple on/off switching to dimming. All PIRs require an additional Back-Box which is included within the option.

### PIR1 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



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). Holophone cannot be held responsible for the operation of its luminaires with third party devices.



**IoT.TZ.TZCA**  
For use with TZ01



**IoT.TZ.TZSC**  
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 **PrecisionHALO** is Lucy Zoolion'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.

| Code    | Luminaire (required)                                                                        |
|---------|---------------------------------------------------------------------------------------------|
| DWL     | Driver ID Wall                                                                              |
| Code    | Series                                                                                      |
| .1      | Series 1                                                                                    |
| Code    | Lamp Type (required)                                                                        |
| .LA01.2 | LED light engine producing c.1,000 lm with a nominal 2700K colour temperature               |
| .LA02.2 | LED light engine producing c.2,000 lm with a nominal 2700K colour temperature               |
| .LA03.2 | LED light engine producing c.3,000 lm with a nominal 2700K colour temperature               |
| .LA04.2 | LED light engine producing c.4,000 lm with a nominal 2700K colour temperature               |
| .LA01.3 | LED light engine producing c.1,000 lm with a nominal 3000K colour temperature               |
| .LA02.3 | LED light engine producing c.2,000 lm with a nominal 3000K colour temperature               |
| .LA03.3 | LED light engine producing c.3,000 lm with a nominal 3000K colour temperature               |
| .LA04.3 | LED light engine producing c.4,000 lm with a nominal 3000K colour temperature               |
| .LA01.4 | LED light engine producing c.1,000 lm with a nominal 4000K colour temperature               |
| .LA02.4 | LED light engine producing c.2,000 lm with a nominal 4000K colour temperature               |
| .LA03.4 | LED light engine producing c.3,000 lm with a nominal 4000K colour temperature               |
| .LA04.4 | LED light engine producing c.4,000 lm with a nominal 4000K colour temperature               |
| Code    | Distribution (required)                                                                     |
| .SY     | Symmetrical                                                                                 |
| .AN     | Asymmetrical                                                                                |
| .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      | Enhancer 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)       |
| .PIRO   | with weather proof locking cap                                                              |
| .PIR1   | Passive Infrared Sensor. Switches off luminaire when no occupancy detected after 10 minutes |
|         | 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 Regulate Dim                                                                            |
| .LR156  | Pre-set to dim to 50% between 12m to 6m                                                     |
| .LR166  | Pre-set to dim to 60% between 12m to 6m                                                     |
| .LR176  | Pre-set to dim to 70% between 12m to 6m                                                     |
| .LR1*** | 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                                                                     |
| D8D     | .LA01.2 .SY .C1 .C .TSZ                                                                     |
| Example |                                                                                             |

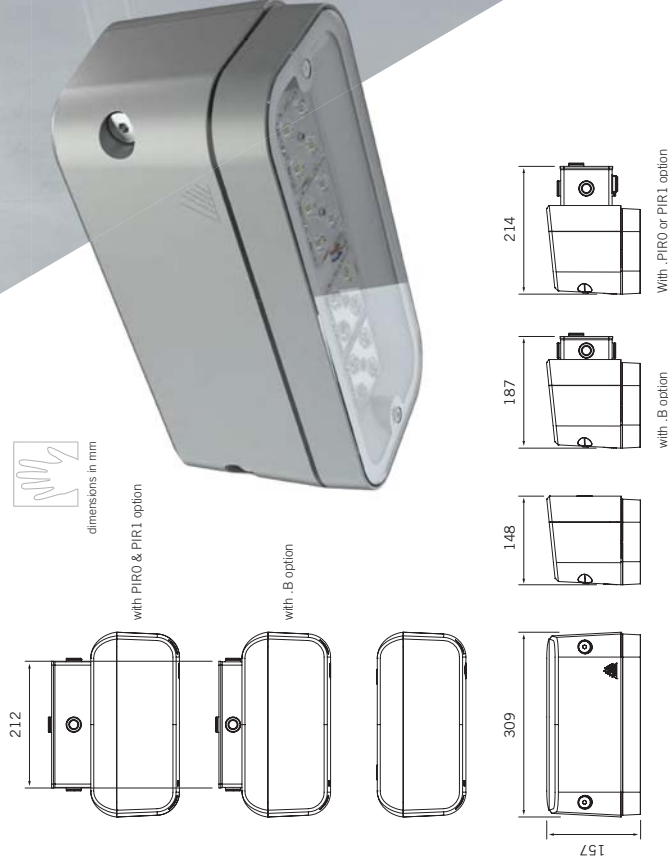
Note: TSZ not compatible with TZ01/PIRO/PIR1.

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 Hoshizone luminaire, all descriptions, illustrations, drawings and specifications in the Hoshizone 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 of 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.LA01.X    | c.1,000          | 7                 | 200                        | 8                           | 127                       |
| DWL.LA02.X    | c.1,500          | 12                | 360                        | 8                           | 135                       |
| DWL.LA03.X    | c.2,500          | 18                | 650                        | 8                           | 137                       |
| DWL.LA04.X    | c.4,000          | 25                | 475                        | 16                          | 153                       |

Weight

|     |        |
|-----|--------|
| DWL | 6.5 kg |
|-----|--------|

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%.

