

Phase 2 Unit 02 – Symmetry Park, Merseyside External Lighting Planning Statement

14th July 2023

Ref: 3995-HAN-PL-02-RP-E-64-01-External-Lighting-Planning-Statement Rev 2 230714

1.0 Introduction

This Lighting Design report has been commissioned and prepared in support of a planning application for the installation of exterior lighting to Unit 02, Symmetry Park, Merseyside

The Lighting strategy will aim to deliver the following objectives:

- Create a safe, secure and accessible environment for all users of the proposed facility
- Minimise the impact on the existing environment through the use of good design principles
- Maintain conditions favourable to the local wildlife by building an understanding of their needs and incorporating the necessary measures into the design
- Adopt a holistically sustainable approach to selection and specification of the lighting
- Adopt a controls approach that will allow lighting levels to be modified to suit specific use and unused zones to be switched off in the event that they are not being fully utilised

1.1 Planning Conditions

Outline Planning Permission

Planning Application No: 20/00494/HYB

Condition 61. Prior to the occupation of each phase of development approved as part of any subsequent reserved matters application details of all external lighting within the curtilage of each building shall be submitted to and approved in writing by the Local Planning Authority. The agreed details shall be implemented in full before each building is first occupied and maintained thereafter.

REASON: To ensure the lightning proposed is acceptable and is not detrimental to the amenity of nearby residential properties.

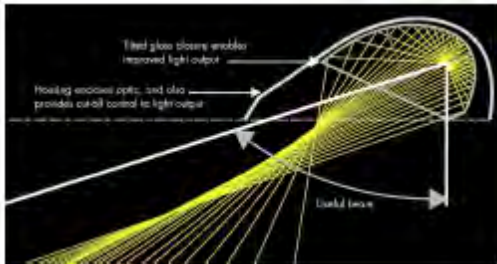
2.0 Design Standards and Legislation

The lighting design will comply with the following key standards where applicable:

- Building Regulations
- CIBSE lighting guides and recommendations
- ILE lighting guides and recommendations
- British Standards guides and recommendations
- CIE Standards guides and recommendations
- BREEAM recommendations for lighting control and light pollution minimisation
- Lighting design limits set by the ILE/CIE for the environmental lighting zones E1 - E4 where appropriate
- Bats and Lighting in the UK

3.0 Lighting Scheme

The design of the development will seek to minimise the impact on climate change and incorporate measures to enable it to cope with anticipated changes in temperature and weather as outlined below.



Key Impact Appraisal	
Security and Safety	The floodlighting will provide secure and safe use of the facility for staff, visitors and vehicles
Adjacent Development	Tight illumination control and compliance with 'Dark Skies' recommendations will minimize any impact on the adjacent development and existing amenities These measures will ensure that the increase in levels of illumination at the site boundaries is kept to a minimum
Wildlife and Ecology	The design of the flood lighting will take full consideration of the advice provided by the Ecology Consultants and adopt the methods of mitigation listed in Section 4.0
Carbon Emissions	Luminaires, controls and lamps will be selected to provide energy efficient solutions to minimise carbon emissions

4.0 Ecological Considerations

Lighting should be designed to minimise disturbance to wildlife by avoiding potentially suitable foraging habitats and movement corridors such as tree lines, hedgerows and areas of open water where feasible

A combination of the following measures should also be used:

- Avoid unnecessary lighting especially around the boundary of the development
- Use low level and/or hooded lamps, baffles and shields where necessary to ensure spill is minimised
- Use low intensity lighting where possible
- Use movement sensors over the night time period to ensure lighting is only on when required

The following measures will be taken to ensure mitigation of lighting impacts on wildlife:

- Lighting will be positioned to avoid sensitive areas
- LED lamps will be utilized throughout
- Lighting will only be directed where it is required and baffles or louvers will be added to minimise light spill
- Lighting columns will be kept to minimum height
- All lighting will be computer modelled to predict light spill and patterns
- Asymmetric beams will be used on all floodlights
- Controlled zoning of illuminated areas will minimise light usage

5.0 Lamps, Maintenance and Control

The luminaires will be selected using LED Lamp sources throughout to achieve the optimum balance between efficiency, life expectancy, aesthetics and control requirements for each lighting situation

Lighting control strategies will make use of time and zone setting control systems to minimise the energy use and improve lamp life whilst ensuring a safe and secure environment

Lamp Data Lamp Type	Colour Appearance	Colour Rendering Index Ra (sun=100)	Efficiency (lumens/watt)	Rated Life (hours)
Light-Emitting Diodes LED (in array form)	White (also blue, amber, green and red)	70 White Good (although colour varies between manufacturing batches)	85 – 100 High	50,000–70,000 (but can be limited by driver life to 20,000–50,000)

6.0 Lighting Designs

6.1 Development External Lighting Detailed Design Proposals

External lighting designs have been prepared for the Development Phase 2 Access Road & Unit 02 Developments Works

The proposed luminaire types, locations, mounting heights and controls along with the computer-generated lighting design calculation results for the minimum average illumination levels, uniformity and light spillage onto the adjoining areas are detailed on the following External Lighting Design Drawings

6.1.1 Unit 02

- i) 3995-HAN-PL-02-DR-E-64 21 – Rev2 : Dated 14/07/2023 : Site Plan – Unit 02 – External Lighting Design Strategy
- ii) 3995-HAN-PL-02-DR-E-64 31 – Rev2 : Dated 14/07/2023 : Site Plan – Unit 02 – External Lighting Design Layout
- iii) 3995-HAN-PL-02-DR-E-64 41 – Rev2 : Dated 14/07/2023 : Site Plan – Unit 02 – External Lighting Design Illumination Plots
- iv) 3995-HAN-PL-02-DR-E-64 51 – Rev2 : Dated 14/07/03/2023 : Site Plan – Unit 02 – External Lighting Control Strategy
- v) 3995-HAN-PL-02-DR-E-64 61 – Rev2 : Dated 14/07/2023 : Site Plan – Unit 01 – External Lighting Controls Layout

6.1.2 Luminaire and Photometric Datasheets

Luminaire and Photometric Datasheets are included at the back of this report for the following luminaires:

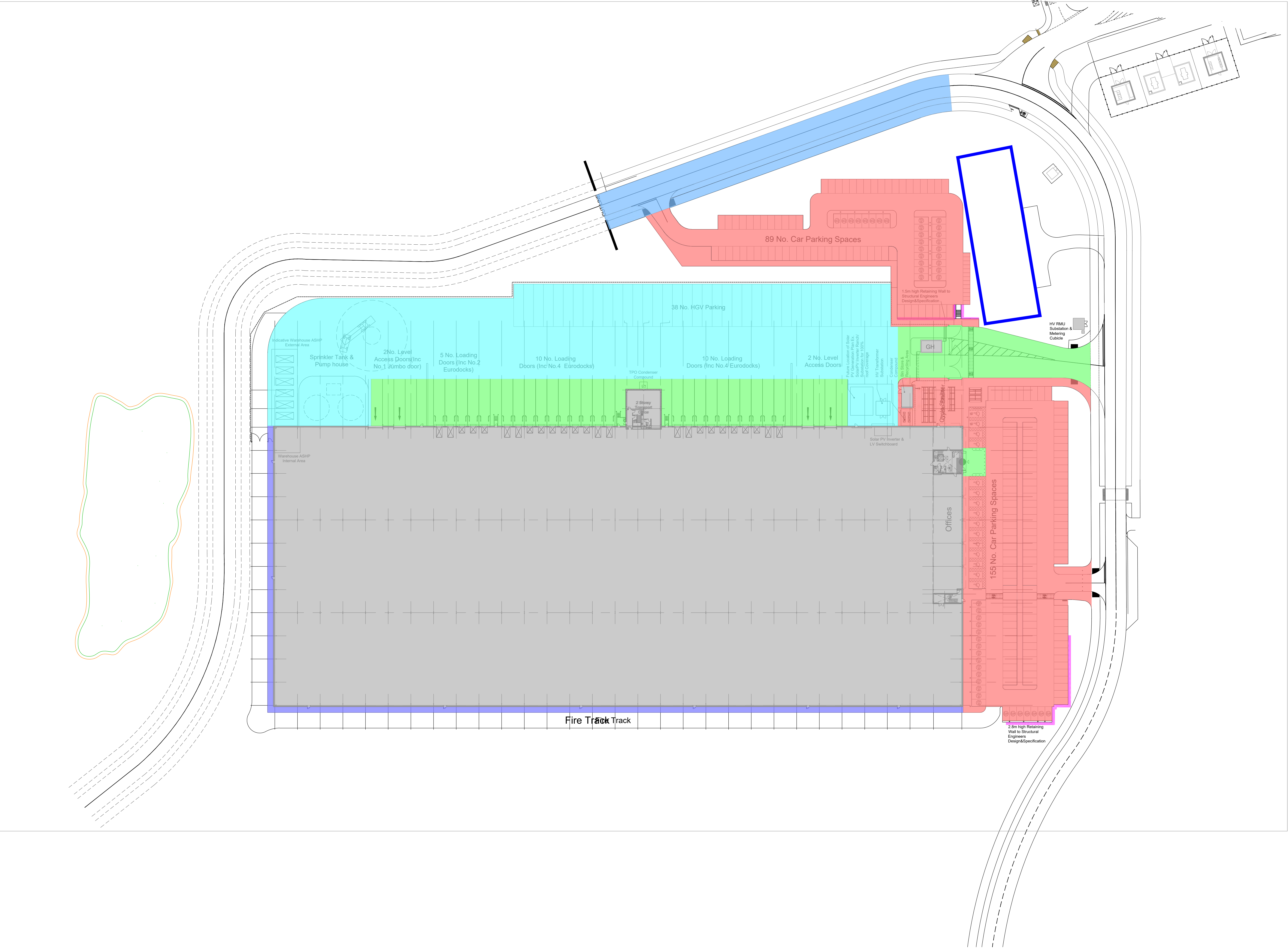
- | | | |
|------------------|---|-----------------------------|
| i) Type AW | – | DSX2.2.LA364.FW.CA |
| ii) Type B2 | – | DSX0.1.LA154.AY.CA |
| iii) Type BW | – | DSX0.1.LA154.AY.CA |
| iv) Type C1 | – | DSX2.2.LA304.FW.CA |
| v) Type C1BLS | – | DSX2.2.LA304.FW.BLS.CA |
| vi) Type D1BLC | – | DSX0.1.LA104.BLC.CA |
| vii) Type E1 | – | DSX2.2.LA304.AY.CA |
| viii) Type E1BLC | – | DSX2.2.LA304.BLC.CA |
| ix) Type F2 | – | DSX0.1.LA154.FW.CA |
| x) Type G | – | DBD.1.LA024.DO.NR.W014.CA |
| xi) Type H | – | DWL.1.LA024.HN.W011.CA |
| xii) Type RW1 | – | VMX.2.LA074.V2.X2L2.W042.CA |

Obtrusive Light Limits : Environmental Zone E2
Low District Brightness Areas - Rural or Small Village Locations

Sky Glow UWLR (Max %)	2.5
Light Into Windows Ev (Lux) - Pre / Post Curfew	5.0 / 1.0
Source Intensity I (kcd) - Pre / Post Curfew	7.5 / 0.5
Average Building Luminance L (cd / m2) - Pre-Curfew	5.0

Legend - External Lighting - Design Illumination Levels

Key	Minimum Average Maintained Illuminance (Occupancy Level) & Uniformity	Set-Back / Curfew Illuminance (Un-Occupied Set-Back Level)	Locations
10 lux	40%	5 lux (50%)	Pedestrian Walkways
20 lux	40%	5 lux (25%)	Staff Car Park / Site Roadways / Cycle Shelter
25 lux	40%	5 lux (20%)	Service Yard
50 lux	40%	5 lux (10%)	Loading Bays / Main Entrance
M4			Commercial Streets / Phase 2 Site Access Spine Road
Building Outline			



14
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23

2

UPDATED TO INCORPORATE UMC SITE PLAN REV P06.

TRF

JW

17
03
23

1

FOR APPROVALS

TRF

JW

02
03
23

1

DESCRIPTION

DRN

DRN

Hannan Associates

MEP Design Solutions

Hannan Associates Ltd
Beta House, Alnhamel Drive,
Manchester Road, Denton
M34 3PH
Tel: +44 (0)161 337 2300
Email: info@hannan-uk.com
Web: www.hannan-uk.com

TRITAX SYMMETRY

A TRITAX BIG BOX COMPANY

Client

Symmetry Park
Merseyside

Design Stage

Planning

Drawing Title

Site Plan - Unit 02
External Lighting Design Strategy

Scale

1:500

Page Size

A0L

Drawn

FOR APPROVALS

Project - Original - Version

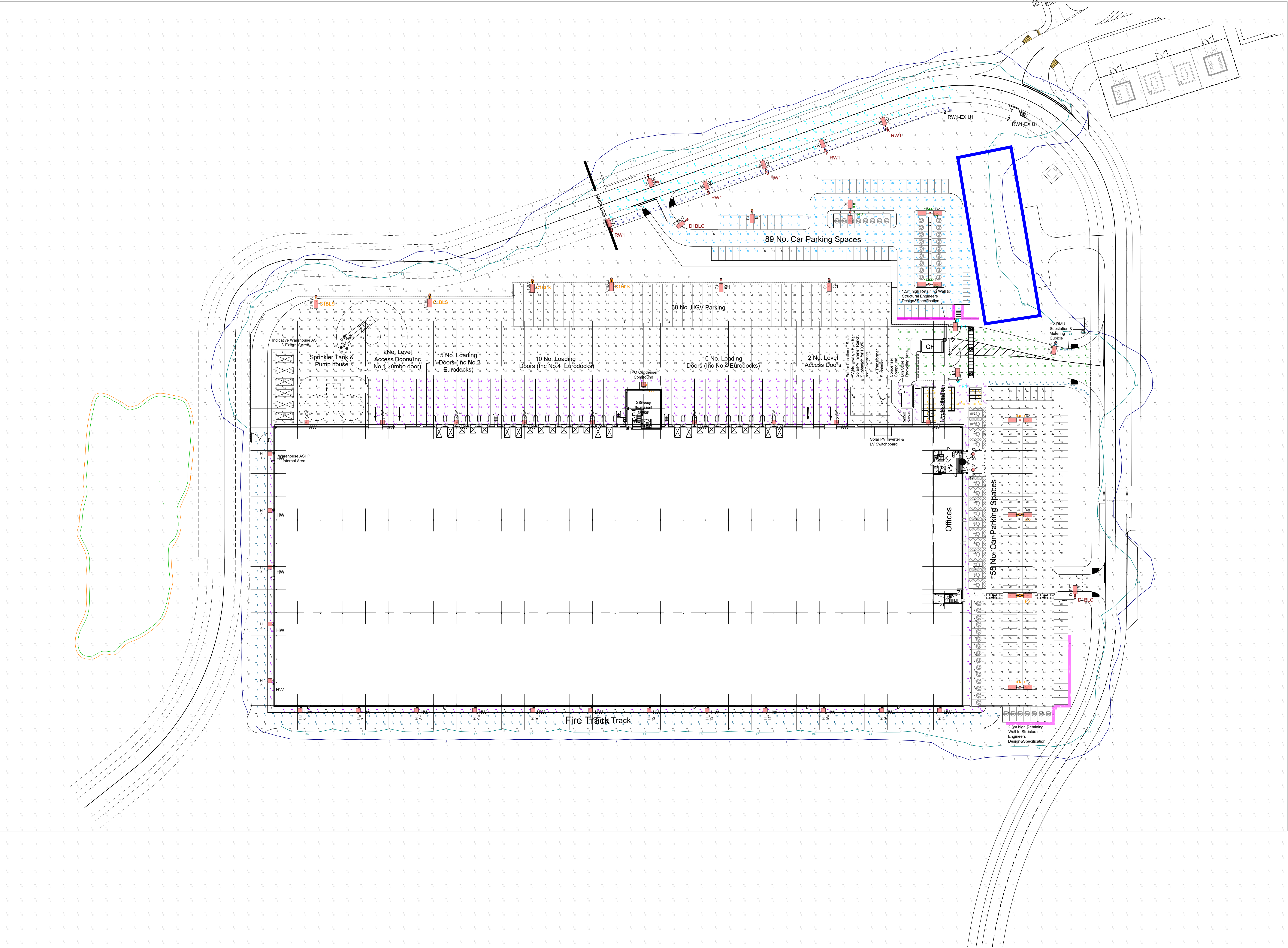
3995 - HAN - PL

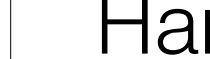
Lead - File Date

02 - DR - E - 6421

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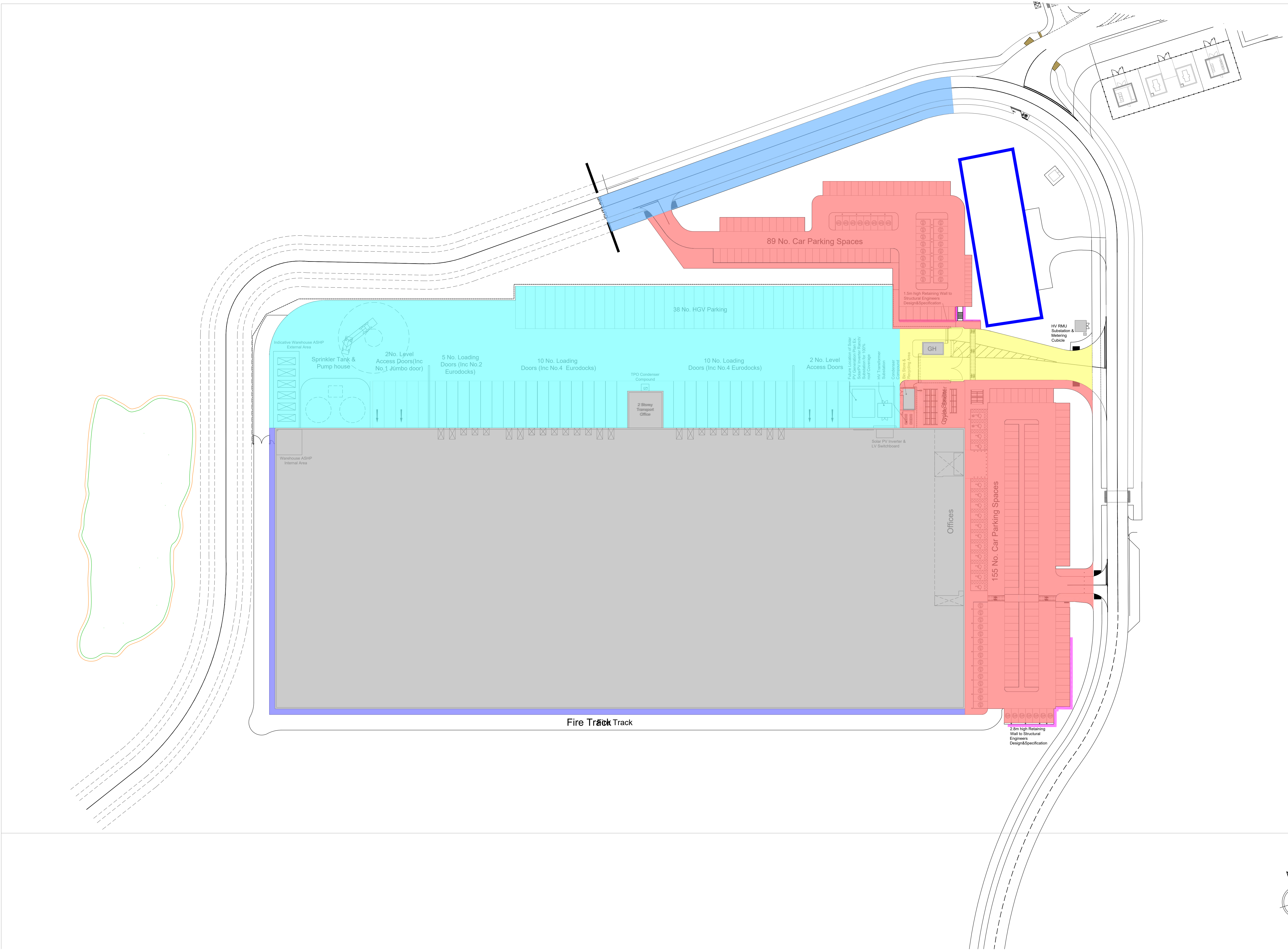
Unit 02 Statistics							
Description	Symbol	Average Lux Level	Minimum Lux Level	Uniformity (Min / Av)	Design Criteria (Av Lux)	Design Criteria (Uniformity)	Design Compliance Check
Staff Car Park No 1	+	22 Lux	11 Lux	50%	20 Lux	40%	Satisfactory
Staff Car Park No 2	+	25 Lux	12 Lux	48%	20 Lux	40%	Satisfactory
Circulation Area	+	52 Lux	35 Lux	67%	20 Lux	40%	Satisfactory
Cycle Racks	+	56 Lux	35 Lux	63%	20 Lux	40%	Satisfactory
Main Office Entrance	+	50 Lux	32 Lux	64%	50 Lux	40%	Satisfactory
Gatehouse / Service Yard Entrance	+	55 Lux	23 Lux	42%	50 Lux	40%	Satisfactory
Loading Bay	+	54 Lux	26 Lux	48%	50 Lux	40%	Satisfactory
Pedestrian Path East Gate	+	30 Lux	11 Lux	37%	10 Lux	40%	Satisfactory
Pedestrian Path / Cycle Way	+	19 Lux	12 Lux	63%	10 Lux	40%	Satisfactory
Perimeter Walkway	+	11 Lux	5 Lux	45%	10 Lux	40%	Satisfactory
Service Yard	+	28 Lux	11 Lux	39%	25 Lux	40%	Satisfactory
Phase 2 Access Road	+	16 Lux	5 Lux	31%	M4	25%	Satisfactory
Spill	+	1 Lux	0 Lux	0%			Satisfactory



	14	UPDATED TO INCORPORATE LUMC SITE PLAN REV POS.		TW	JF	WF
	27					
	01	FOR APPROVALS		TW	JF	WF
	03					
Date	28	Description				
						
 Hannan Associates MEP Design Solutions				Hannan Associates Ltd Berris House, Altringham Drive, Manchester Road, Denton M20 4YU Tel : +44 (0)161 337 2200 Email : info@hannan-uk.com Web : www.hannan-uk.com		
Client	 TRITAX SYMMETRY A TRITAX BIG BOX COMPANY					
Project	Symmetry Park Merseyside					
Design Stage	Planning					
Drawing Title	Site Plan - Unit 02 External Lighting Design Illumination Plots					
Scale	1:500		Page Size		AOL	
Sheet						
FOR APPROVALS						
Project / Original / Value			Level / Plot Type / Units / Number			
3995 - HAN - PL			02 - DR - E - 64 41			
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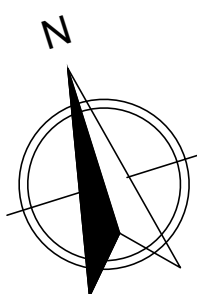
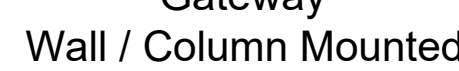
Legend - External Lighting - Control Zones

Key	Control Zone
	Zone 1a - Building Rear Access / Circulation Route
	Zone 1b - Building Side Access / Circulation Route
	Zone 2a - Staff Car Park 1
	Zone 2b - Staff Car Park 2
	Zone 3 - HGV Main Access / Gatehouse
	Zone 4 - Service Yard
	Zone 5 - Site Landlord's Phase 2 Access Road



External Lighting Controls Cause And Effect Schedule					
External Lighting	Control Input Status / External Lighting Control Status				
	Master Control		Control Override (When Daylight Levels >100lux)		
Control Zones	PhotoCell (Day > 70lux)	PhotoCell (Day > 500 lux)	Intruder Alarm Unit 02 "SET"	Intruder Alarm Unit 02 "SET & In Alarm"	
Unit 02	OFF	ON	OFF	ON	

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Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[www.DSX2 HOLOPHANE WEBSITE](#)

DSX2.2.LA364.FW.C9.TZ01.CA

Holophane D-Series 2 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 2
- LED light engine producing c.36,000 lumen with a nominal 4000K colour temperature
- Forward throw light distribution
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

HAWA.AU.GV9

Holophane D-Series wall bracket .
• Bracket galvanised and painted metallic silver (RAL9006)
Please note that it is the responsibility of the installing contractor to confirm that the bracket offered within this quotation suits the application.

