wink
enhancing spaces with light

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Clondalkin RFC Kingswood Redevelopment
Lighting Report
Compiled by Conor O'Byrne
19.12.2022

This report presents the results of a calculation of light levels for the proposed lighting at Clondalkin RFC. It combines car park, cycle path lighting previously submitted by Wink and sport lighting previously submitted by Signify in order to asses the impact of all proposed lighting.

Calculation surfaces are positioned in three dimensions based on A.03.05.1.1 site layout provided by Cummins + Voortman and the elevation data and height contours contained within.

Specifications for all luminaires used are included in the report.

The resulting lux value chart and iso lines have been incorporated into Wink drawing "22112.01 Lighting Layout with Lux Values (19.12.22)" and accompany this report in PDF and DWG format.

Standard Illumination Levels

The bike path has been identified as a P6/P7 pedestrian zone for the purposes of lighting in accordance with EN 13201-2. Where possible a minimum lux level of 0.4 lux suitable for a P6 zone has been maintained. In the short area of the dark corridor along the Camac as described below, the levels drop below 0.4 lux. In these places low level marker lights are used to bridge the gap between more illuminated areas and provide way finding between these areas.

The car park is designated as a P2 pedestrian zone with mixed motorised and pedestrian traffic. Thus it is illuminated to a minimum of 2 lux.

Ecological Considerations

The proposed layout has been developed with the intention of having minimal impact on local ecology and has been amended in response to the Veon Bat Assessment Report 07/22 to improve on this.

To establish a dark corridor along the Camac river while also providing lighting of the cycle river crossing so that it can be safely used, a tiered lighting approach is to be implemented. Generally, the car park and cycle path are to be illuminated by luminaires on 6m poles. Within 20m on either side of the river, bollards are to be used at a height of not more than 1.2m. Crossing the river itself and extending 10m on either side the path is to be illuminated only by low level marker lights at 0.2m. In addition to this, solid fencing will further shield the river from any light spill from the bridge and hedging will shield the river from spill from the bollards and pole lights in the immediate vicinity of the crossing.

- Luminaires have upward light ratio of 0%.
- Luminaires lack UV and IR elements.

- All luminaires have a correlated colour temperature (CCT) of <2700K. Pole lights L2 and low level marker lights L5 are specified with a CCT of 2200K.
- The bike path lighting is to be controlled by PIR motion detectors such that the lighting is only on when the path is in use.
- The only pitch to be lit is over 100m from the river.The drop of light level over this distance can be observed on the attached drawing.

Pedestrian and Cycle Entrances

In order to determine the suitability of existing lighting at the bicycle and pedestrian entrances off the R316, a survey was conducted on November 29th between 6 and 6.30am, this time being before sunrise. Readings were taken with a lux meter at ground level along the verge of the existing cycle path at the locations where the new entrances are proposed. These readings are included on the accompanying map. It can be determined from these readings and the light level calculations for the proposed lighting that together they will provide sufficient lighting without the need for any additional lighting.

Traffic Entrances

As part of the lighting of the car park, poles are placed at each traffic entrance to provide sufficient visibility entering and leaving the site on to the local road. These lit entrance zones are lit to 10 lux and will be visible along the length of the local road.

It is not recommended to light along the west end of the local road (vicinity of the site notice) as this is the location of the tributary ditch to the Camac river identified in the ecological survey as an area to be protected and kept dark.

Road Spill

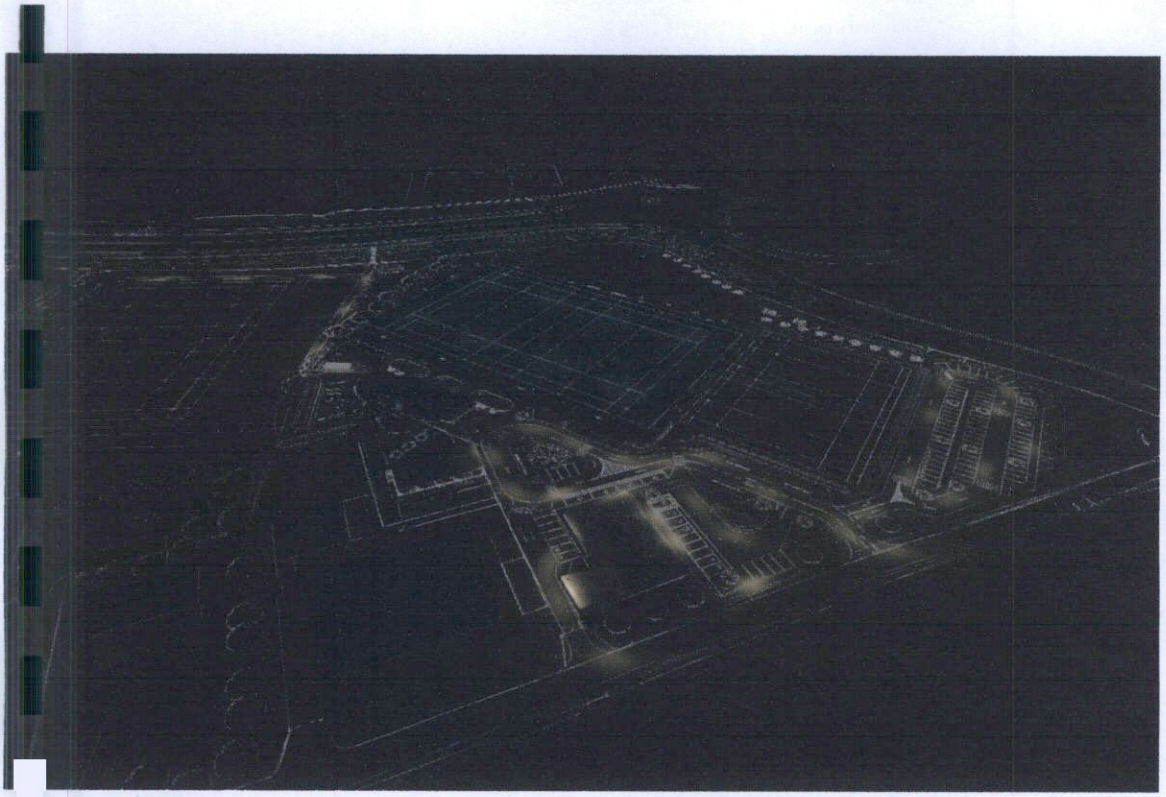
The results show a negligible (avg <1 Lux) spill beyond the site boundary onto the R136 and N7 ramps.