# GIVING YOUR OUTDOOR SPACE ITS OWN IDENTITY



WELCOME



# 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

CE UK CA

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](http://www.holophane.co.uk)

## AN ENVIABLE REPUTATION THROUGHOUT THE WORLD

**125 years of**  
**Innovation & Excellence**

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.



## 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

#### 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.

# D-SERIES



## 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.

## 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.

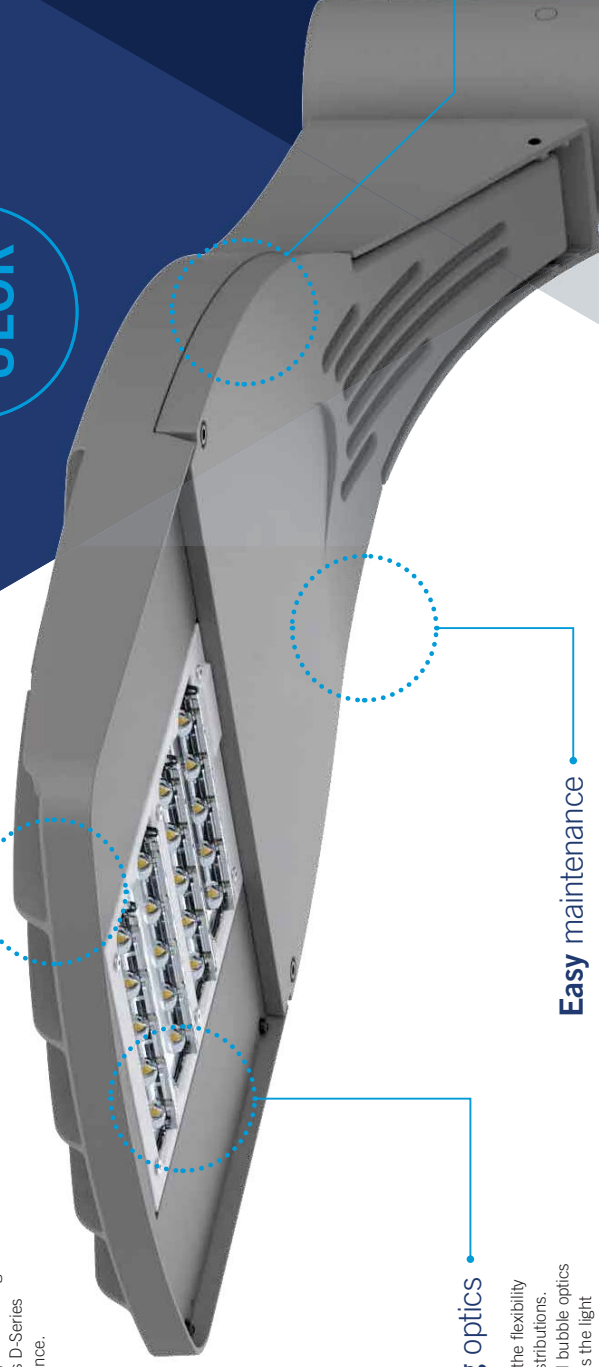
**Note:** Post Top Bracket for The D-Series range is sold separately. Please enquire with your Holophane representative for the full range of mounting options.