PERFORMANCE

Drive Current from Driver:	1,050mA
Power:	328W
Fitting Current:	1.47A
Power Factor:	0.98
Fitting Inrush:	22A - 0.135ms
Number of Drivers:	2
2x Driver 1 Inrush:	11.2A - 0.135ms
Max Drivers per 16A Type B MCB:	15
Max Fittings per 16A Type B MCB:	7
Total Number of LEDs:	50
Minimum Dim Level:	7 %
Optical Risk Group:	1



15Kg₂



0.1M



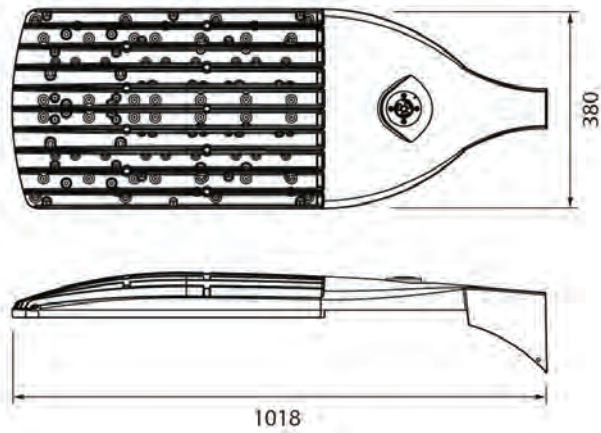
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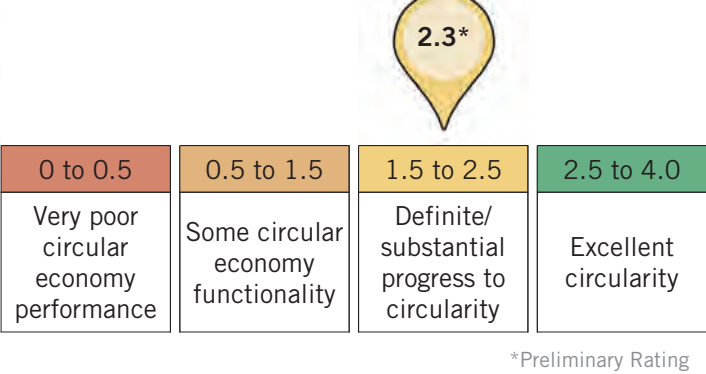
[Installation Guide](#)

*Generic UMSUG code based on product wattage and some or all of product family being included within Elexon data base.

DIMENSIONS



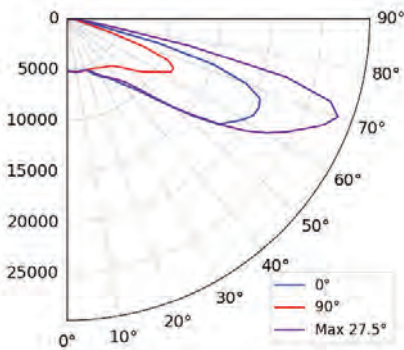
CIBSE TM66 - CEAM RATING



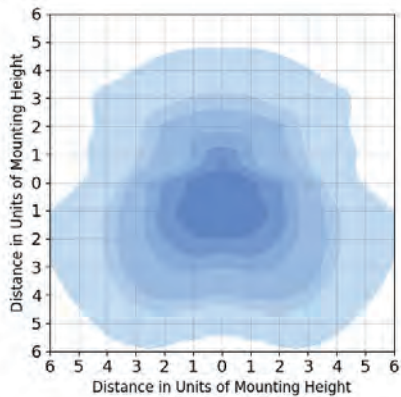
PHOTOMETRY



Polar Plot

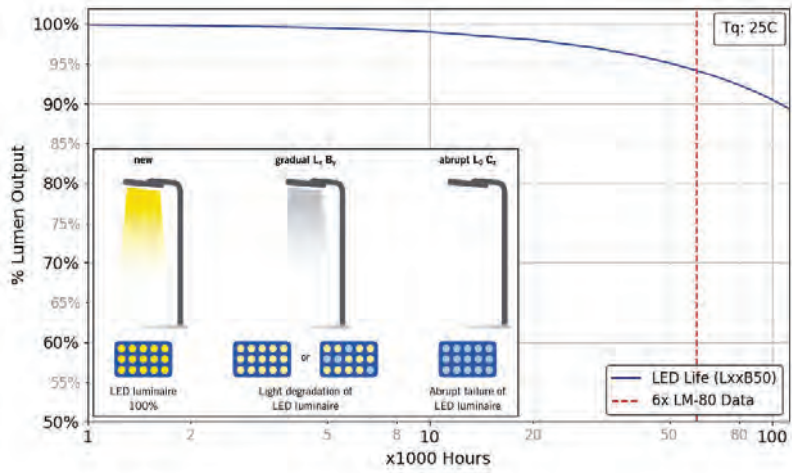


Isoilluminance Plot



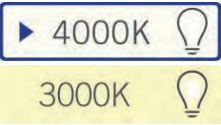
Lumens:	40,789
CCT:	4000K
CRI:	70
IES File:	DSX2.2.LA364.FW
G-Class:	G*2 Imax @ ≥ 70°: 693 Imax @ ≥ 80°: 118 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES



COLOURS

Selected Colour

C9 Metallic Silver (RAL9006)

Standard Colours Available

C1 Smooth White (RAL9016)

C4 Smooth Graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 Textured Black (RAL9005)

C9 Metallic Silver (RAL9006)

Custom Colour Available

RAL **** Customer specified colour

*Choosing a custom colour may increase the cost and lead time.

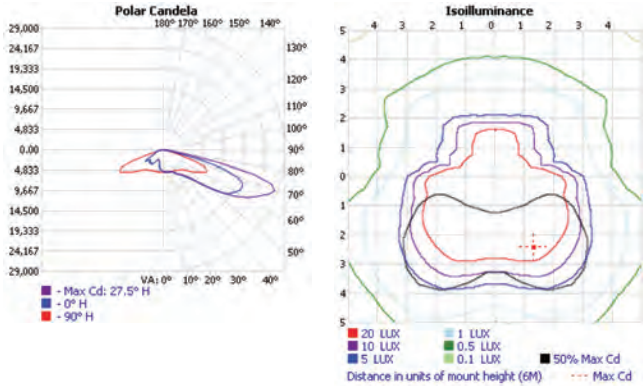
Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturer's data) and luminaire power of +/- 5%.

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA364.FW
Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 34057P17
Test Lab: ACUITY BRANDS LIGHTING - CONYERS LAB - SCALED PHOTOMETRY
Test Date: 3/21/2017
Catalog: DSX2.2.LA364.FW
Description: D-Series 2 Luminaire
Lamp Catalog: LA364
Lamp: LED C.36000LM-4000K
Lamp Output: Total luminaire Lumens: 40788.8, absolute photometry *
Input Wattage: 328
Luminous Opening: Rectangle (L: 0.46M, W: 0.33M)
Max Cd: 28,265.5 at Horizontal: 27.5°, Vertical: 70°
Roadway Class: SHORT, TYPE IV



No
Photo
Available



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.
This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

Type AW

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA364.FW

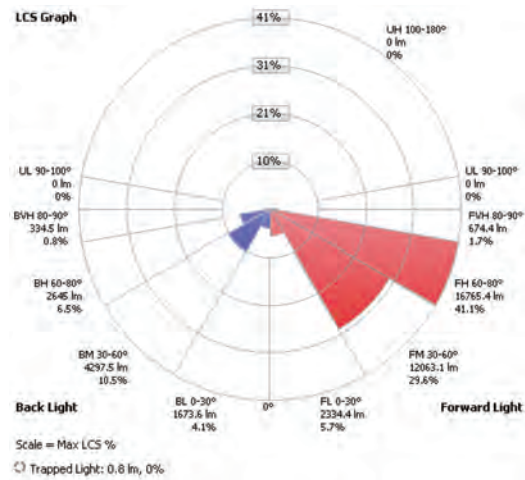


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	4,007.7	9.8%
0-40	7,209.7	17.7%
0-60	20,372.9	49.9%
60-90	20,415.9	50.1%
70-100	8,552.3	21%
90-120	0.000	0%
0-90	40,788.8	100%
90-180	0.000	0%
0-180	40,788.8	100%

Roadway Summary		
Distribution:	TYPE IV, SHORT	
Max Cd, 90 Deg Vert:	0.000	
Max Cd, 80 to <90 Deg:	4,828.8	
	Lumens	% Lamp
Downward Street Side:	31,837.4	78.1%
Downward House Side:	8,950.6	21.9%
Downward Total:	40,788.0	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	40,788.0	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	485.3	1.2%	90-100	0.000	0%
10-20	1,370.5	3.4%	100-110	0.000	0%
20-30	2,151.9	5.3%	110-120	0.000	0%
30-40	3,201.9	7.9%	120-130	0.000	0%
40-50	4,816.3	11.8%	130-140	0.000	0%
50-60	8,346.9	20.5%	140-150	0.000	0%
60-70	11,863.6	29.1%	150-160	0.000	0%
70-80	7,541.9	18.5%	160-170	0.000	0%
80-90	1,010.4	2.5%	170-180	0.000	0%

LCS Table			
BUG Rating		B4 - U0 - G5	
Forward Light	Lumens	Lumens	%
Low(0-30):	2,334.4		5.7%
Medium(30-60):	12,063.1		29.6%
High(60-80):	16,765.4		41.1%
Very High(80-90):	674.4		1.7%
Back Light			
Low(0-30):	1,673.6		4.1%
Medium(30-60):	4,297.5		10.5%
High(60-80):	2,645.0		6.5%
Very High(80-90):	334.5		0.8%
Uplight			
Low(90-100):	0.000		0%
High(100-180):	0.000		0%
Trapped Light:	0.8		0%



Type AW

Candela Table - Type C

[illegible]



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[DSX0 HOLOPHANE WEBSITE](#)

DSX0.1.LA154.AY.C9.TZ01.CA

Holophane D-Series 0 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 1
- LED light engine producing c.15,000 lm with a nominal 4000°K colour temperature
- Asymmetric light distribution
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

DSX1B.8.2A.LMZ.GV9

Holophane tubular base compartment column for use with DSX1 Luminaires. 8 metre, Twin head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised and painted metallic silver (RAL9006)
• Direct embedment

PERFORMANCE

Drive Current from Driver:	1,020mA
Power:	133W
Fitting Current:	0.6A
Power Factor:	0.98
Fitting Inrush:	11A - 0.135ms
Number of Drivers:	1
1x Driver 1 Inrush:	11.2A - 0.135ms
Max Drivers per 16A Type B MCB:	15
Max Fittings per 16A Type B MCB:	15
Total Number of LEDs:	20
Minimum Dim Level:	7 %
Optical Risk Group:	1



8Kg₂

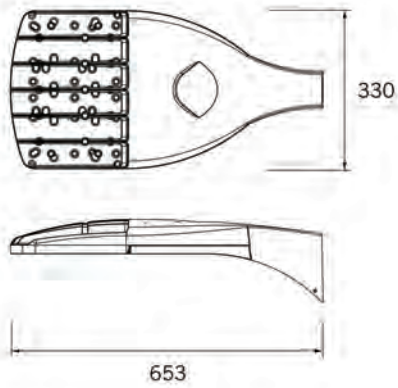


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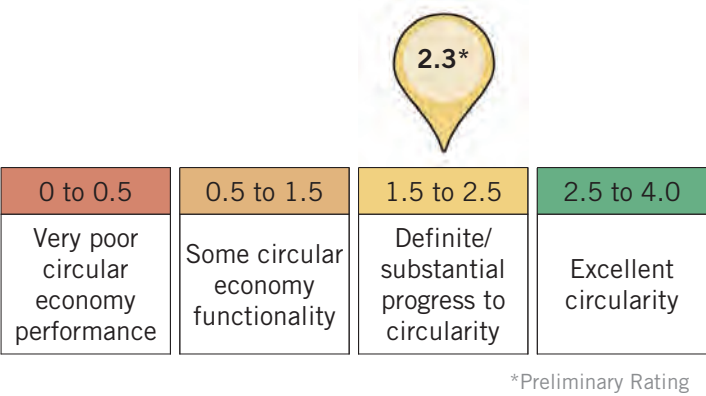


[Installation Guide](#)

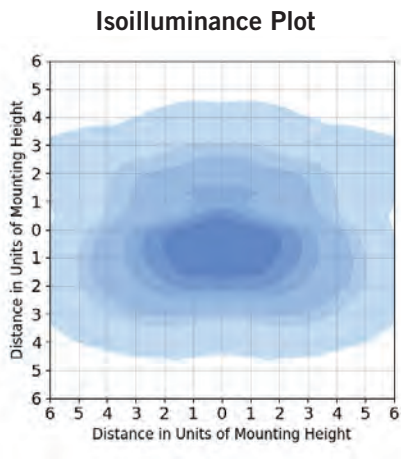
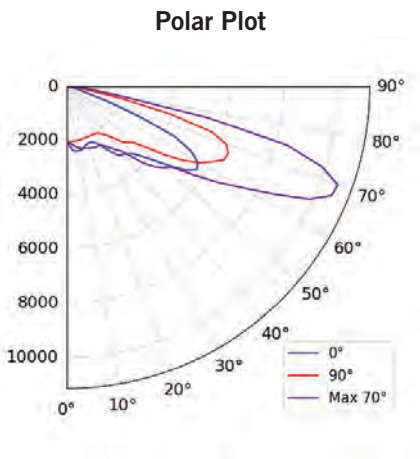
DIMENSIONS



CIBSE TM66 - CEAM RATING

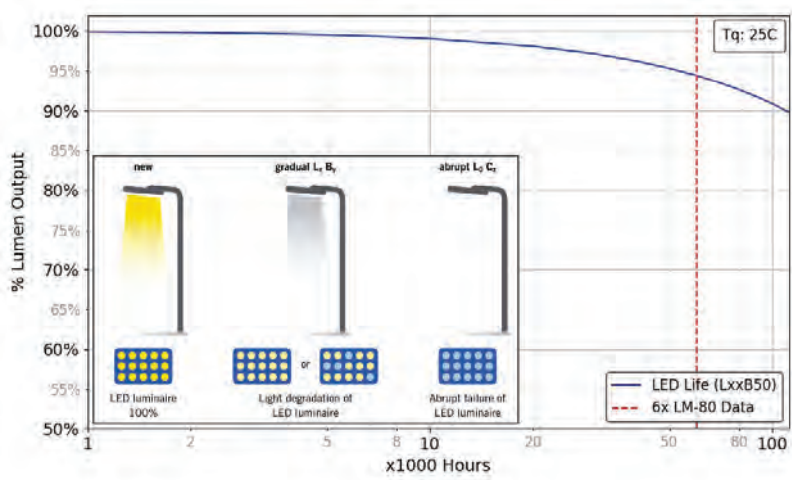


PHOTOMETRY

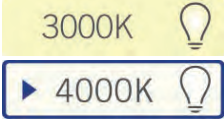


Lumens:	15,509
CCT:	4000K
CRI:	70
IES File:	DSX0.1.LA154.AY
G-Class:	G*2 Imax @ ≥ 70°: 687 Imax @ ≥ 80°: 127 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.



COLOURS

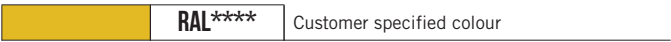
Selected Colour



Standard Colours Available

C1	Smooth White (RAL9016)
C4	Smooth Graphite (RAL7011)
C6	Smooth Grey (RAL7035)
C7	Textured Black (RAL9005)
C9	Metallic Silver (RAL9006)

Custom Colour Available



*Choosing a custom colour may increase the cost and lead time.

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

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.

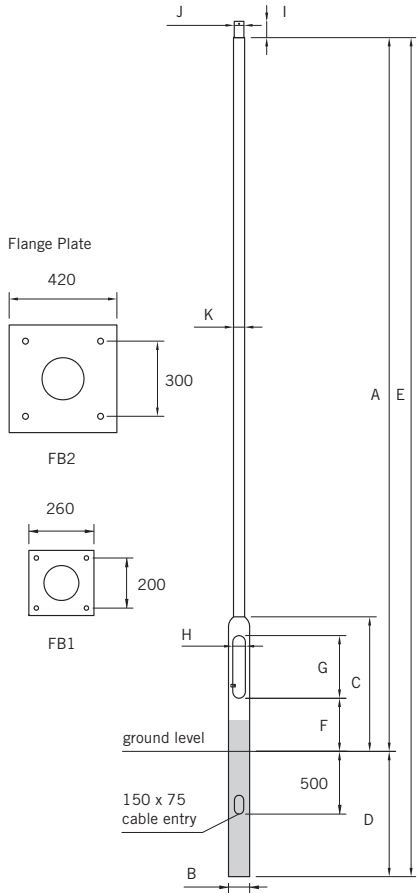


> DATASHEET
DSX1B.8.2A.LMZ.GV9



Holophane products that are suitable

CityMax
Denver Elite pole
D-Series
Factor
Factor small
V-Max



	Nominal Height	Base Diameter*	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length*	Spigot Diameter*	Shaft Diameter*	Weight kg*	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
2.5m standard duty	2500	140	1075	800	3300	400	500	100	-	-	76	27	2100
3m standard duty	3000	140	1075	800	3800	400	500	100	-	-	76	30	4666
3.5m standard duty	3500	140	1075	800	4300	400	500	100	-	-	76	32	2100
4m standard duty	4000	140	1075	800	4800	400	500	100	-	-	76	34	6484
4.5m standard duty	4500	140	1075	800	5300	400	500	100	-	-	76	37	5108
5m standard duty	5000	140	1075	800	5800	400	500	100	-	-	76	39	6149
5.5m standard duty	5500	140	1075	1000	6500	400	500	100	-	-	76	44	6003
6m standard duty	6000	140	1075	1000	7000	400	500	100	-	-	76	46	5999
6m heavy duty	5700	168	1200	1000	6700	400	600	115	130	76	89	71	10404
8m standard duty	7700	168	1200	1200	8900	400	600	115	130	76	89	89	10072
8m heavy duty	7700	168	1300	1200	9000	500	600	115	250	101	114	107	15699
8m extra heavy duty	7700	194	1300	1200	9000	500	600	115	250	127	140	136	18973
10m standard duty	9700	168	1300	1500	11200	500	600	115	250	101	114	150	18067
10m heavy duty	9700	194	1300	1500	11200	500	600	115	250	127	140	168	23193
10m extra heavy duty	9700	194	1300	1500	11200	500	600	115	250	152	168	220	28317
12m standard duty	11700	194	1300	1700	13400	500	600	115	250	127	140	213	26251
12m heavy duty	11700	194	1300	1700	13400	500	600	115	250	127	168	260	40390

* Exclusion TBC

2.5-6m std Poles
8-12m std Poles
Flange Plate FB1
Flange Plate FB2
Bolts M18 x 400
Bolts M24 x 820



F +44 (0)1908 367 618

Flange Plate and Anchor Bolt information will be confirmed at time of order due to the necessity in ensuring the correct plate and Anchor Bolts are supplied.
Column type to be confirmed at time of order as this is based on luminaire weight, windage and geographical location.
F Intl +44 (0)1908 363 789
E info@holophane.co.uk

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

stepped steel - CityMax Large only
post top

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
6m	6000	140	1075	1000	7000	400	500	115	-	-	-	46	5999
8m	7700	168	1300	1200	9000	500	600	115	100	76	114	107	15699
10m	9700	168	1300	1500	11200	500	600	115	100	76	114	150	18067
12m	11700	194	1300	1700	13400	500	600	115	100	76	140	168	26251
15m	14700	194	1200	2000	17000	400	600	115	100	76	168	306	40300

twin head

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
8m	7400	194	1200	1200	8800	400	600	115	200	127	139.7	125	22610
10m	9400	194	1200	1500	11100	400	600	115	200	152.4	168.3	208	39131
12m	11400	194	2500	1700	13300	1000	600	115	200	152.4	168.3	295	41585

Note: For Terrain Category 2 locations LMZ, HVZ & HEZ

<https://www.holophane.co.uk/>



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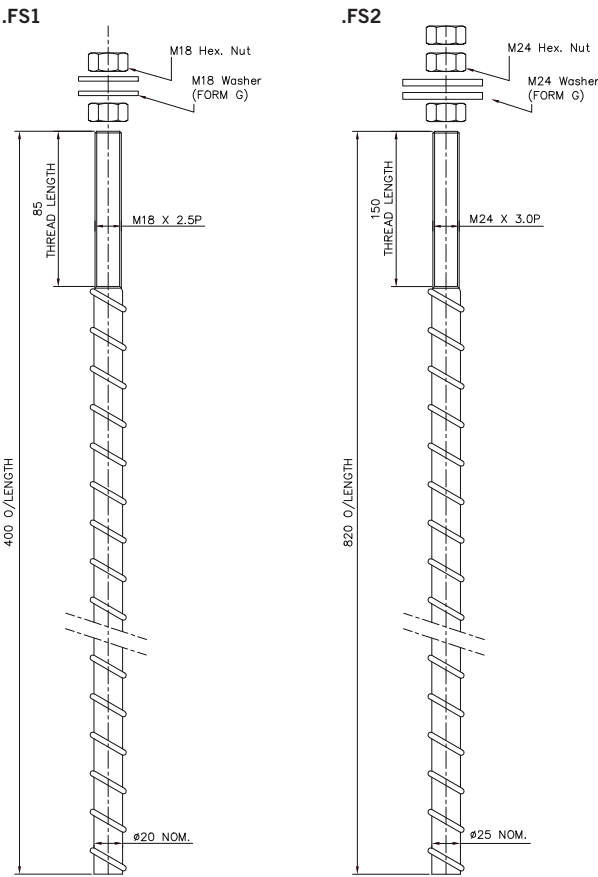
E info@holophane.co.uk

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

For columns supplied with optional flange base Holophane offers two types of foundation bolts.