Conor O'Byrne

Lighting Designer & Project Manager
Wink Lighting

Date 2022-12-19

DIALux



22112 - Clondalkin RFC

Clondalkin RFC - Lighting Calculation

Object
Clondalkin RFC, Kindswood Farm, Moneenalion Commons Lower, Clondalkin, Dublin 22

Content

Product data sheets

Site

Contacts

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DIALux

Luminaire list

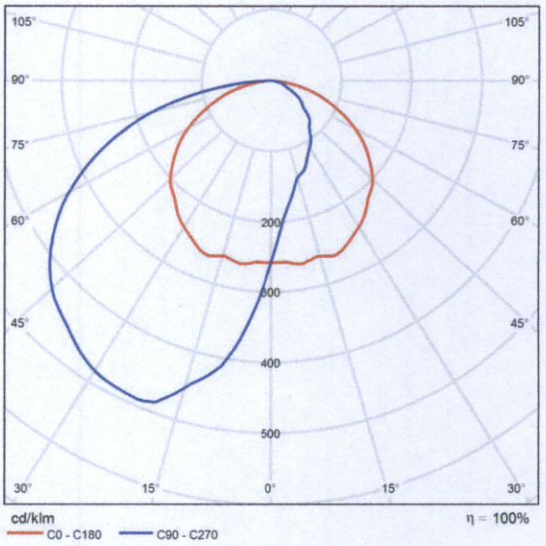
Φ_{total}	P_{total}	Luminous efficacy
5490745 lm	47550.0 W	115.5 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy	Index
22	Linea Light Group	65395M07	Opti-Pole Bollards 8W DC	9.5 W	216 lm	22.7 lm/W	L3
41	Linea Light Group	84508A72	Parker Street & Urban 48 LED 91 W DC Autocontrol System	100.0 W	7817 lm	78.2 lm/W	L2
32	Not yet a DIALux member	84434N23	Biglamp PRO Projector 3x450W DC	1350.0 W	161342 lm	119.5 lm/W	L1
6	Not yet a DIALux member	LD42DA-C1-500-LW30-EOB	LD42DA-C1	1.7 W	55 lm	32.4 lm/W	L5
22	Not yet a DIALux member	LPOD40	LPOD40-Dir-PCLens-AsymRefW-LPOD-350mA-3000K-0.025m-451795-A	1.4 W	101 lm	72.0 lm/W	L4

Product data sheet

Linea Light Group - Opti-Pole Bollards 8W DC

Article No.	65395M07
P	9.5 W
Φ_{Lamp}	216 lm
$\Phi_{Luminaire}$	216 lm
η	100.00 %
Luminous efficacy	22.7 lm/W
CCT	2700 K
CRI	80
Index	L3



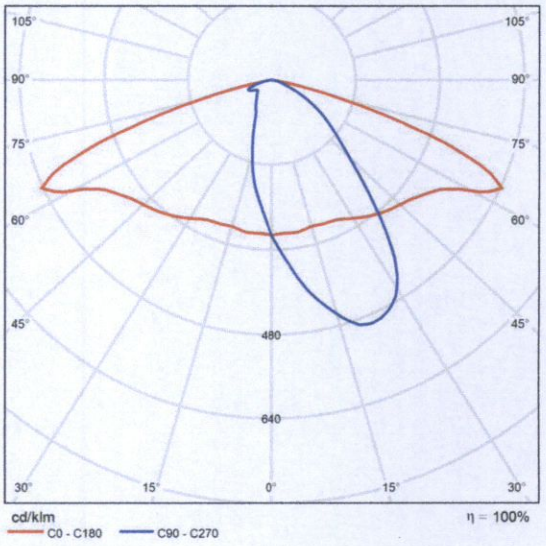
Polar LDC

DIALux

Product data sheet

Linea Light Group - Parker Street & Urban 48 LED 91 W DC Autocontrol System

Article No.	84508A72
P	100.0 W
Φ_{Lamp}	7817 lm
$\Phi_{Luminaire}$	7817 lm
η	100.00 %
Luminous efficacy	78.2 lm/W
CCT	2200 K
CRI	80
Index	L2

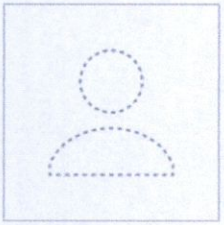


Polar LDC

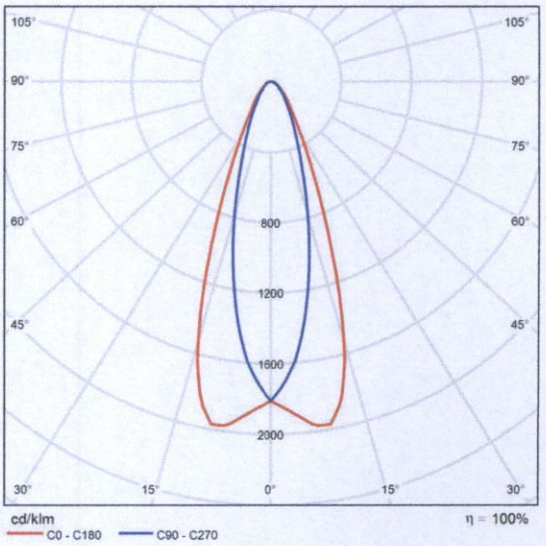
DIALux

Product data sheet

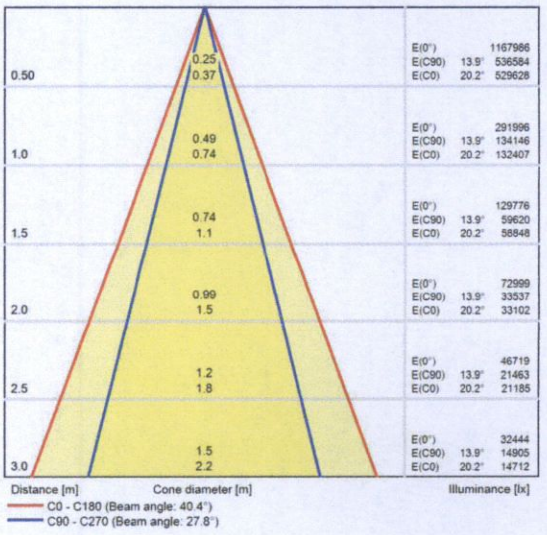
Not yet a DIALux member - Biglamp PRO Projector 3x450W DC



Article No.	84434N23
P	1350.0 W
Φ_{Lamp}	161337 lm
$\Phi_{Luminaire}$	161342 lm
η	100.00 %
Luminous efficacy	119.5 lm/W
CCT	4000 K
CRI	70
Index	L1



Polar LDC

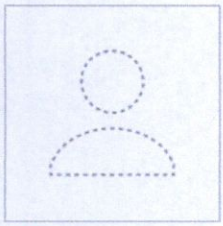


Cone diagram

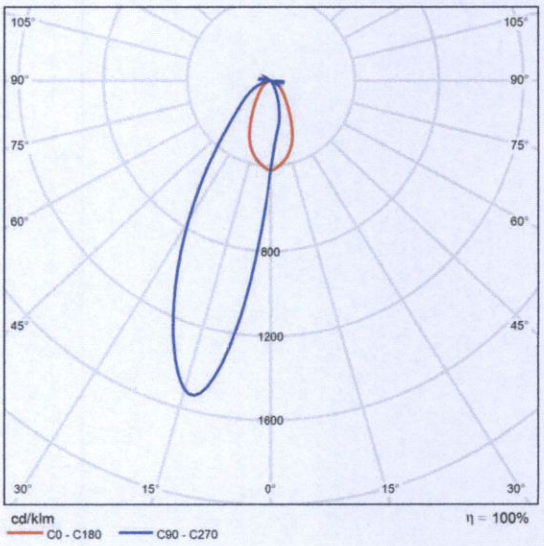
DIALux

Product data sheet

Not yet a DIALux member - LD42DA-C1



Article No.	LD42DA-C1-500-LW30-EOB
P	1.7 W
Φ_{Lamp}	55 lm
$\Phi_{Luminaire}$	55 lm
η	100.00 %
Luminous efficacy	32.4 lm/W
CCT	3000 K
CRI	93
Index	L5

