

EXTERNAL LIGHTING ASSESSMENT REPORT

FOR:
Indurent Park, Knowsley.

A PROJECT FOR:
Indurent Management Limited.

AUTHOR:
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ISSUE:
Planning Issue Rev – P2

DOCUMENT MANAGEMENT

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1.0 INTRODUCTION

1. This External Artificial Lighting Assessment Statement has been prepared by MBA Consulting Engineers Limited on behalf of Indurent Management Ltd to assist the local planning authority in its consideration for the artificial lighting strategy for the proposed development on Land to the East of Moorgate Point, Alchemy Way, Knowsley business Park Kirby as follows.
2. Full Planning Permission to cover the following.
Demolition of Existing Buildings / Structures and Erection of Industrial and Logistics Warehouse Units (Use Class B2 and / or B8 and / or E(g)(iii) with Ancillary Offices, Including Provision of Revised Access Arrangements form Alchemy Way and All Associated Works of Landscaping, Car Parking and Servicing Arrangements
3. The external lighting design shall give consideration to all external areas surrounding the building including service yard, car parking, cycle parking, walkways and the access road to the development area
4. The proposed lighting design requires that all the luminaires be mounted horizontally with a zero-degree tilt to the finished road surface, in addition to the use of full cut-off luminaires. The proposed lighting design also ensures that the column mounted luminaires parallel to the central estate road is orientated so that the peak intensity is not directed towards the receptors further reducing source intensity glare.
5. The scheme is based on the use of LED luminaires fixed to the building façade and on lighting columns including low level bollard luminaires around the entrances to the units as detailed on the accompanying drawing 25078-MBA-EX-SP-DR-E-0001.

2.0 LIGHTING STANDARDS AND GUIDES

The following lighting standards, policies and guidance documents will form the basis within this report for assessment and were consulted during and post completion of the theoretical lighting design: -

- National Planning Policy Framework (Revision February 2025)
- Clean Neighborhoods and Environment Act 2005 (CNEA)
- Environmental Protection Act (1990)
- HSE Executive Lighting at Work (ISBN 978 0 7176 1232 1) 1997
- British Standards, Lighting of Outdoor Work Places (BS EN 12464-2:2021)
- British Standards, Accessible & Inclusive Built Environment (BS 8300-1:2018)
- British Standards, Roads (BS 5489-1:2020)
- British Standards, Photobiological Safety of Lamp Systems (BS EN 62471:2008)
- CIBSE Lighting Guide LG1, The Industrial Environment (2018)
- CIBSE Lighting Guide LG6, The Outdoor Environment (2016)
- ILP Guidance Notes for the Reduction of Obtrusive Light (2021)
- ILP Technical Report TR12 Lighting of Pedestrian Crossings (2015)
- ILP Professional Lighting Guide PLG23 Lighting for Cycling Infrastructure (2020)

3.0 LIGHTING SOLUTION

1. Care has been taken when selecting the luminaires that ensure the appropriate products will greatly reduce spill light and glare to and around site boundaries and prevent sky glow.
2. Full cut-off luminaires, horizontal, “flat” floodlights and LED modules that are housed in the luminaires canopy have been generally selected.
3. The proposed luminaires all have a total ULR of less than 2% as per ILP guidance which drastically reduces the upward spread of light near to and above the horizontal. All luminaires are installed at a tilt of 0% to achieve this. The overall site ULR is 0.01% as result of these actions which is well within ILP guidance tolerances with the site being an E3 classification
4. Best lighting practice design guidelines have been followed in order to achieve the criteria outlined in The Institution of Lighting Professionals: Guidance Notes for the Reduction of Obtrusive Light 01/20, covering Environmental Zones E0 to E4.
5. The most sensitive/critical zones for minimising sky glow are those between 85 - 100° as shown in Table 1.

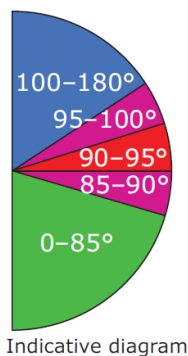


Table 1: The effect on the ability to view the night sky at various angles

Angle of light emitted (degrees)	Sky glow effect	Glare effect
100 – 180	Local	Little
95 – 100	Significant	Some
90 – 95	High	High
85 – 90	Significant	High
0 – 85	Minimal	Some

Table 1: Critical Luminaire Angles for Minimising Sky Glow - [1]

6. With the proposed luminaires being strategically placed and having zero or minimal upward light ratio (ULR), the proposed design solution meets the criteria of environmental zone E3, Lighting Environment classification of Medium District Brightness and Maximum Upward Light Ratio of Luminaires as indicated respectively in Tables 2 & 3.

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark (SQM 20.5+)	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark (SQM 20 to 20.5)	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness (SQM ~15 to 20)	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres of suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

Table 2: Environmental Zones - [1]

Light technical parameter	Environmental zones				
	E0	E1	E2	E3	E4
Upward light ratio (ULR)/%	0	0	2.5	5	15

Table 3: Maximum Values of Upward Light Ratio (ULR) of Luminaires - [1]

7. Glare has been kept to a minimum by ensuring that the main beam angle of all the luminaires directed towards any potential observer is not more than 70 degrees as indicated in Figure 1.

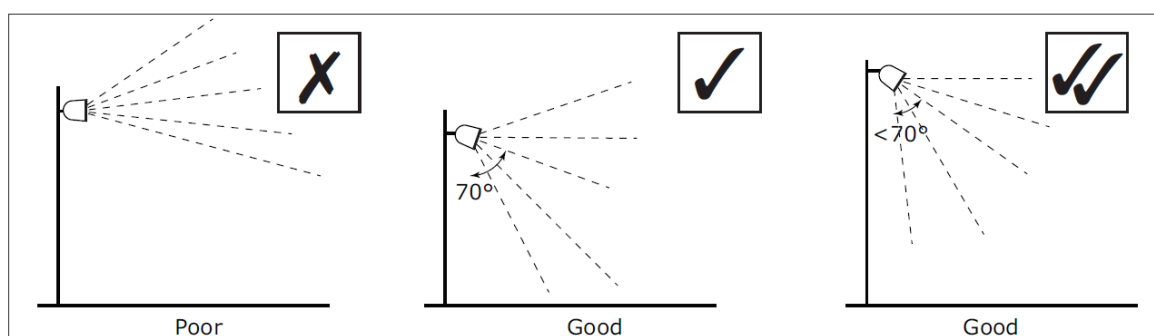


Figure 1: Luminaire Aiming Angles - [1]

In addition, the designed mounting heights and chosen luminaires ensure that greater spacing between luminaires is achieved thus reducing the number of overall lighting points and also reducing the spill and glare as indicated in Figures 2 and 3.

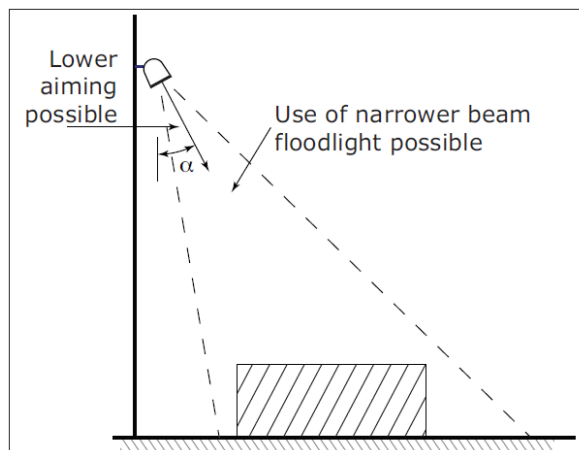


Figure 2: Higher Mounting Height – Less Spill and Glare - [1]

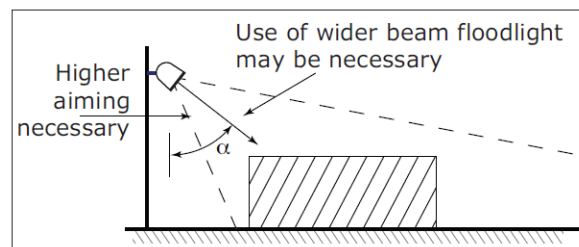


Figure 3: Lower Mounting Height – More Spill and Glare - [1]

8. Lighting pollution on adjacent properties has been kept to a minimum and in accordance with the respective environmental zone category indicated in Table 4.

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Table 4: Maximum Values of Vertical Illumination on Properties – [1]

9. All external lighting will be controlled by automatic timeclock arrangement to assist in the control of the lighting during required hours as required going forward.

4.0 DESIGN STATISTICS

- The following table details the design statistics achieved within the various areas of the development and should be read in conjunction with the external lighting drawings provided.

Statistics				
Description	Symbol	Avg	Min	Min/Avg
K72 Car Park - 20/0.40Uo	+	23 lux	10 lux	0.43
K72 Dock Doors - 50/0.40Uo	+	58 lux	39 lux	0.67
K72 Main Entrance Plaza - 50/0.40Uo	+	58 lux	27 lux	0.47
K72 Rear Walkways - 5/0.25Uo	+	8 lux	2 lux	0.25
K72 Service Yard - 20/0.40Uo	+	22 lux	10 lux	0.45
K135 Access and Gatehouse - 20/0.40Uo	+	25 lux	16 lux	0.64
K135 Car Park - 20/0.40Uo	+	20 lux	8 lux	0.40
K135 Dock Doors - 50/0.40Uo	+	59 lux	34 lux	0.58
K135 Rear Walkways - 5/0.25Uo	+	8 lux	2 lux	0.25
K135 Service Yard - 20/0.40Uo	+	23 lux	10 lux	0.43
Access Road (Landlords) 20/0.40Uo	+	20 lux	8 lux	0.40

Table 5: Designed Lux Levels

- The results obtained fall in line with the respective guidelines Environmental Zones E3 inclusive as detailed elsewhere in this report.
- As further detailed on the drawing any potential light spill over the boundaries into adjoining areas including neighboring properties has been kept to the minimum.