Note: The material used for the bolts is Fe E500 grade steel, with yield strength 500 N/mm2 and minimum UTS 550 N/mm2.

- HEL.FS1 M18 Bolts (FS1) x 400 mm long
HEL.FS2 M24 Bolts (FS2) x 820 mm long



OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX0.1.LA154.AY

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 33813-SUM21001
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 08/01/2021
Catalog: DSX0.1.LA154.AY
Description: D-Series 0 Area luminaire
Lamp Catalog: LA154
Lamp: LED C.15000 Lumens
Lamp Output: Total luminaire Lumens: 15477.3, absolute photometry *
Input Wattage: 133
Luminous Opening: Rectangle (L: 0.33M, W: 0.33M)
Max Cd: 10,635.7 at Horizontal: 70°, Vertical: 70°
Roadway Class: MEDIUM, TYPE III



No
Photo
Available

Types B2 & BW

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX0.1.LA154.AY

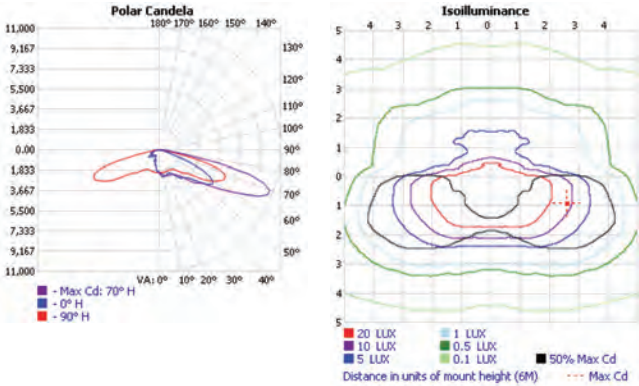


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,599.6	10.3%
0-40	2,831.9	18.3%
0-60	7,994.0	51.7%
60-90	7,483.3	48.3%
70-100	3,037.4	19.6%
90-120	0.000	0%
0-90	15,477.3	100%
90-180	0.000	0%
0-180	15,477.3	100%

Lumens Per Zone			
Zone	Lumens	% Total	Zone Lumens % Total
0-10	200.7	1.3%	90-100 0.000 0%
10-20	561.0	3.6%	100-110 0.000 0%
20-30	838.0	5.4%	110-120 0.000 0%
30-40	1,232.2	8.0%	120-130 0.000 0%
40-50	1,956.4	12.6%	130-140 0.000 0%
50-60	3,205.7	20.7%	140-150 0.000 0%
60-70	4,445.9	28.7%	150-160 0.000 0%
70-80	2,615.6	16.9%	160-170 0.000 0%
80-90	421.8	2.7%	170-180 0.000 0%

Roadway Summary		
Distribution:	TYPE III, MEDIUM	
Max Cd, 90 Deg Vert:	0.000	
Max Cd, 80 to <90 Deg:	1,968.5	
	Lumens	% Lamp
Downward Street Side:	12,049.3	77.9%
Downward House Side:	3,428.0	22.1%
Downward Total:	15,477.3	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	15,477.3	100%

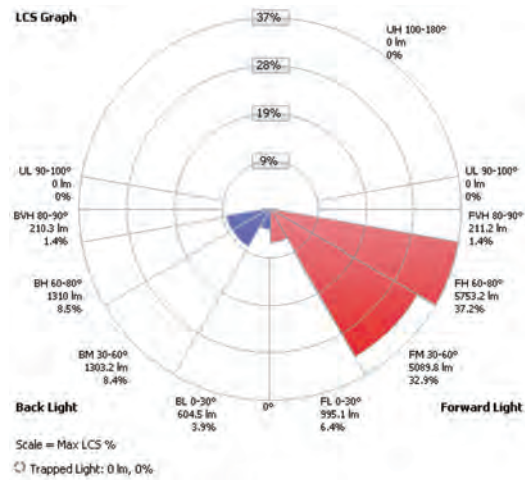
LCS Table		
BUG Rating	B3 - U0 - G3	
Forward Light	Lumens	Lumens %
Low(0-30):	995.1	6.4%
Medium(30-60):	5,089.8	32.9%
High(60-80):	5,753.2	37.2%
Very High(80-90):	211.2	1.4%
Back Light	Lumens	Lumens %
Low(0-30):	604.5	3.9%
Medium(30-60):	1,303.2	8.4%
High(60-80):	1,310.0	8.5%
Very High(80-90):	210.3	1.4%
Uplight	Lumens	Lumens %
Low(90-100):	0.000	0%
High(100-180):	0.000	0%
Trapped Light:	0.0	0%



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

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Types B2 & BW

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Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[www.DSX2 HOLOPHANE WEBSITE](#)

DSX2.2.LA304.FW.C9.TZ01.CA

Holophane D-Series 2 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 2
- LED light engine producing c.30,000 lumen with a nominal 4000K colour temperature
- Forward throw light distribution
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

DSX2B.8.1A.LMZ.GV9

Holophane tubular base compartment column for use with DSX2 Luminaires. 8 metre, Single head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised and painted metallic silver (RAL9006)
• Direct embedment

PERFORMANCE

Drive Current from Driver:	1,050mA
Power:	282W
Fitting Current:	1.26A
Power Factor:	0.97
Fitting Inrush:	22A - 0.135ms
Number of Drivers:	2
2x Driver 1 Inrush:	11.2A - 0.135ms
Max Drivers per 16A Type B MCB:	15
Max Fittings per 16A Type B MCB:	7
Total Number of LEDs:	20
Minimum Dim Level:	7 %
Optical Risk Group:	1



15Kg₂



0.1M



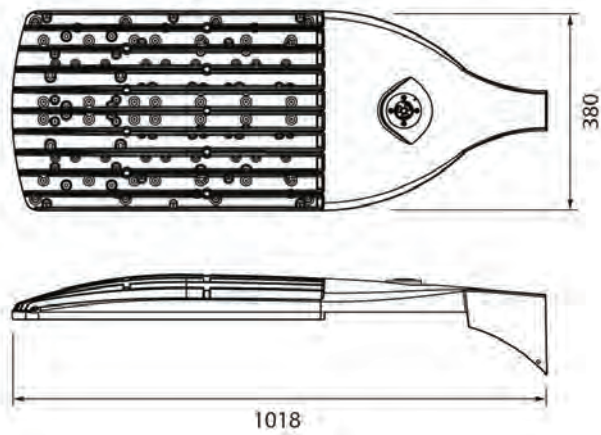
42 0282 0000 100*



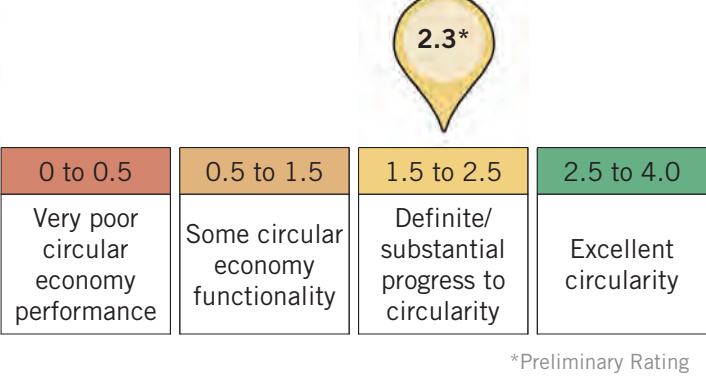
[Installation Guide](#)

*Generic UMSUG code based on product wattage and some or all of product family being included within Elexon data base.

DIMENSIONS



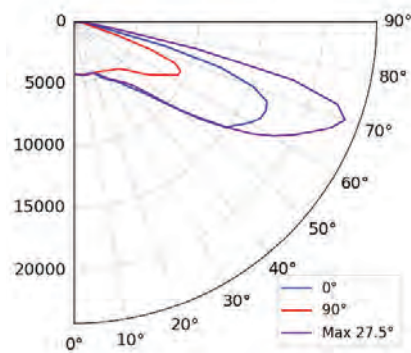
CIBSE TM66 - CEAM RATING



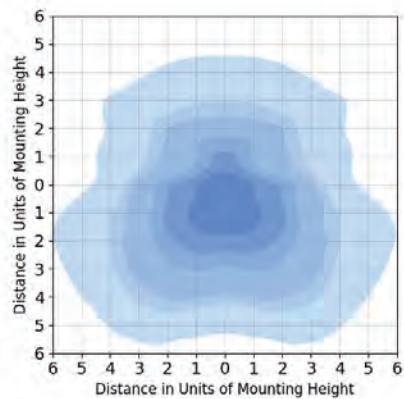
PHOTOMETRY



Polar Plot

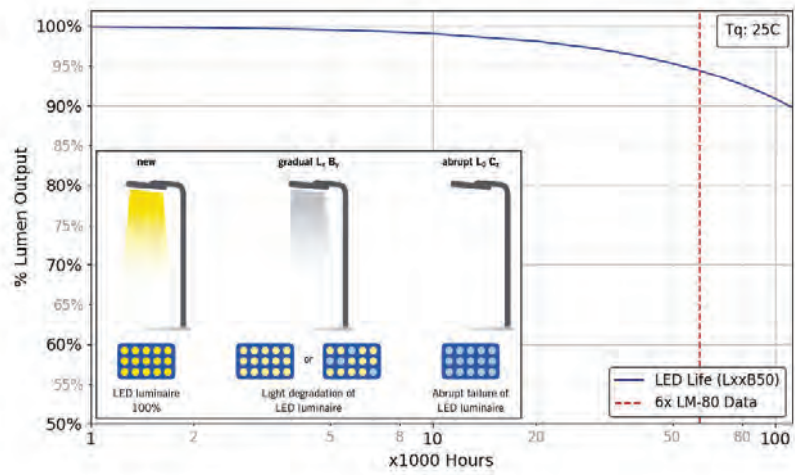


Isoilluminance Plot



Lumens:	33,390
CCT:	4000K
CRI:	70
IES File:	DSX2.2.LA304.FW
G-Class:	G*2 Imax @ ≥ 70°: 693 Imax @ ≥ 80°: 118 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES



COLOURS

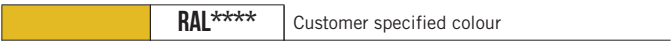
Selected Colour



Standard Colours Available

C1	Smooth White (RAL9016)
C4	Smooth Graphite (RAL7011)
C6	Smooth Grey (RAL7035)
C7	Textured Black (RAL9005)
C9	Metallic Silver (RAL9006)

Custom Colour Available



*Choosing a custom colour may increase the cost and lead time.

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

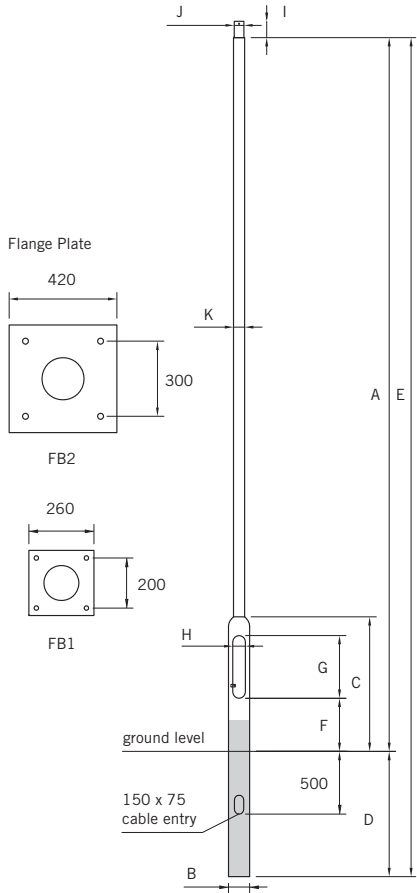
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> DATASHEET
DSX2B.8.1A.LMZ.GV9



Holophane products that are suitable

CityMax
Denver Elite pole
D-Series
Factor
Factor small
V-Max



	Nominal Height	Base Diameter*	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length*	Spigot Diameter*	Shaft Diameter*	Weight kg*	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
2.5m standard duty	2500	140	1075	800	3300	400	500	100	-	-	76	27	2100
3m standard duty	3000	140	1075	800	3800	400	500	100	-	-	76	30	4666
3.5m standard duty	3500	140	1075	800	4300	400	500	100	-	-	76	32	2100
4m standard duty	4000	140	1075	800	4800	400	500	100	-	-	76	34	6484
4.5m standard duty	4500	140	1075	800	5300	400	500	100	-	-	76	37	5108
5m standard duty	5000	140	1075	800	5800	400	500	100	-	-	76	39	6149
5.5m standard duty	5500	140	1075	1000	6500	400	500	100	-	-	76	44	6003
6m standard duty	6000	140	1075	1000	7000	400	500	100	-	-	76	46	5999
6m heavy duty	5700	168	1200	1000	6700	400	600	115	130	76	89	71	10404
8m standard duty	7700	168	1200	1200	8900	400	600	115	130	76	89	89	10072
8m heavy duty	7700	168	1300	1200	9000	500	600	115	250	101	114	107	15699
8m extra heavy duty	7700	194	1300	1200	9000	500	600	115	250	127	140	136	18973
10m standard duty	9700	168	1300	1500	11200	500	600	115	250	101	114	150	18067
10m heavy duty	9700	194	1300	1500	11200	500	600	115	250	127	140	168	23193
10m extra heavy duty	9700	194	1300	1500	11200	500	600	115	250	152	168	220	28317
12m standard duty	11700	194	1300	1700	13400	500	600	115	250	127	140	213	26251
12m heavy duty	11700	194	1300	1700	13400	500	600	115	250	127	168	260	40390

* Exclusion TBC

2.5-6m std Poles
8-12m std Poles
Flange Plate FB1
Flange Plate FB2
Bolts M18 x 400
Bolts M24 x 820
T +44 (0)1908 649 292
F +44 (0)1908 367 618



Flange Plate and Anchor Bolt information will be confirmed at time of order due to the necessity in ensuring the correct plate and Anchor Bolts are supplied.
Column type to be confirmed at time of order as this is based on luminaire weight, windage and geographical location.
Info@holophane.co.uk

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Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

stepped steel - CityMax Large only
post top

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
6m	6000	140	1075	1000	7000	400	500	115	-	-	-	46	5999
8m	7700	168	1300	1200	9000	500	600	115	100	76	114	107	15699
10m	9700	168	1300	1500	11200	500	600	115	100	76	114	150	18067
12m	11700	194	1300	1700	13400	500	600	115	100	76	140	168	26251
15m	14700	194	1200	2000	17000	400	600	115	100	76	168	306	40300

twin head

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
8m	7400	194	1200	1200	8800	400	600	115	200	127	139.7	125	22610
10m	9400	194	1200	1500	11100	400	600	115	200	152.4	168.3	208	39131
12m	11400	194	2500	1700	13300	1000	600	115	200	152.4	168.3	295	41585

Note: For Terrain Category 2 locations LMZ, HVZ & HEZ

<https://www.holophane.co.uk/>



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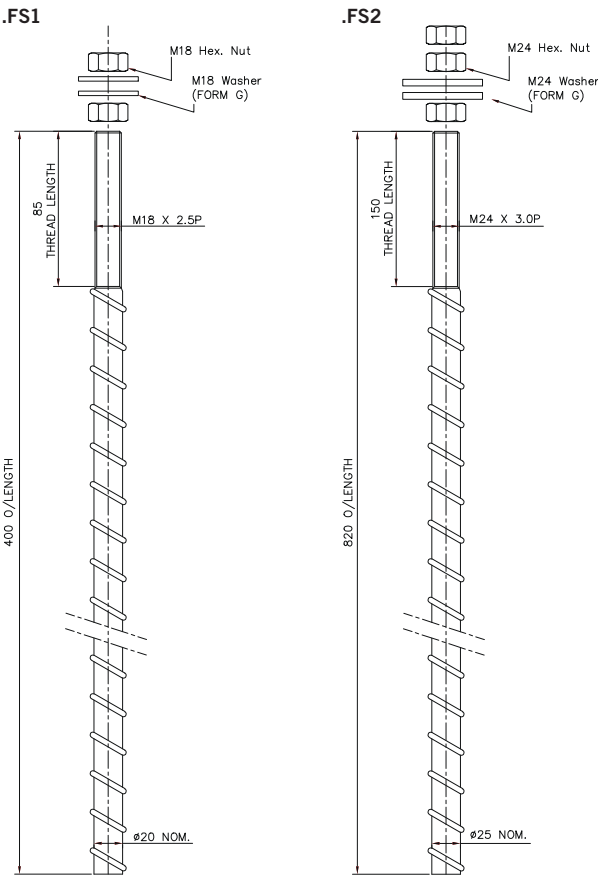
E info@holophane.co.uk

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

For columns supplied with optional flange base Holophane offers two types of foundation bolts.

Note: The material used for the bolts is Fe E500 grade steel, with yield strength 500 N/mm2 and minimum UTS 550 N/mm2.

- HEL.FS1 M18 Bolts (FS1) x 400 mm long
HEL.FS2 M24 Bolts (FS2) x 820 mm long

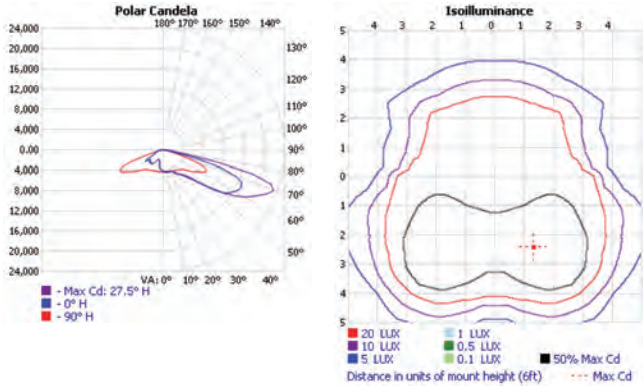


OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.FW

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 34057P11
Test Lab: ACUITY BRANDS LIGHTING - CONYERS LAB - SCALED PHOTOMETRY
Test Date: 3/21/2017
Catalog: DSX2.2.LA304.FW
Description: D-Series 2 Luminaire
Lamp Catalog: LA304
Lamp: LED C.30000LM-4000K
Lamp Output: Total luminaire Lumens: 33389.6, absolute photometry *
Input Wattage: 282
Luminous Opening: Rectangle (L: 0.46M, W: 0.33M)
Max Cd: 23,138.0 at Horizontal: 27.5°, Vertical: 70°
Roadway Class: SHORT, TYPE IV



No
Photo
Available



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

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Type C1

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.FW

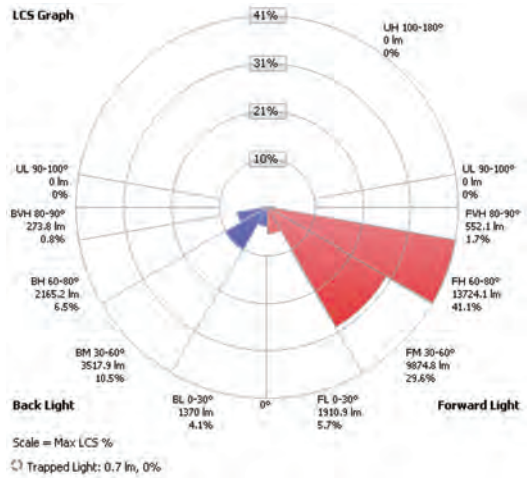


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,280.7	9.8%
0-40	5,901.8	17.7%
0-60	16,677.2	49.9%
60-90	16,712.4	50.1%
70-100	7,000.9	21%
90-120	0.000	0%
0-90	33,389.6	100%
90-180	0.000	0%
0-180	33,389.6	100%

Roadway Summary		
Distribution: TYPE IV, SHORT		
Max Cd, 90 Deg Vert:	0.000	
Max Cd, 80 to <90 Deg:	3,952.8	
	Lumens	% Lamp
Downward Street Side:	26,061.9	78.1%
Downward House Side:	7,326.9	21.9%
Downward Total:	33,388.8	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	33,388.8	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	397.3	1.2%	90-100	0.000	0%
10-20	1,121.9	3.4%	100-110	0.000	0%
20-30	1,761.6	5.3%	110-120	0.000	0%
30-40	2,621.1	7.9%	120-130	0.000	0%
40-50	3,942.6	11.8%	130-140	0.000	0%
50-60	6,832.8	20.5%	140-150	0.000	0%
60-70	9,711.5	29.1%	150-160	0.000	0%
70-80	6,173.8	18.5%	160-170	0.000	0%
80-90	827.1	2.5%	170-180	0.000	0%

LCS Table		
BUG Rating	B3 - U0 - G5	
Forward Light	Lumens	Lumens %
Low(0-30):	1,910.9	5.7%
Medium(30-60):	9,874.8	29.6%
High(60-80):	13,724.1	41.1%
Very High(80-90):	552.1	1.7%
Back Light		
Low(0-30):	1,370.0	4.1%
Medium(30-60):	3,517.9	10.5%
High(60-80):	2,165.2	6.5%
Very High(80-90):	273.8	0.8%
Uplight		
Low(90-100):	0.000	0%
High(100-180):	0.000	0%
Trapped Light:	0.7	0%



Type C1

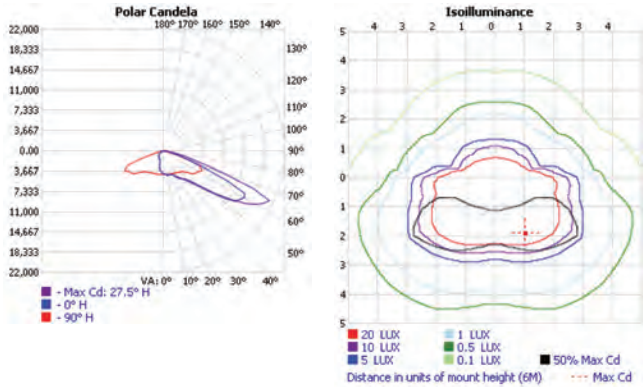
Candela Table - Type C																			
	0	15	25	35	45	55	65	75	85	90	105	115	125	135	145	155	165	175	180
0	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249	4249
5	4269	4293	4281	4266	4249	4245	4256	4274	4280	4284	4276	4175	4065	4022	3989	3956	3939	3929	3919
10	4399	4422	4405	4364	4318	4276	4242	4262	4315	4331	4148	4017	3904	3832	3807	3807	3807	3798	3774
15	4322	4367	4394	4364	4374	4335	4283	4273	4338	4397	4134	3947	3824	3720	3465	3205	3041	2953	2930
20	4415	4407	4405	4461	4473	4487	4391	4338	4376	4436	4088	3891	3509	2978	2596	2380	2294	2271	2257
25	4909	4852	4751	4630	4638	4683	4627	4456	4437	4478	4072	3633	2846	2399	2172	2139	2174	2197	2187
30	5366	5356	5276	5161	4912	4862	4870	4596	4540	4599	4088	3114	2474	2214	2210	2121	2104	2152	2149
35	5874	5855	5799	5706	5467	5107	4936	4773	4731	4827	3925	2677	2385	2200	2130	2492	2888	3158	3159
40	6872	6605	6488	6285	6049	5595	5259	5033	4916	5036	3425	2441	2280	2021	2221	2658	3214	3574	3575
45	8290	8229	8012	7634	7273	6769	6099	5626	5380	5431	2978	2276	2158	1919	2169	2725	3301	3652	3662
50	11023	11275	11221	10212	9077	8187	7330	6412	6332	6306	2534	2200	2000	1972	2492	3342	3627	3489	3430
55	14852	15492	15107	13843	12575	11046	9404	7703	7779	7488	2189	2193	1975	2257	2953	3402	3527	3545	3496
60	16294	17731	18747	17306	16268	15008	12297	9581	9740	8608	1972	2358	2087	2634	3697	4338	4319	3916	3669
65	16985	19411	21104	20104	19626	19477	15600	11139	11431	9428	1728	2099	2138	2916	3913	2837	2047	1888	1847
70	15269	19351	22934	22315	21708	20142	14435	8968	8265	6525	1569	1618	1860	2776	2135	1783	1784	1707	1672
75	7626	11976	17153	18344	16185	12696	6327	4030	1906	1495	1157	1159	1686	1694	1371	1367	1319	1261	1228
80	1191	1798	3139	3953	3229	3193	3014	2693	1280	847	858	924	1392	1039	1014	951	846	759	744
85	333	508	688	857	1141	1149	1177	1273	829	402	472	736	714	587	567	514	392	253	291
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.FW.BLS
Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 34067P11
Test Lab: ACUITY BRANDS LIGHTING - CONYERS LAB - SCALED PHOTOMETRY
Test Date: 21 Mar 2017
Catalog: DSX2.2.LA304.FW.BLS
Description: D-Series 2 Luminaire with Back Light Shield
Lamp Catalog: LA304
Lamp: LED C.30000LM-4000K
Lamp Output: Total luminaire Lumens: 26069.8, absolute photometry *
Input Wattage: 282
Luminous Opening: Rectangle (L: 0.46M, W: 0.33M)
Max Cd: 21,154.6 at Horizontal: 27.5°, Vertical: 65°
Roadway Class: VERY SHORT, TYPE III



No
Photo
Available

Type C1BLS



*Test based on absolute photometry where lamp lumens=lumens total.