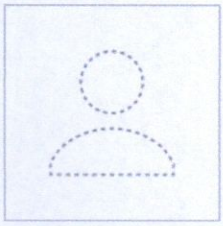


Polar LDC

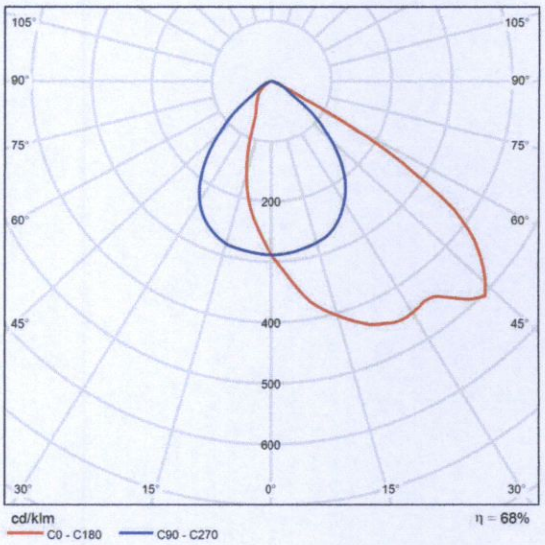
DIALux

Product data sheet

Not yet a DIALux member - LPOD40-Dir-PCLens-AsymRefW-LPOD-350mA-3000K-0.025m-451795-A



Article No.	LPOD40
P	1.4 W
Φ_{Lamp}	149 lm
$\Phi_{Luminaire}$	101 lm
η	67.65 %
Luminous efficacy	72.0 lm/W
CCT	3000 K
CRI	100
Index	L4



Polar LDC

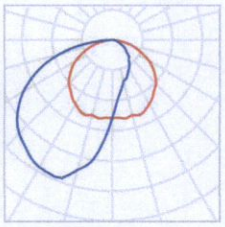
DIALux

Site

Luminaire layout plan

Site

Luminaire layout plan



Manufacturer	Linea Light Group	**P**	9.5 W
Article No.	65395M07	**$\Phi_{Luminaire}$**	216 lm
Article name	Opti-Pole Bollards 8W DC		
Fitting	1x LED-LD041-SC		
Index	L3		

6 x Linea Light Group Opti-Pole Bollards 8W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	192.149 m / 257.380 m / 1.200 m
X-direction	6 pcs., Centre - centre, 4.391 m
Arrangement	A7

X	Y	Mounting height	Luminaire
192.149 m	257.380 m	1.200 m	68
190.685 m	253.240 m	1.200 m	69
189.221 m	249.100 m	1.200 m	107
187.757 m	244.960 m	1.200 m	108
186.293 m	240.819 m	1.200 m	112
184.829 m	236.679 m	1.200 m	113

8 x Linea Light Group Opti-Pole Bollards 8W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	153.402 m / 285.105 m / 1.200 m
X-direction	8 pcs., Centre - centre, 6.440 m
Arrangement	A16

X	Y	Mounting height	Luminaire
153.402 m	285.105 m	1.200 m	102
153.222 m	291.542 m	1.200 m	103
153.582 m	278.667 m	1.200 m	104

Site

Luminaire layout plan

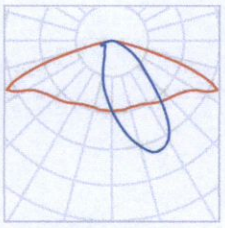
X	Y	Mounting height	Luminaire
153.763 m	272.230 m	1.200 m	105
153.943 m	265.792 m	1.200 m	106
154.123 m	259.355 m	1.200 m	109
154.303 m	252.918 m	1.200 m	110
154.483 m	246.480 m	1.200 m	111

Individual luminaires

X	Y	Mounting height	Luminaire
289.546 m	117.892 m	4.000 m	19
298.165 m	104.467 m	4.000 m	20
329.820 m	77.303 m	4.000 m	22
322.027 m	77.263 m	4.000 m	23
337.912 m	81.561 m	4.000 m	27
322.096 m	84.666 m	4.000 m	28
320.095 m	92.143 m	4.000 m	29
280.892 m	133.850 m	4.000 m	30

Site

Luminaire layout plan



Manufacturer	Linea Light Group	**P**	100.0 W
Article No.	84508A72	**$\Phi_{Luminaire}$**	7817 lm
Article name	Parker Street & Urban 48 LED 91 W DC Autocontrol System		
Fitting	1x LED-XTE002-22		
Index	L2		

3 x Linea Light Group Parker Street & Urban 48 LED 91 W DC Autocontrol System

Type	Line arrangement
1st luminaire (X/Y/Z)	278.758 m / 235.314 m / 5.000 m
X-direction	3 pcs., Centre - centre, 33.405 m
Arrangement	A1

X	Y	Mounting height	Luminaire
278.758 m	235.314 m	5.000 m	31
247.248 m	246.405 m	5.000 m	32
215.739 m	257.497 m	5.000 m	67

2 x Linea Light Group Parker Street & Urban 48 LED 91 W DC Autocontrol System

Type	Line arrangement
1st luminaire (X/Y/Z)	138.316 m / 303.605 m / 5.000 m
X-direction	2 pcs., Centre - centre, 34.511 m
Arrangement	A2

X	Y	Mounting height	Luminaire
138.316 m	303.605 m	5.000 m	33
108.683 m	321.293 m	5.000 m	34

Site

Luminaire layout plan

2 x Linea Light Group Parker Street & Urban 48 LED 91 W DC Autocontrol System

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	54.478 m / 361.785 m / 5.000 m	54.478 m	361.785 m	5.000 m	35
X-direction	2 pcs., Centre - centre, 33.855 m	81.256 m	341.070 m	5.000 m	36
Arrangement	A3				

1 x Linea Light Group Parker Street & Urban 48 LED 91 W DC Autocontrol System

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	276.722 m / 150.309 m / 5.000 m	276.722 m	150.309 m	5.000 m	40
X-direction	1 pcs., Centre - centre, 20.685 m				
Arrangement	A4				

3 x Linea Light Group Parker Street & Urban 48 LED 91 W DC Autocontrol System

Type	Line arrangement	X	Y	Mounting height	Luminaire
1st luminaire (X/Y/Z)	273.054 m / 167.458 m / 5.000 m	273.054 m	167.458 m	5.000 m	41
X-direction	3 pcs., Centre - centre, 30.769 m	284.686 m	195.944 m	5.000 m	42
		296.318 m	224.430 m	5.000 m	43
Arrangement	A5				

