

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



DENVER  
iD BOLLARD



  
**HOLOPHANE®**

REGISTERED EUROPEAN DESIGN  
PATENTED DESIGN

# BOLLARD™ DENVER ID

## The Denver ID: Bollard

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: Bollard offers improved visual comfort; perfect for the unique requirements of pedestrian-friendly amenity spaces.

Coupled with the latest LED technologies, smart controls integration and class-leading optical performance the new Denver ID: Bollard 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.

Future-proofing is catered for with the integration of ZD4i, enabling use with an ever expanding eco-system of smart sensors and devices.

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: Bollard** 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
- Town Squares
- Campuses
- Retail Parks
- Car Parks
- Landscaped Areas

## Overview

- Available in lumen packages of 1000 to 3000 (delivered lumens).
- 2 optimised optical distributions including Single or Double-sided optics.
- 2700K, 3000K & 4000K options available.
- CRI > 70.
- Integrated presence detector, controls and emergency options (c.300lm in emergency model).
- Enhanced vandal resistance.

## TM66 CEAM-Make Rating

Preliminary Rating: 2.4 (Intermediate progress to circularity).

## 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

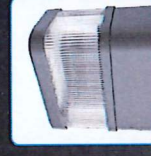
Over our 125-year history we have always been committed to delivering the best service to our customers and supporting in a myriad of ways to ensure the best possible outcomes. This goes as far as offering a free lighting design service to one-off products/ solutions to meet customers unique needs.

## 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: Wall.**



**DENVER  
ID POLE**

**DENVER  
ID WALL**

**DENVER  
ID BOLLARD**

## PRODUCT FEATURES

# BOLLARD™ DENVER ID

### Class Leading Performance

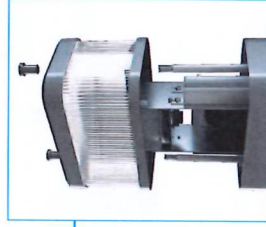
Denver ID: Bollard features the very latest LED technologies and bespoke individual PMMA optical lenses. These have been optimised to provide the best spacings possible on lighting schemes whilst ensuring low-energy consumption.

The optical aperture is available in both single-sided or double-sided versions.

### Easily maintainable

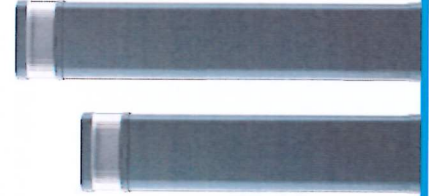
Denver ID: Bollard has an easily removable and replaceable LED module. This enables at any time for the module and emergency pack to be replaced in case of unlikely failures or upgraded.

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



### Two Heights

Denver ID: Bollard is available in either 750mm or 1000mm heights.



### Vandal Resistance

Unlike the majority of luminaires Bollards are more susceptible to damage and vandalism.

Denver ID: Bollard has been engineered using a construction of robust cast and extruded Aluminium parts as well as a polycarbonate lens. This culminates in a Bollard that is IK10 rated.

In addition to this, Denver ID: Bollard is available with 2 x vandal resistant nuts to prevent vandals from accessing the luminaire.

IK10

### Connected

Denver ID: Bollard can be used in conjunction with Holophane's Controlux Air system to create a full connected lighting scheme. This is achieved using an internal ZD41 device.

For simple motion control Denver ID: Bollard is available with a discrete PIR mounted in the body.



## TRANSITION ZONE

### Patented Transition Zone

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.

### Recessed LEDs

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

### High Transparency Lens

The plastic extrusion used in Denver iD: Bollard is highly transparent ensuring that optical performance remains uncompromised.

# 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 electrical components as low as possible is critical to maintaining the luminaire's efficiency.

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



### Conduction

Taking heat away from electronic components, LEDs and drivers.

**Denver ID**: **Bollard**'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**: **Bollard**'s driver and LEDs are mounted separately to avoid compound heating of components. The luminaire gear is suspended within the extruded body to encourage air movement around the driver.



### Radiation

Surface finish and form designed to maximise heat radiation.

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

# THERMAL MANAGEMENT

## INSTALLATION AND MAINTENANCE

### Installation

**Denver ID: Bollard** has been designed to facilitate easy installation. With only two nuts needed to remove the bollard LED module and combined gear, this makes it easy to quickly remove the bollard head to access the mounting base of the luminaire.