*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.

This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.FW.BLS

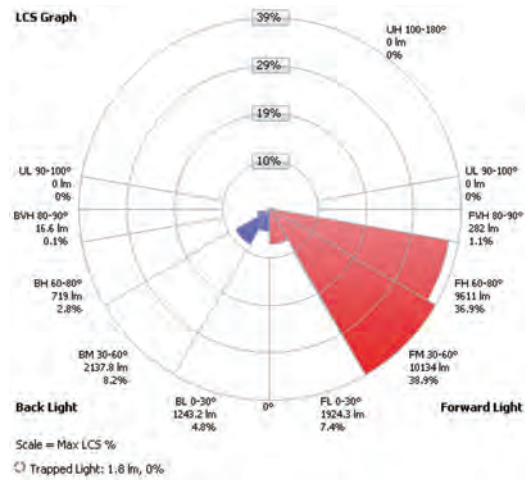


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,167.3	12.1%
0-40	5,600.7	21.5%
0-60	15,442.5	59.2%
60-90	10,627.2	40.8%
70-100	3,046.2	11.7%
90-120	0.000	0%
0-90	26,069.8	100%
90-180	0.000	0%
0-180	26,069.8	100%

Roadway Summary		
Distribution: TYPE III, VERY SHORT		
Max Cd, 90 Deg Vert:		0.000
Max Cd, 80 to <90 Deg:		2,036.8
		Lumens
Downward Street Side:	21,951.4	84.2%
Downward House Side:	4,116.6	15.8%
Downward Total:	26,068.0	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	26,068.0	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	386.7	1.5%	90-100	0.000	0%
10-20	1,084.5	4.2%	100-110	0.000	0%
20-30	1,696.1	6.5%	110-120	0.000	0%
30-40	2,433.5	9.3%	120-130	0.000	0%
40-50	3,655.0	14.0%	130-140	0.000	0%
50-60	6,186.8	23.7%	140-150	0.000	0%
60-70	7,581.1	29.1%	150-160	0.000	0%
70-80	2,746.6	10.5%	160-170	0.000	0%
80-90	299.6	1.1%	170-180	0.000	0%

LCS Table		
BUG Rating	B3 - U0 - G4	
Forward Light	Lumens	Lumens %
Low(0-30):	1,924.3	7.4%
Medium(30-60):	10,134.0	38.9%
High(60-80):	9,611.0	36.9%
Very High(80-90):	282.0	1.1%
Back Light		
Low(0-30):	1,243.2	4.8%
Medium(30-60):	2,137.8	8.2%
High(60-80):	719.0	2.8%
Very High(80-90):	16.6	0.1%
Uplight		
Low(90-100):	0.000	0%
High(100-180):	0.000	0%
Trapped Light:	1.8	0%



Candela Table - Type C

[illegible]

> DATASHEET - AMENITY - DSX0

DSX0.1.LA104.BLC.C9.TZ01.CA



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

 [DSX0 HOLOPHANE WEBSITE](#)

DSX0.1.LA104.BLC.C9.TZ01.CA

Holophane D-Series 0 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 1
- LED light engine producing c.10,000 lm with a nominal 4000°K colour temperature
- Long & narrow distribution with extreme backlight cut-off
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

DSX1B.8.1A.LMZ.GV9

Holophane tubular base compartment column for use with DSX1 Luminaires. 8 metre, Single head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised and painted metallic silver (RAL9006)
• Direct embedment



Product Website

PERFORMANCE

Drive Current from Driver:	575mA
Power:	81W
Fitting Current:	0.36A
Power Factor:	0.97
Fitting Inrush:	9A - 0.13ms
Number of Drivers:	1
1x Driver 1 Inrush:	9.6A - 0.13ms
Max Drivers per 16A Type B MCB:	31
Max Fittings per 16A Type B MCB:	31
Total Number of LEDs:	20
Minimum Dim Level:	9 %
Optical Risk Group:	1



8Kg₂

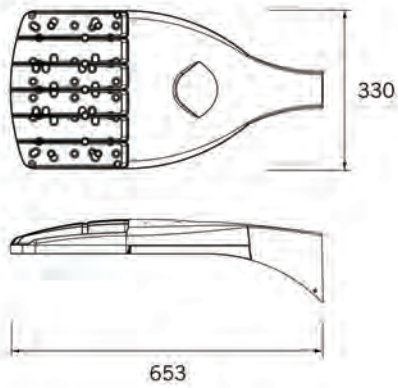


0.09M

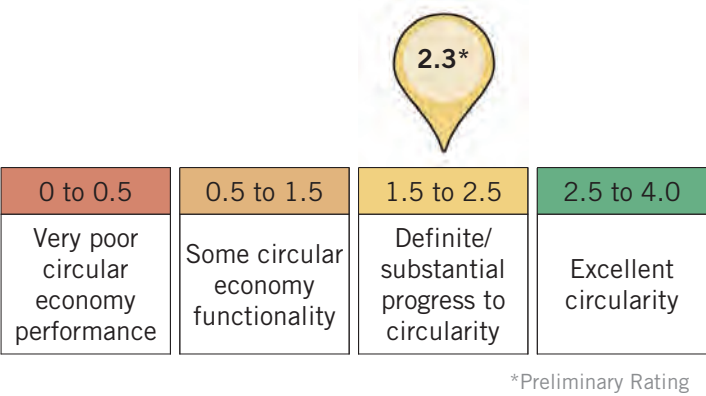


[Installation Guide](#)

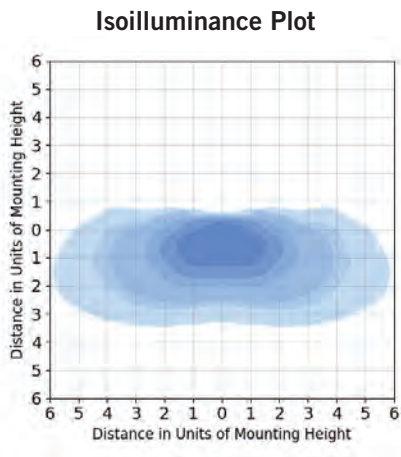
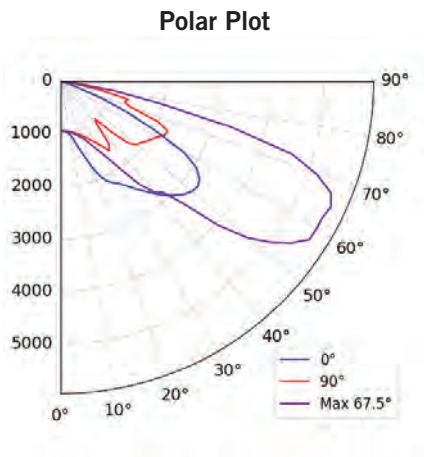
DIMENSIONS



CIBSE TM66 - CEAM RATING

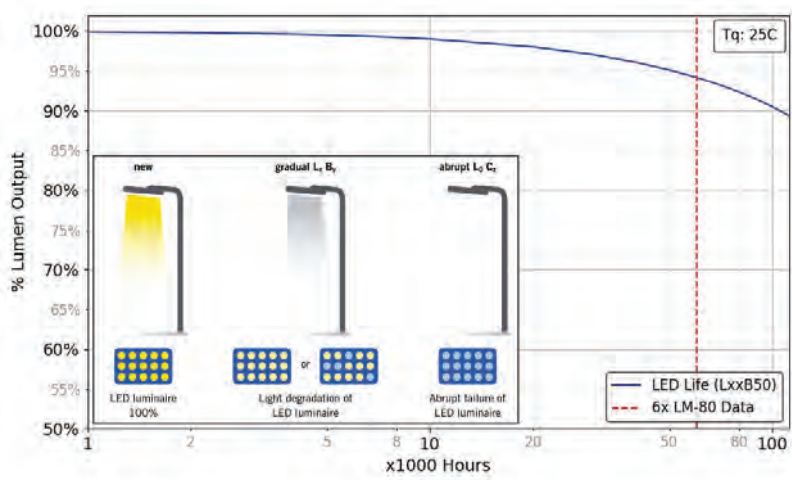


PHOTOMETRY



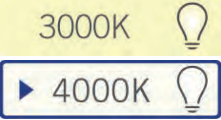
Lumens:	7,954
CCT:	4000K
CRI:	70
IES File:	DSX0.1.LA104.BLC
G-Class:	G*2 Imax @ ≥ 70°: 654 Imax @ ≥ 80°: 128 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES

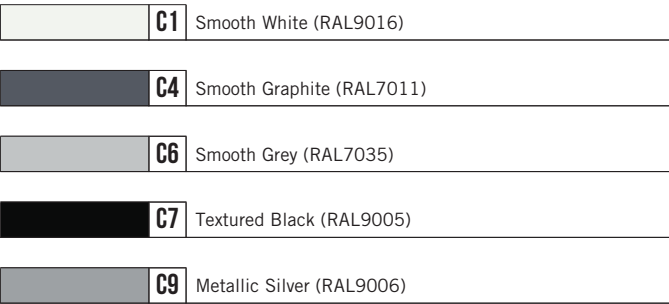


COLOURS

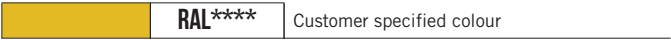
Selected Colour



Standard Colours Available



Custom Colour Available



*Choosing a custom colour may increase the cost and lead time.

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

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.

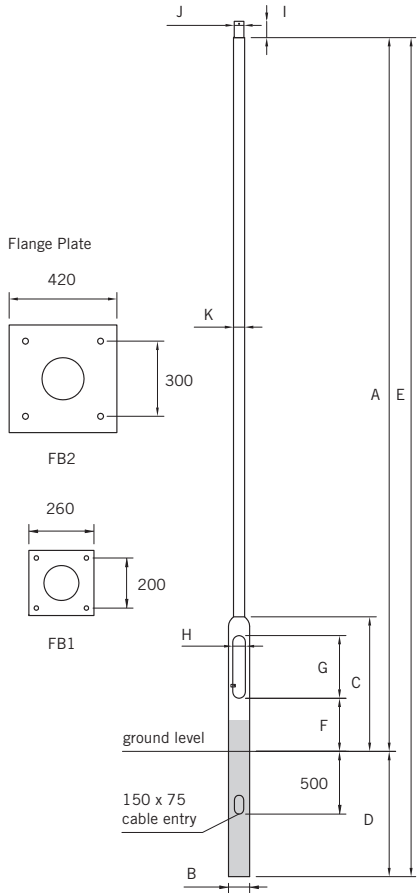


> DATASHEET
DSX1B.8.1A.LMZ.GV9



Holophane products that are suitable

CityMax
Denver Elite pole
D-Series
Factor
Factor small
V-Max



	Nominal Height	Base Diameter*	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length*	Spigot Diameter*	Shaft Diameter*	Weight kg*	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
2.5m standard duty	2500	140	1075	800	3300	400	500	100	-	-	76	27	2100
3m standard duty	3000	140	1075	800	3800	400	500	100	-	-	76	30	4666
3.5m standard duty	3500	140	1075	800	4300	400	500	100	-	-	76	32	2100
4m standard duty	4000	140	1075	800	4800	400	500	100	-	-	76	34	6484
4.5m standard duty	4500	140	1075	800	5300	400	500	100	-	-	76	37	5108
5m standard duty	5000	140	1075	800	5800	400	500	100	-	-	76	39	6149
5.5m standard duty	5500	140	1075	1000	6500	400	500	100	-	-	76	44	6003
6m standard duty	6000	140	1075	1000	7000	400	500	100	-	-	76	46	5999
6m heavy duty	5700	168	1200	1000	6700	400	600	115	130	76	89	71	10404
8m standard duty	7700	168	1200	1200	8900	400	600	115	130	76	89	89	10072
8m heavy duty	7700	168	1300	1200	9000	500	600	115	250	101	114	107	15699
8m extra heavy duty	7700	194	1300	1200	9000	500	600	115	250	127	140	136	18973
10m standard duty	9700	168	1300	1500	11200	500	600	115	250	101	114	150	18067
10m heavy duty	9700	194	1300	1500	11200	500	600	115	250	127	140	168	23193
10m extra heavy duty	9700	194	1300	1500	11200	500	600	115	250	152	168	220	28317
12m standard duty	11700	194	1300	1700	13400	500	600	115	250	127	140	213	26251
12m heavy duty	11700	194	1300	1700	13400	500	600	115	250	127	168	260	40390

* Exclusion TBC

2.5-6m std Poles
8-12m std Poles
<https://www.holophane.co.uk/>



Flange Plate FB1
Flange Plate FB2

Bolts M18 x 400
Bolts M24 x 820

F +44 (0)1908 367 618

Flange Plate and Anchor Bolt information will be confirmed at time of order due to the necessity in ensuring the correct plate and Anchor Bolts are supplied.
Column type to be confirmed at time of order as this is based on luminaire weight, windage and geographical location.
Info@holophane.co.uk

F Intl +44 (0)1908 363 789

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

stepped steel - CityMax Large only
post top

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
6m	6000	140	1075	1000	7000	400	500	115	-	-	-	46	5999
8m	7700	168	1300	1200	9000	500	600	115	100	76	114	107	15699
10m	9700	168	1300	1500	11200	500	600	115	100	76	114	150	18067
12m	11700	194	1300	1700	13400	500	600	115	100	76	140	168	26251
15m	14700	194	1200	2000	17000	400	600	115	100	76	168	306	40300

twin head

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
8m	7400	194	1200	1200	8800	400	600	115	200	127	139.7	125	22610
10m	9400	194	1200	1500	11100	400	600	115	200	152.4	168.3	208	39131
12m	11400	194	2500	1700	13300	1000	600	115	200	152.4	168.3	295	41585

Note: For Terrain Category 2 locations LMZ, HVZ & HEZ

<https://www.holophane.co.uk/>



T +44 (0)1908 649 292

F +44 (0)1908 367 618

F Intl +44 (0)1908 363 789

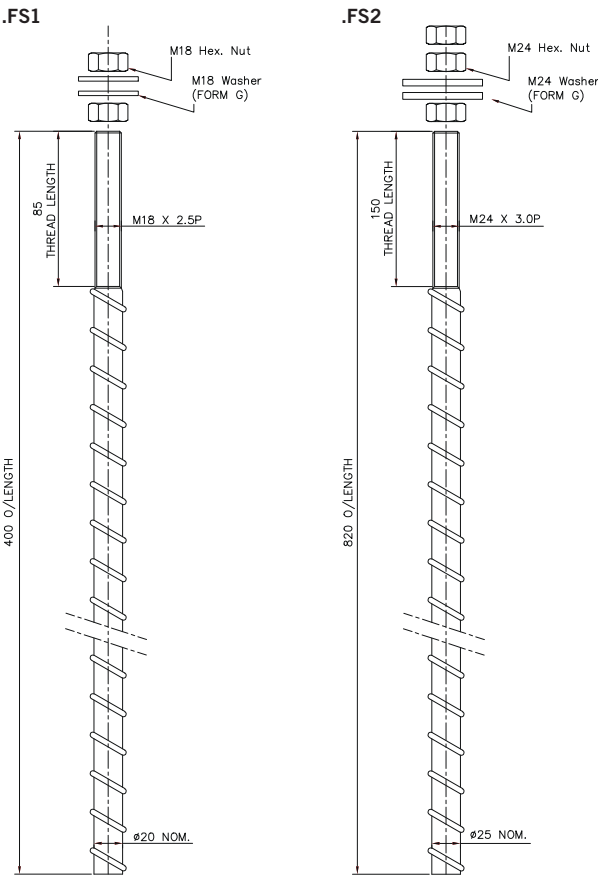
E info@holophane.co.uk

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

For columns supplied with optional flange base Holophane offers two types of foundation bolts.

Note: The material used for the bolts is Fe E500 grade steel, with yield strength 500 N/mm2 and minimum UTS 550 N/mm2.

- HEL.FS1 M18 Bolts (FS1) x 400 mm long
HEL.FS2 M24 Bolts (FS2) x 820 mm long



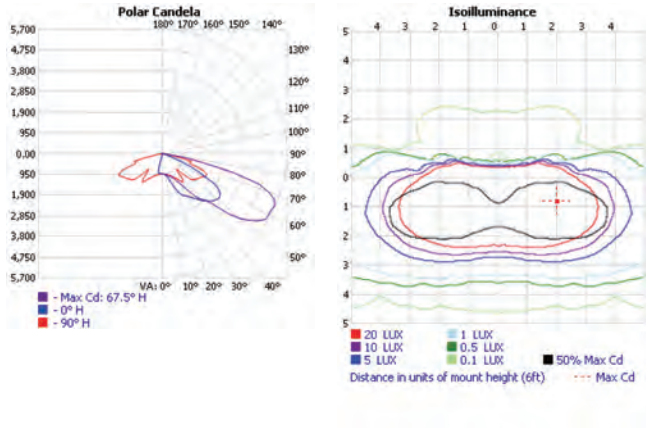
OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX0.1.LA104.BLC

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 33923-SUM210015
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 03/11/2021
Catalog: DSX0.1.LA104.BLC
Description: D-Series 0 Area luminaire
Lamp Catalog: LA104
Lamp: LED C.10000 Lumens
Lamp Output: Total luminaire Lumens: 7935.9, *absolute photometry **
Input Wattage: 81
Luminous Opening: Rectangle (L: 0.15M, W: 0.19M)
Max Cd: 5,664.7 at Horizontal: 67.5°, Vertical: 65°
Roadway Class: SHORT, TYPE III



No
Photo
Available

Type D1BLC



*Test based on absolute photometry where lamp lumens=lumens total.

*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.