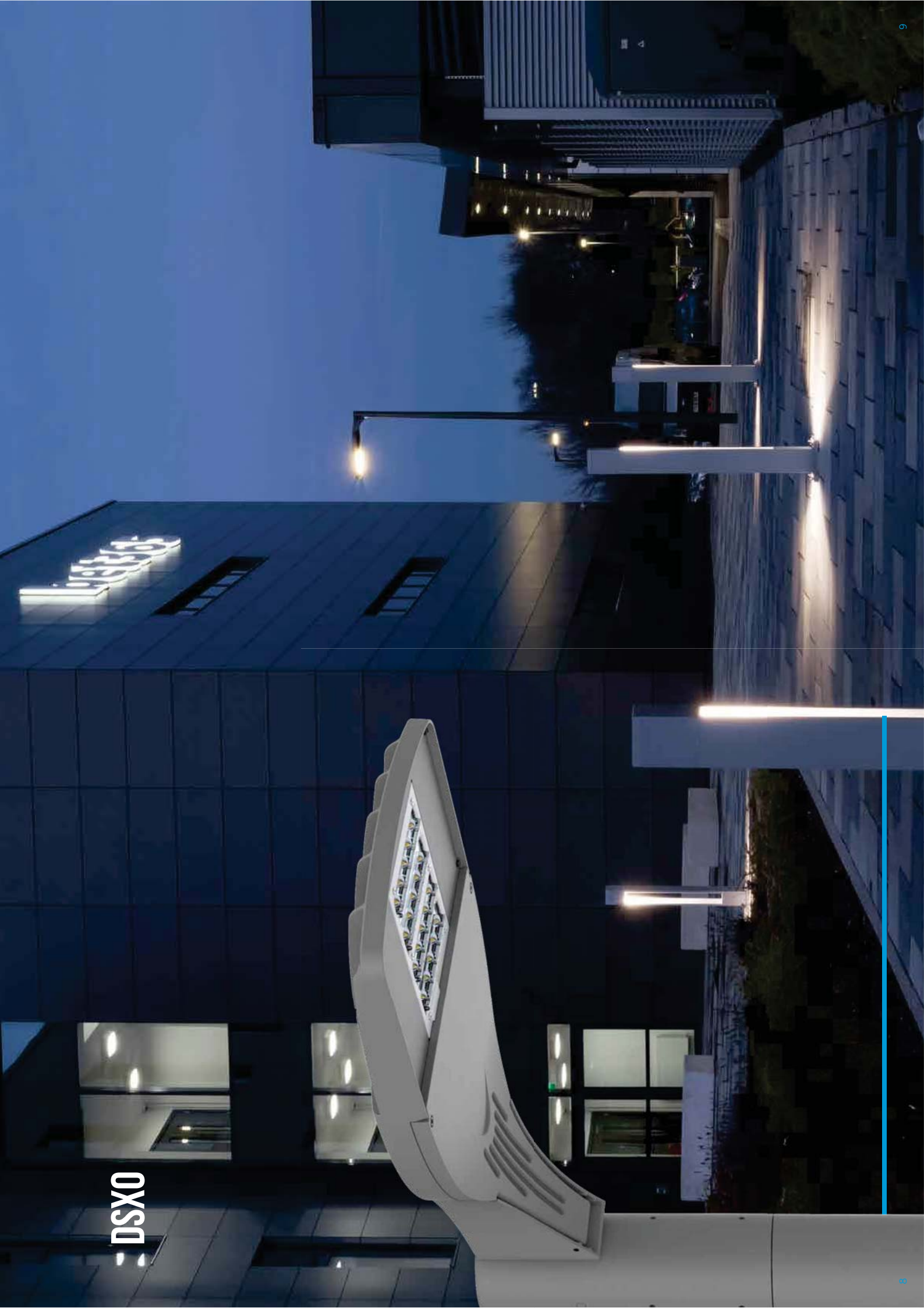


DSX1



DSX2





DSX0

## THERMAL MANAGEMENT

The reliability and performance of an LED luminaire is dependent on a combination of factors. Keeping the temperature of the drivers, LEDs and electronic components as low as possible is critical to maintaining the luminaire's efficiency.

One of Holophane's key luminaire design principles ensures that the **D-Series** family utilises all three heat transfer principles of conduction, convection and radiation.



### Conduction

Taking heat away from electronic components, LEDs and drivers.

The **D-Series** range has drivers and LEDs that are mounted directly to thermally efficient, LM6 Aluminium to promote efficient transfer of heat from these critical components.



### Convection

From luminaire heat sink chassis and LED module to ambient air.

The **D-Series** range is designed to have drivers and LEDs that are mounted separately to avoid compound heating of components. This ensures critical components are kept as cool as possible to ensure long system life.

# THERMAL MANAGEMENT



### Radiation

Surface finish and form designed to maximise heat radiation.

The **D-Series** range incorporates a large finned casting design which increases the total surface area of the luminaire and in turn helps to promote cooling through radiation.

DSX1



# 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.

## 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.

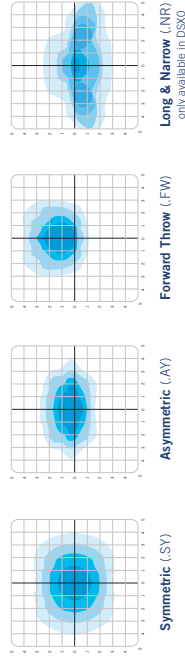
### Exceptional Performance

- 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 ZD4; 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) | Weight (with control gear) |
|---------------|------------------|-------------------|----------------------------|--------------------------------|---------------------------|----------------------------|
| DSX0.1LA02X   | c.2,000          | 15                | 450                        | 20                             | 133                       | DSX 0 8.0 kg               |
| DSX0.1LA03X   | c.3,000          | 21                | 650                        | 20                             | 143                       | DSX 1 12.2 kg              |
| DSX0.1LA04X   | c.4,000          | 29                | 450                        | 20                             | 138                       | DSX 2 15.0 kg              |
| DSX0.1LA05X   | c.5,000          | 37                | 570                        | 20                             | 135                       |                            |
| DSX0.1LA06X   | c.6,000          | 45                | 700                        | 20                             | 133                       |                            |
| DSX0.1LA08X   | c.8,000          | 64                | 950                        | 20                             | 125                       |                            |
| DSX0.1LA10X   | c.10,000         | 81                | 1250                       | 20                             | 123                       |                            |
| DSX1.2LA11X   | c.11,000         | 105               | 1050                       | 30                             | 116                       |                            |
| DSX1.2LA16X   | c.16,000         | 131               | 700                        | 60                             | 126                       |                            |
| DSX1.2LA22X   | c.22,000         | 208               | 1050                       | 60                             | 113                       |                            |
| DSX1.2LA30X   | c.30,000         | 286               | 1400                       | 60                             | 105                       |                            |
| DSX2.2LA30X   | c.30,000         | 282               | 1050                       | 100                            | 115                       |                            |
| DSX2.2LA36X   | c.36,000         | 328               | 1000                       | 100                            | 121                       |                            |