Installation is achieved either using the standard base or in conjunction with a root spike. The base has 4 x mounting holes to ensure stability.

### 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, emergency packs are easily accessed via the gear compartment.

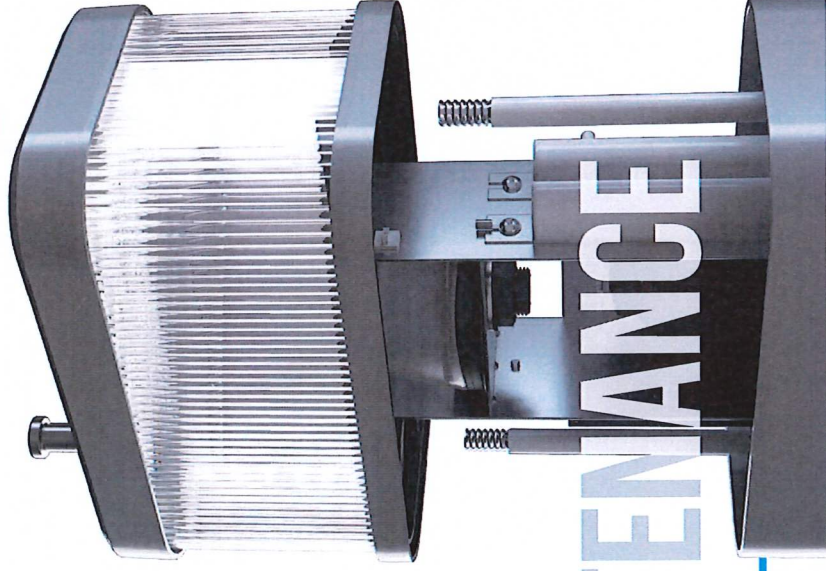
### Upgradability

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

The ability to replace major components means that the **Denver ID: Bollard** can deliver a longer, more sustainable luminaire system life.

Using recyclable components such as Glass and Aluminium means that a large percentage of **Denver ID: Bollard** can be recycled at end-of-life through recycling schemes such as Recolight.



## SPECIFICATION

### Specification

**Holophane Denver ID: Bollard** Denver consists of LM6-extruded Aluminium 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 and up light. This is sealed behind high-transparency clear Polycarbonate extrusion. 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 using the mounting base of the bollard through specifically drilled points. Cable entry and termination to the luminaire is via an IP65 cable gland. Access to the luminaire is via 2 x nuts.

### Features and benefits

#### Exceptional Performance

- Achieves spacings of up to 12m at 10lux average/2lux minimum
- Available with both a single or double sided optical distributions. Giving flexibility to put light where it's needed.
- Patented Transition Zone helps to reduce perceived glare of LEDs.

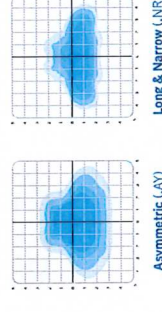
#### Easy Installation & Maintenance

- LED module uses a plug and play system and can be removed from the luminaire as one unit to aid in easy access to the base of the luminaire for installation.
- A removable/upgradable LED module and easy access to gear compartment ensures that key components can be removed and replaced if required.

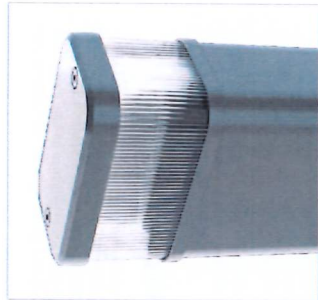
#### Fully Controllable

- Integrated discrete PIR sensor option for motion sensing capabilities either per luminaire or as a group of luminaires.
- Integrated 1hr & 3hr emergency options.
- Compatible with Controlux Air.

### Light Distributions



# MAINTENANCE



### Integrated Presence Sensors

**Denver ID: Bollard** is available with a range of integrated controls and PIR options to suit project requirements. These range from simple on/off detection on one side of the bollard to double sided detection with pre-set dim levels.

#### PL1 Option

Integrated PIR, suitable up to 4m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL PRG.G (purchased separately).

#### PL2 Option

Groupable Integrated PIR. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL PRG.G (purchased separately).