5.0 CONCLUSION

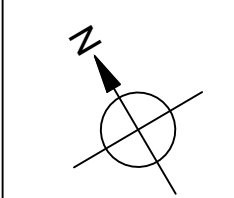
- All external lighting shall be controlled by photocell and time clock.
- The total lighting solution has been carefully generated to ensure the immediate environment has been protected including the properties adjacent to the site.
- The illumination that would normally be free flowing from site boundaries has been restricted and has been further designed to mitigate any potential impact to properties adjacent to the proposed site.
- Careful consideration has also been taken to ensure no loss of amenity due to glare through shielding of the lamps, choice of luminaires and efficient mounting heights.

6.0 REFERENCES

[1] – 2020/01 - Institute of Lighting Professionals – GN 01/21 Guidance Note for the reduction of obtrusive light.

7.0 APPENDICES

7.1 EXTERNAL LIGHTING DRAWING

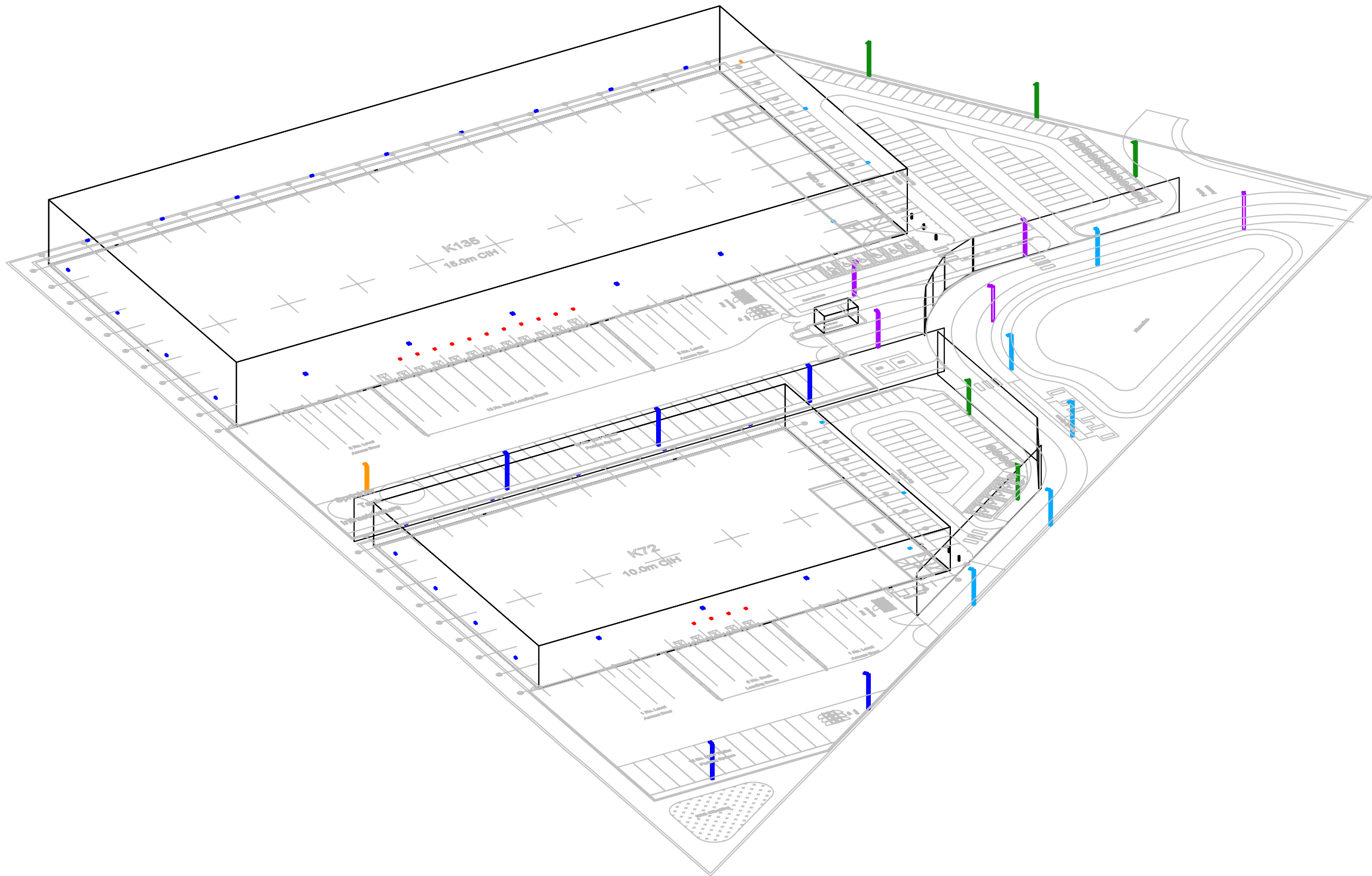


INDICATIVE EXTERNAL LIGHTING LAYOUT
Scale 1:500 @ A0

Schedule					
Symbol	Label	Quantity	Catalog Number	Description	Wattage
	A1	4	DSX1-4LA224-FWE (TZ)	D-Series 1 - Area luminaire on 8m Column	145
	A1s	1	DSX2-4LA224-FWE (DSX2-4 LED BL5)	D-Series 0 - Area luminaire with Back Light Shield on 8m Column	169
	AW	8	DSX1-4LA224-FWE (TZ)	D-Series 1 - Area luminaire on Wall Bracket at 8m AFFL	145
	B1	5	DSX0-4LA114-BLC (TZ)	D-Series 0 - Area luminaire on 8m Column with Extreme landscape Control Cables	130
	CW	6	DSX1-4LA224-FWE (TZ)	D-Series 1 - Area luminaire on Wall Bracket at 8m AFFL	145
	D1	3	DSX0-4LA134-AV (TZ)	D-Series 0 - Area luminaire on 8m Column	90
	D1s	2	DSX0-4LA134-AV (DSX0-4 LED BL5) (TZ)	D-Series 0 - Area luminaire with Back Light Shield on 8m Column	90
	E1	1	DSX0-4LA114-FWE (TZ)	D-Series 0 - Area luminaire on 8m Column	75
	F1s	5	DSX0-4LA114-NR (DSX0-4 LED BL5) (TZ)	D-Series 0 - Area luminaire with Back Light Shield on 8m Column	75
	G	1	WAP-1LA064-FW	WALLPACK at 8m AFFL	50
	H	22	DWL-1LA014-HN.W007	Downer ID Wall at 2.7m AFFL	6.5
	I	15	T8H AMC 7024AH015BL	7024 - MCHP 10W 4000K MCHP AY - CR80 at 2m AFFL, Zone T8	15
	J	5	DBD-1LA024-DO-NR.L8.W0-21 - DBD-NOT	Downer ID Bulbless 1m High	23

Statistics				
Description	Symbol	Avg	Min	Min/Avg
K72 Car Park - 200.40Up	+	23 lux	10 lux	0.43
K72 Dock Doors - 500.40Up	+	59 lux	39 lux	0.67
K72 Main Entrance Plaza - 500.40Up	+	59 lux	27 lux	0.47
K72 Rear Walkways - 50.25Up	+	8 lux	2 lux	0.25
K72 Service Yard - 200.40Up	+	22 lux	10 lux	0.45
K135 Access and Gatehouse - 200.40Up	+	25 lux	16 lux	0.64
K135 Car Park - 200.40Up	+	20 lux	8 lux	0.40
K135 Dock Doors - 500.40Up	+	59 lux	34 lux	0.58
K135 Rear Walkways - 50.25Up	+	8 lux	2 lux	0.25
K135 Service Yard - 200.40Up	+	23 lux	10 lux	0.43
Access Road (Landform) 200.40Up	+	20 lux	8 lux	0.40

- NOTES
- GENERAL NOTES:
- DO NOT SCALE THIS DRAWING.
 - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
 - FOR DETAILS OF SYMBOLS AND LINE STYLES USED IN THE DRAWINGS, PLEASE REFER TO THE LEGEND SHEETS.
 - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL OTHER MSE SERVICES DRAWINGS, SCHEDULES AND SPECIFICATIONS, TOGETHER WITH THE ARCHITECTS AND STRUCTURAL DRAWINGS AND ASSOCIATED SPECIFICATIONS.
 - MBA CONSULTANCY ENGINEERS LIMITED HAVE NO RESPONSIBILITY FOR ANY USE MADE OF THIS DRAWING OTHER THAN FOR THAT WHICH IT WAS PREPARED AND ISSUED.
 - ANY DISCREPANCIES, ERRORS OR OMISSIONS ARE TO BE CLARIFIED WITH THE RELEVANT ENGINEER AT THE EARLIEST OPPORTUNITY.
 - ALL WORKS ARE TO BE IN ACCORDANCE WITH THE CURRENT RELEVANT STATUTORY REGULATIONS, BUILDING REGULATIONS, BRITISH STANDARDS, ACCEPTED CODES OF PRACTICE AND TRADE ASSOCIATION REQUIREMENTS.
 - THIS DRAWING IS FOR TENDER PURPOSES ONLY. DETAILED DESIGN AND INSTALLATION DRAWINGS ARE TO BE PROVIDED BY THE SUCCESSFUL SUBCONTRACTOR PRIOR TO INSTALLATION, IN ACCORDANCE WITH THE SPECIFICATION.
 - IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE DESIGN COMPLIES WITH LOCAL AUTHORITY REGULATIONS.