**Windage** (effective projected area)  
DSX 0 0.09 m²  
DSX 1 0.09 m²  
DSX 2 0.10 m²

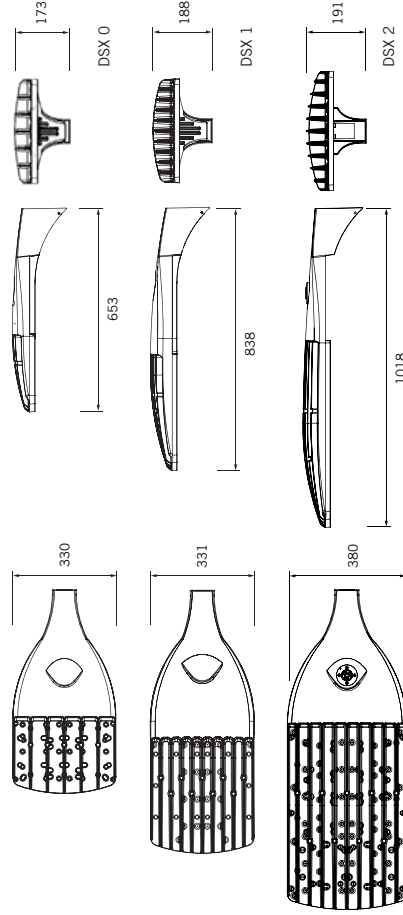
**TA**  
-40°C to 40°C

Note: Data is correct at time of print.

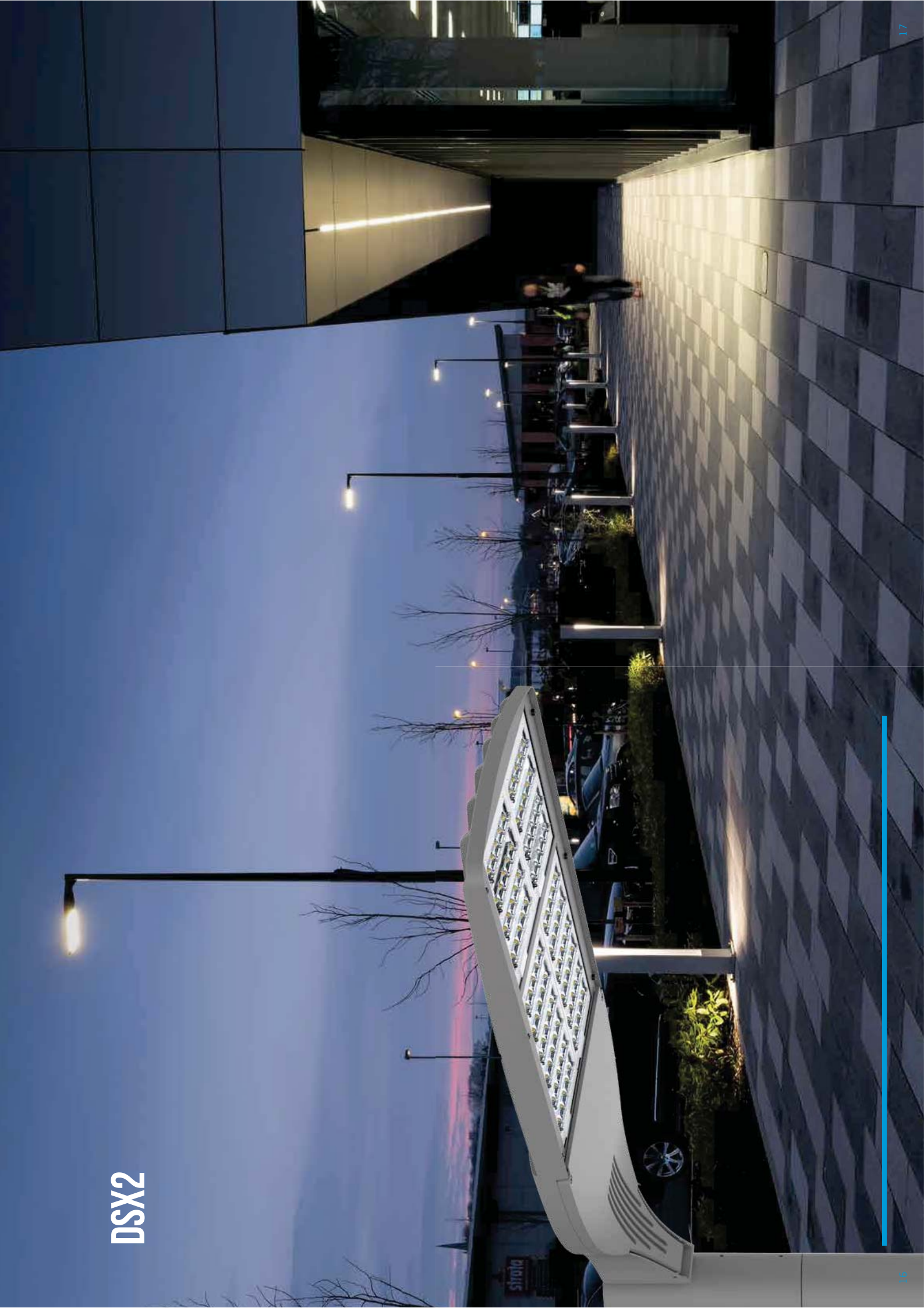
\* For other life metric data in line with IEC PAS62722-2-1 and 62717 contact your Holophane Representative for details.