#### 2PL2 Option

Dual Groupable Integrated PIR. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL PRG.G (purchased separately).



| Distance from Bollard |     | 2.4 | 3.0 | 3.6 | 6.0 |
|-----------------------|-----|-----|-----|-----|-----|
| M                     | 1.0 | 2.0 | 3.0 | -   | -   |
|                       | T   | 3.0 | 4.0 | 5.0 | 6.0 |
| A                     | 5.0 | 6.0 | 7.0 | 9.0 | -   |

## ZD4

The **ZD4 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 **Denver ID: Bollard** ZD4 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 ZD4 architecture enables the interchanging and upgrading of sensor and device options should and when the end-user pleases.

#### Future Proof

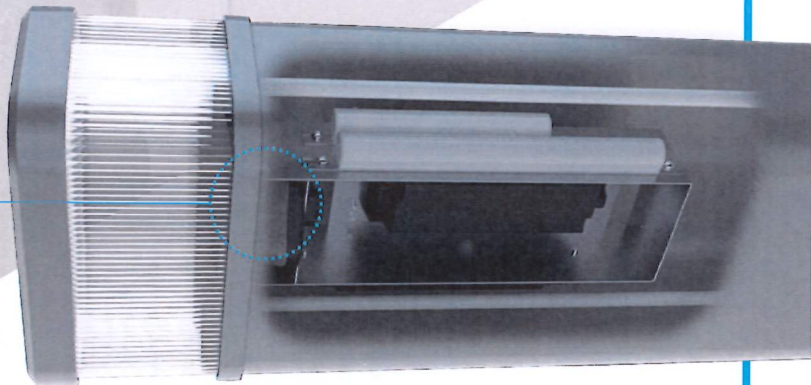
End-users have access to an ever expanding eco-system of devices and sensors through 3rd-party suppliers. The ZD4 architecture is an industry recognised platform.



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.

**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.

**Internal Controlux Air Node**  
**Denver ID: Bollard** is available with an internally mounted Controlux Air Node to enable full connectivity and luminaire control.