South West View

PL1	17/07/20	FIRST ISSUE - PLANNING	RM
REV	DATE	AMENDMENTS	APPROV

Part of the **Canalco** Group

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Email: enquiries@mbaconsultancy.co.uk
Web: www.mbaconsultancy.co.uk

CLIENT: INDURENT

PROJECT: INDURENT PARK, KNOWSLEY

TITLE: INDICATIVE EXTERNAL LIGHTING LAYOUT

DRAWING NUMBER:	25078-MBA-EX-SP-DR-E-0001		
REV	STATUS	FLOOR	SITE
PL1	PLANNING		
SCALE 0/40	DATE:	PROJECT No:	
1:500	JULY 2025	25-078	

7.2 BREEAM

BREEAM P109-4104 - Indurent Park Knowsley

Total Lumens

668,622

Total Upward Lumens

252

Installation ULR

0.04%

Complies with environmental zones

E2 & E3 & E4

CATALOGUE	ITEM REF	QUANTITY	LUMENS	POWER (W)	LLM/TcW	TOTAL LUMENS	TILT (°)	ULOR (%)	TOTAL UPWARD LUMENS
DSX1.4.LA224.FWE.C9	A1	4	21,795	145	150	87,180	-	0	0
DSX0.4.LA224.FWE.C9	A1s	1	21,795	169	129	21,795	-	0	0
DSX1.4.LA224.FWE.C9	AW	8	21,795	145	150	174,360	-	0	0
DSX0.4.LA184.BLC.C9	B1	5	12,463	130	96	62,315	-	0	0
DSX1.4.LA224.FWE.C9	CW	6	21,795	145	150	130,770	-	0	0
DSX0.4.LA134.AY.C9	D1	3	12,602	90	140	37,806	-	0	0
DSX0.4.LA134.AY.C9	D1s	2	12,602	90	140	25,204	-	0	0
DSX0.4.LA114.FWE.C9	E1	1	10,897	75	145	10,897	-	0	0
DSX0.4.LA114.NR.C9	F1s	5	11,379	75	152	56,895	-	0	0
WAP.1.LA064.FW.C9.CTR	G	1	5,861	50	117	5,861	-	0	0
DWL.1.LA014.HN.C9.W007	H	22	897	6	138	19,734	-	0	0
TBHF.MICS.7024AR4015BL	I	15	1,687	15	112	25,305	-	0	0
DBD.1.LA024.DO.NR.H100.C9.W023.LS	J	5	2,100	23	91	10,500	-	2.4	252

Required LLM/TcW: 70

Permissible ULR %: E0: 0% E1: 0% E2: up to 2.5% E3: up to 5% E4: up to 15%

Environmental zone level is based solely on the ULR.

The information provided is based on the latest the Institute of Lighting Professionals (ILP) Guidance notes for the reduction of obtrusive light and the latest BREEAM UK New construction V6.1. This assumes that all external lighting (except safety and security lighting) can automatically be switched off between 23:00 and 07:00. If safety or security lighting is required to be on during these hours, then it should comply with the levels recommended in the ILP guidance notes.

All values shown are the result of calculations derived from product specific photometry of luminaires positioned in a fixed relationship to each other and the statistical zone. In practice the values may vary due to tolerances in column installation, luminaire orientation, and surface reflectance, the substitution of alternative luminaires will not produce comparable results.

Summary P109-4104 - Indurent Park Knowsley

Line No.	Item Ref	Quantity	Catalogue
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
10	A1	4	DSX1.4.LA224.FWE.C9
11	A1	4	DSX1B.8.1A.LMZ.GV
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
20	A1s	1	DSX0.4.LA224.FWE.C9
21	A1s	1	DSX1B.8.1A.LMZ.GV
ACCESSORY			
30	A1s	1	DSX0.40LED.BLS
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
40	AW	8	DSX1.4.LA224.FWE.C9
41	AW	8	DSX1B.8.1A.LMZ.GV
LUMINAIRE AND BRACKET PACKAGE			
50	B1	5	DSX0.4.LA184.BLC.C9
51	B1	5	HAWA.AU.GV9
LUMINAIRE AND BRACKET PACKAGE			
60	CW	6	DSX1.4.LA224.FWE.C9
61	CW	6	HAWA.AU.GV9
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
70	D1	3	DSX0.4.LA134.AY.C9
71	D1	3	DSX1B.8.1A.LMZ.GV
ACCESSORY			
80	D1s	2	DSX0.40LED.BLS
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
90	D1s	2	DSX0.4.LA134.AY.C9
91	D1s	2	DSX1B.8.1A.LMZ.GV
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
100	E1	1	DSX0.4.LA114.FWE.C9
101	E1	1	DSX1B.6.1A.LMZ.GV
LUMINAIRE, COLUMN AND BRACKET PACKAGE			
110	F1s	5	DSX0.4.LA114.NR.C9
111	F1s	5	DSX1B.8.1A.LMZ.GV
ACCESSORY			
120	F1s	5	DSX0.40LED.BLS
LUMINAIRE			
130	G	1	WAP.1.LA064.FW.C9.CTR
LUMINAIRE			
140	H	22	DWL.1.LA014.HN.C9.W007
LUMINAIRE			
150	I	15	TBHF.MICS.7024AR4015BL

ACCESSORY

160		21	HEL.CBEPAC2
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LUMINAIRE

170	J	5	DBD.1.LA024.DO.NR.H100.C9.W023.LS
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ACCESSORY

180		5	DBD.ROOT
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7.3 FITTING DATASHEETS

> Datasheet - AMENITY - DSX1

DSX1.4.LA224.FWE.C9



Product image may not represent the final configuration stated above.

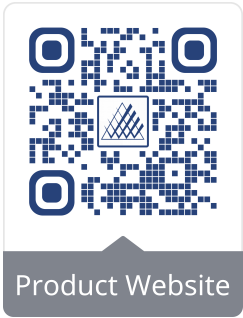


Product Specification **DSX1 Holophane Website**

DSX1.4.LA224.FWE.C9

Holophane DSX1 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 lenses (PMMA or silicone). 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 4
- LED light engine producing c.22,000 lm with a nominal 4000°K colour temperature
- Forward throw extra light distribution
- Metallic Silver (RAL9006)



DSX1B.8.1A.LMZ.GV

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
• Direct embedment

Performance

Drive Current from Driver:	799mA
Power:	145W
Fitting Current:	0.65A
Fitting Inrush:	53A - 0.3ms
Number of Drivers:	1
1x Driver 1 Inrush:	53A - 0.3ms
Max Drivers per 16A Type B MCB:	8
Max Fittings per 16A Type B MCB:	8
Total Number of LEDs:	60
Minimum Dim Level:	9%
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5



12.2Kg₂

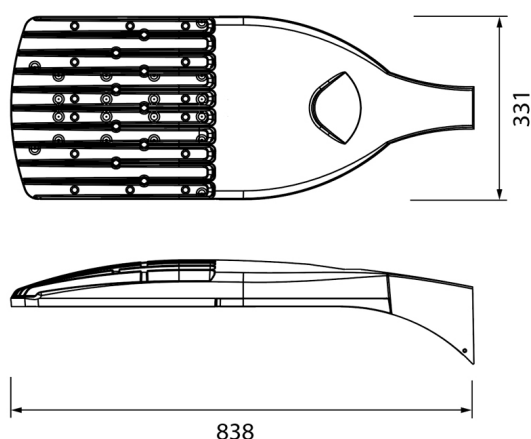


0.09M



[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

2.6

2.5 to 4.0

Excellent circularity

1.5 to 2.5

Definite/
substantial
progress to
circularity

0.5 to 1.5

Some circular
economy
functionality

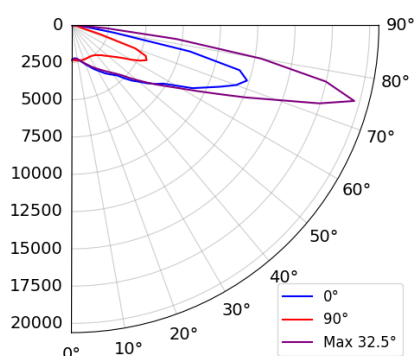
0 to 0.5

Very poor
circular
economy
performance

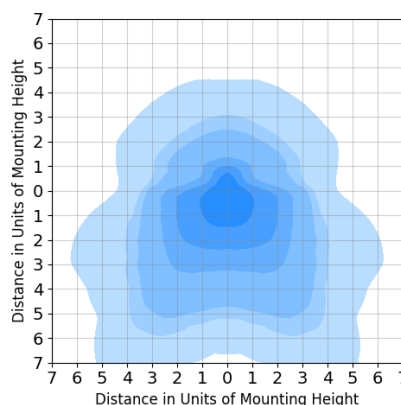
Assured Score

Photometry [↓ IES File](#)

Polar Plot

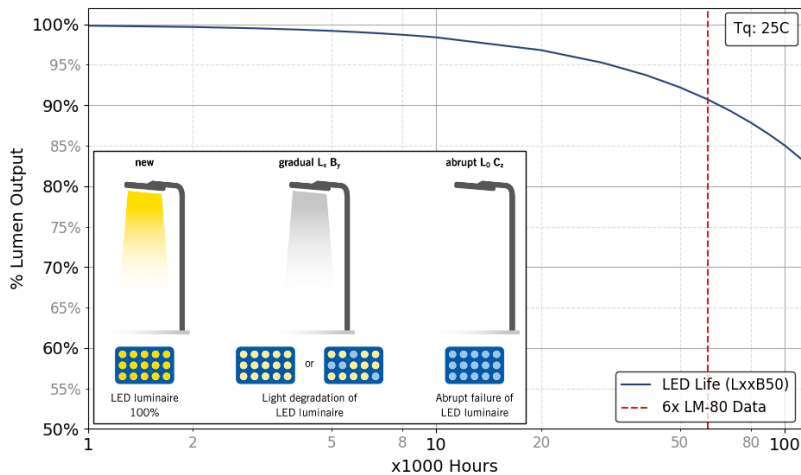


Isoilluminance Plot



Lumens:	21,795
CCT:	4000K
CRI:	70
IES File:	DSX1.4.LA224.FWE (TZ)

LLMF Graph



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

Colour Temperatures



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 graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 Black (RAL9005)

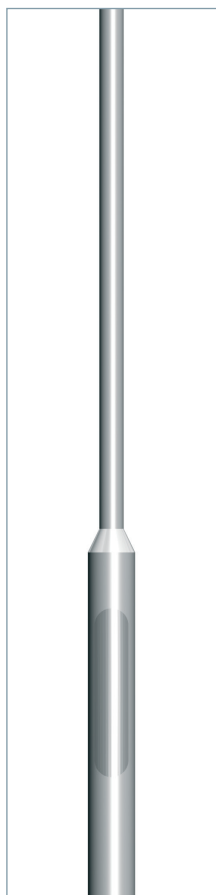
C9 Metallic Silver (RAL9006)

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.