dimensions in mm



DSX2



| Code      | Luminaire (required)                                                                                                    |    |
|-----------|-------------------------------------------------------------------------------------------------------------------------|----|
| DSX0      | D-Series 1 Luminaire                                                                                                    |    |
| Code      | Series (required)                                                                                                       |    |
| 1         | Series 1                                                                                                                |    |
| Code      | Lamp Type (required)                                                                                                    |    |
| LA02X     | LED light engine producing c.2,000 lm with a nominal 3000K or 4000K colour temperature                                  |    |
| LA03X     | LED light engine producing c.3,000 lm with a nominal 3000K or 4000K colour temperature                                  |    |
| LA04X     | LED light engine producing c.4,000 lm with a nominal 3000K or 4000K colour temperature                                  |    |
| LA05X     | LED light engine producing c.5,000 lm with a nominal 3000K or 4000K colour temperature                                  |    |
| LA06X     | LED light engine producing c.6,000 lm with a nominal 3000K or 4000K colour temperature                                  |    |
| LA08X     | LED light engine producing c.8,000 lm with a nominal 3000K or 4000K colour temperature                                  |    |
| LA10X     | LED light engine producing c.10,000 lm with a nominal 3000K or 4000K colour temperature                                 |    |
| Code      | Distribution (required)                                                                                                 |    |
| .SY       | Symmetric light distribution                                                                                            |    |
| .AY       | Asymmetric light distribution                                                                                           |    |
| .FW       | Forward Throw distribution                                                                                              |    |
| .NR       | Long & Narrow 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      | Voltage Electrical Class (option)                                                                                       |    |
| .CII      | Class II                                                                                                                |    |
| Code      | Photocell (option)                                                                                                      |    |
| .TSZ      | Complete with miniature 70 lux factory fitted photocell. (Zadon SS12)                                                   |    |
| .T1       | Complete with NEMA socket. (To accept standard NEMA Photocell, available from Hidophane).                               |    |
| .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 |    |
| .TZ01     | Complete with 4-Pin Zhaga Socket - "Top" (suitable photocell/node supplied by others) with weather proof locking cap    |    |
| .TZ02     | Complete with 4-Pin Zhaga Socket - "Bottom" (suitable photocell/node supplied by others) with weather proof locking cap |    |
| Code      | Control Gear (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                                          |    |
| .CL****   | customer specified programming                                                                                          |    |
| Code      | Dimming outputs (option)                                                                                                |    |
| .LRD      | DALI enabled                                                                                                            |    |
| .LRT56    | pre-set to dim to 50% between 12m to 6m                                                                                 |    |
| .LRT66    | pre-set to dim to 60% between 12m to 6m                                                                                 |    |
| .LRT76    | pre-set to dim to 70% between 12m to 6m                                                                                 |    |
| .LRT***** | Customer specified pre-set dimming                                                                                      |    |
| Code      | Paint finish (option)                                                                                                   |    |
| .C        | Enhanced Paint Finish                                                                                                   |    |
| .CL7      |                                                                                                                         |    |
| .CII      |                                                                                                                         |    |
| .C7       |                                                                                                                         |    |
| DSX0      | LA02X                                                                                                                   | AY |
| Example   |                                                                                                                         |    |

| Code    | Luminaire (required)                                                                                                             |    |
|---------|----------------------------------------------------------------------------------------------------------------------------------|----|
| DSX1    | D-Series 1 Luminaire                                                                                                             |    |
| DSX2    | D-Series 2 Luminaire                                                                                                             |    |
| Code    | Lamp Type (required)                                                                                                             |    |
| .LA05X* | LED light engine producing c. 5,000 lumens                                                                                       |    |
| .LA08X* | LED light engine producing c. 8,000 lumens                                                                                       |    |
| .LA11X* | LED light engine producing c. 11,000 lumens                                                                                      |    |
| .LA16X* | LED light engine producing c. 16,000 lumens                                                                                      |    |
| .LA22X* | LED light engine producing c. 22,000 lumens                                                                                      |    |
| .LA30X* | LED light engine producing c. 30,000 lumens                                                                                      |    |
| .LA36X* | LED light engine producing c. 36,000 lumens                                                                                      |    |
| Code    | Distribution (required)                                                                                                          |    |
| .AY     | Asymmetric                                                                                                                       |    |
| .SY     | Symmetric                                                                                                                        |    |
| .FW     | Forward throw                                                                                                                    |    |
| 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    | Photocell (option)                                                                                                               |    |
| .T      | Mini Photocell                                                                                                                   |    |
| .T1     | Complete with NEMA socket (To accept standard NEMA Photocell, available from Hidophane)                                          |    |
| .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          |    |
| .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    | Control Gear (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                                                   |    |
| .D2     | DALI HF electronic control gear                                                                                                  |    |
| Code    | Dimming outputs (option)                                                                                                         |    |
| .LRT56  | Pre-set to dim to 50% between 12m to 6m                                                                                          |    |
| .LRT66  | Pre-set to dim to 60% between 12m to 6m                                                                                          |    |
| .LRT76  | Pre-set to dim to 70% between 12m to 6m                                                                                          |    |
| Code    | Paint finish (option)                                                                                                            |    |
| .C      | Enhanced Paint Finish                                                                                                            |    |
| .CL7    |                                                                                                                                  |    |
| .LRT56  |                                                                                                                                  |    |
| DSX1    | LA224                                                                                                                            | AY |
| DSX2    | LA224                                                                                                                            | AY |
| Example |                                                                                                                                  |    |

\*DSX1 only \*\*DSX2 &2 \*\*DSX2 only

accessories

| Code        |                                                            |
|-------------|------------------------------------------------------------|
| DPL,BLSI,C7 | DPL back lighting shield 25mm, finished in black (RAL9005) |
| DPL,WB      | Wall Bracket                                               |

Note: The specifications of the Hidophane luminaire, all descriptions, illustrations, drawings and specifications in the Hidophane 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.