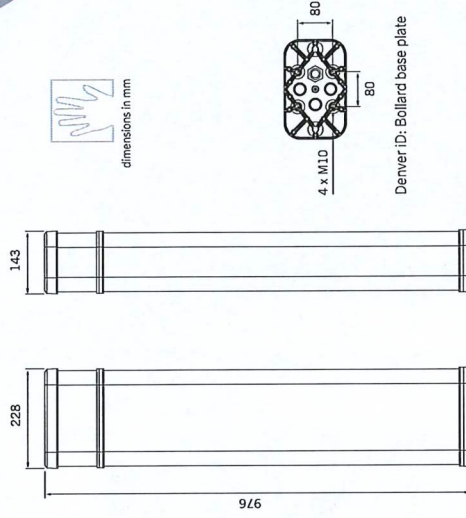


| Code   | Luminaires (required)                                                                                                                                                                           |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DBD    | Denver ID Bollard                                                                                                                                                                               |
| Code   | Series                                                                                                                                                                                          |
| DBD    | Series 1                                                                                                                                                                                        |
| Code   | Lamp Type (required)                                                                                                                                                                            |
| .JA012 | LED light engine producing c.1,000 lm with a nominal 2700K colour temperature                                                                                                                   |
| .JA022 | LED light engine producing c.2,000 lm with a nominal 2700K colour temperature                                                                                                                   |
| .JA013 | LED light engine producing c.1,000 lm with a nominal 3000K colour temperature                                                                                                                   |
| .JA023 | LED light engine producing c.2,000 lm with a nominal 3000K colour temperature                                                                                                                   |
| .JA014 | LED light engine producing c.1,000 lm with a nominal 4000K colour temperature                                                                                                                   |
| .JA024 | LED light engine producing c.2,000 lm with a nominal 4000K colour temperature                                                                                                                   |
| Code   | Optical Efficacy (required)                                                                                                                                                                     |
| .SU    | Single Street (SEDA)                                                                                                                                                                            |
| .DO    | Double sided (DOEDA)                                                                                                                                                                            |
| Code   | Distribution (required)                                                                                                                                                                         |
| .AY    | Asymmetric                                                                                                                                                                                      |
| .NR    | Long and Narrow light distribution                                                                                                                                                              |
| Code   | Head Height (option)                                                                                                                                                                            |
| .H75   | 750mm high                                                                                                                                                                                      |
| .H100  | 1000mm high                                                                                                                                                                                     |
| Code   | Colour (required)                                                                                                                                                                               |
| .C1    | Smooth White (RAL9016)                                                                                                                                                                          |
| .C4    | Graphite (RAL 7011)                                                                                                                                                                             |
| .C6    | Smooth Grey (RAL7035)                                                                                                                                                                           |
| .C7    | Black (RAL5005)                                                                                                                                                                                 |
| .C3    | Medium Silver (RAL5005)                                                                                                                                                                         |
| .RAL   | RAL Colour (see website)                                                                                                                                                                        |
| Code   | Shades (option)                                                                                                                                                                                 |
| .LS    | Internal light shield                                                                                                                                                                           |
| 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                                                                                                                                         |
| Code   | Controls (option)                                                                                                                                                                               |
| .P.L1  | Integrated PIR, suitable up to 4m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL-PIRG (purchased separately). |
| .P.L2  | Geospatial Integrated PIR. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL-PIRG (purchased separately).         |
| .2P.L2 | Dual Geospatial Integrated PIR. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL-PIRG (purchased separately).    |
| .CA    | Wireless lighting code (integrated) for use with Holophone Centrilux Air System. Includes subscription package for two years                                                                    |
| Code   | Emergency (option)                                                                                                                                                                              |
| .EM1   | 1hr maintained integrated emergency, Self-test                                                                                                                                                  |
| .EM3   | 3hr maintained integrated emergency, Self-test                                                                                                                                                  |
| Code   | Mini Circuit Breaker                                                                                                                                                                            |
| .MCB   | Mini Circuit Breaker                                                                                                                                                                            |
| Code   | Dimming Outputs (option)                                                                                                                                                                        |
| .LRO   | LED Regulator                                                                                                                                                                                   |
| .LRT   | Customer specified pre-set dimming                                                                                                                                                              |
| Code   | Control Gear-2 (option)                                                                                                                                                                         |
| .CL7   | Programmed to deliver 70% of the initial lumens over the life of the luminaire                                                                                                                  |
| .CL8   | Programmed to deliver 60% of the initial lumens over the life of the luminaire                                                                                                                  |
| .CL9   | Programmed to deliver 50% of the initial lumens over the life of the luminaire                                                                                                                  |
| Code   | Auxiliary Circuits - 14 (option)                                                                                                                                                                |
| .TW    | Through Wiring                                                                                                                                                                                  |
| Code   | Screws - 21 (option)                                                                                                                                                                            |
| .V1    | Vandal-resistant screws                                                                                                                                                                         |
| Code   | Example                                                                                                                                                                                         |
| DBD    | .JA012 .SU .AY .H75 .C1 .CII .TSZ .CA                                                                                                                                                           |

## ACCESSORIES

|          |                                                                                               |
|----------|-----------------------------------------------------------------------------------------------|
| Code     | Accessory                                                                                     |
| DBDVK    | Vandal Key                                                                                    |
| DBD.FOOT | Base Mounting Spike to fit Flange Base Denver ID Bollard. Includes set of 2 Bolts M10 x 100mm |
| DBD.FT   | Set of 4 Bolts M10 x 100mm for Flange Base Fixing                                             |

Note: The specifications of the Holophone luminaires, all descriptions, illustrations, drawings and specifications in the Holophone catalogue and website represent only general particulars of the products 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 authorities.

DIMENSIONS  
& PERFORMANCE

Denver ID: Bollard base plate

## Typical luminaire performance

| Configuration | Delivered Lumens | Circuit Power (W) | Driver output current (mA) | Luminaire total no. of LEDs | Luminaire Efficacy (lm/W) | Weight     |
|---------------|------------------|-------------------|----------------------------|-----------------------------|---------------------------|------------|
| DBD.LA01X.SU  | c.500            | 6                 | 270                        | 5                           | 85                        | DBD 9.5 kg |
| DBD.LA01X.DO  | c.1,000          | 11                | 265                        | 10                          | 110                       |            |
| DBD.LA02X.SU  | c.1,000          | 12                | 585                        | 5                           | 90                        |            |
| DBD.LA02X.DO  | c.1,500          | 16                | 425                        | 10                          | 106                       |            |
| DBD.LA02X.SU  | c.1,500          | 18                | 1000                       | 5                           | 85                        |            |
| DBD.LA02X.DO  | c.2,000          | 23                | 600                        | 10                          | 101                       |            |
| DBD.LA03X.DO  | c.3,000          | 28                | 850                        | 10                          | 96                        |            |

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**



BOLLARD DENVER™:iD

DENVER  
iD BOLLARD



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**AcuityBrands.**