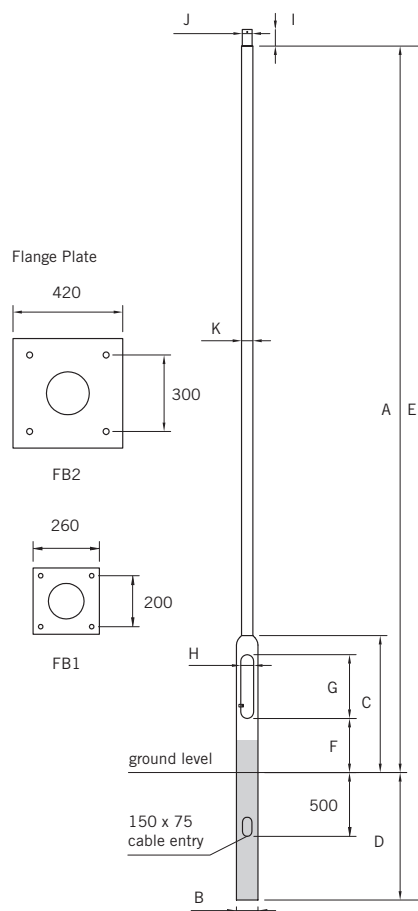
> Datasheet

DSX1B.8.1A.LMZ.GV



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

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.

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

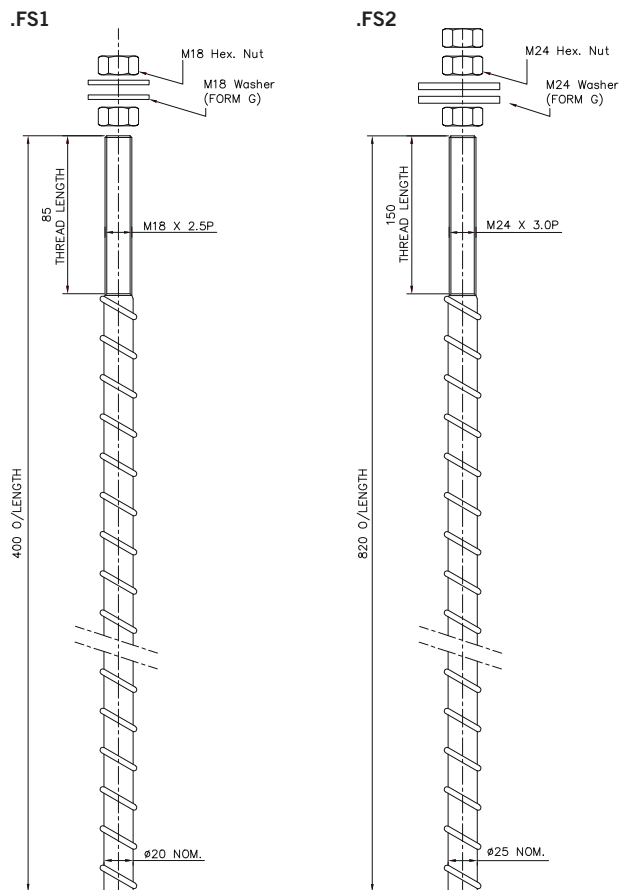
Note: For Terrain Category 2 locations LMZ, HVZ & HEZ

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



> Datasheet - AMENITY - DSX0

DSX0.4.LA224.FWE.C9



Product image may not represent the final configuration stated above.

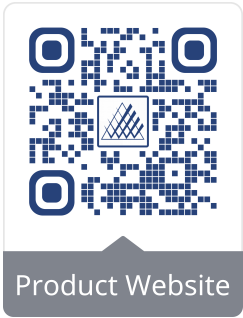


Product Specification **DSX0 Holophane Website**

DSX0.4.LA224.FWE.C9

Holophane DSX0 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 lenses (PMMA or silicone). 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 4
- LED light engine producing c.22,000 lm with a nominal 4000°K colour temperature
- Forward throw extra light distribution
- Metallic Silver (RAL9006)



DSX1B.8.1A.LMZ.GV

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
• Direct embedment

Performance

Drive Current from Driver:	1,385mA
Power:	169W
Fitting Current:	0.76A
Fitting Inrush:	83.2A - 0.261ms
Number of Drivers:	1
1x Driver 1 Inrush:	83.2A - 0.261ms
Max Drivers per 16A Type B MCB:	5
Max Fittings per 16A Type B MCB:	5
Total Number of LEDs:	40
Minimum Dim Level:	5%
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5



8Kg₂

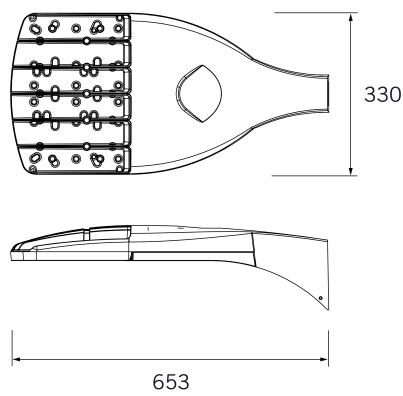


0.09M



[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

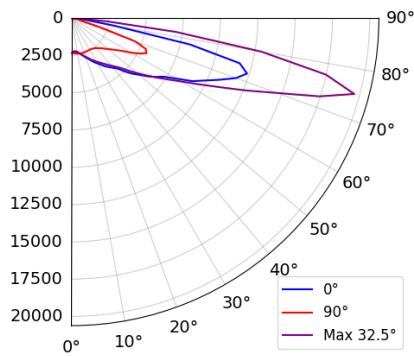


2.5 to 4.0	1.5 to 2.5	0.5 to 1.5	0 to 0.5
Excellent circularity	Definite/ substantial progress to circularity	Some circular economy functionality	Very poor circular economy performance

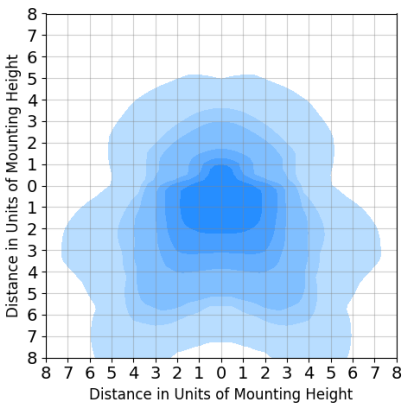
Assured Score

Photometry [↓ IES File](#)

Polar Plot

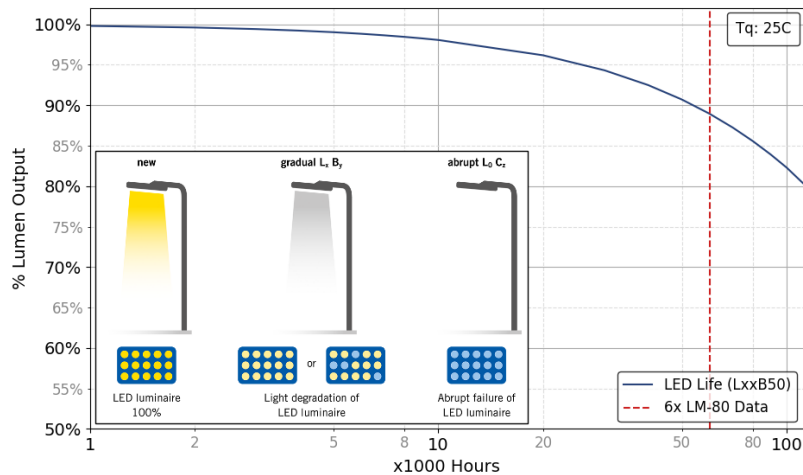


Isoilluminance Plot



Lumens:	21,795
CCT:	4000K
CRI:	70
IES File:	DSX0.4.LA224.FWE

LLMF Graph



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

Colour Temperatures



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 graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 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.

> Datasheet - AMENITY - DSX0
DSX0.4.LA184.BLC.C9



Product image may not represent the final configuration stated above.