Individual luminaires

X	Y	Mounting height	Luminaire
409.258 m	37.740 m	6.000 m	1

Site

Luminaire layout plan

X	Y	Mounting height	Luminaire
436.970 m	56.669 m	6.000 m	2
449.189 m	34.876 m	6.000 m	3
426.812 m	35.801 m	6.000 m	4
387.965 m	31.085 m	6.000 m	5
377.030 m	29.722 m	6.000 m	6
355.531 m	39.650 m	6.000 m	7
368.729 m	47.373 m	6.000 m	8
353.808 m	51.953 m	6.000 m	9
352.960 m	65.771 m	6.000 m	10
365.800 m	67.463 m	6.000 m	11
344.524 m	73.936 m	6.000 m	12
334.868 m	85.978 m	6.000 m	13
326.091 m	97.555 m	6.000 m	14
308.910 m	87.796 m	6.000 m	15
309.727 m	71.295 m	6.000 m	16
337.925 m	60.834 m	6.000 m	17
311.764 m	36.200 m	6.000 m	18
321.843 m	65.819 m	4.000 m	21
339.327 m	50.824 m	4.000 m	24
339.560 m	41.822 m	4.000 m	25
349.680 m	23.922 m	4.000 m	26
465.276 m	74.485 m	6.000 m	37
456.024 m	55.317 m	6.000 m	38
470.004 m	58.171 m	6.000 m	39

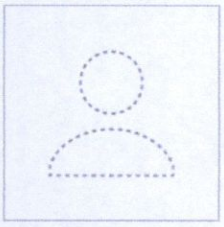
Site

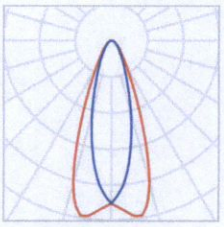
Luminaire layout plan

X	Y	Mounting height	Luminaire
313.496 m	45.726 m	6.000 m	66
455.639 m	69.220 m	6.000 m	120
410.917 m	31.292 m	6.000 m	121
386.224 m	22.683 m	6.000 m	122
315.249 m	21.677 m	6.000 m	123

Site

Luminaire layout plan





Manufacturer	Not yet a DIALux member
Article No.	84434N23
Article name	Biglamp PRO Projector 3x450W DC
Fitting	1x LED-MHB004-BN
Index	L1

P	1350.0 W
$\Phi_{Luminaire}$	161342 lm

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	293.718 m / 168.932 m / 18.025 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A8

X	Y	Mounting height	Luminaire
293.718 m	168.932 m	18.025 m	70
310.474 m	144.048 m	17.996 m	71
327.230 m	119.163 m	17.968 m	72
343.986 m	94.279 m	17.940 m	73

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	294.139 m / 168.308 m / 18.024 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A9

X	Y	Mounting height	Luminaire
294.139 m	168.308 m	18.024 m	74
310.895 m	143.423 m	17.996 m	75
327.651 m	118.539 m	17.967 m	76
344.407 m	93.654 m	17.939 m	77

Site

Luminaire layout plan

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	293.290 m / 169.568 m / 18.026 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A10

X	Y	Mounting height	Luminaire
293.290 m	169.568 m	18.026 m	78
310.046 m	144.683 m	17.997 m	79
326.802 m	119.799 m	17.969 m	80
343.558 m	94.914 m	17.941 m	81

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	294.563 m / 167.678 m / 18.024 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A11

X	Y	Mounting height	Luminaire
294.563 m	167.678 m	18.024 m	82
311.319 m	142.794 m	17.995 m	83
328.075 m	117.909 m	17.967 m	84
344.831 m	93.025 m	17.939 m	85

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	359.021 m / 211.737 m / 17.940 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A12

X	Y	Mounting height	Luminaire
359.021 m	211.737 m	17.940 m	86
375.777 m	186.852 m	17.968 m	87
392.533 m	161.968 m	17.996 m	88
409.289 m	137.083 m	18.025 m	89

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement

X	Y	Mounting height	Luminaire

Site

Luminaire layout plan

1st luminaire (X/Y/Z)	358.601 m / 212.361 m / 17.939 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A13

X	Y	Mounting height	Luminaire
358.601 m	212.361 m	17.939 m	90
375.357 m	187.477 m	17.967 m	91
392.113 m	162.592 m	17.996 m	92
408.869 m	137.708 m	18.024 m	93

4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

Type	Line arrangement
1st luminaire (X/Y/Z)	358.177 m / 212.990 m / 17.939 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A14

X	Y	Mounting height	Luminaire
358.177 m	212.990 m	17.939 m	94
374.933 m	188.106 m	17.967 m	95
391.689 m	163.222 m	17.995 m	96
408.445 m	138.337 m	18.024 m	97

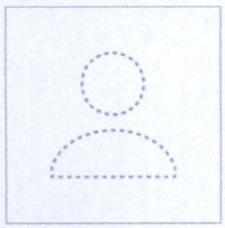
4 x Not yet a DIALux member Biglamp PRO Projector 3x450W DC

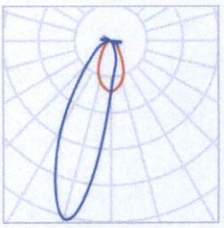
Type	Line arrangement
1st luminaire (X/Y/Z)	359.449 m / 211.101 m / 17.941 m
X-direction	4 pcs., Centre - centre, 30.000 m
Arrangement	A15

X	Y	Mounting height	Luminaire
359.449 m	211.101 m	17.941 m	98
376.205 m	186.217 m	17.969 m	99
392.961 m	161.332 m	17.997 m	100
409.717 m	136.448 m	18.026 m	101

Site

Luminaire layout plan





Manufacturer	Not yet a DIALux member
Article No.	LD42DA-C1-500-LW30-EOB
Article name	LD42DA-C1
Fitting	1x C1
Index	L5

P	1.7 W
$\Phi_{Luminaire}$	55 lm

6 x Not yet a DIALux member LD42DA-C1

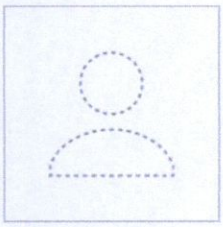
Type	Line arrangement
1st luminaire (X/Y/Z)	157.248 m / 241.941 m / 0.200 m
X-direction	6 pcs., Centre - centre, 4.583 m
Arrangement	A17

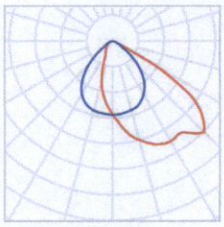
X	Y	Mounting height	Luminaire
157.248 m	241.941 m	0.200 m	114
161.494 m	240.216 m	0.200 m	115
165.740 m	238.491 m	0.200 m	116
169.987 m	236.766 m	0.200 m	117
174.233 m	235.041 m	0.200 m	118
178.479 m	233.316 m	0.200 m	119

DIALux

Site

Luminaire layout plan





Manufacturer	Not yet a DIALux member
Article No.	LPOD40
Article name	LPOD40-Dir-PCLens-AsymRefW-LPOD-350mA-3000K-0.025m-451795-A
Fitting	1x LPOD-350mA-3000K
Index	L4

P	1.4 W
$\Phi_{Luminaire}$	101 lm

22 x Not yet a DIALux member LPOD40-Dir-PCLens-AsymRefW-LPOD-350mA-3000K-0.025m-451795-A

Type	Line arrangement
1st luminaire (X/Y/Z)	300.998 m / 240.268 m / 0.800 m
X-direction	22 pcs., Centre - centre, 1.000 m
Arrangement	A6