This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX0.1.LA104.BLC



Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	899.1	11.3%
0-40	1,782.9	22.5%
0-60	5,183.5	65.3%
60-90	2,752.4	34.7%
70-100	845.6	10.7%
90-120	0.000	0%
0-90	7,935.9	100%
90-180	0.000	0%
0-180	7,935.9	100%

Roadway Summary

Distribution:	TYPE III, SHORT
Max Cd, 90 Deg Vert:	0.000
Max Cd, 80 to <90 Deg:	1,019.3
	Lumens % Lamp
Downward Street Side:	7,121.5 89.7%
Downward House Side:	814.0 10.3%
Downward Total:	7,935.6 100%
Upward Street Side:	0.000 0%
Upward House Side:	0.000 0%
Upward Total:	0.000 0%
Total Lumens:	7,935.6 100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	91.2	1.1%	90-100	0.000	0%
10-20	287.8	3.6%	100-110	0.000	0%
20-30	520.1	6.6%	110-120	0.000	0%
30-40	883.9	11.1%	120-130	0.000	0%
40-50	1,382.3	17.4%	130-140	0.000	0%
50-60	2,018.3	25.4%	140-150	0.000	0%
60-70	1,906.9	24.0%	150-160	0.000	0%
70-80	789.6	10.0%	160-170	0.000	0%
80-90	55.9	0.7%	170-180	0.000	0%

LCS Table

BUG Rating B1 - U0 - G2

Forward Light	Lumens	Lumens %
Low(0-30):	613.4	7.7%
Medium(30-60):	3,892.9	49.1%
High(60-80):	2,565.4	32.3%
Very High(80-90):	49.8	0.6%

Back Light

Low(0-30):	285.4	3.6%
Medium(30-60):	391.1	4.9%
High(60-80):	131.7	1.7%
Very High(80-90):	5.8	0.1%

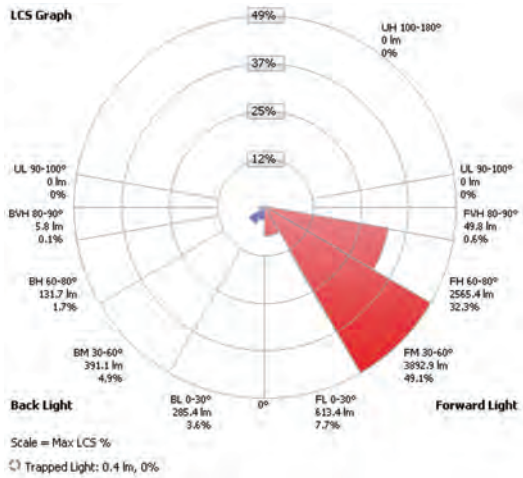
Uplight

Low(90-100):	0.000	0%
High(100-180):	0.000	0%

Trapped Light:

0.4	0%
-----	----

Type D1BLC



Candela Table - Type C

	0	15	25	35	45	55	65	75	85	90	105	115	125	135	145	155	165	175	180
0	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938	938
5	965	967	966	963	959	958	953	949	946	947	940	938	932	930	928	926	922	924	924
10	1038	1035	1028	1018	1011	1000	987	981	973	971	960	953	942	937	930	926	920	918	917
15	1310	1276	1238	1170	1113	1074	1047	1035	1022	1019	1000	988	971	953	917	856	777	731	707
20	1735	1682	1620	1514	1369	1235	1146	1110	1094	1086	1060	1041	994	813	495	251	139	95	83
25	2096	2093	2069	1989	1808	1561	1338	1244	1208	1197	1158	1100	778	290	53	21	14	14	14
30	2253	2289	2322	2380	2341	2070	1672	1430	1370	1352	1304	1004	310	31	12	6	3	2	3
35	2505	2555	2624	2695	2785	2747	2277	1763	1624	1613	1513	696	52	9	3	1	1	0	1
40	2803	2906	3024	3168	3291	3404	2950	2189	1352	1075	1081	290	11	4	2	1	1	1	1
45	3073	3251	3477	3739	3916	3504	3288	2928	1565	1380	1137	116	5	4	2	2	1	1	2
50	3261	3490	3863	4339	4549	4266	4765	3877	2045	1874	1180	36	5	4	3	3	2	3	3
55	3219	3490	3998	4726	5160	5104	5425	4623	2431	1990	809	10	6	5	5	4	5	6	6
60	2704	3091	3801	4776	5543	5513	5624	4893	2690	2121	393	8	7	7	9	8	6	6	7
65	1421	1731	2657	4144	5145	5083	5612	5296	3144	2243	65	8	8	13	12	8	6	6	6
70	320	526	1192	2143	3357	4415	5168	4507	2220	1388	15	9	15	15	11	7	4	4	4
75	61	79	179	487	1309	2537	3302	2959	1952	1329	16	11	13	12	7	3	2	2	2
80	26	26	29	32	69	428	913	1016	526	270	9	10	7	6	4	2	1	1	0
85	7	7	8	10	14	24	66	156	162	101	7	7	5	4	3	2	1	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[www.DSX2 HOLOPHANE WEBSITE](#)

DSX2.2.LA304.AY.C9.TZ01.CA

Holophane D-Series 2 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 2
- LED light engine producing c.30,000 lumen with a nominal 4000K colour temperature
- Asymmetric light distribution
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

DSX2B.8.1A.LMZ.GV9

Holophane tubular base compartment column for use with DSX2 Luminaires. 8 metre, Single head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised and painted metallic silver (RAL9006)
• Direct embedment

PERFORMANCE

Drive Current from Driver:	1,050mA
Power:	282W
Fitting Current:	1.26A
Power Factor:	0.97
Fitting Inrush:	22A - 0.135ms
Number of Drivers:	2
2x Driver 1 Inrush:	11.2A - 0.135ms
Max Drivers per 16A Type B MCB:	15
Max Fittings per 16A Type B MCB:	7
Total Number of LEDs:	20
Minimum Dim Level:	7 %
Optical Risk Group:	1



15Kg₂



0.1M



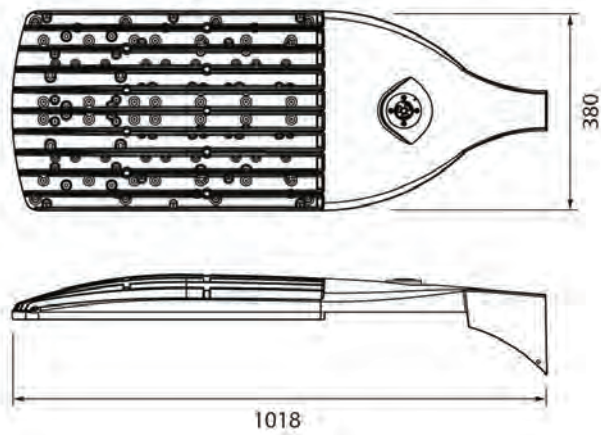
42 0282 0000 100*



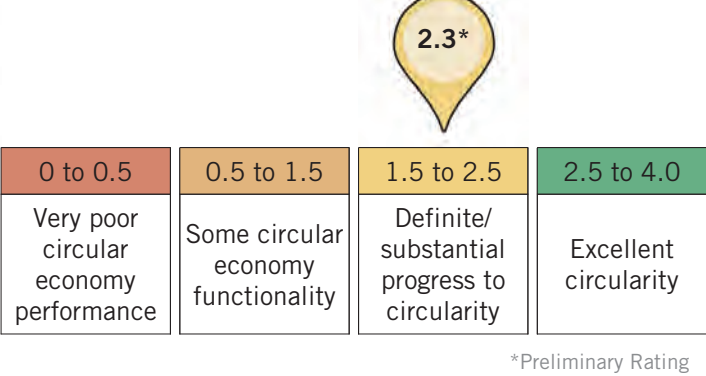
[Installation Guide](#)

*Generic UMSUG code based on product wattage and some or all of product family being included within Elexon data base.

DIMENSIONS



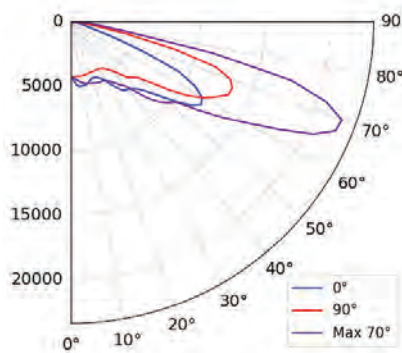
CIBSE TM66 - CEAM RATING



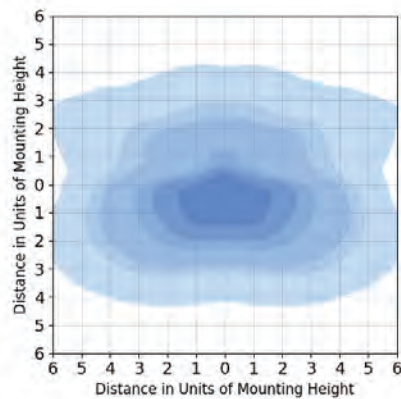
PHOTOMETRY



Polar Plot

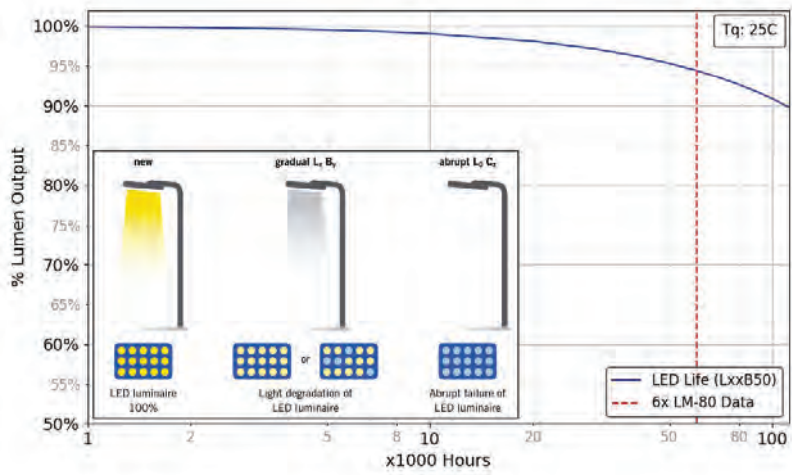


Isoilluminance Plot



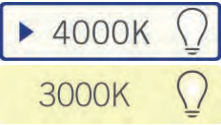
Lumens:	32,435
CCT:	4000K
CRI:	70
IES File:	DSX2.2.LA304.AY
G-Class:	G*2 Imax @ ≥ 70°: 687 Imax @ ≥ 80°: 127 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES



COLOURS

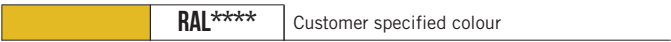
Selected Colour



Standard Colours Available

C1	Smooth White (RAL9016)
C4	Smooth Graphite (RAL7011)
C6	Smooth Grey (RAL7035)
C7	Textured Black (RAL9005)
C9	Metallic Silver (RAL9006)

Custom Colour Available



*Choosing a custom colour may increase the cost and lead time.

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

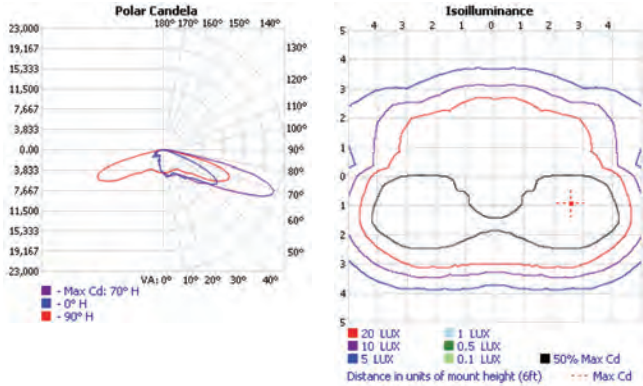
The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets and website represent only general particulars of the goods to which they apply and shall not form part of any contract. The company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



OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.AY
Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 33813P11
Test Lab: ACUTY BRANDS LIGHTING - CONYERS LAB - SCALED PHOTOMETRY
Test Date: 3/13/2017
Catalog: DSX2.2.LA304.AY
Description: D-Series 2 Luminaire
Lamp Catalog: LA304
Lamp: LED C.30000LM-4000K
Lamp Output: Total luminaire Lumens: 32434.9, absolute photometry *
Input Wattage: 282
Luminous Opening: Rectangle (L: 0.46M, W: 0.33M)
Max Cd: 22,288.7 at Horizontal: 70°, Vertical: 70°
Roadway Class: MEDIUM, TYPE III



No
Photo
Available



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.
This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

Type E1

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.AY

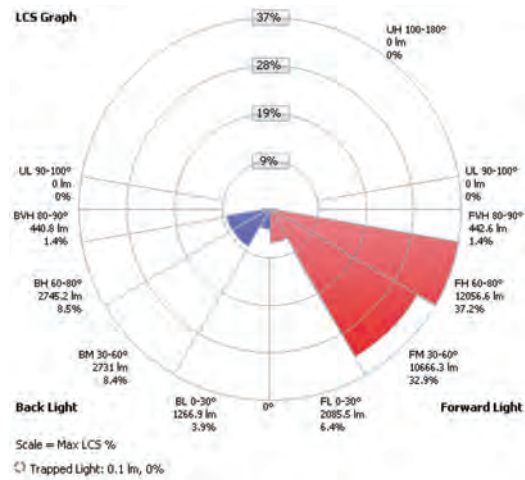


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,352.2	10.3%
0-40	5,934.6	18.3%
0-60	16,752.7	51.7%
60-90	15,682.2	48.3%
70-100	6,365.2	19.6%
90-120	0.000	0%
0-90	32,434.9	100%
90-180	0.000	0%
0-180	32,434.9	100%

Roadway Summary		
Distribution:	TYPE III, MEDIUM	
Max Cd, 90 Deg Vert:	0.000	
Max Cd, 80 to <90 Deg:	4,125.2	
	Lumens	% Lamp
Downward Street Side:	25,251.0	77.9%
Downward House Side:	7,183.8	22.1%
Downward Total:	32,434.8	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	32,434.8	100%

Lumens Per Zone				
Zone	Lumens	% Total	Zone	Lumens % Total
0-10	420.6	1.3%	90-100	0.000 0%
10-20	1,175.6	3.6%	100-110	0.000 0%
20-30	1,756.1	5.4%	110-120	0.000 0%
30-40	2,582.4	8.0%	120-130	0.000 0%
40-50	4,100.0	12.6%	130-140	0.000 0%
50-60	6,718.1	20.7%	140-150	0.000 0%
60-70	9,317.0	28.7%	150-160	0.000 0%
70-80	5,481.3	16.9%	160-170	0.000 0%
80-90	883.9	2.7%	170-180	0.000 0%

LCS Table			
BUG Rating		B4 - U0 - G5	
Forward Light	Lumens	Lumens %	
Low(0-30):	2,085.5	6.4%	
Medium(30-60):	10,666.3	32.9%	
High(60-80):	12,056.6	37.2%	
Very High(80-90):	442.6	1.4%	
Back Light			
Low(0-30):	1,266.9	3.9%	
Medium(30-60):	2,731.0	8.4%	
High(60-80):	2,745.2	8.5%	
Very High(80-90):	440.8	1.4%	
Uplight			
Low(90-100):	0.000	0%	
High(100-180):	0.000	0%	
Trapped Light:	0.1	0%	



Type E1

Candela Table - Type C

[illegible]



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[www.holophane.co.uk](#) **DSX2 HOLOPHANE WEBSITE**

DSX2.2.LA304.BLC.C9.TZ01.CA

Holophane D-Series 2 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 2
- LED light engine producing c.30,000 lumen with a nominal 4000K colour temperature
- Long & narrow distribution with extreme backlight cut-off
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

DSX2B.8.1A.LMZ.GV9

Holophane tubular base compartment column for use with DSX2 Luminaires. 8 metre, Single head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised and painted metallic silver (RAL9006)
• Direct embedment

PERFORMANCE

Drive Current from Driver:	1,050mA
Power:	282W
Fitting Current:	1.26A
Power Factor:	0.97
Fitting Inrush:	22A - 0.135ms
Number of Drivers:	2
2x Driver 1 Inrush:	11.2A - 0.135ms
Max Drivers per 16A Type B MCB:	15
Max Fittings per 16A Type B MCB:	7
Total Number of LEDs:	20
Minimum Dim Level:	7 %
Optical Risk Group:	1



15Kg₂



0.1M



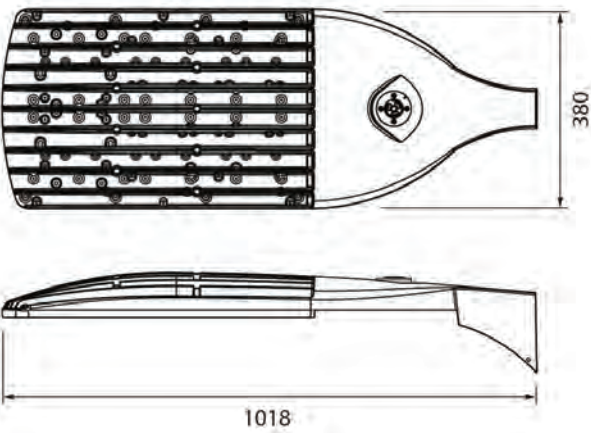
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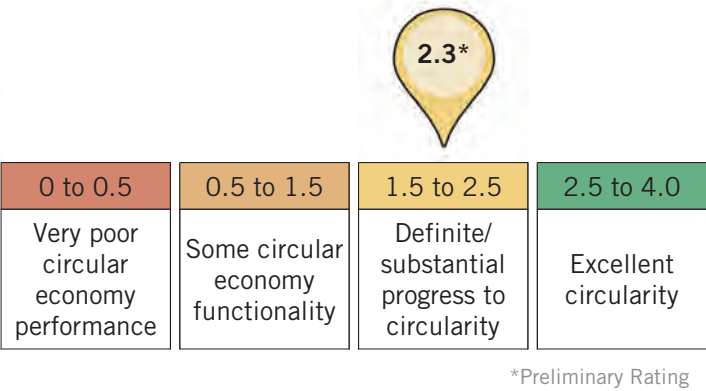
[Installation Guide](#)

*Generic UMSUG code based on product wattage and some or all of product family being included within Elexon data base.

DIMENSIONS



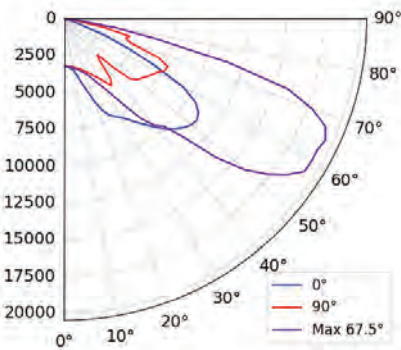
CIBSE TM66 - CEAM RATING



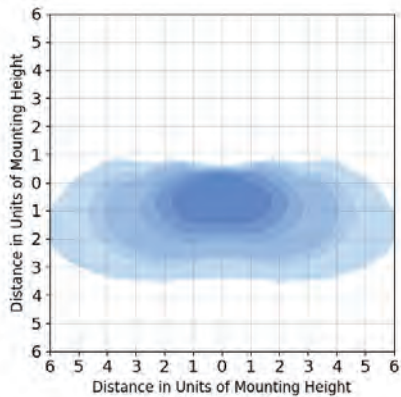
PHOTOMETRY



Polar Plot

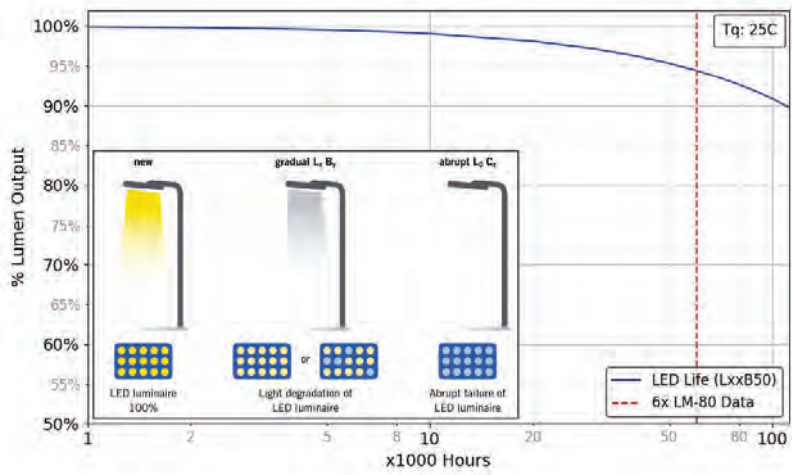


Isoilluminance Plot



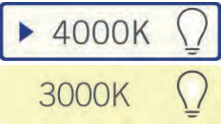
Lumens:	27,376
CCT:	4000K
CRI:	70
IES File:	DSX2.2.LA304.BLC
G-Class:	G*2 Imax @ ≥ 70°: 654 Imax @ ≥ 80°: 128 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES



COLOURS

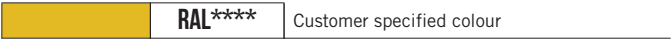
Selected Colour



Standard Colours Available

C1	Smooth White (RAL9016)
C4	Smooth Graphite (RAL7011)
C6	Smooth Grey (RAL7035)
C7	Textured Black (RAL9005)
C9	Metallic Silver (RAL9006)

Custom Colour Available



*Choosing a custom colour may increase the cost and lead time.

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

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.



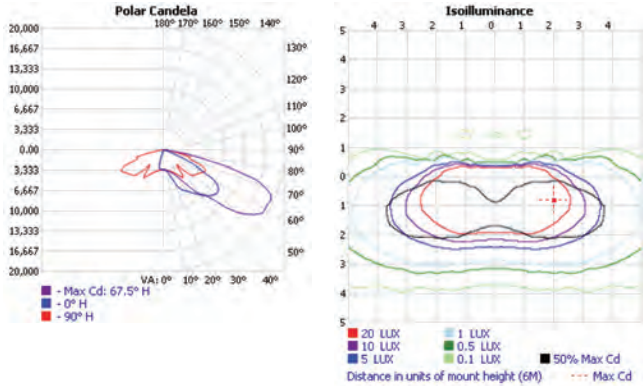
OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.BLC

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 33923-SUM210015
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 03/11/2021
Catalog: DSX2.2.LA304.BLC
Description: D-Series 2 Area luminaire
Lamp Catalog: LA304
Lamp: LED C.30000 Lumens
Lamp Output: Total luminaire Lumens: 27313.8, absolute photometry *
Input Wattage: 282
Luminous Opening: Rectangle (L: 0.3M, W: 0.41M)
Max Cd: 19,496.7 at Horizontal: 67.5°, Vertical: 65°
Roadway Class: SHORT, TYPE III



No
Photo
Available

Type E1BLC



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.
This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX2.2.LA304.BLC



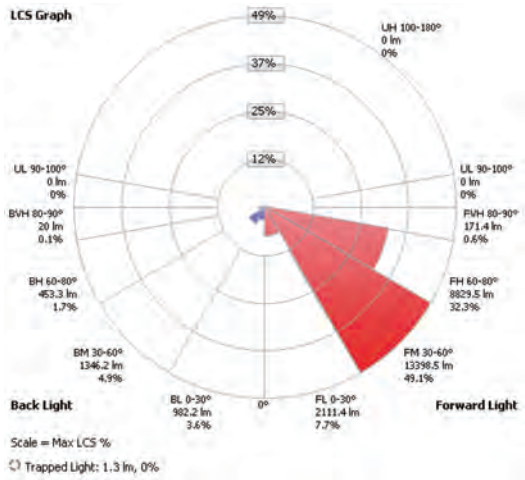
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,094.3	11.3%
0-40	6,136.4	22.5%
0-60	17,840.6	65.3%
60-90	9,473.3	34.7%
70-100	2,910.3	10.7%
90-120	0.000	0%
0-90	27,313.8	100%
90-180	0.000	0%
0-180	27,313.8	100%

Roadway Summary		
Distribution:	TYPE III, SHORT	
Max Cd, 90 Deg Vert:	0.000	
Max Cd, 80 to <90 Deg:	3,508.2	
	Lumens	% Lamp
Downward Street Side:	24,510.8	89.7%
Downward House Side:	2,801.7	10.3%
Downward Total:	27,312.5	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	27,312.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	313.7	1.1%	90-100	0.000	0%
10-20	990.7	3.6%	100-110	0.000	0%
20-30	1,789.9	6.6%	110-120	0.000	0%
30-40	3,042.1	11.1%	120-130	0.000	0%
40-50	4,757.6	17.4%	130-140	0.000	0%
50-60	6,946.6	25.4%	140-150	0.000	0%
60-70	6,563.0	24.0%	150-160	0.000	0%
70-80	2,717.8	10.0%	160-170	0.000	0%
80-90	192.5	0.7%	170-180	0.000	0%

LCS Table		
BUG Rating	B2 - U0 - G4	
Forward Light	Lumens	Lumens %
Low(0-30):	2,111.4	7.7%
Medium(30-60):	13,398.6	49.1%
High(60-80):	8,829.5	32.3%
Very High(80-90):	171.4	0.6%
Back Light	Lumens	Lumens %
Low(0-30):	982.2	3.6%
Medium(30-60):	1,346.2	4.9%
High(60-80):	453.3	1.7%
Very High(80-90):	20.0	0.1%
Uplight	Lumens	Lumens %
Low(90-100):	0.000	0%
High(100-180):	0.000	0%
Trapped Light:	1.3	0%