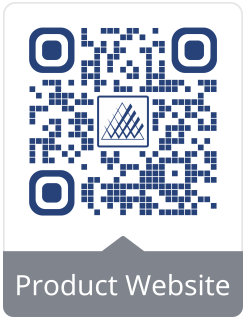


Product Specification **DSX0 Holophane Website**

DSX0.4.LA184.BLC.C9

Holophane DSX0 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 lenses (PMMA or silicone). 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 4
- LED light engine producing c.18,000 lm with a nominal 4000K colour temperature
- Long & narrow distribution with extreme backlight cut-off
- Metallic Silver (RAL9006)



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:	130W
Fitting Current:	0.58A
Fitting Inrush:	53A - 0.3ms
Number of Drivers:	1
1x Driver 1 Inrush:	53A - 0.3ms
Max Drivers per 16A Type B MCB:	8
Max Fittings per 16A Type B MCB:	8
Total Number of LEDs:	40
Minimum Dim Level:	7%
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5



8Kg₂

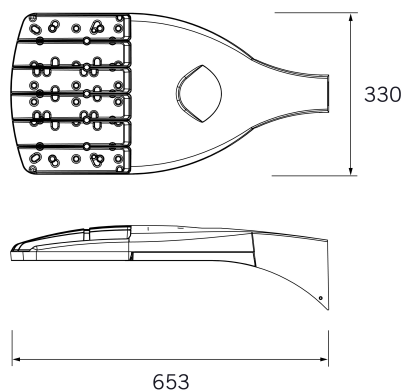


0.09M



[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

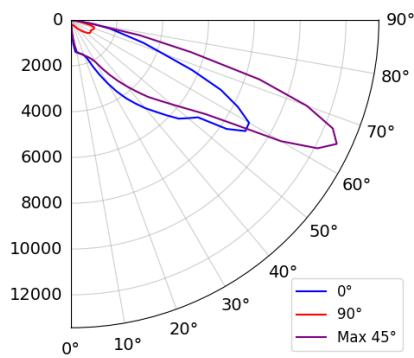


2.5 to 4.0	1.5 to 2.5	0.5 to 1.5	0 to 0.5
Excellent circularity	Definite/ substantial progress to circularity	Some circular economy functionality	Very poor circular economy performance

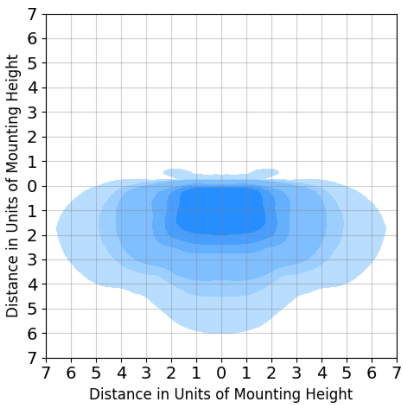
Assured Score

Photometry [↓ IES File](#)

Polar Plot

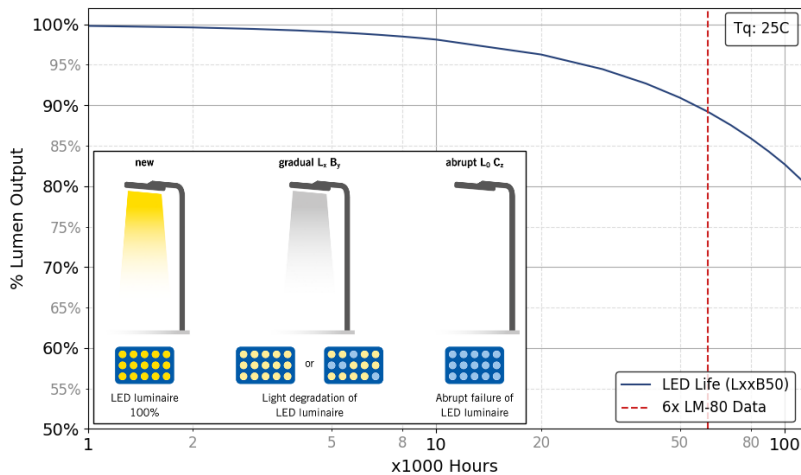


Isoilluminance Plot



Lumens:	12,463
CCT:	4000K
CRI:	70
IES File:	DSX0.4.LA184.BLC (TZ)
G-Class:	G*1 Imax @ 70°: 893 Imax @ 80°: 184 Imax @ 90°: 0

LLMF Graph



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

Colour Temperatures



Colours

Selected Colour

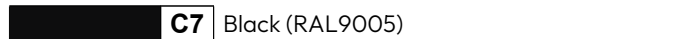


Custom Colour Available



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

Standard Colours Available



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> Datasheet - AMENITY - DSX0
DSX0.4.LA134.AY.C9



Product image may not represent the final configuration stated above.

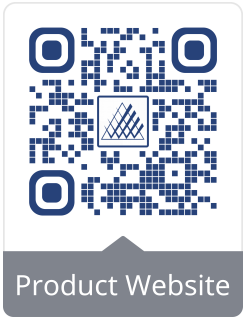


Product Specification **DSX0 Holophane Website**

DSX0.4.LA134.AY.C9

Holophane DSX0 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 lenses (PMMA or silicone). 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 4
- LED light engine producing c.13,000 lm with a nominal 4000°K colour temperature
- Asymmetric light distribution
- Metallic Silver (RAL9006)



DSX1B.8.1A.LMZ.GV

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
• Direct embedment

Performance

Drive Current from Driver:	733mA
Power:	90W
Fitting Current:	0.4A
Fitting Inrush:	53A - 0.3ms
Number of Drivers:	1
1x Driver 1 Inrush:	53A - 0.3ms
Max Drivers per 16A Type B MCB:	8
Max Fittings per 16A Type B MCB:	8
Total Number of LEDs:	40
Minimum Dim Level:	10%
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5



8Kg₂

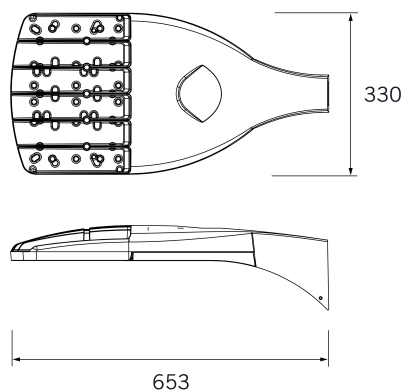


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[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating



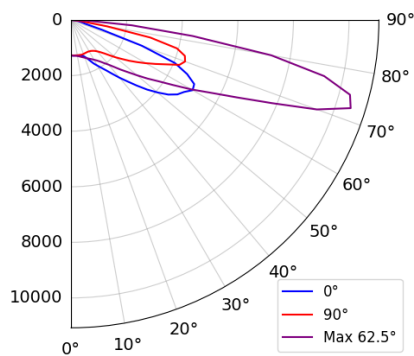
2.5 to 4.0	1.5 to 2.5	0.5 to 1.5	0 to 0.5
Excellent circularity	Definite/ substantial progress to circularity	Some circular economy functionality	Very poor circular economy performance

Assured Score

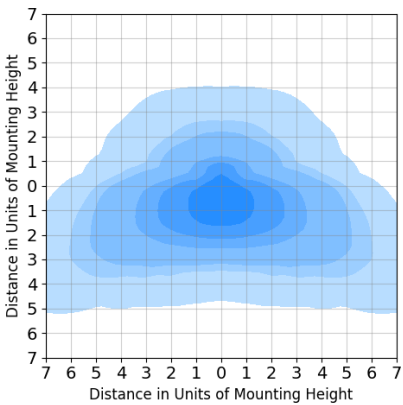
Photometry

[Download IES File](#)

Polar Plot

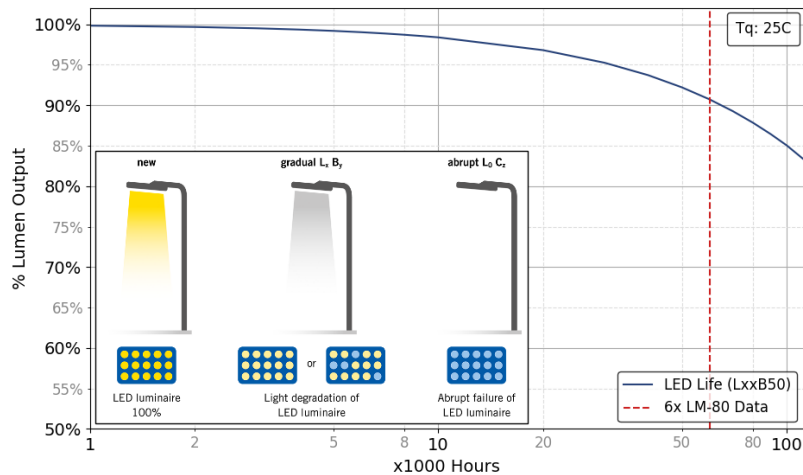


Isoilluminance Plot



Lumens:	12,602
CCT:	4000K
CRI:	70
IES File:	DSX0.4.LA134.AY (TZ)

LLMF Graph



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

Colour Temperatures



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 graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 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%.

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> Datasheet - AMENITY - DSX0
DSX0.4.LA114.FWE.C9



Product image may not represent the final configuration stated above.