X	Y	Mounting height	Luminaire
300.998 m	240.268 m	0.800 m	44
301.157 m	241.255 m	0.800 m	45
301.316 m	242.243 m	0.800 m	46
301.475 m	243.230 m	0.800 m	47
301.634 m	244.217 m	0.800 m	48
301.793 m	245.205 m	0.800 m	49
301.952 m	246.192 m	0.800 m	50
302.111 m	247.179 m	0.800 m	51
302.270 m	248.166 m	0.800 m	52
302.429 m	249.154 m	0.800 m	53
302.588 m	250.141 m	0.800 m	54

Site

Luminaire layout plan

X	Y	Mounting height	Luminaire
302.747 m	251.128 m	0.800 m	55
302.906 m	252.116 m	0.800 m	56
303.065 m	253.103 m	0.800 m	57
303.224 m	254.090 m	0.800 m	58
303.383 m	255.077 m	0.800 m	59
303.542 m	256.065 m	0.800 m	60
303.701 m	257.052 m	0.800 m	61
303.860 m	258.039 m	0.800 m	62
304.019 m	259.027 m	0.800 m	63
304.178 m	260.014 m	0.800 m	64
304.337 m	261.001 m	0.800 m	65

DIALux

Site

Luminaire list

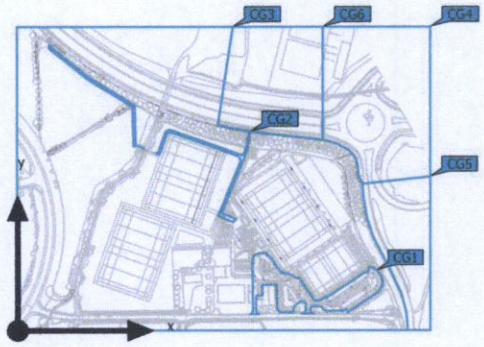
Φ_{total}	P_{total}	Luminous efficacy
5490745 lm	47550.0 W	115.5 lm/W

pcs.	Manufacturer	Article No.	Article name	P	Φ	Luminous efficacy	Index
22	Linea Light Group	65395M07	Opti-Pole Bollards 8W DC	9.5 W	216 lm	22.7 lm/W	L3
41	Linea Light Group	84508A72	Parker Street & Urban 48 LED 91 W DC Autocontrol System	100.0 W	7817 lm	78.2 lm/W	L2
32	Not yet a DIALux member	84434N23	Biglamp PRO Projector 3x450W DC	1350.0 W	161342 lm	119.5 lm/W	L1
6	Not yet a DIALux member	LD42DA-C1-500-LW30-EOB	LD42DA-C1	1.7 W	55 lm	32.4 lm/W	L5
22	Not yet a DIALux member	LPOD40	LPOD40-Dir-PCLens-AsymRefW-LPOD-350mA-3000K-0.025m-451795-A	1.4 W	101 lm	72.0 lm/W	L4

DIALux

Site

Calculation objects



Site

Calculation objects

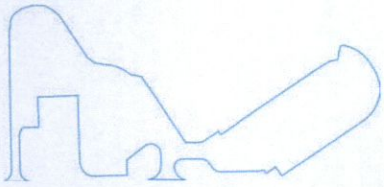
Calculation surfaces

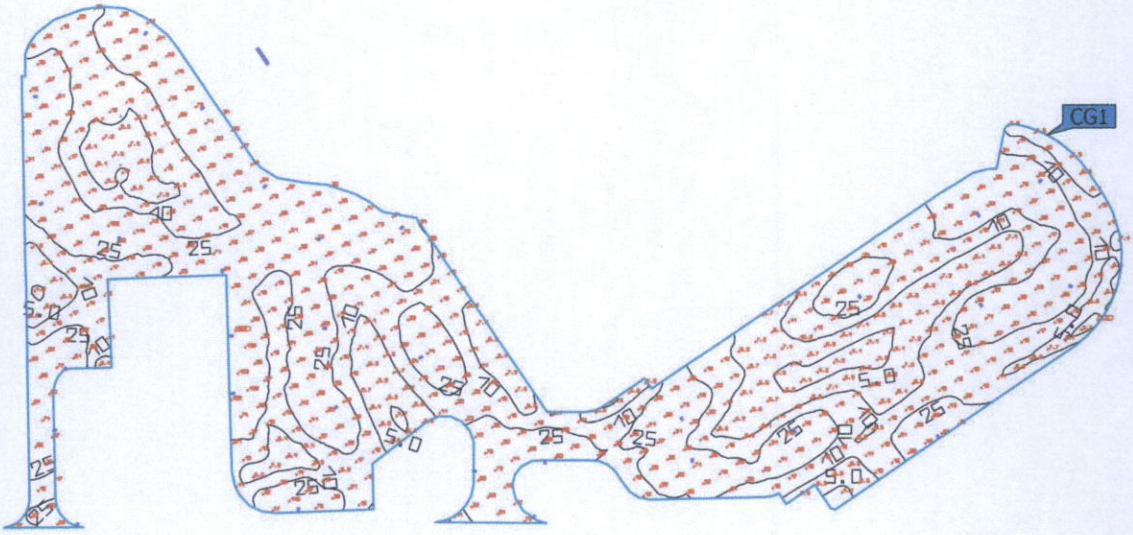
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Parking and Paths Perpendicular illuminance Height: 0.000 m	28.2 lx	3.00 lx	163 lx	0.11	0.018	CG1
Bike Paths Horizontal illuminance Height: 0.000 m	26.2 lx	0.43 lx	121 lx	0.016	0.004	CG2
Site and R316 Section Perpendicular illuminance Height: 0.000 m	25.7 lx	0.00 lx	972 lx	0.00	0.00	CG3
Roundabout Perpendicular illuminance Height: 7.000 m	0.23 lx	0.071 lx	0.50 lx	0.31	0.14	CG4
N7 Ramps Perpendicular illuminance Height: 6.000 m	0.30 lx	0.064 lx	0.84 lx	0.21	0.076	CG5
R316 Section Perpendicular illuminance Height: 3.000 m	0.24 lx	0.071 lx	0.80 lx	0.30	0.089	CG6