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# POL1

7026

Indoor and outdoor led floodlight. Die cast aluminium body, coated with polyester anticorrosion powder, white, silver, anthracite or dark brown color. 4 mm thick tempered transparent glass, silicon gasket, electronic driver 220-240V 50/60Hz. Manufactured in accordance with EN / IEC 60598-1.

## MAIN FEATURES

|                                                                                    |         |                                                                                     |                                                                                                                                                     |                                                                                     |                          |
|------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------|
|    | Class I |    | CRI >80<br>CRI >90                                                                                                                                  |    | EN / IEC<br>60598-1      |
|    | Ground  |    | Mac Adams 3                                                                                                                                         |    | RG0/RG1                  |
|   | Wall    |   | IK 08                                                                                                                                               |   | L90-B10 >100.000 h       |
|  | Pole    |  | IP 66                                                                                                                                               |  | Ball Test<br>DIN 18032-3 |
|  | Ceiling |  | 10 kV<br>Surge Protection                                                                                                                           |                                                                                     |                          |
|                                                                                    |         |  | <input type="radio"/> Silver<br><input type="radio"/> Matt white<br><input checked="" type="radio"/> Anthracite<br><input type="radio"/> Dark brown |                                                                                     |                          |
|                                                                                    |         |  | 100% regenerable                                                                                                                                    |                                                                                     |                          |



## CODING

| Art. | + | Mod. | + °K (CRI)            | + W. tot. | + Options | ○ Silver             | Options | ○ Bianco opaco       | Options | ● Antracite          | Options | ● Marrone scuro      |
|------|---|------|-----------------------|-----------|-----------|----------------------|---------|----------------------|---------|----------------------|---------|----------------------|
| 7026 |   | PR   | 22 = ambra (CRI >80)  | 30        | GL        | = on/off             | BL      | = on/off             | EL      | = on/off             | CL      | = on/off             |
|      |   | CR   | 30 = 3000°K (CRI >80) | 40        | GD        | = dali 2             | BD      | = dali 2             | LD      | = dali 2             | CD      | = dali 2             |
|      |   | AR   | 40 = 4000°K (CRI >80) | 50        | GV        | = shatterproof glass | BV      | = shatterproof glass | VI      | = shatterproof glass | CV      | = shatterproof glass |
|      |   | RR   | 50 = 5000°K (CRI >80) | 54        | GA        | = acid-etched glass  | BA      | = acid-etched glass  | VA      | = acid-etched glass  | CA      | = acid-etched glass  |
|      |   |      | 57 = 5700°K (CRI >80) | 68        |           |                      |         |                      |         |                      |         |                      |
|      |   |      | 65 = 6500°K (CRI >80) | 73        |           |                      |         |                      |         |                      |         |                      |
|      |   |      | 93 = 3000°K (CRI >90) |           |           |                      |         |                      |         |                      |         |                      |
|      |   |      | 94 = 4000°K (CRI >90) |           |           |                      |         |                      |         |                      |         |                      |

## Δ LUMEN

|    | °K    | CRI  | % Lm     |
|----|-------|------|----------|
| 22 | ambra | > 80 | -19.85%  |
| 30 | 3000  | > 80 | -5.28%   |
| 40 | 4000  | > 80 | standard |
| 50 | 5000  | > 80 | +0.90%   |
| 57 | 5700  | > 80 | +1.00%   |
| 65 | 6500  | > 80 | 0.00%    |
| 93 | 3000  | > 90 | -18.15%  |
| 94 | 4000  | > 90 | -14.33%  |

## STANDARD EQUIPMENT



- 1000 mm long H07RN-F 3x1mm² neoprene cable.



- 10kV Surge Protection.

- Cable gland with integrated anti-condensation valve.

## LOW VOLTAGE DALI OUTDOOR PHOTO/MOTION PIR SENSOR

FDP-301SR



### Product Overview

The FDP-301SR sensor works with intelligent drivers utilizing the DALI 2 protocol. This sensor family features bi-directional communication between sensor and control device, enabling connected systems for smarter, more energy efficient and data-driven applications. The FDP sensor series is compatible with various intelligent drivers such as SR compatible drivers. By connecting to an intelligent driver, the FDP sensor series does not need its own power supply which will save the OEM cost and space inside the fixture.

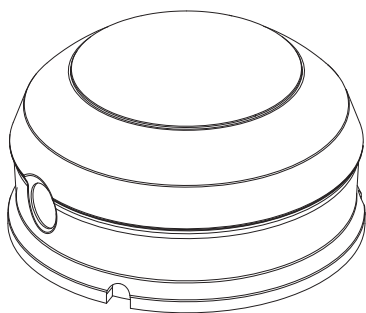
Configuration is possible through the Sensor Configuration App for iOS® or Android® (Search for Wattstopper Sensor Configuration App) or through compatible DALI devices and outdoor lighting controllers conforming to Zhaga or DiiA standards (103 and 303\*) remotely.