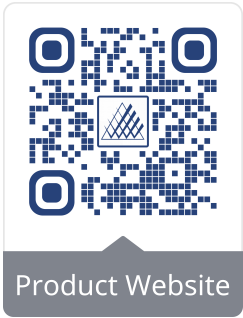


Product Specification **DSX0 Holophane Website**

DSX0.4.LA114.FWE.C9

Holophane DSX0 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 lenses (PMMA or silicone). 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 4
- LED light engine producing c.11,000 lm with a nominal 4000K colour temperature
- Forward throw extra light distribution
- Metallic Silver (RAL9006)



DSX1B.6.1A.LMZ.GV

Holophane tubular base compartment column for use with DSX1 Luminaires. 6 metre, Single head, For light & medium area wind zones (compliant to EN40).
• Bracket galvanised
• Direct embedment

Performance

Drive Current from Driver:	609mA
Power:	75W
Fitting Current:	0.34A
Fitting Inrush:	43A - 0.26ms
Number of Drivers:	1
1x Driver 1 Inrush:	43A - 0.26ms
Max Drivers per 16A Type B MCB:	10
Max Fittings per 16A Type B MCB:	10
Total Number of LEDs:	40
Minimum Dim Level:	8%
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5



8Kg₂

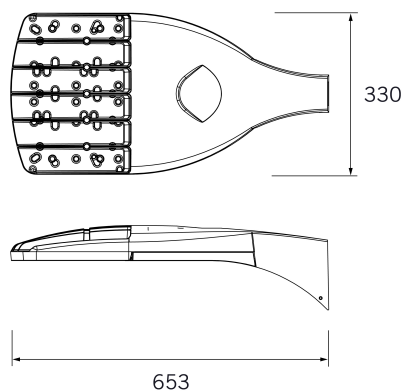


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[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

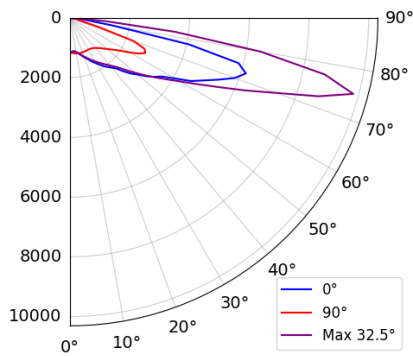


2.5 to 4.0	1.5 to 2.5	0.5 to 1.5	0 to 0.5
Excellent circularity	Definite/ substantial progress to circularity	Some circular economy functionality	Very poor circular economy performance

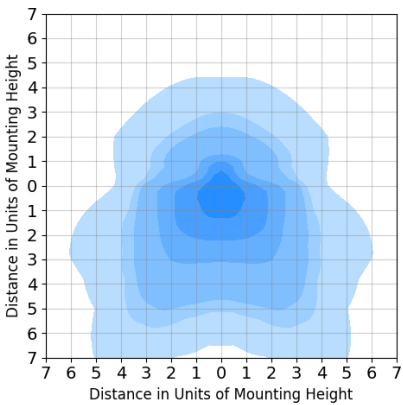
Assured Score

Photometry [↓ IES File](#)

Polar Plot

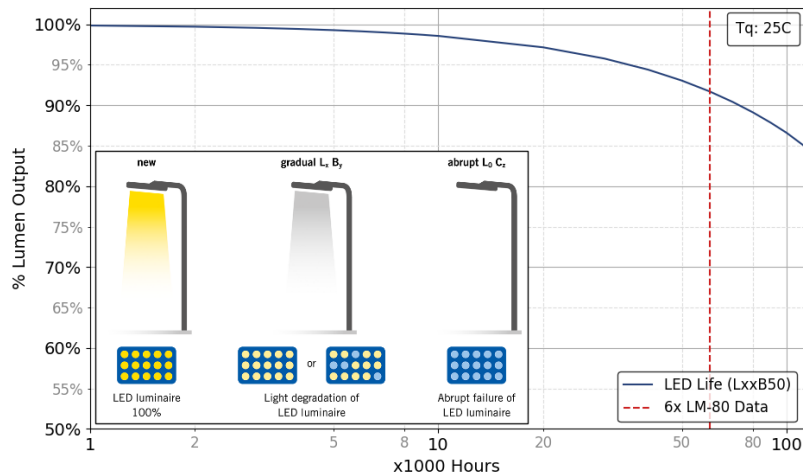


Isoilluminance Plot



Lumens:	10,897
CCT:	4000K
CRI:	70
IES File:	DSX0.4.LA114.FWE (TZ)

LLMF Graph



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

Colour Temperatures



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 graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 Black (RAL9005)

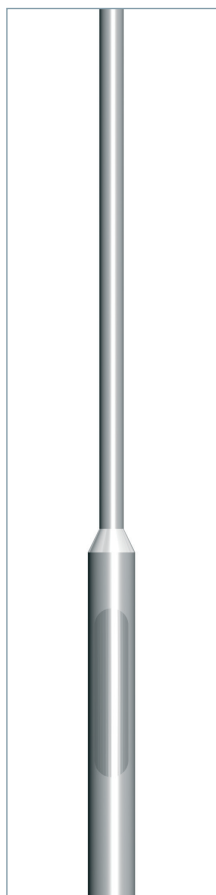
C9 Metallic Silver (RAL9006)

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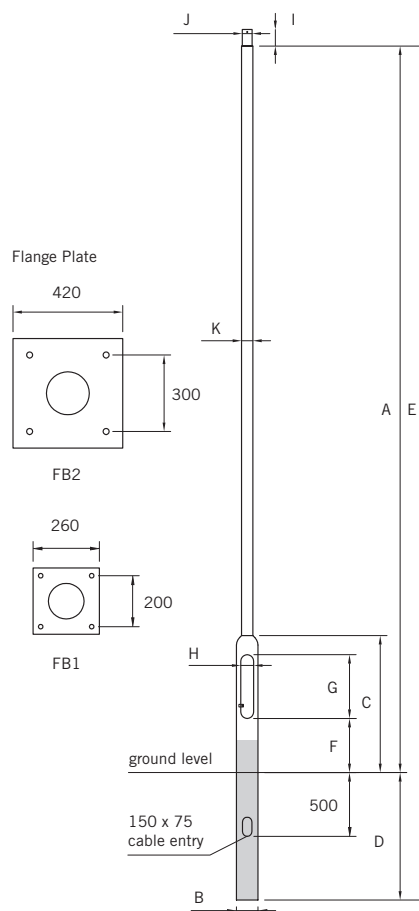
> Datasheet

DSX1B.6.1A.LMZ.GV



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

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.

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

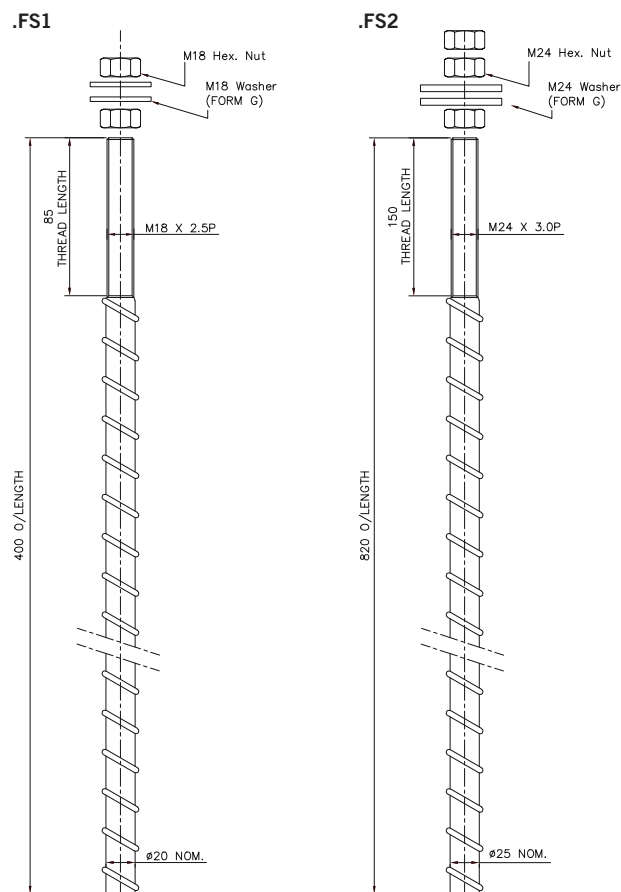
Note: For Terrain Category 2 locations LMZ, HVZ & HEZ

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



> Datasheet - AMENITY - DSX0
DSX0.4.LA114.NR.C9



Product image may not represent the final configuration stated above.

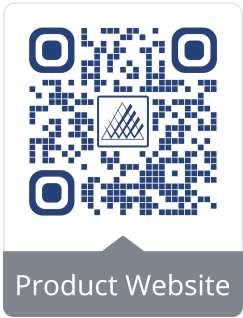


Product Specification **DSX0 Holophane Website**

DSX0.4.LA114.NR.C9

Holophane DSX0 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 lenses (PMMA or silicone). 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 4
- LED light engine producing c.11,000 lm with a nominal 4000K colour temperature
- Long and Narrow light distribution
- Metallic Silver (RAL9006)



DSX1B.8.1A.LMZ.GV

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
• Direct embedment

Performance

Drive Current from Driver:	609mA
Power:	75W
Fitting Current:	0.34A
Fitting Inrush:	43A - 0.26ms
Number of Drivers:	1
1x Driver 1 Inrush:	43A - 0.26ms
Max Drivers per 16A Type B MCB:	10
Max Fittings per 16A Type B MCB:	10
Total Number of LEDs:	40
Minimum Dim Level:	8%
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5



8Kg₂

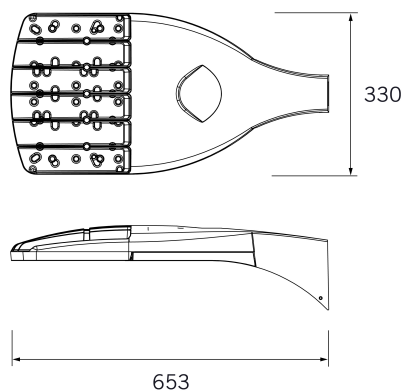


0.09M



[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

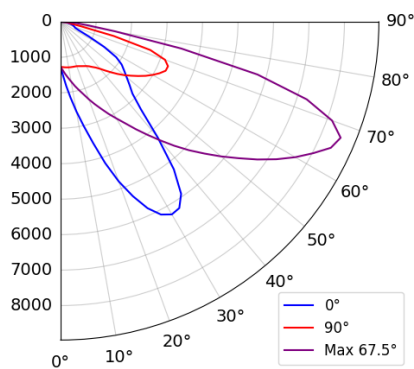


2.5 to 4.0	1.5 to 2.5	0.5 to 1.5	0 to 0.5
Excellent circularity	Definite/ substantial progress to circularity	Some circular economy functionality	Very poor circular economy performance