Type E1BLC



Candela Table - Type C		0	15	25	35	45	55	65	75	85	90	105	115	125	135	145	155	165	175	180
0	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229	3229
5	3321	3328	3324	3314	3300	3298	3278	3268	3257	3259	3236	3229	3208	3201	3193	3188	3174	3179	3181	
10	3572	3561	3536	3503	3480	3441	3397	3377	3349	3342	3303	3278	3243	3225	3202	3186	3165	3160	3156	
15	4509	4392	4261	4028	3830	3696	3604	3561	3519	3508	3443	3400	3342	3278	3155	2946	2675	2516	2433	
20	5973	5789	5577	5209	4711	4251	3945	3819	3766	3738	3650	3582	3420	2797	1705	865	477	325	285	
25	7214	7202	7122	6847	6224	5372	4605	4283	4159	4120	3986	3788	2677	999	184	72	50	50	48	
30	7754	7879	7992	8191	8056	7124	5754	4923	4714	4654	4488	3455	1068	106	42	21	9	7	9	
35	8622	8795	9032	9276	9584	9453	7839	6069	5589	5551	5207	2394	180	32	11	4	2	0	2	
40	9646	10003	10408	10903	11327	11716	10153	7533	4654	3699	3720	997	39	14	7	4	4	2	2	
45	10576	11189	11966	12869	13478	12059	11317	10079	5388	4750	3915	400	16	12	7	7	4	4	5	
50	11223	12013	13295	14935	15656	14684	16399	13345	7038	6449	4062	126	18	14	11	9	7	11	11	
55	11078	12013	13760	16264	17760	17566	18673	15911	8367	6850	2783	35	19	16	16	14	16	21	19	
60	9308	10638	13083	16438	19078	18973	19355	16841	9259	7299	1351	28	23	25	32	28	21	21	23	
65	4891	5957	9145	14263	17707	17495	19316	18227	10822	7720	223	28	28	46	42	28	19	19	19	
70	1102	1811	4102	7377	11554	15196	17789	15511	7642	4778	53	32	51	53	39	23	14	14	14	
75	210	272	615	1676	4505	8732	11366	10183	6718	4573	57	39	46	41	25	11	7	5	5	
80	90	90	99	111	239	1475	3142	3496	1811	930	32	35	25	21	14	7	4	2	0	
85	23	25	28	35	50	81	226	538	559	347	25	23	18	14	11	7	2	0	0	
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

> DATASHEET - AMENITY - DSX0

DSX0.1.LA154.FW.C9.TZ01.CA



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[DSX0 HOLOPHANE WEBSITE](#)

DSX0.1.LA154.FW.C9.TZ01.CA

Holophane D-Series 0 luminaire. Single-piece die-cast aluminium housing conforming to EN1706 AC-46500, with integral heat sink fins to optimise thermal management. LED light engine modules are IP66 with individual PMMA lenses. Housing sealed to IP65 via hinged access door (two captive fixing screws). Installation via bespoke Holophane mounting feature for quick and easy installation. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).
This specific SKU includes:

- Series 1
- LED light engine producing c.15,000 lm with a nominal 4000°K colour temperature
- Forward throw light distribution
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))

DSX1B.8.2A.LMZ.GV9

Holophane tubular base compartment column for use with DSX1 Luminaires. 8 metre, Twin head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised and painted metallic silver (RAL9006)
• Direct embedment



PERFORMANCE

Drive Current from Driver:	1,020mA
Power:	133W
Fitting Current:	0.6A
Power Factor:	0.98
Fitting Inrush:	11A - 0.135ms
Number of Drivers:	1
1x Driver 1 Inrush:	11.2A - 0.135ms
Max Drivers per 16A Type B MCB:	15
Max Fittings per 16A Type B MCB:	15
Total Number of LEDs:	20
Minimum Dim Level:	7 %
Optical Risk Group:	1



8Kg₂

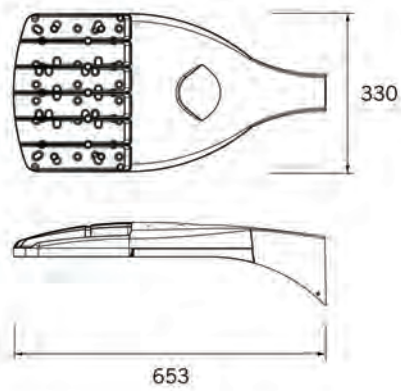


0.09M

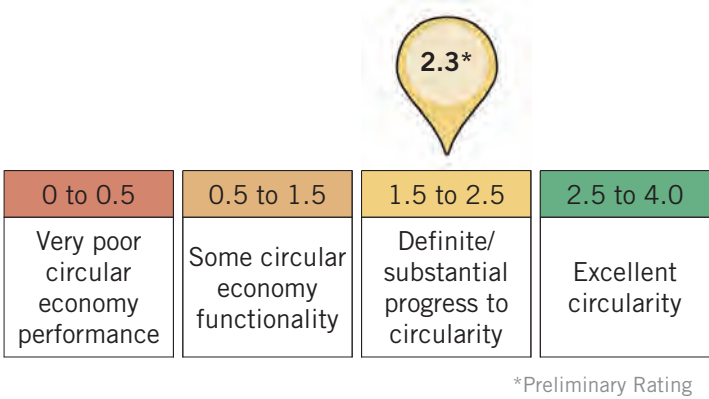


[Installation Guide](#)

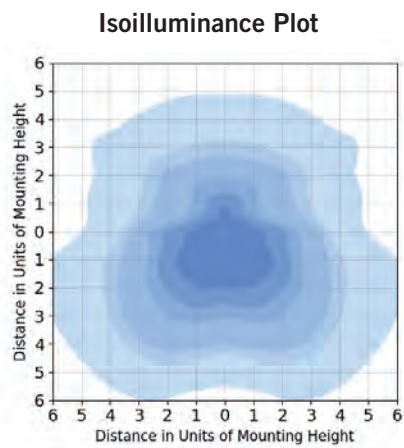
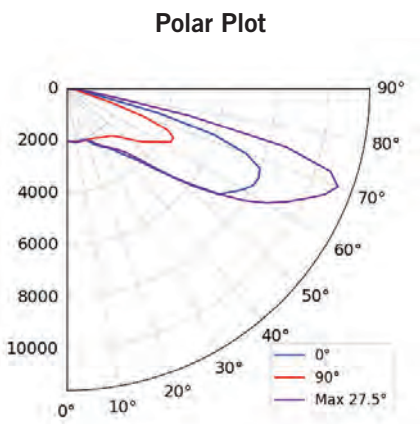
DIMENSIONS



CIBSE TM66 - CEAM RATING

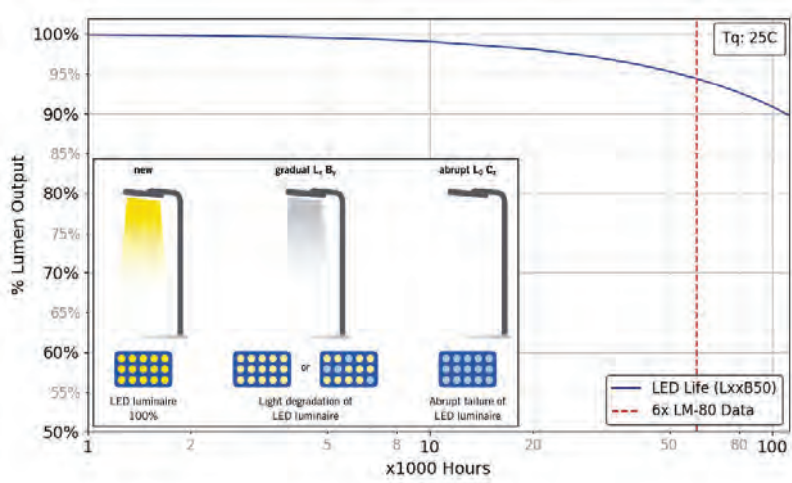


PHOTOMETRY [↓ IES FILE](#)



Lumens:	15,965
CCT:	4000K
CRI:	70
IES File:	DSX0.1.LA154.FW
G-Class:	G*2 Imax @ ≥ 70°: 693 Imax @ ≥ 80°: 118 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

3000K

▶ 4000K

COLOURS

Selected Colour

C9 Metallic Silver (RAL9006)

Custom Colour Available

RAL **** Customer specified colour

*Choosing a custom colour may increase the cost and lead time.

Standard Colours Available

C1 Smooth White (RAL9016)

C4 Smooth Graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 Textured Black (RAL9005)

C9 Metallic Silver (RAL9006)

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

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.



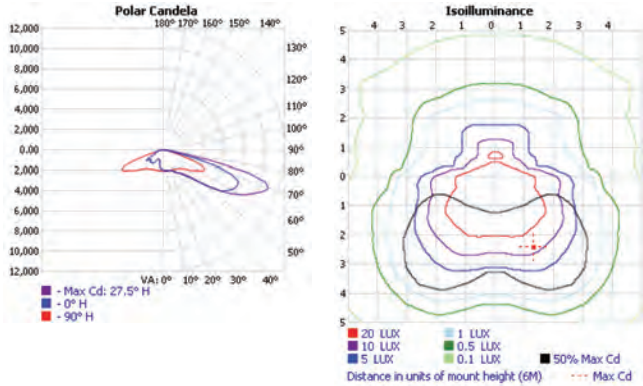
OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX0.1.LA154.FW

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: ISF 34057-SUM21001
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 08/01/2021
Catalog: DSX0.1.LA154.FW
Description: D-Series 0 Area luminaire
Lamp Catalog: LA154
Lamp: LED C.15000 Lumens
Lamp Output: Total luminaire Lumens: 15916.8, **absolute photometry ***
Input Wattage: 133
Luminous Opening: Rectangle (L: 0.33M, W: 0.33M)
Max Cd: 11,029.9 at Horizontal: 27.5°, Vertical: 70°
Roadway Class: SHORT, TYPE IV



No
Photo
Available

Type F2



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.
This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DSX0.1.LA154.FW

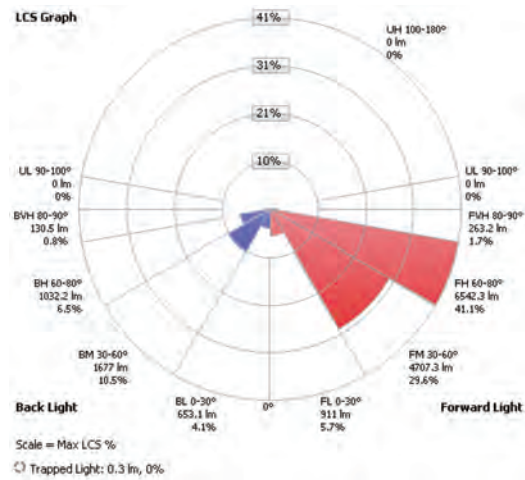


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,563.9	9.8%
0-40	2,813.4	17.7%
0-60	7,950.0	49.9%
60-90	7,966.8	50.1%
70-100	3,337.3	21%
90-120	0.000	0%
0-90	15,916.8	100%
90-180	0.000	0%
0-180	15,916.8	100%

Roadway Summary		
Distribution:	TYPE IV, SHORT	
Max Cd, 90 Deg Vert:		0.000
Max Cd, 80 to <90 Deg:		1,884.3
	Lumens	% Lamp
Downward Street Side:	12,423.8	78.1%
Downward House Side:	3,492.7	21.9%
Downward Total:	15,916.5	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	15,916.5	100%

Lumens Per Zone			
Zone	Lumens	% Total	Zone Lumens % Total
0-10	189.4	1.2%	90-100 0.000 0%
10-20	534.8	3.4%	100-110 0.000 0%
20-30	839.7	5.3%	110-120 0.000 0%
30-40	1,249.5	7.9%	120-130 0.000 0%
40-50	1,879.5	11.8%	130-140 0.000 0%
50-60	3,257.2	20.5%	140-150 0.000 0%
60-70	4,629.5	29.1%	150-160 0.000 0%
70-80	2,943.1	18.5%	160-170 0.000 0%
80-90	394.3	2.5%	170-180 0.000 0%

LCS Table		
BUG Rating	B3 - U0 - G3	
Forward Light	Lumens Lumens %	
Low(0-30):	911.0 5.7%	
Medium(30-60):	4,707.3 29.6%	
High(60-80):	6,542.3 41.1%	
Very High(80-90):	263.2 1.7%	
Back Light		
Low(0-30):	653.1 4.1%	
Medium(30-60):	1,677.0 10.5%	
High(60-80):	1,032.2 6.5%	
Very High(80-90):	130.5 0.8%	
Uplight		
Low(90-100):	0.000 0%	
High(100-180):	0.000 0%	
Trapped Light:	0.3 0%	



Type F2

Candela Table - Type C

[illegible]

> DATASHEET - EXTERNAL - DBD

DBD.1.LA024.DO.NR.H100.C9.W014.CA



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION

[DBD HOLOPHANE WEBSITE](#)

Holophane Denver iD: Bollard luminaire. Extruded marine grade aluminium body with die-cast aluminium top and base secured by stainless steel nuts and sealed to IP65. The optical arrangement consists of individual opitcal modules with a patented transition zone to minimise glare. Suitable for flange base mounting (bolts available as an accessory). This specific SKU includes:

- Series 1
- LED light engine producing c.2,000 lm with a nominal 4000°K colour temperature
- Double sided
- Long and Narrow light distribution
- 1 metre high
- Metallic Silver (RAL9006)
- 14W
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))



PERFORMANCE

Drive Current from Driver:	425mA
Power:	14W
Fitting Current:	0.06A
Power Factor:	0.96
Fitting Inrush:	18A - 0.32ms
Number of Drivers:	1
1x Driver 1 Inrush:	18A - 0.32ms
Max Drivers per 16A Type B MCB:	23
Max Fittings per 16A Type B MCB:	23
Total Number of LEDs:	10
Minimum Dim Level:	12 %
THDi:	8.2
SVM:	0.07
Pst LM:	0.05
Optical Risk Group:	1

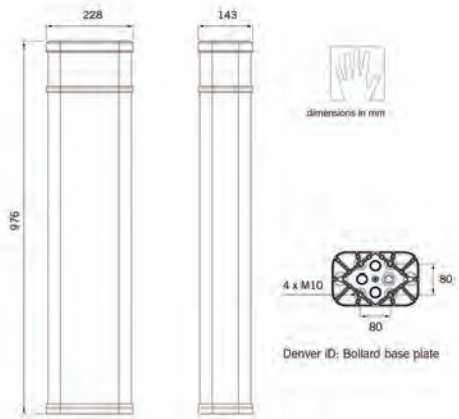


9.5Kg

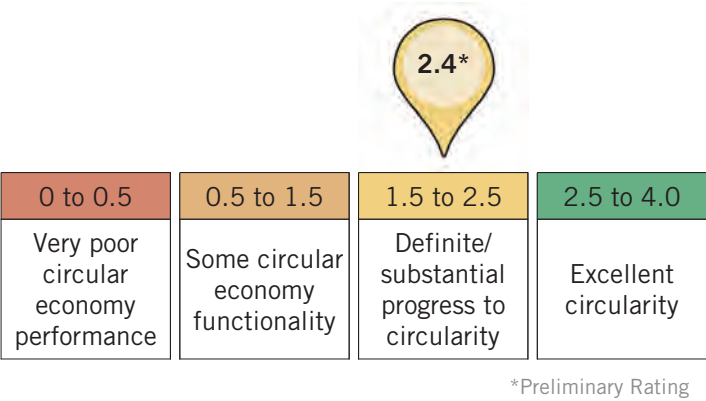


[Installation Guide](#)

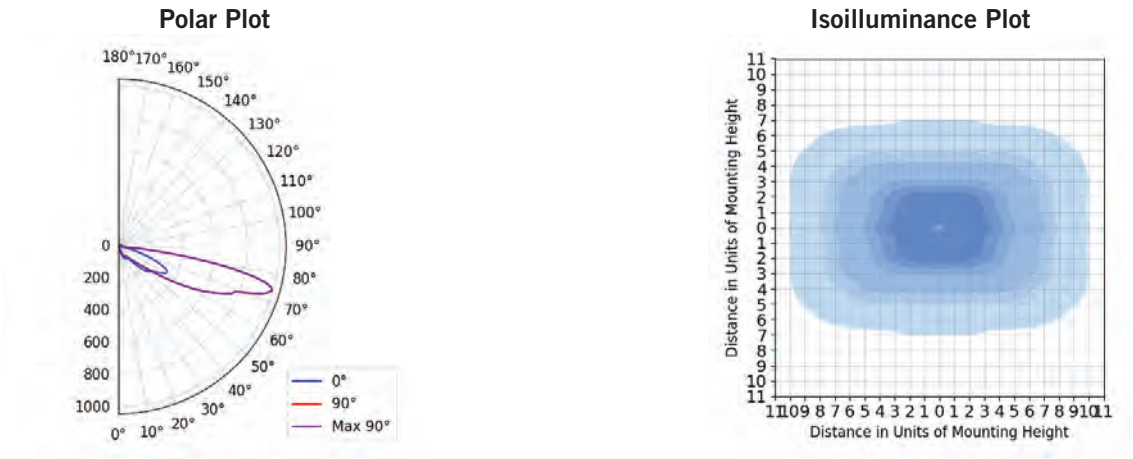
DIMENSIONS



CIBSE TM66 - CEAM RATING

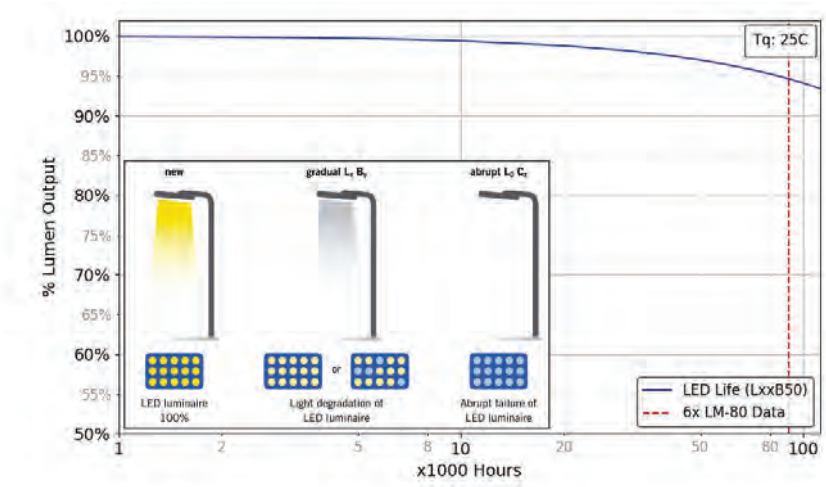


PHOTOMETRY [↓ IES FILE](#)



Lumens:	1,530
CCT:	4000K
CRI:	70
IES File:	DBD.1.LA024.DO.NR.W014

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES



COLOURS

Selected Colour	Standard Colours Available
C9 Metallic Silver (RAL9006)	C1 Smooth White (RAL9016)
	C4 Smooth Graphite (RAL7011)
Custom Colour Available	C6 Smooth Grey (RAL7035)
RAL **** Customer specified colour	C7 Textured Black (RAL9005)
	C9 Metallic Silver (RAL9006)

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

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.

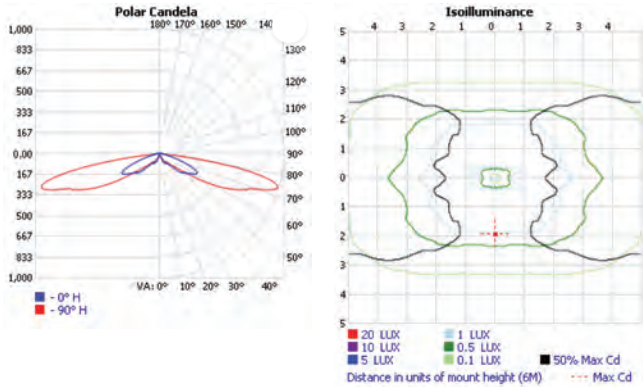
OUTDOOR PHOTOMETRIC REPORT
CATALOG: DBD.1.LA024.DO.NR.W014

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: B21018 - SUM20025
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 21 May 2021
Catalog: DBD.1.LA024.DO.NR.W014
Description: Denver ID Bollard
Lamp Catalog: LA024
Lamp: LED C.2,000 Lumens
Lamp Output: Total luminaire Lumens: 1529.7, *absolute photometry **
Input Wattage: 14
Luminous Opening: Rectangle w/Luminous Sides (L: 0.14M, W: 0.23M, H: 0.12M)
Max Cd: 991.0 at Horizontal: 90°, Vertical: 73.75°
Roadway Class: MEDIUM, TYPE IV



No
Photo
Available

Type G



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.
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OUTDOOR PHOTOMETRIC REPORT
CATALOG: DBD.1.LA024.DO.NR.W014



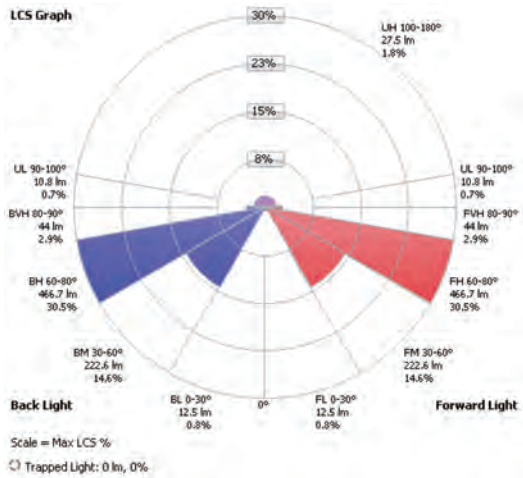
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	25.1	1.6%
0-40	77.9	5.1%
0-60	470.4	30.8%
60-90	1,020.9	66.7%
70-100	558.7	36.5%
90-120	30.5	2%
0-90	1,491.4	97.5%
90-180	38.3	2.5%
0-180	1,529.7	100%

Roadway Summary		
Distribution:	TYPE IV, MEDIUM	
Max Cd, 90 Deg Vert:	11.0	
Max Cd, 80 to <90 Deg:	599.9	
	Lumens	% Lamp
Downward Street Side:	745.8	48.8%
Downward House Side:	745.8	48.8%
Downward Total:	1,491.6	97.5%
Upward Street Side:	19.1	1.3%
Upward House Side:	19.1	1.3%
Upward Total:	38.3	2.5%
Total Lumens:	1,529.9	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	0.2	0.0%	90-100	10.8	0.7%
10-20	3.5	0.2%	100-110	16.9	1.1%
20-30	21.3	1.4%	110-120	2.8	0.2%
30-40	52.9	3.5%	120-130	1.7	0.1%
40-50	119.2	7.8%	130-140	2.5	0.2%
50-60	273.3	17.9%	140-150	2.2	0.1%
60-70	473.1	30.9%	150-160	1.0	0.1%
70-80	459.7	30.1%	160-170	0.4	0%
80-90	88.2	5.8%	170-180	0.1	0%

LCS Table		
BUG Rating	B1 - U2 - G1	
Forward Light	Lumens	Lumens %
Low(0-30):	12.5	0.8%
Medium(30-60):	222.6	14.6%
High(60-80):	466.7	30.5%
Very High(80-90):	44.0	2.9%
Back Light		
Low(0-30):	12.5	0.8%
Medium(30-60):	222.6	14.6%
High(60-80):	466.7	30.5%
Very High(80-90):	44.0	2.9%
Uplight		
Low(90-100):	10.8	0.7%
High(100-180):	27.5	1.8%
Trapped Light:	0.000	0%

Type G



Candela Table - Type C		0		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	1	1	1	0	0	0	0	1	2	1	1	1	1	1	1	1	1	1	1	1	1
10	7	8	8	7	7	7	7	6	5	5	5	5	4	4	4	4	4	4	4	4	4
15	14	13	13	13	13	13	13	12	11	12	11	12	11	10	10	10	9	9	8	8	8
20	40	39	37	34	32	28	23	20	18	18	16	15	14	13	13	12	12	12	12	12	12
25	75	75	74	73	73	71	65	58	46	34	25	22	23	20	20	20	22	25	31	33	33
30	87	87	87	87	86	86	88	87	81	71	58	42	33	32	32	32	32	54	75	71	71
35	94	95	96	97	98	99	99	98	98	98	93	82	58	47	45	49	72	85	77	77	77
40	110	110	110	111	113	116	117	118	120	118	115	119	102	76	69	79	82	81	84	84	84
45	183	183	180	174	163	154	151	151	157	146	149	157	141	135	114	105	108	122	128	128	128
50	239	241	245	250	255	261	253	244	240	218	212	215	190	195	179	157	162	177	186	186	186
55	274	277	282	287	292	310	320	334	347	329	327	343	317	277	256	254	257	290	318	318	318
60	331	336	342	344	347	370	386	401	431	415	429	449	464	457	388	365	378	450	511	511	511
65	319	326	336	347	370	421	466	503	550	519	530	538	553	611	562	499	500	597	686	686	686
70	215	221	231	246	269	326	399	497	620	632	682	691	672	694	648	625	617	726	841	841	841
75	108	111	120	132	147	182	221	295	389	458	596	693	729	788	696	659	690	820	984	984	984
80	48	49	53	58	63	71	83	116	167	231	321	377	434	539	524	467	437	497	600	600	600
85	18	19	20	22	24	24	25	25	27	34	54	70	78	87	77	69	58	43	44	44	44
90	3	4	4	4	5	5	6	7	8	8	9	10	10	11	9	9	9	6	5	5	5
95	7	7	7	8	8	9	9	10	11	11	12	12	12	12	12	11	11	10	9	8	8
100	11	11	11	11	12	12	13	13	14	14	14	14	14	14	14	13	13	12	11	11	11
105	22	22	26	26	24	22	23	22	26	27	26	22	23	22	23	26	28	26	22	23	23
110	2	2	2	2	3	4	3	3	4	3	4	4	4	4	3	2	2	2	1	2	2
115	3	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
120	4	3	3	3	3	3	3	2	2	2	2	2	2	2	3	3	4	4	4	4	4
125	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3
130	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
135	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3
140	4	4	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4	4
145	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3
150	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2
155	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
160	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1
165	1	1	1	1	1	2	1	1	2	1	1	1	1	1	2	2	1	1	1	1	1
170	1	1	1	0	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

> DATASHEET - EXTERNAL - DWL
DWL.1.LA024.HN.C9.W011.TZ01.CA



Product image may not represent the final configuration stated above.