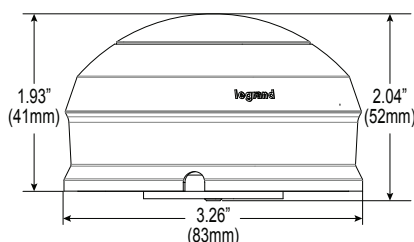
Suitable Applications: Parking Lots, Plazas, Pedestrian Street Lighting, Public Parks.

Not suitable for Roadway Detection

### FDP-301SR sensor

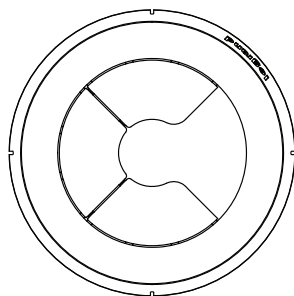


### FDP-301SR dimensions



### FDP-M1 sensor mask

The optional FDP-M mask provides the ability to limit coverage areas for example, in hallways or multi-use environments. The mask has three 90° sections. One or two of the sections can be removed, to provide different coverage patterns. Snap the mask onto the lens and rotate to the desired position.



### Models

FDP-301SR, 12-20 VDC (Input Voltage)  
Use with Philips™ SR Drivers

### Specifications and Features

Quick connect design with 4-pin connector (use with high bays, parking lots and street lighting)

DALI Bus Current Consumption:  
16 mA max.

2 Len Configurations  
L7: 40ft (12m)  
L2: 8-15ft (3m)

Remote setup and adjustment with the Wattstopper Sensor Configuration App

Adjustable high and low modes (high: 0 to 100%, low: off, 0 to 100%)

Hold time (1 second, 0 seconds to 42 minutes)

Adjustable cut off delay (none, 1 to 60 minutes, 1 to 5 hours)

Adjustable sensitivity/service mode (low, med, max; on-fix, off-fix)

Photocell: (Enable/Disable, 1 to 250 fc)

Adjustable ramp and fade times (1 to 60 seconds)

Operating temperature: -40°F to +167°F (-40°C to +75°C)

Storage temperature: -40°F to +167°F (-40°C to +75°C)

Operating Humidity: 5% to 95% non-condensing

Weight: 2.12 oz (60 grams)

UL and cUL listed, CE

IP66 rated

Five year warranty

### Materials

Polycarbonate, flame retardant  
UV resistant

Impact resistant (IK09 rated)

Recyclable

Meets materials restrictions of RoHS

### Factory Defaults

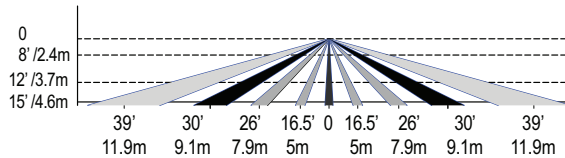
|                   |           |
|-------------------|-----------|
| High mode:        | 100%      |
| Low mode:         | 40%       |
| Time delay:       | 5 minutes |
| Cut off:          | Disabled  |
| Setpoint:         | Disabled  |
| Sensitivity:      | Max       |
| Ramp up time:     | Disabled  |
| Fade down time:   | Disabled  |
| Photocell On/Off: | Disabled  |

*\*DALI 303 features are continually released. Please consult Wattstopper for a list of current features.*

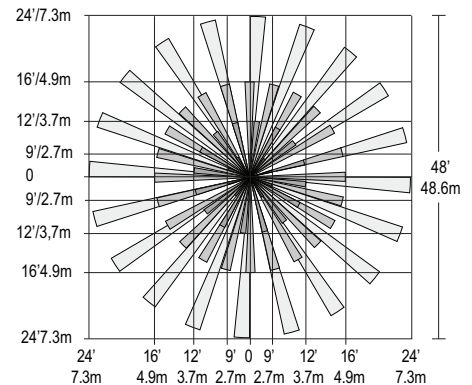
## Coverage

### FDP-301SR-L2

The FDP-L2 is designed for mounting at heights between 8' to 15'. It provides a 48' diameter coverage area when mounted at a height of 8', or a 78' diameter coverage area at 15'.

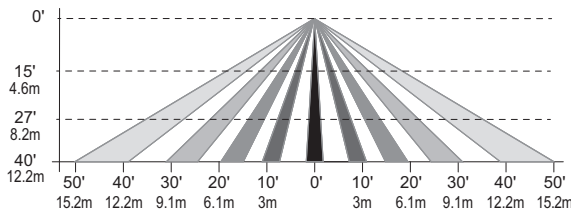


### Top coverage pattern @8ft.

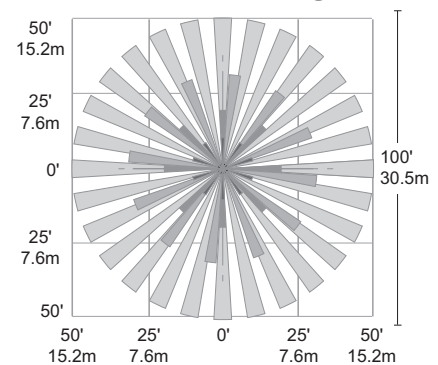


### FDP-301SR-L7

The FDP-L7 has a lens that covers a 100' diameter area at a height of 40'.