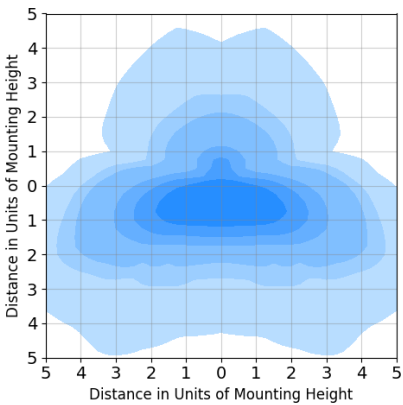
Assured Score

Photometry [↓ IES File](#)

Polar Plot

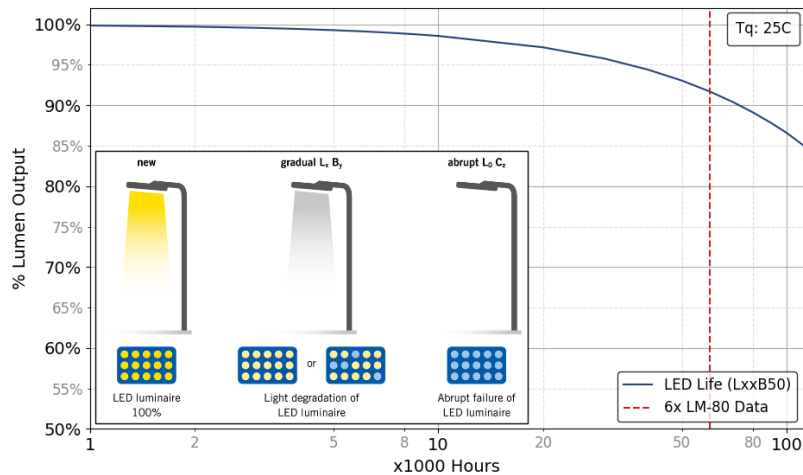


Isoilluminance Plot



Lumens:	11,379
CCT:	4000K
CRI:	70
IES File:	DSX0.4.LA114.NR (TZ)
G-Class:	G*2 Imax @ 70°: 716 Imax @ 80°: 142 Imax @ 90°: 0

LLMF Graph



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

Colour Temperatures



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 graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 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%.

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> Datasheet - AMENITY - WAP

WAP.1.LA064.FW.C9.CTR



Product image may not represent the final configuration stated above.



Product Specification

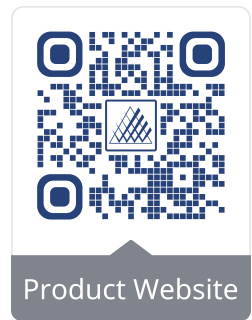


WAP Holophane Website

Holophane Wallpack LED bulkhead luminaire, manufactured from marine grade die-cast aluminium with integrated thermal management design. LED light engine modules are IP65 with individual PMMA lenses. Luminaire housing sealed to IP65 and suitable for wall mounting with rear, top, bottom and side via threaded 3/4 inch cable entry/exit points. 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.6,000 lm with a nominal 4000K colour temperature
- Forward throw light distribution
- Metallic Silver (RAL9006)
- Conduit Thread Reducer Adapter from 3/4 inch NPT to 20mm (2 supplied in box)



Performance

Drive Current from Driver:	1,400mA
Power:	50W
Fitting Current:	0.22A
Power Factor:	0.97
Fitting Inrush:	43A - 0.26ms
Number of Drivers:	1
1x Driver 1 Inrush:	43A - 0.26ms
Max Drivers per 16A Type B MCB:	10
Max Fittings per 16A Type B MCB:	10
Total Number of LEDs:	10
Minimum Dim Level:	7%
SDCM/MacAdam Ellipse:	7
Energy Class:	D

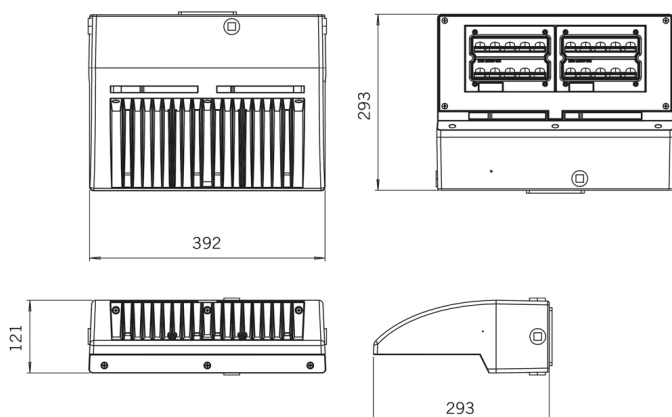


10Kg



[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

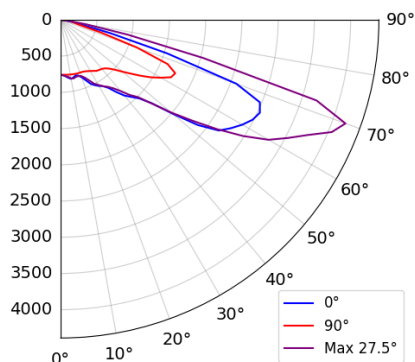
2.4*

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

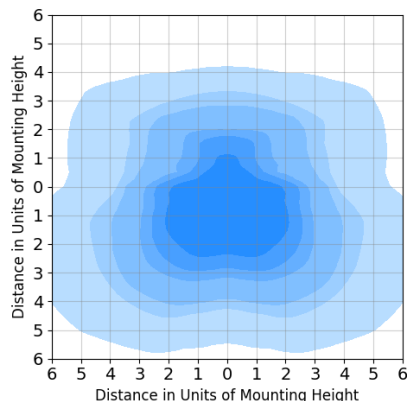
*Preliminary Score

Photometry IES File

Polar Plot

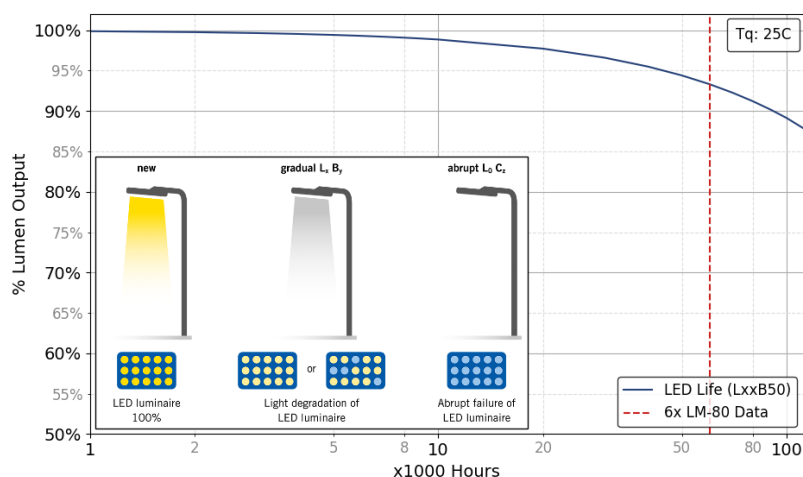


Isoilluminance Plot



Lumens:	5,861
CCT:	4000K
CRI:	70
IES File:	WAP.1.LAO64.FW
G-Class:	G*3 Imax @ 70°: 713 Imax @ 80°: 90 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)
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Custom Colour Available

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

Standard Colours Available

	C1	Smooth White (RAL9016)
	C4	graphite (RAL7011)
	C6	Smooth Grey (RAL7035)
	C7	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%.

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> Datasheet - EXTERNAL - DWL

DWL.1.LA014.HN.C9.W007



Product image may not represent the final configuration stated above.



Product Specification

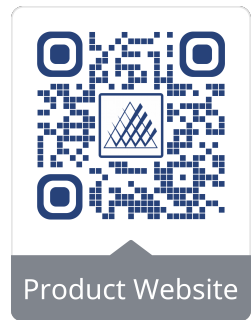


DWL Holophane Website

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 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.1,000 lm with a nominal 4000°K colour temperature
- High beam long and narrow distribution
- Metallic Silver (RAL9006)
- 7W



Performance

Drive Current from Driver:	200mA
Power:	6.5W
Fitting Current:	0.03A
Power Factor:	0.95
Fitting Inrush:	15A - 0.295ms
Number of Drivers:	1
1x Driver 1 Inrush:	15A - 0.295ms
Max Drivers per 16A Type B MCB:	29
Max Fittings per 16A Type B MCB:	29
Total Number of LEDs:	8
Minimum Dim Level:	26%
THDi:	12.4
SVM:	0.07
Pst LM:	0.05
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5

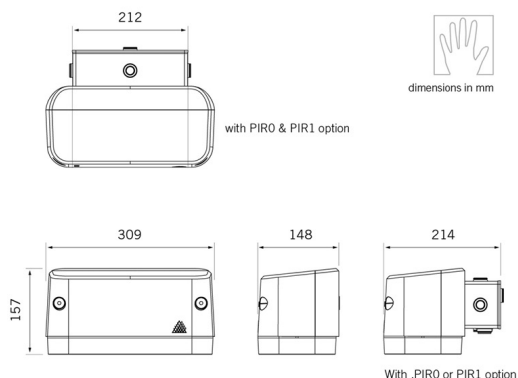


6.5Kg



[Installation Guide](#)