PRODUCT SPECIFICATION DWL HOLOPHANE WEBSITE

Holophane Denver iD: Wall consists of a 2-part body and a removable LED module manufactured from LM6 marine grade die-cast aluminum 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 a via an 2 x IP65 M20 cable gland. International Dark-Sky Association Approved (colour temperatures 3000K or warmer are approved under the IDA).

This specific SKU includes:

- Series 1
- LED light engine producing c.2,000 lm with a nominal 4000°K colour temperature
- High beam long and narrow distribution
- Metallic Silver (RAL9006)
- 11W
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- Wireless lighting node for use with Holophane Controlux Air System. (Includes subscription package for two years (Europe))



PERFORMANCE

Drive Current from Driver:	360mA
Power:	10.3W
Fitting Current:	0.05A
Power Factor:	0.97
Fitting Inrush:	18A - 0.32ms
Number of Drivers:	1
1x Driver 1 Inrush:	18A - 0.32ms
Max Drivers per 16A Type B MCB:	23
Max Fittings per 16A Type B MCB:	23
Total Number of LEDs:	8
Minimum Dim Level:	19 %
THDi:	8.5
SVM:	0.07
Pst LM:	0.12
Optical Risk Group:	1



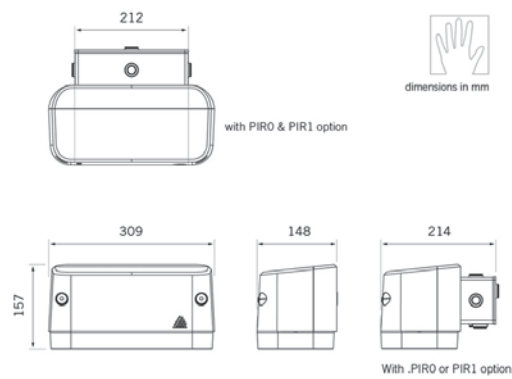
6.5Kg



Installation Guide



DIMENSIONS



CIBSE TM66 - CEAM RATING

0 to 0.5	0.5 to 1.5	1.5 to 2.5	2.5 to 4.0
Very poor circular economy performance	Some circular economy functionality	Definite/substantial progress to circularity	Excellent circularity

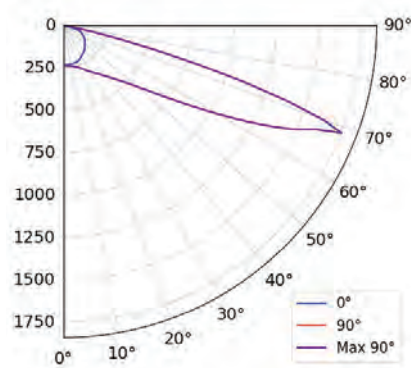
*Preliminary Rating

2.6*

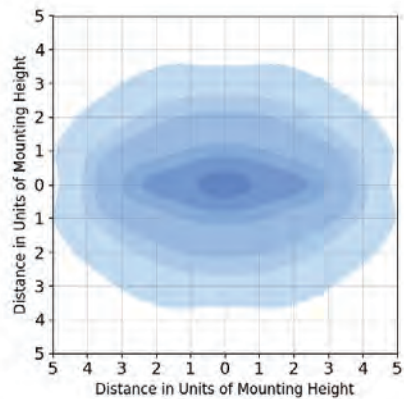
PHOTOMETRY

↓ IES FILE

Polar Plot

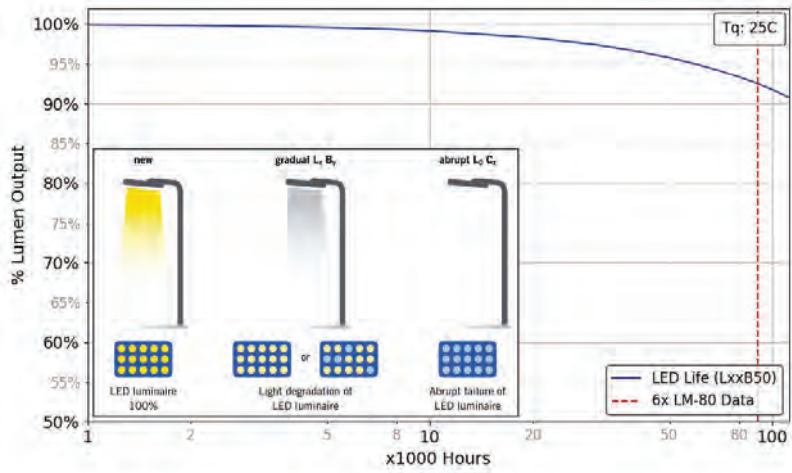


Isoilluminance Plot



Lumens:	1,497
CCT:	4000K
CRI:	70
IES File:	DWL.1.LA024.HN.W011
G-Class:	G*3 Imax @ ≥ 70°: 1085 Imax @ ≥ 80°: 44 Imax @ ≥ 90°: 0

LLMF GRAPH



For reference purposes, the graph extrapolates beyond the recommend 6x LM-80 data in TM-21, which our calculations are based on.

COLOUR TEMPERATURES

2700K



3000K



▶ 4000K



COLOURS

Selected Colour

C9 Metallic Silver (RAL9006)

Standard Colours Available

C1 Smooth White (RAL9016)

C4 Smooth Graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 Textured Black (RAL9005)

C9 Metallic Silver (RAL9006)

Custom Colour Available

RAL **** Customer specified colour

*Choosing a custom colour may increase the cost and lead time.

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

The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets 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.

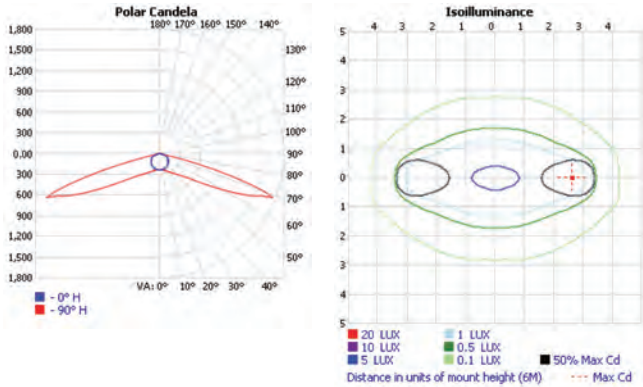
OUTDOOR PHOTOMETRIC REPORT
CATALOG: DWL.1.LA024.HN.W011

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: B20193 - SUM20025
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 25 Nov 2020
Catalog: DWL.1.LA024.HN.W011
Description: Denver ID Wall
Lamp Catalog: LA024
Lamp: LED C.2,000 Lumens
Lamp Output: Total luminaire Lumens: 1496.9, absolute photometry *
Input Wattage: 10.3
Luminous Opening: Rectangle (L: 0.15M, W: 0.31M)
Max Cd: 1,753.1 at Horizontal: 90°, Vertical: 68.75°
Roadway Class: MEDIUM, TYPE I



No
Photo
Available

Type H



*Test based on absolute photometry where lamp lumens=lumens total.
*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.
This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

OUTDOOR PHOTOMETRIC REPORT
CATALOG: DWL.1.LA024.HN.W011

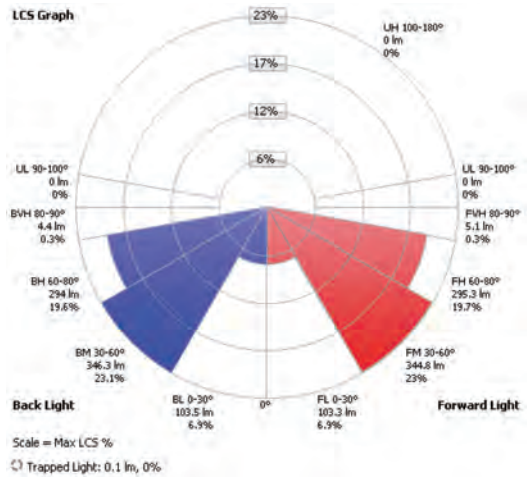


Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	206.9	13.8%
0-40	374.5	25%
0-60	898.0	60%
60-90	598.9	40%
70-100	210.7	14.1%
90-120	0.000	0%
0-90	1,497.0	100%
90-180	0.000	0%
0-180	1,497.0	100%

Roadway Summary		
Distribution:	TYPE I, MEDIUM	
Max Cd, 90 Deg Vert:	0.000	
Max Cd, 80 to <90 Deg:	65.4	
	Lumens	% Lamp
Downward Street Side:	748.5	50%
Downward House Side:	748.3	50%
Downward Total:	1,496.8	100%
Upward Street Side:	0.000	0%
Upward House Side:	0.000	0%
Upward Total:	0.000	0%
Total Lumens:	1,496.8	100%

Lumens Per Zone			
Zone	Lumens	% Total	Zone Lumens % Total
0-10	22.5	1.5%	90-100 0.000 0%
10-20	68.0	4.5%	100-110 0.000 0%
20-30	116.3	7.8%	110-120 0.000 0%
30-40	167.6	11.2%	120-130 0.000 0%
40-50	222.8	14.9%	130-140 0.000 0%
50-60	300.8	20.1%	140-150 0.000 0%
60-70	388.2	25.9%	150-160 0.000 0%
70-80	201.1	13.4%	160-170 0.000 0%
80-90	9.6	0.6%	170-180 0.000 0%

LCS Table		
BUG Rating	B1 - U0 - G1	
Forward Light	Lumens Lumens %	
Low(0-30):	103.3 6.9%	
Medium(30-60):	344.8 23%	
High(60-80):	295.3 19.7%	
Very High(80-90):	5.1 0.3%	
Back Light		
Low(0-30):	103.5 6.9%	
Medium(30-60):	346.3 23.1%	
High(60-80):	294.0 19.6%	
Very High(80-90):	4.4 0.3%	
Uplight		
Low(90-100):	0.000 0%	
High(100-180):	0.000 0%	
Trapped Light:	0.1 0%	



Type H

Candela Table - Type C

	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236	236
5	233	234	234	234	235	235	236	237	238	239	238	237	237	236	236	235	235	235	235
10	231	231	232	233	233	235	237	239	240	242	243	242	241	239	237	235	233	232	232
15	230	230	231	234	236	240	243	246	249	251	249	247	243	239	236	233	231	230	230
20	227	228	231	235	239	245	252	258	263	265	263	258	252	245	240	235	231	228	228
25	219	221	228	234	241	252	264	276	285	288	285	276	265	254	243	235	229	222	220
30	207	212	222	230	243	259	278	297	311	316	311	299	281	263	246	232	224	214	210
35	198	203	213	226	245	268	294	320	340	348	341	324	298	272	249	229	216	205	200
40	188	193	205	223	247	276	310	349	379	394	381	353	314	281	250	226	207	193	187
45	173	178	193	214	243	280	326	382	434	459	436	386	329	282	245	217	193	176	170
50	160	167	185	208	238	284	349	431	520	562	521	433	351	284	239	208	183	165	158
55	150	157	174	198	229	284	369	490	650	742	652	493	369	285	231	198	173	155	149
60	136	142	158	181	212	271	372	546	837	1040	843	550	374	276	217	182	158	142	137
65	118	123	137	156	185	241	341	556	1019	1435	1039	564	344	251	192	160	139	123	118
70	100	105	118	134	159	205	287	496	1079	1624	1099	499	287	207	159	132	116	100	95
75	43	46	66	84	104	130	176	272	512	563	498	262	166	120	94	75	58	38	35
80	7	8	13	21	24	28	47	63	45	0	38	55	40	23	18	15	9	6	6
85	5	5	4	4	3	4	6	12	21	33	22	12	5	3	3	3	4	4	4
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

> DATASHEET
VMX.2.LA074.V2.X2L2.PT1.C9.TZ01.W042



Product image may not represent the final configuration stated above.



PRODUCT SPECIFICATION **VMX HOLOPHANE WEBSITE**

VMX.2.LA074.V2.X2L2.PT1.C9.TZ01.W042

Holophane V-Max LED street light. Ultra-low profile design and patented modular chevron light engine concept. High pressure die cast LM6 aluminium housing ((EN AC-44100) (AL.Si12)) sealed to IP66 with a close cell gasket and single M5 stainless steel fastener that also allows access to the gear cover for electrical termination. Metal core LED boards are mounted directly to aluminium ((EN AC-44100)(AL.Si12)) chevron to aid heat dissipation. This specific SKU includes:

- Series 2
- LED light engine producing c.7,000 lm with a nominal 4000K colour temperature
- 2 LED chevrons
- X2L2 optical setting
- 60/76mm post top mounting only
- Metallic Silver (RAL9006)
- Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node available from Holophane or supplied by others) with weather proof locking top
- 42W. If not supplied with factory fitted flying lead, only use flex cable diameter from 6mm to 10mm.

VMXB.8.1S.LMZ.SA60.GV9

Holophane tubular base compartment column for use with V-Max Luminaires. 8 metre, Single head short bracket (300mm outreach). For light & medium area wind zones (compliant to EN40).

- Side arm bracket suitable for 60mm entry
- Bracket galvanised and painted metallic silver (RAL9006)
- Direct embedment



Product Website

PERFORMANCE

Drive Current from Driver:	421mA
Power:	42W
Fitting Current:	0.19A
Fitting Inrush:	9A - 0.13ms
Number of Drivers:	1
1x Driver 1 Inrush:	9.6A - 0.13ms
Max Drivers per 16A Type B MCB:	31
Max Fittings per 16A Type B MCB:	31
Total Number of LEDs:	16
Minimum Dim Level:	13 %
THDi:	12.9
Optical Risk Group:	1



8Kg₂



0.037M



42 0042 0000 100*



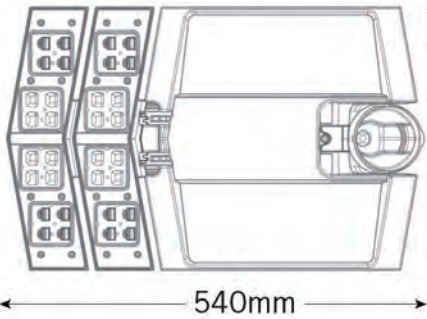
[Installation Guide](#)

*Generic UMSUG code based on product wattage and some or all of product family being included within Elexon data base.

DIMENSIONS

CIBSE TM66 - CEAM RATING

COLOURS



V2

540mm

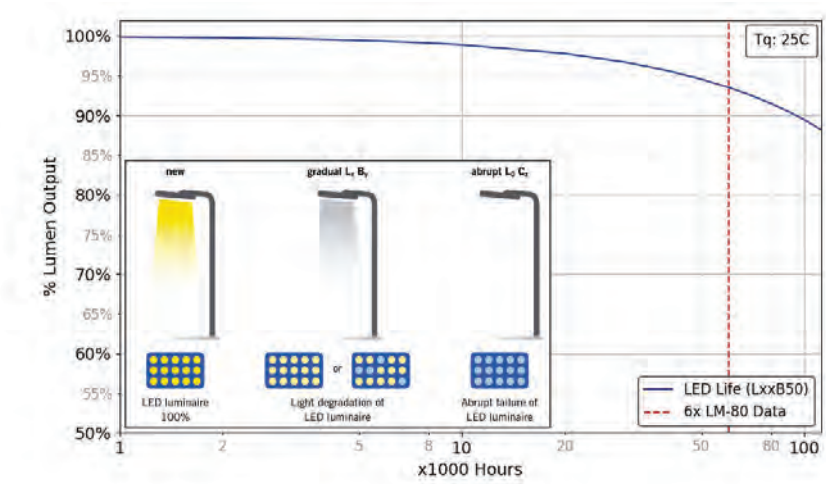
2.6*

0 to 0.5	0.5 to 1.5	1.5 to 2.5	2.5 to 4.0
Very poor circular economy performance	Some circular economy functionality	Definite/ substantial progress to circularity	Excellent circularity

*Preliminary Rating

LLMF GRAPH

COLOUR TEMPERATURES



AMBER

3000K

4000K

Selected Colour

C9

Metallic Silver (RAL9006)

Standard Colours Available

C1

Smooth White (RAL9016)

C3

Green (RAL6013)

C4

Smooth Graphite (RAL7011)

C6

Smooth Grey (RAL7035)

C7

Textured Black (RAL9005)

C9

Metallic Silver (RAL9006)

Custom Colour Available

RAL****

Customer specified colour

*Choosing a custom colour may increase the cost and lead time.

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

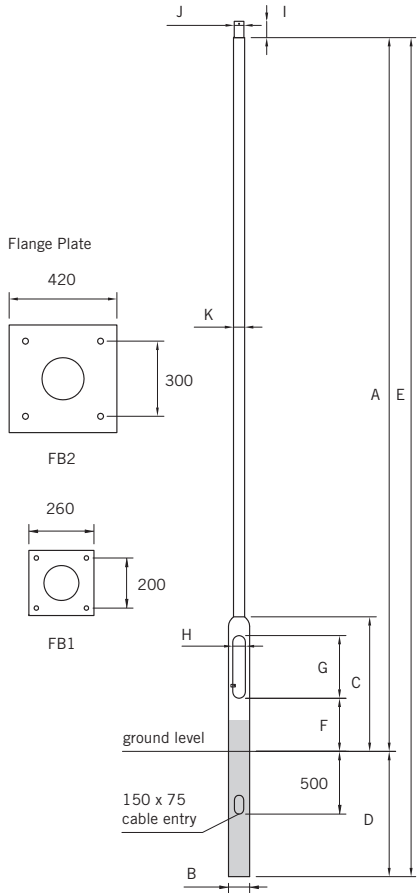
The specifications of the Holophane luminaires represents typical values. All descriptions, illustrations, drawings and specifications in the Holophane catalogue, Datasheets and website represent only general particulars of the goods to which they apply and shall not form part of any contract. The company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

> DATASHEET
VMXB.8.1S.LMZ.SA60.GV9



Holophane products that are suitable

CityMax
Denver Elite pole
D-Series
Factor
Factor small
V-Max



	Nominal Height	Base Diameter*	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length*	Spigot Diameter*	Shaft Diameter*	Weight kg*	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
2.5m standard duty	2500	140	1075	800	3300	400	500	100	-	-	76	27	2100
3m standard duty	3000	140	1075	800	3800	400	500	100	-	-	76	30	4666
3.5m standard duty	3500	140	1075	800	4300	400	500	100	-	-	76	32	2100
4m standard duty	4000	140	1075	800	4800	400	500	100	-	-	76	34	6484
4.5m standard duty	4500	140	1075	800	5300	400	500	100	-	-	76	37	5108
5m standard duty	5000	140	1075	800	5800	400	500	100	-	-	76	39	6149
5.5m standard duty	5500	140	1075	1000	6500	400	500	100	-	-	76	44	6003
6m standard duty	6000	140	1075	1000	7000	400	500	100	-	-	76	46	5999
6m heavy duty	5700	168	1200	1000	6700	400	600	115	130	76	89	71	10404
8m standard duty	7700	168	1200	1200	8900	400	600	115	130	76	89	89	10072
8m heavy duty	7700	168	1300	1200	9000	500	600	115	250	101	114	107	15699
8m extra heavy duty	7700	194	1300	1200	9000	500	600	115	250	127	140	136	18973
10m standard duty	9700	168	1300	1500	11200	500	600	115	250	101	114	150	18067
10m heavy duty	9700	194	1300	1500	11200	500	600	115	250	127	140	168	23193
10m extra heavy duty	9700	194	1300	1500	11200	500	600	115	250	152	168	220	28317
12m standard duty	11700	194	1300	1700	13400	500	600	115	250	127	140	213	26251
12m heavy duty	11700	194	1300	1700	13400	500	600	115	250	127	168	260	40390

* Exclusion TBC

2.5-6m std Poles
8-12m std Poles
Flange Plate FB1
Flange Plate FB2
Bolts M18 x 400
Bolts M24 x 820



F +44 (0)1908 367 618

Flange Plate and Anchor Bolt information will be confirmed at time of order due to the necessity in ensuring the correct plate and Anchor Bolts are supplied.
Column type to be confirmed at time of order as this is based on luminaire weight, windage and geographical location.
Info@holophane.co.uk

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

stepped steel - CityMax Large only
post top

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
6m	6000	140	1075	1000	7000	400	500	115	-	-	-	46	5999
8m	7700	168	1300	1200	9000	500	600	115	100	76	114	107	15699
10m	9700	168	1300	1500	11200	500	600	115	100	76	114	150	18067
12m	11700	194	1300	1700	13400	500	600	115	100	76	140	168	26251
15m	14700	194	1200	2000	17000	400	600	115	100	76	168	306	40300

twin head

	Nominal Height	Base Diameter	Base Height	Planting Depth	Overall Length	Door to Ground	Door Opening Length	Door Opening Width	Spigot Length	Spigot Diameter	Shaft Diameter	Weight kg	Bending Moment (ULS) Nm
description	A	B	C	D	E	F	G	H	I	J	K		
8m	7400	194	1200	1200	8800	400	600	115	200	127	139.7	125	22610
10m	9400	194	1200	1500	11100	400	600	115	200	152.4	168.3	208	39131
12m	11400	194	2500	1700	13300	1000	600	115	200	152.4	168.3	295	41585

Note: For Terrain Category 2 locations LMZ, HVZ & HEZ

<https://www.holophane.co.uk/>



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F +44 (0)1908 367 618

F Intl +44 (0)1908 363 789

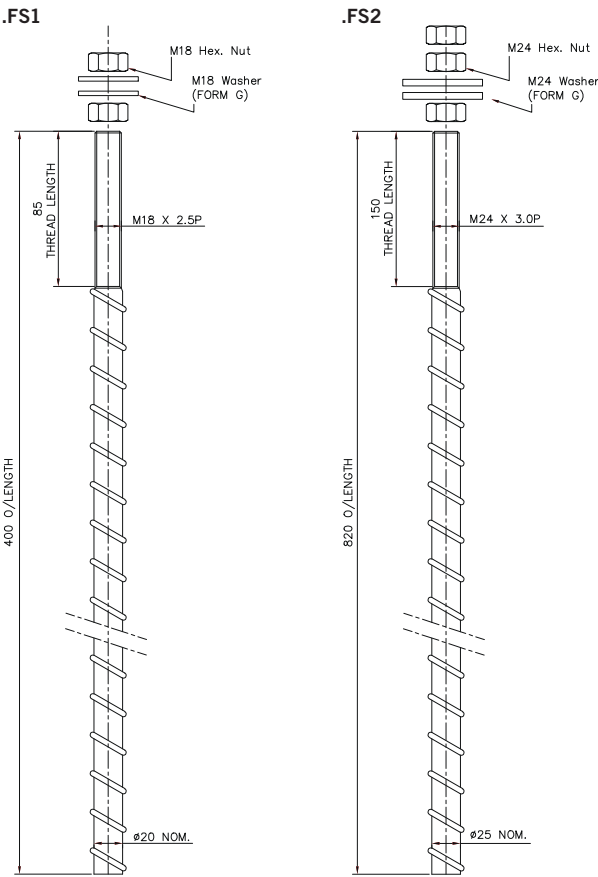
E info@holophane.co.uk

Holophane Europe Limited
Bond Avenue, Milton Keynes
Buckinghamshire MK1 1JG
United Kingdom

For columns supplied with optional flange base Holophane offers two types of foundation bolts.