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

Site

Parking and Paths





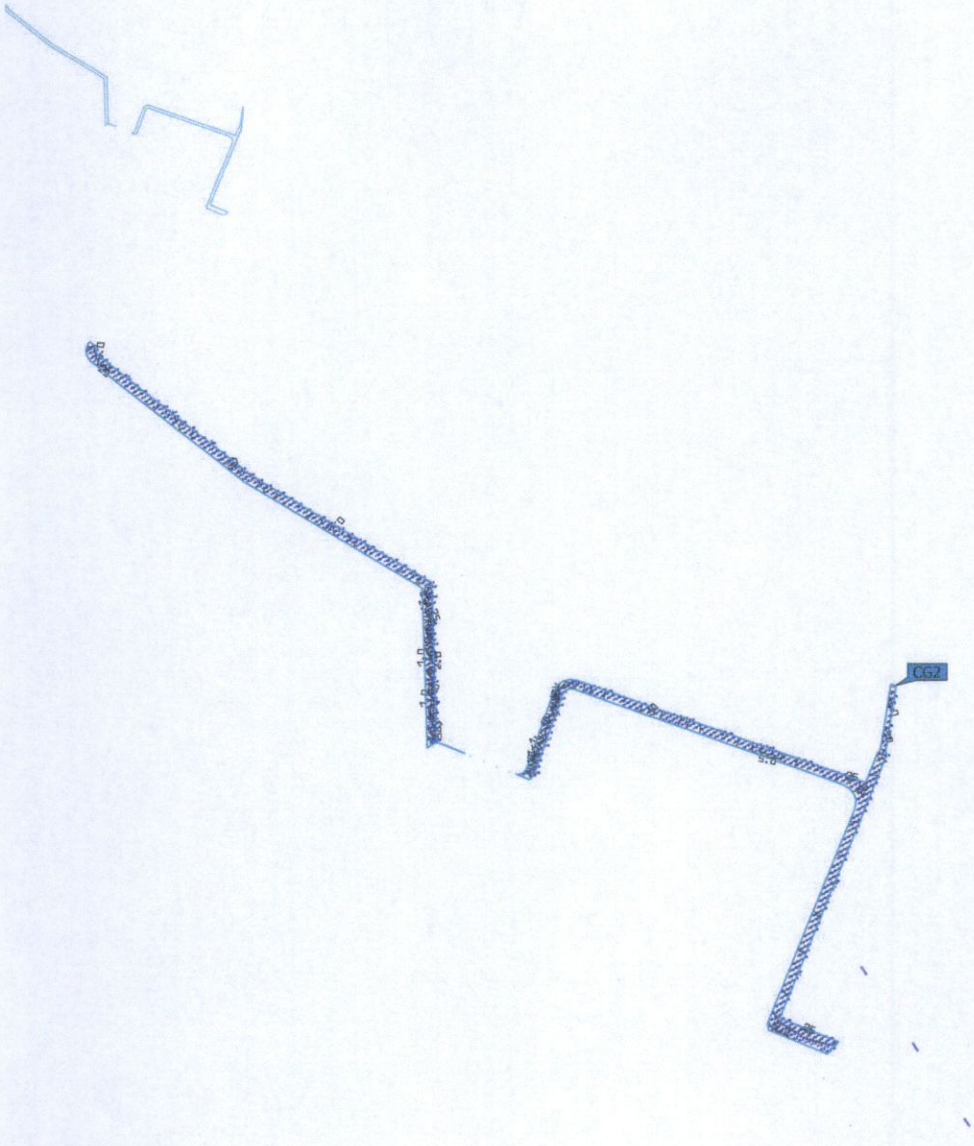
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Parking and Paths Perpendicular illuminance Height: 0.000 m	28.2 lx	3.00 lx	163 lx	0.11	0.018	CG1

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

DIALux

Site

Bike Paths



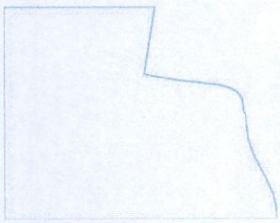
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Bike Paths Horizontal illuminance Height: 0.000 m	26.2 lx	0.43 lx	121 lx	0.016	0.004	CG2

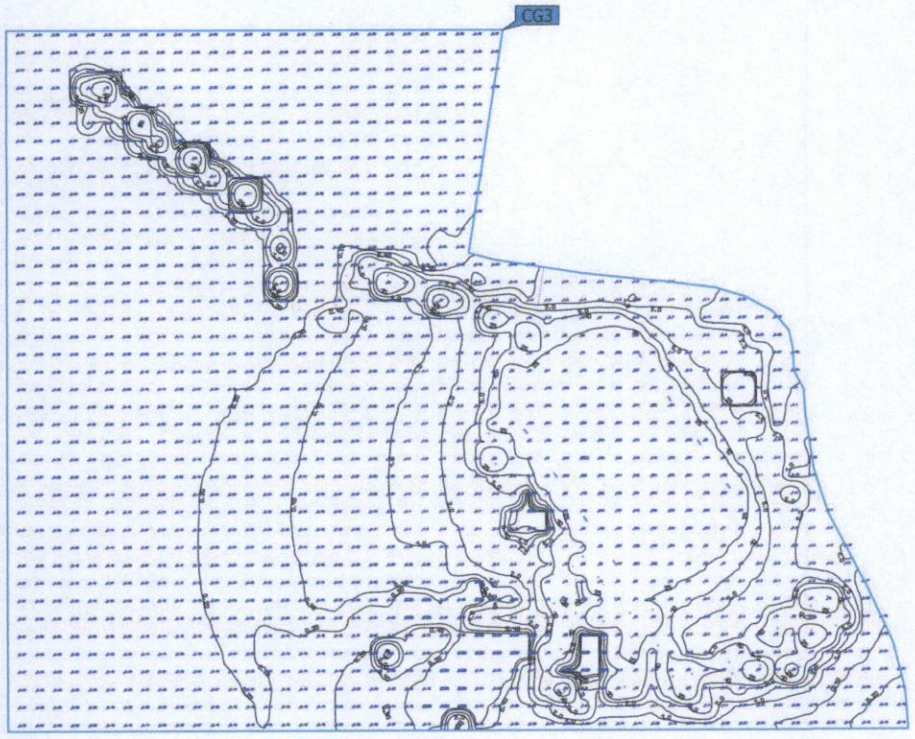
Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

DIALux

Site

Site and R316 Section





Properties	$\bar{E}$	E_{min}	E_{max}	g_1	g_2	Index
Site and R316 Section Perpendicular illuminance Height: 0.000 m	25.7 lx	0.00 lx	972 lx	0.00	0.00	CG3

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

Site

Roundabout

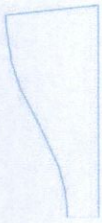
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
Roundabout Perpendicular illuminance Height: 7.000 m	0.23 lx	0.071 lx	0.50 lx	0.31	0.14	CG4

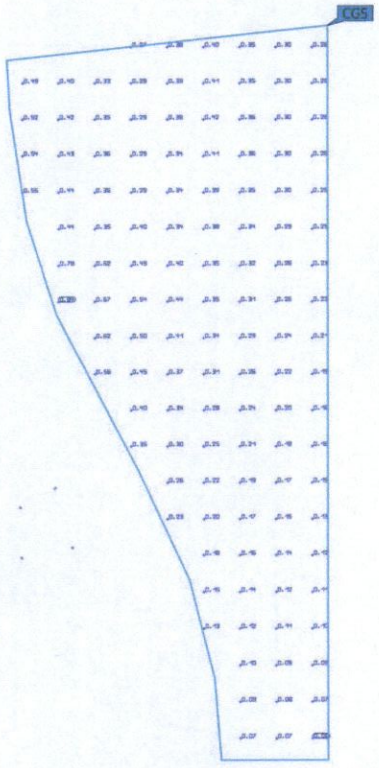
Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