Dimensions



CIBSE TM66 - CEAM Rating

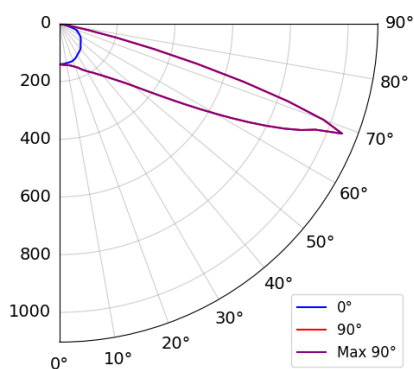
2.7

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

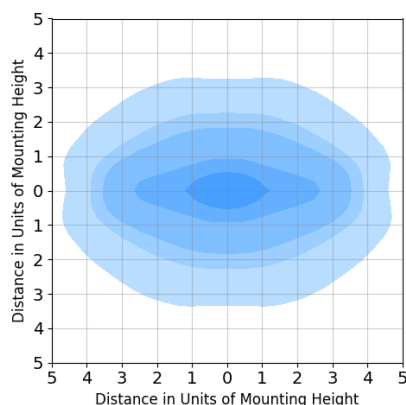
Assured Score

Photometry [↓ IES File](#)

Polar Plot

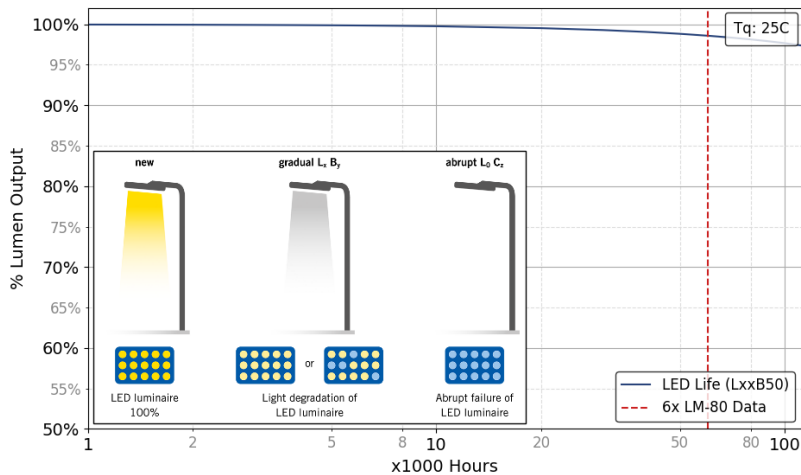


Isoilluminance Plot



Lumens:	897
CCT:	4000K
CRI:	70
IES File:	DWL.1.LA014.HN.W007
G-Class:	G*3 Imax @ 70°: 1085 Imax @ 80°: 44 Imax @ 90°: 0

LLMF Graph



For reference purposes, the graph extrapolates beyond the recommended 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 graphite (RAL7011)

C6 Smooth Grey (RAL7035)

C7 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%.

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> Datasheet

TBHF.MICS.7024AR4015BL



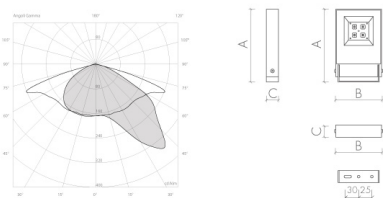
MICRO/AR

Mod	AR	Installation	Indoor and outdoor floodlight
Material	Die cast aluminium body, painted with polyester coated anticorrosion powder white color, tempered transparent glass mm 4 thickness, silicon gasket	Insulation class	Class I
Protection index	IP66	Impact degree	IK08
Color rendering index (CRI)	> 80	Ambient temperature (Ta)	-25 / +45 °C
Optics	45° asymmetrical PMMA lens	Power supply	230V 50/60Hz
Photobiological safety class	IEC 62471: Exempt group	Trademarks and certifications	CE / UNI EN 60598-1:2015
		Luminous flux maintenance	L70-B50 (60.000h)
		Beam angle	45°

W-tot	°K	Lm [Tc=25°]	Lm [Output]	A	B	C	Kg
15	4000	2250	1687	140	95	25	0,5
20	4000	3060	2295	140	95	25	0,5

*The flux may vary from -5/+5% compared to the real.

• 3000K = -0,8% lm • 4000K = standard • 5000K = +0,8% lm



> Datasheet - EXTERNAL - DBD

DBD.1.LA024.DO.NR.H100.C9.W023.LS



Product image may not represent the final configuration stated above.

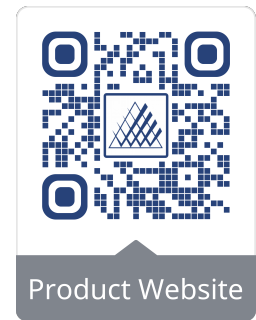


Product Specification [DBD Holophane Website](#)

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 optical 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)
- 23W
- Internal light shield



Performance

Drive Current from Driver:	687mA
Power:	23W
Fitting Current:	0.1A
Power Factor:	0.97
Fitting Inrush:	15A - 0.295ms
Number of Drivers:	1
1x Driver 1 Inrush:	15A - 0.295ms
Max Drivers per 16A Type B MCB:	29
Max Fittings per 16A Type B MCB:	29
Total Number of LEDs:	10
Minimum Dim Level:	8%
THDi:	7.4
SVM:	0.07
Pst LM:	0.05
Optical Risk Group:	1
SDCM/MacAdam Ellipse:	5

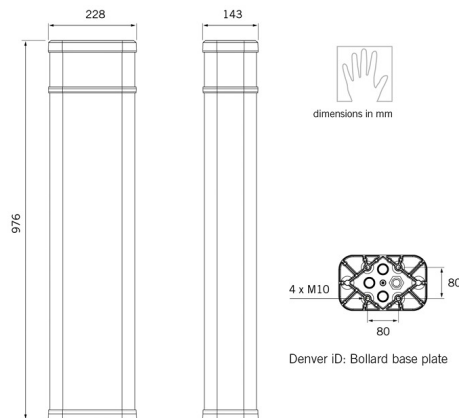


9.5Kg



[Installation Guide](#)

Dimensions



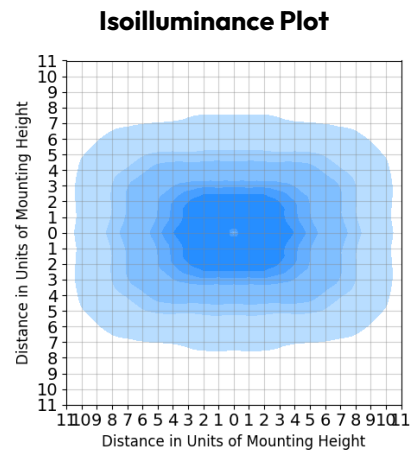
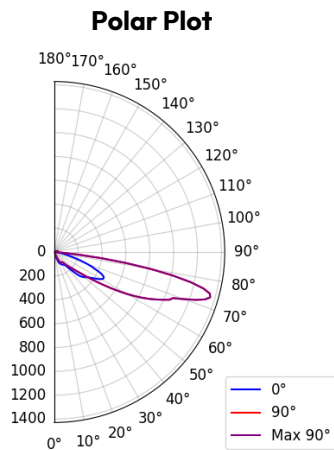
CIBSE TM66 - CEAM Rating

2.4*

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

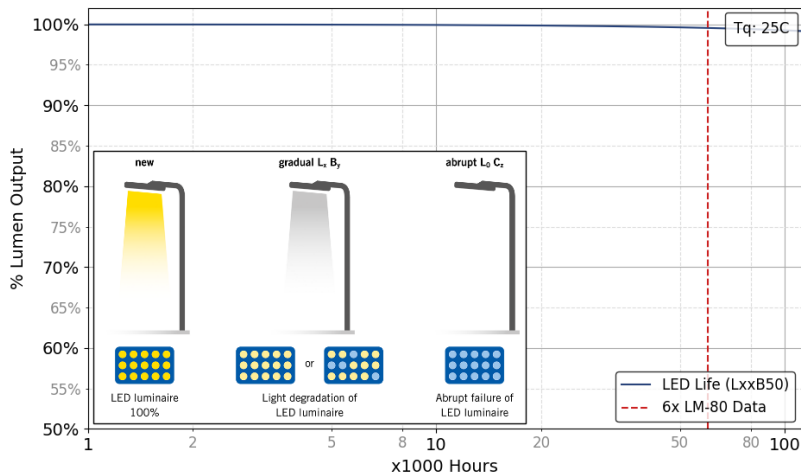
*Preliminary Score

Photometry [↓ IES File](#)



Lumens:	2,100
CCT:	4000K
CRI:	70
IES File:	DBD.1.LA024.DO.NR.W023

LLMF Graph



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

Colour Temperatures



Colours

Selected Colour

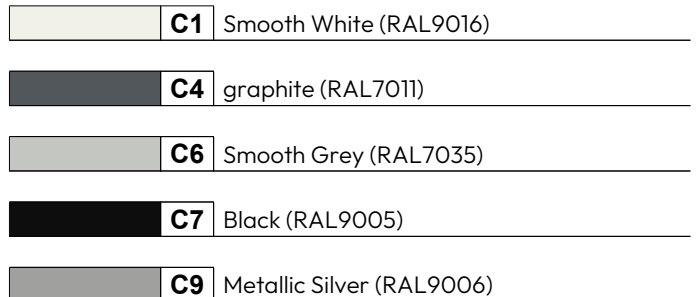


Custom Colour Available



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

Standard Colours Available



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