Note: The material used for the bolts is Fe E500 grade steel, with yield strength 500 N/mm2 and minimum UTS 550 N/mm2.

- HEL.FS1 M18 Bolts (FS1) x 400 mm long
HEL.FS2 M24 Bolts (FS2) x 820 mm long



OUTDOOR PHOTOMETRIC REPORT
CATALOG: VMX.2.LA074.V2.X2L2.W042

Manufacturer: HOLOPHANE EUROPE LIMITED
Test #: B14013 - SUM19038
Test Lab: HOLOPHANE EUROPE LIMITED PHOTOMETRIC LAB
Test Date: 4 Sep 2019
Catalog: VMX.2.LA074.V2.X2L2.W042
Description: V-Max Streetlighting luminaire with a Type III - Short distribution
Lamp Catalog: LA074
Lamp: LED C.7000 Lumens
Lamp Output: Total luminaire Lumens: 6821.8, absolute photometry *
Input Wattage: 42
Luminous Opening: Rectangle (L: 0.34M, W: 0.2M)
Max Cd: 5,081.9 at Horizontal: 60°, Vertical: 67.5°
Roadway Class: SHORT, TYPE III



No
Photo
Available

Type RW1

OUTDOOR PHOTOMETRIC REPORT
CATALOG: VMX.2.LA074.V2.X2L2.W042



Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,026.3	15%
0-40	1,897.2	27.8%
0-60	4,511.4	66.1%
60-90	2,310.5	33.9%
70-100	905.8	13.3%
90-120	0.000	0%
0-90	6,821.8	100%
90-180	0.000	0%
0-180	6,821.8	100%

Roadway Summary

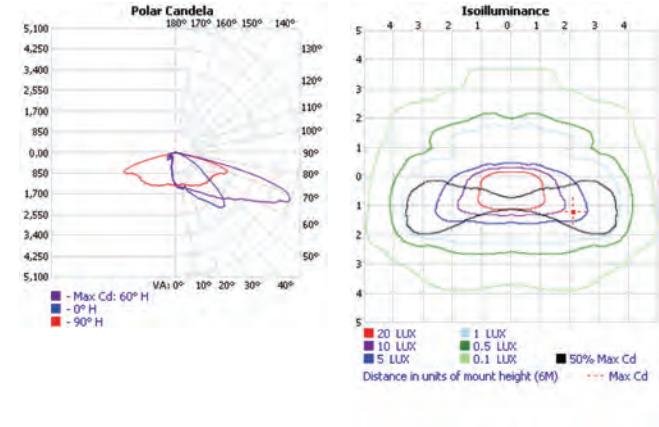
Distribution:	TYPE III, SHORT
Max Cd, 90 Deg Vert:	0.000
Max Cd, 80 to <90 Deg:	459.6
	Lumens % Lamp
Downward Street Side:	5,395.5 79.1%
Downward House Side:	1,427.0 20.9%
Downward Total:	6,822.4 100%
Upward Street Side:	0.000 0%
Upward House Side:	0.000 0%
Upward Total:	0.000 0%
Total Lumens:	6,822.4 100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	122.6	1.8%	90-100	0.000	0%
10-20	336.8	4.9%	100-110	0.000	0%
20-30	566.8	8.3%	110-120	0.000	0%
30-40	870.9	12.8%	120-130	0.000	0%
40-50	1,245.2	18.3%	130-140	0.000	0%
50-60	1,369.0	20.1%	140-150	0.000	0%
60-70	1,404.7	20.6%	150-160	0.000	0%
70-80	834.2	12.2%	160-170	0.000	0%
80-90	71.6	1.0%	170-180	0.000	0%

LCS Table

BUG Rating	B1 - U0 - G1	Lumens	Lumens %
Forward Light			
Low(0-30):	705.4	10.3%	
Medium(30-60):	2,888.5	42.3%	
High(60-80):	1,759.4	25.8%	
Very High(80-90):	42.1	0.6%	
Back Light			
Low(0-30):	321.0	4.7%	
Medium(30-60):	596.4	8.7%	
High(60-80):	480.4	7%	
Very High(80-90):	29.2	0.4%	
Uplight			
Low(90-100):	0.000	0%	
High(100-180):	0.000	0%	
Trapped Light:	0.000	0%	



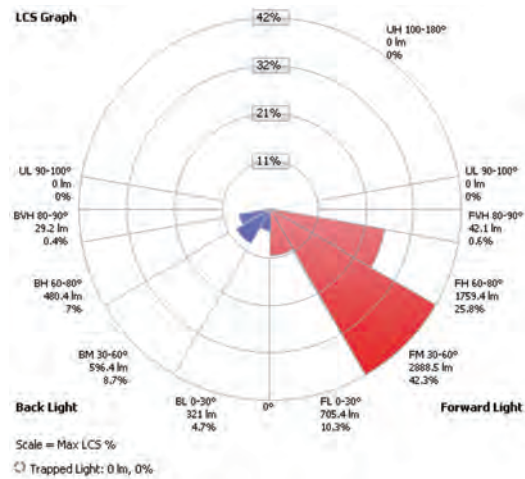
*Test based on absolute photometry where lamp lumens=lumens total.

*Cutoff Classification and efficiency cannot be properly calculated for absolute photometry.

Visual Photometric Tool 1.2.46 copyright 2023, Acuity Brands Lighting.

This Photometric report has been generated using methods recommended by the IESNA. Calculations are based on Photometric data provided by the manufacturer, and the accuracy of this Photometric report is dependent on the accuracy of the data provided. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual Photometric performance to differ from the performance calculated using the data provided by the manufacturer. This report is provided without warranty as to accuracy, completeness, reliability or otherwise. In no event will Acuity Brands Lighting be responsible for any loss resulting from any use of this report.

Type RW1

[illegible]

CONTROLUX AIR GATEWAY

The Controlux Gateway is a state-of-the-art network interface device which synchronizes Controlux outdoor lighting controllers and the lighting management software (CityManager or similar third-party software).

The Gateway has an in-built radio module for wireless network configuration, commissioning, and maintenance. It can reliably communicate with a large number of devices spread across large distances. In-built smart monitoring tools notify users about the status of the luminaires and the network (via CityManager or other software).

Several Internet connectivity options offer robustness and flexibility to the end-customer. Furthermore, it supports the industry-standard protocols allowing for an easy integration with other systems and networks.

The Gateway encloses advanced industrial components for optimized performance worldwide.

specifications

hardware

integrated product

- In-built power supply, 2.4 GHz wireless network communication, server communication (SIM-card, Ethernet, Wi-Fi). SIM-card provided by Twilight with worldwide coverage, or by customer himself (requires 1GB monthly data subscription)

input voltage

- Universal 85 – 264 VAC, 50/60 Hz

power consumption

- <8W (average)

processor

- High-performance industrial grade dual-core ARM Cortex-A9 CPU, 1 GHz

data storage

- Micro SD-card

real-time clock

- Battery-backed RTC

electrical protection

- Class II: overload, short circuit, and overtemperature protection

electrical safety

- Galvanic isolation between high-voltage and low-voltage terminals

operating conditions

- 20 °C to +60 °C, 20% to 90%, Rh non-condensing

antenna

- Integrated internally for 2.4 GHz wireless and Wi-Fi

connectors

- 1x Ethernet port (10/100, RJ45)
- 1x USB 2.0 connector (high speed)
- 1x micro SD-card slot (max. 32 GB)
- 1x push insert for a standard SIM-card bay (25 mm x 15 mm)
- 2-pin power connector
- 2x uFL antenna connector (2.4 GHz wireless, Wi-Fi)
- 1x SMA-F antenna connector (2G/3G modem)

product mounting options

- Pole mounting, wall mounting, or inside the cabinet

housing

- IP65, fireproof (UL94VO) housing

dimension

- 230 mm x 130 mm x 90 mm

manufacturing

- ISO 9001: 2008, Made in Europe

certification

- RoHS, CE, EN301489-1/3, EN61547, EN55015, EN300328, EN60950
- RF Transceiver compliant with US (FCC), Canadian (IC), European (ETSI), and Japanese (Telec) standards



Controlux Air Gateway

specifications (continued)

internet communication

server communication

- 2G GSM/ GPRS/ EDGE quad-band,
- 3G six-band UMTS/ HSPA
- Additional Ports: Ethernet and WiFi

network security

- 128 AES, WebSocket (with SSL) and VPN
- Multilayer security with end-to-end encryption
- Dual protection for messages between devices and Gateway
- Certificate-based secure WebSocket and VPN connection

functions

- Real-time monitoring of devices and network
- Several Internet connectivity options (Ethernet, Wi-Fi and GSM) and automatic connectivity selection
- Automatic recovery for mobile connection
- SNTP time-sync between Gateway and devices
- Regular logging of the system operation (selectable time interval)
- Real-time connection between Gateway and DigiHub
- Remote debugging of Gateway and devices
- Over-the-air update for Gateway and devices (software and firmware)
- Local intelligence for reliability and faster response time

over-the-air update

- Configurations and software can be updated remotely, ensuring an up-to-date network infrastructure

remote monitoring

- CityManager (or third-party software) enables remote management, monitoring, control, and configuration of luminaires on individual and group level.

wireless communication

wireless network

- 2.4 GHz IEEE 802.15.4
- Self-forming, self-healing, user-configurable wireless network
- +10 dBm max. receiver sensitivity
- Up to 1 km open field range
- Up to 250 kbps RF data rate

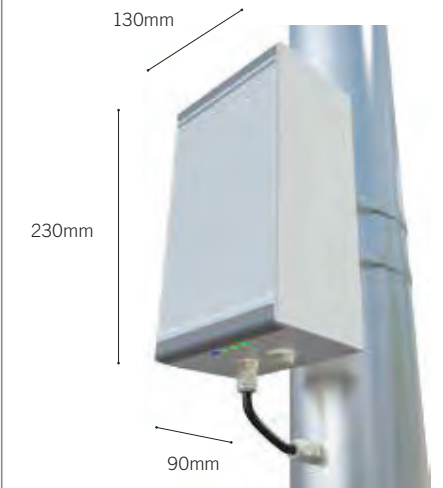
device to gateway ratio

- 200:1

product compatibility

- Plug-and-play compatibility with Controlux Air enabled luminaires and motion sensors

Model X (External Wireless Motion Sensor)



EXTERNAL WIRELESS MOTION SENSOR

The Controlux Air standalone motion sensor is a revolutionary integrated wireless motion sensor for the presence-based monitoring and control of outdoor lighting. The product is compatible with both conventional and new luminaires (such as LED).

The motion sensor delivers on-demand dynamic lighting, making the lights adjust their brightness based on the presence of pedestrians, bicycles, and cars. As a result, the lights automatically dim down during the off-peak hours when there is nobody in the vicinity. Upon detection of the human presence, all lights in the surrounding area return to the brightness levels previously defined by the user. Dynamic lighting reduces energy consumption by up to 80% without compromising public safety and citizen comfort.

The in-built monitoring tools notify users (via CityManager) about the lighting-related faults such as a luminaire or driver failure. This greatly reduces the need for expensive visual inspections and enables a reduction of operation and maintenance costs.

features

- Revolutionary outdoor motion sensor with an in-built wireless lighting controller
- On-demand dynamic lighting thanks to advanced human detection technology
- Heatmaps to track occupancy levels and traffic intensity in the area
- Plug-and-play installation
- Universal lamp compatibility
- Energy Monitoring
- In-built real-time clock with a back-up battery, AstroClock
- Fully controllable through Controlux Air CityManager
- Open interfaces for third-party compatibility
- Fail-proof: three-level back-up system



specifications

Product

- Motion detection sensors, wireless communication, and lighting control integrated into one product for a simple plug-and-play installation. Includes a 5,5 m pre-connected power and control cable.

Motion detection

- Detects pedestrians, cyclists, and cars (range: 4-120 km/h)
- Range: up to 15 m on each side, 9 m in front, 3 m behind
- Angle: >270 ° (depends on pole diameter)
- Triggering of 1-10 neighboring lamps upon detection (user-configurable)

Input voltage

- 230 VAC (PR150868) or 115 VAC (PR151116), 50/60 Hz (normal power grid)

Power consumption

- <3W

DALI loads

- Max.3

Dimming control

- 1-10 V or DALI (isolated for safety)

Surge protection

- 110 joules (6 Ka), 12 kV combination wave

Controller

- ARM Cortex-M3 CPU

Electrical protection

- Class II: overload, short circuit, and overtemperature protection

Electrical safety

- Galvanic isolation between high-voltage and low-voltage terminals

Operating conditions

- -20 °C to +70 °C ambient, 20% to 90%, Rh non-condensing

Product mounting

- On the pole. Recommended mounting height 5 m above the ground

Housing

- IP65, weatherproof and fireproof

Antenna

- Integrated Internally

Dimensions

- 100 mm x 125 mm x 95 mm
- ± 10° adjustable mounting plate to accommodate for pole tilts

Product compatibility

- Direct wireless communication with Controlux Air node and Gateway, communication with CityManager—through Gateway
- Compatibility with conventional (PLL, HID, HPS) and new (LED) luminaires

wireless communication

- 2.4 GHz IEEE 802.15.4 self-forming, self-healing wireless network
- +10 dBm max. transmit power, -98 dBm max. receiver sensitivity
- Up to 1 km open field range
- Up to 250 kbps microcontroller RF data rate
- 32-bit microcontroller, 64 kB Flash and 16 kB RAM

network security

- 128 AES
- Multi-layer security with end-to-end encryption

over-the-air update

- Configurations and software can be updated remotely, ensuring an up-to-date network infrastructure

server communication

- via Gateway

device to gateway ratio

- 200:1

remote monitoring

- Via CityManager or similar third-party management software. CityManager enables remote management, monitoring, control, and configuration of lamps on individual and group level.

safety mode

- Auto-safe: in a case of Gateway failure, all lamps go back to the highest pre-programmed level of brightness. In a case of the controller failure, the lamp goes back to the 100% brightness.

certification

- RoHS, CE, EN301489-1/3, EN61547, EN55015, EN300328, EN60950, EN550121-5
- RF transceiver compliant with US (FCC), Canadian (IC), European (ETSI), and Japanese (Telec) standards

manufacturing

- ISO 9001:2008, Made in Europe

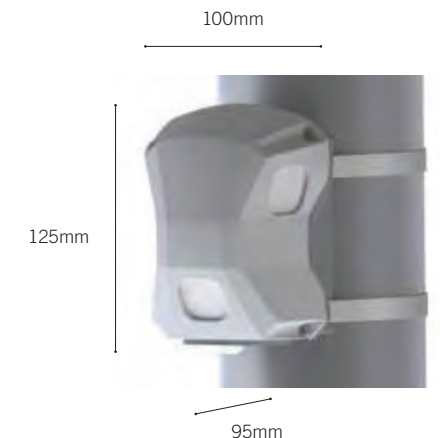
lamp switching capacity

- 2400 VA (Relay), 16A max. current

astroclock

- Battery-backed real-time clock; AstroClock feature
- Able to switch on/off the lamps at sunset/sunrise and adjust them seasonally (Summer-Winter time).
- Eliminates the need for conventional photocell

External Wireless Motion Sensor



UNIVERSAL INTERFACE DEVICE

The Universal Interface Device enables the user to use a switch as an override device.

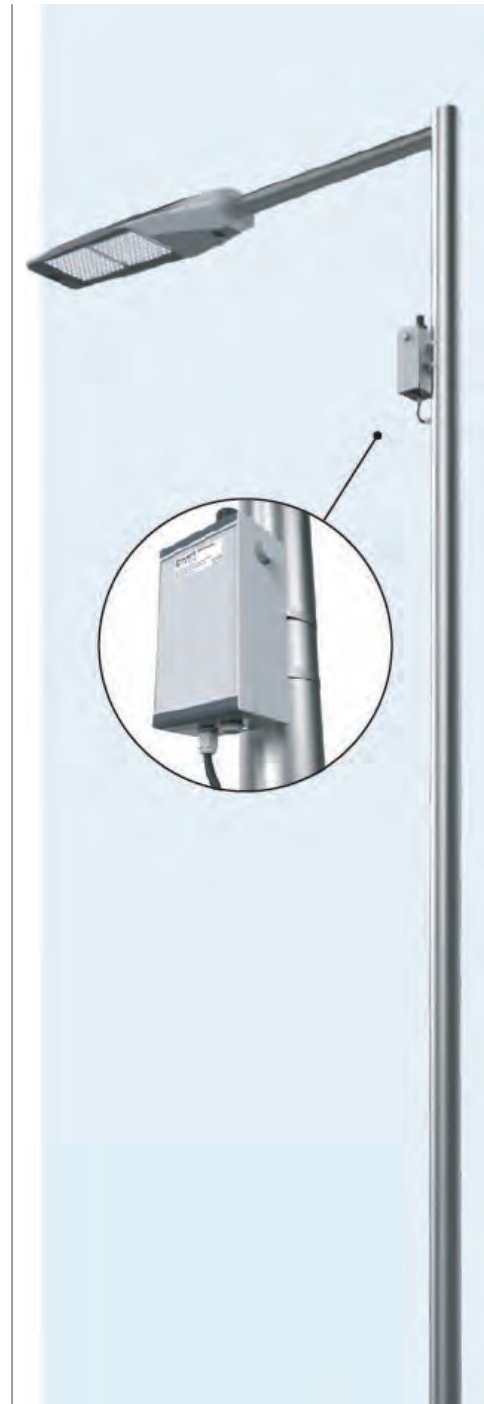
The Universal Interface Device supports seamless communication with other Controlux devices/products, such as Motion Sensor and Gateway, and can be managed remotely via Controlux Air CityManager.

The CTA.UID can fit into several user applications where an override of a standard lighting profile is desired, such as emergency conditions or a temporary change of the lighting levels.

The override switch (**supplied by others**) can be installed remotely as far as there is a valid and safe electrical connection to the CTA.UID.

features

- Override commands issued via the Controlux Air wireless network
- Remote management and control via CityManager and third-party software
- Advanced dimming and adaptive lighting schedules
- Able to interface with third party systems
- Automatic failure and status reports via CityManager
- Plug-and-play installation



specifications

product

- In-built wireless communication, lighting control, and external sensor interface
- Model B: 5.5 m pre-connected power cable for ease of installation

input voltage

- 230 VAC (Model A PR151083 - Model B PR161195) or
- 115 VAC (Model A PR151115 - Model B PR161196), 50/60 Hz (normal power grid)

wireless control

- Remote on/off/dimming
- Grouped Scheduling

power consumption

- <2W

surge protection

- 110 joules (6 Ka)
- 12 kV combination wave

controller

- ARM Cortex-M3 CPU

electrical safety

- Galvanic isolation between high-voltage and low-voltage terminals

operating conditions

- -20 °C to +70 °C ambient
- 20% to 90%, Rh non-condensing

housing

- IP65

antenna

- External antenna

dimensions

- 230mm x 130 mm x 90 mm

product compatibility

- Direct wireless communication with Controlux Air and Gateway, communication with CityManager—through Gateway

external sensor integration

- I²C interface to connect third-party external sensors

wireless communication

- 2.4 GHz IEEE 802.15.4 self-forming, self-healing wireless network
- +10 dBm max. transmit power, -98 dBm max. receiver sensitivity
- Up to 1 km open field range
- Up to 250 kbps microcontroller RF data rate
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device to gateway ratio remote monitoring

- 200:1

safety mode

- Via CityManager or similar third-party management software. CityManager enables remote management, monitoring, control, and configuration of lamps on individual and group level.

certification

- Auto-safe: in a case of Gateway failure, all lamps go back to the highest pre-programmed level of brightness. In a case of the controller failure, the lamp goes back to the 100% brightness.
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