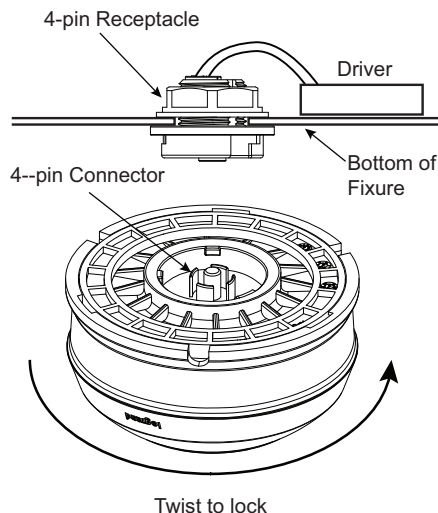


### Top coverage pattern @40ft.



## Installing the FDP-301SR Sensor in a Light Fixture

- For OEMs: Determine an appropriate mounting location inside the light fixture. Allow a minimum distance of 0.2" (5.1mm) from the end of the sensor to the wall of the fixture.
- Drill a 0.79" (20mm) diameter hole through the sheet metal in the bottom of the fixture.
- Install a socket (call your local account manager for details) that utilizes a 4 pin connection.
- Mounting the sensor is then simple—insert the pins on the connector into the receptacle, and rotate clockwise to lock. the connector only fits onto the receptacle one way, so the pins always line up correctly
- Connect load, supply and control wires.
- Restore power from the circuit breaker.
- Commission the sensor settings using the Wattstopper Sensor Configuration App (including setting a recommended password).



| Pin | Function                                        |
|-----|-------------------------------------------------|
| 1   | not used                                        |
| 2   | DALI (or DALI-based protocol) - / common ground |
| 3   | DALI (or DALI-based protocol) +                 |
| 4   | not used                                        |

## Sequence of Operation

- Dimming:** When motion is detected within the sensor's coverage area, the sensor sends a signal to ramp the load up to the selectable High Mode level unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go to the selectable Low Mode level based on the signal from the sensor. If desired, a cut off time delay (factory preset at 1 hour) will trigger to eventually turn the lights OFF.
- Non dimming:** When motion is detected within the sensor's coverage area, the sensor sends a signal to turn the load ON unless the ambient light level is higher than the selected setpoint. When no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go OFF based on the signal from the sensor.
- Dusk to dawn control:** When photocell on/off is enabled, and the ambient light falls below the photocell setpoint, the sensor ramps the load up to the selectable High Mode level. If no motion is detected for the duration of the time delay setting (factory preset at 5 minutes), the lights will go to the selectable Low Mode level. If the cut off time delay is disabled, the load will remain on, at High or Low level, based on motion detection, until the ambient light increases above the photocell setpoint.

## Ordering Information

| Catalog #    | Master Pack Details  |                           |          |          |                   | Inner Pack Details  |                           |        |         |                   |
|--------------|----------------------|---------------------------|----------|----------|-------------------|---------------------|---------------------------|--------|---------|-------------------|
|              | Master Pack Quantity | Case dimensions (in. /mm) |          |          | Weight (lbs. /kg) | Inner Pack Quantity | Case dimensions (in. /mm) |        |         | Weight (lbs. /kg) |
|              |                      | Length                    | Width    | Height   |                   |                     | Length                    | Width  | Height  |                   |
| FDP-301SR-L2 | 40                   | 17.4/443                  | 19.5/494 | 10.3/261 | 19.6/8.9          | 10                  | 8.4/212                   | 19/482 | 4.8/121 | 4.4/2             |
| FDP-301SR-L7 | 40                   | 17.4/443                  | 19.5/494 | 10.3/261 | 19.6/8.9          | 10                  | 8.4/212                   | 19/482 | 4.8/121 | 4.4/2             |
| FDP-M        |                      |                           |          |          |                   |                     |                           |        |         |                   |

| Catalog #    | Unit Pack Details  |                           |         |        |                   |
|--------------|--------------------|---------------------------|---------|--------|-------------------|
|              | Unit Pack Quantity | Case dimensions (in. /mm) |         |        | Weight (lbs. /kg) |
|              |                    | Length                    | Width   | Height |                   |
| FDP-301SR-L2 | 1                  | 3.7/94                    | 4.5/113 | 4/102  | 0.4/0.2           |
| FDP-301SR-L7 | 1                  | 3.7/94                    | 4.5/113 | 4/102  | 0.4/0.2           |
| FDP-M        |                    |                           |         |        |                   |

| Catalog #                                | Color        | Description                                                | Input Voltage | Power Consumption from DALI Bus |
|------------------------------------------|--------------|------------------------------------------------------------|---------------|---------------------------------|
| <input type="checkbox"/> FDP-301SR-L2-W  | White        | Fixture mount, passive infrared motion sensor, low voltage | 12-20 VDC     | 16 mA                           |
| <input type="checkbox"/> FDP-301SR-L2-TG | Traffic Gray | 360° lens, maximum coverage 48' diameter from 8-15' height |               |                                 |
| <input type="checkbox"/> FDP-301SR-L7-W  | White        | Fixture mount, passive infrared motion sensor, low voltage | 12-20 VDC     | 16 mA                           |
| <input type="checkbox"/> FDP-301SR-L7-TG | Traffic Gray | 360° lens, maximum coverage 100' diameter from 40' height  |               |                                 |
| <input type="checkbox"/> FDP-M1-W        | White        |                                                            |               |                                 |
| <input type="checkbox"/> FDP-M1-TG       | Traffic Gray |                                                            |               |                                 |

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