DIALux

Site

N7 Ramps



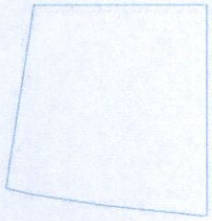


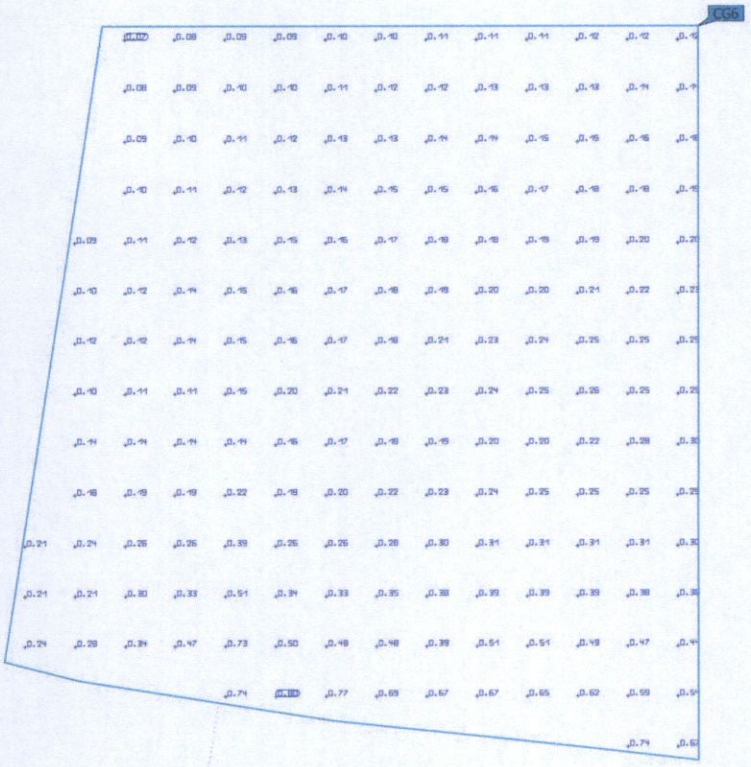
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
N7 Ramps Perpendicular illuminance Height: 6.000 m	0.30 lx	0.064 lx	0.84 lx	0.21	0.076	CG5

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

Site

R316 Section



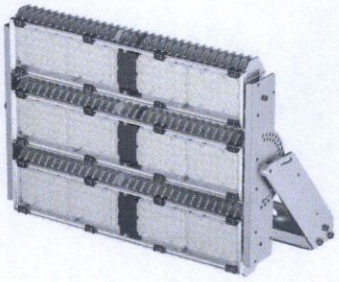


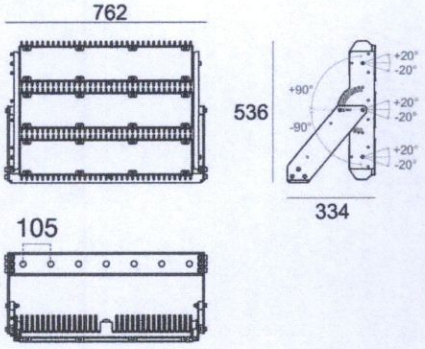
Properties	Ē	E_{min}	E_{max}	g_1	g_2	Index
R316 Section Perpendicular illuminance Height: 3.000 m	0.24 lx	0.071 lx	0.80 lx	0.30	0.089	CG6

Utilisation profile: DIALux presetting, Standard (outdoor transportation area)

Biglamp Pro

Projectors
56 + 56 + 56 x powerLEDs 1350 W DC 3600 mA | CRI 70
84434N23





Technical data	
Type	Surface
Installation position	Wall lights - Ceiling - Floor
Installation environment	Outdoor
Light Source	LED
Optics	Elliptical 23° x 40° + Elliptical 23° x 40° + Elliptical 23° x 40°
Light emission direction	frontal + frontal + frontal
Nominal power	1350 W DC
Source lumens	236343 lm
CCT / Tone	4000 K
Colour rendering index	70 Ra
Safety class	3
IP	IP66
IK	IK08
Glow wire test	850°
Direct mounting on normally flammable surfaces	Yes
CE	Yes
Driver included	No
Dimmable article	DALI - 1-10V
Directional	Swivelling
total angle (vertical plane)	20 °
total angle (horizontal plane)	0 °
Tilting	Yes
total angle (horizontal plane)	0 °
total angle (vertical plane)	90 °
Walk-over	No
Drive-over	No
Cable included	Yes
Cable length	1 m
Resin potting	No
Type of light emission	Multiple emission
Surface exposed to lateral wind	0,018 m²
Plant surface exposed to the wind	0,134 m²
Net weight	37 Kg
Electrostatic discharge protection	No
Surge protection	No
Product technological characteristics	TCS

Finishing casing	
Material	Die-cast Aluminium EN AB - 46100
Colour	Aluminium

Finishing diffuser	
Material	Extra clear glass - Tempered
Colour	transparent

Finishing bracket	
Material	Galvanised Iron
Colour	grey RAL 9006
Processing	Cataphoresis + Powder painting

Electronics

83030
DALI Controller (- art.)

83031
1-10V Controller (- art.)

83211
1-10V Controller (1 art.)

83212
1-10V - PWM Controller (1 art.)

Cables Electrification	
Cable connector	No

Biglamp Pro

Projectors | 56 + 56 + 56 x powerLEDs 1350 W DC 3600 mA | CRI 70 | Base
84434N23

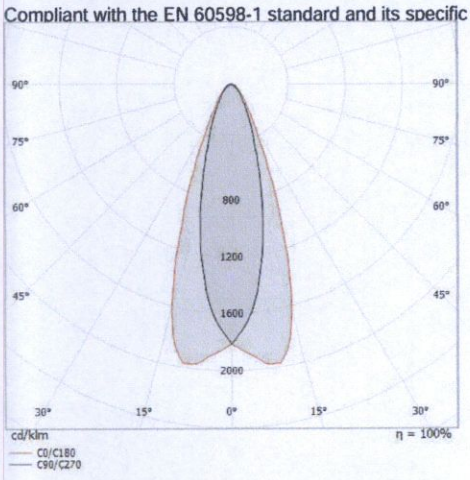
Multiple emission projectors for outdoor application. The natural white LED light source with a elliptical 23° x 40° light distribution is composed of 56 powerled LEDs with CCT of 4000 K and a CRI 70; the source luminous flux is 78781 lm, with a 175.1 lm/W nominal luminous efficacy The natural white LED light source with a elliptical 23° x 40° light distribution is composed of 56 powerled LEDs with CCT of 4000 K and a CRI 70; the source luminous flux is 78781 lm, with a 175.1 lm/W nominal luminous efficacy The natural white LED light source with a elliptical 23° x 40° light distribution is composed of 56 powerled LEDs with CCT of 4000 K and a CRI 70; the source luminous flux is 78781 lm, with a 175.1 lm/W nominal luminous efficacy.

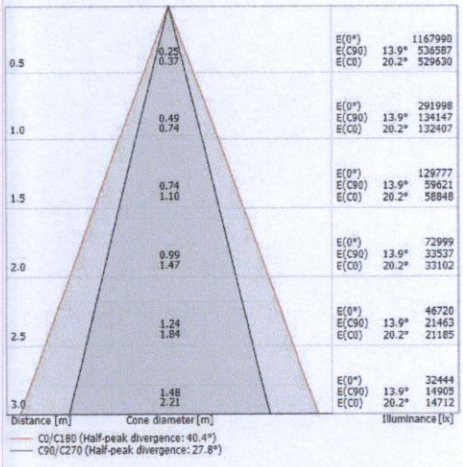
The device body is made of die-cast aluminium en ab - 46100 and features a aluminium finish; the diffuser is made of extra clear glass - tempered. The ingress protection degree is IP66; the total weight is of 37 kg. The power supply driver is not provided and is to be ordered separately.

The total absorbed power is 1350 W. The power supply cable is included and features a 1 m lenght.

The device features protection class III and can be wall lights, ceiling or floor-mounted.

Compliant with the EN 60598-1 standard and its specific provisions.





Energy efficiency class
This product contains 3 light sources of energy efficiency class E.

Illuminotechnical Features	
Light Output Ratio (LOR)	68 %
Source lumens	236343 lm
Delivered lumens	161338 lm
Consumption	1350 W
Luminaire efficacy	119 lm/W
Colour temperature	4000 K
Standard Deviation of Colour Matching	5 Step MacAdam
Colour rendering index	70 Ra
Standard Operating Ambient Temperature	-20 / +50°C
Ordinary temperature on the glass	40°C

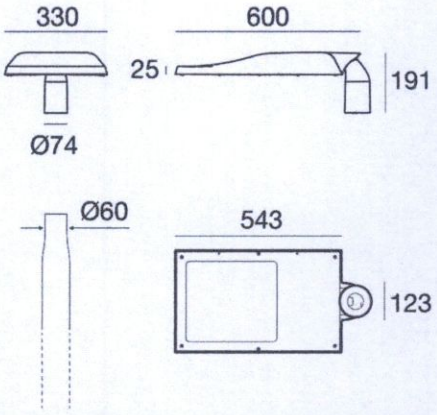
LED Life / Failure Ratio
L90 B10 C0 90000h (at Tj 65 Ta 25)

UGR	
UGR transversal	27.7
UGR axial	25.9
X=4H | Y=8H	S=0.25H
Reflection factor	70/50/20

OPTICAL	
Light distribution simmetry	Symmetrical 2 assis
C0/C180 optics	40°
C90/C270 optics	28°

Parker

Bollard & Pole | 198-264 V
48 x powerLEDs 91 W DC - 100 W AC | CRI 80
84508A72



Technical data	
Type	Bollard & Pole
Installation position	Pole
Installation environment	Outdoor
Light Source	LED
Optics	Street
Light emission direction	downward
Nominal power	91 W DC
Total Power	100 W
Source lumens	9001 lm
Rated efficiency	264 - Array AC
Frequency	50 - 60 Hz
CCT / Tone	2200 K
Colour rendering index	80 Ra
C.C. / C.V.	AC
Safety class	1
IP	IP66
IK	IK08
Glow wire test	850°
Direct mounting on normally flammable surfaces	Yes
CE	Yes
Driver included	Driver
Dimmable article	Autocontrol
Directional	Swivelling
total angle (vertical plane)	15 °
total angle (horizontal plane)	0 °
Tilting	No
Walk-over	No
Drive-over	No
Cable included	Yes
Cable length	1 m
Resin potting	No
Type of light emission	Single emission
Surface exposed to lateral wind	0.04 m²
Plant surface exposed to the wind	0.18 m²
Net weight	8.5 Kg
Electrostatic discharge protection	Yes
Surge protection	Yes
Product technological characteristics	TCS

Finishing casing	
Material	Die-cast Aluminium EN AB - 46100
Colour	Anthracite Gray RAL 7016
Processing	Powder coating

Finishing diffuser	
Material	Extra clear glass
Colour	transparent
Processing	Silk-screening

Cables Electrification	
Cable connector	No

Parker

Bollard & Pole | 198-264 V | 48 x powerLEDs 91 W DC - 100 W AC | CRI 80 | Base
84508A72

Single emission bollard & pole for outdoor application. The ancient white LED light source with a street light distribution is composed of 48 powerled LEDs with CCT of 2200 K and a CRI 80; the source luminous flux is 9001 lm, with a 98.9 lm/W nominal luminous efficacy.

The device body is made of die-cast aluminium en ab - 46100 and features a anthracite gray ral 7016 finish, processed by means of powder coating; the diffuser is made of extra clear glass with a silk-screening treatment. The ingress protection degree is IP66; the total weight is of 8.5 kg.

The total absorbed power is 100 W. The power supply cable is included and features a 1 m lenght.

The device features protection class I and can be pole-mounted.

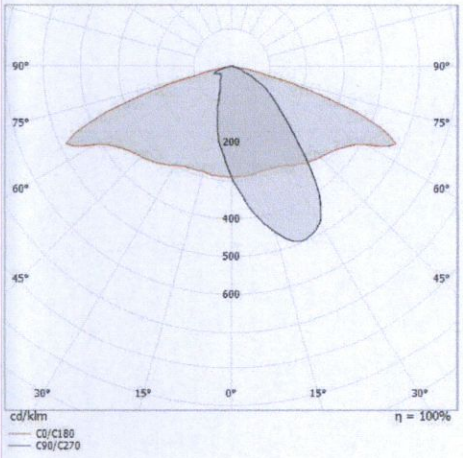
Compliant with the EN 60598-1 standard and its specific provisions.

Energy efficiency class
This product contains a light source of energy efficiency class F.

Illuminotechnical Features	
Light Output Ratio (LOR)	86 %
Source lumens	9001 lm
Delivered lumens	7818 lm
Consumption	100 W
Luminaire efficacy	78 lm/W
Colour temperature	2200 K
Standard Deviation of Colour Matching	1/16 ANSI BIN
Colour rendering index	80 Ra
Standard Operating Ambient Temperature	-20 / +50°C

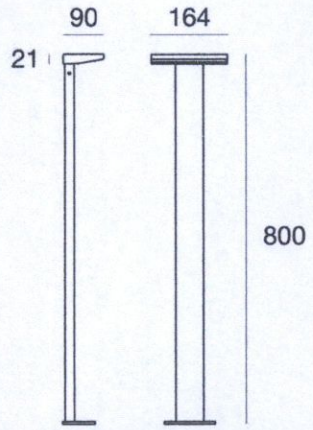
LED Life / Failure Ratio
L70 B10 C0 361980h

OPTICAL	
Light distribution simmetry	Symmetrical 2 assis
C0/C180 optics	145°



Opti-Pole

Bollard & Pole | 80-265 V
18 topLED 8 W DC - 9.5 W AC | CRI 80
65395M07



Technical data	
Type	Bollard
Installation position	Floor
Installation environment	Outdoor
Light Source	LED
Optics	Asymmetric Wallwasher
Light emission direction	downward
Nominal power	8 W DC
Total Power	9.5 W
Source lumens	744 lm
Rated efficiency	265 - Array AC
Frequency	50 - 60 Hz
CCT / Tone	2700 K
Colour rendering index	80 Ra
C.C. / C.V.	AC
Safety class	2
IP	IP65
IK	IK08
Glow wire test	850°
Direct mounting on normally flammable surfaces	Yes
CE	Yes
Driver included	Driver
Dimmable article	No
Directional	No
Tilting	No
Walk-over	No
Drive-over	No
Cable included	No
Resin potting	Yes
Type of light emission	Single emission
Net weight	2,3 Kg
Electrostatic discharge protection	4 KV
Surge protection	0,5 KV
Optics technology	Optilight TM
Product technological characteristics	Acquastop - UV Resistant

Finishing casing	
Material	Die-cast Aluminium EN AB - 46100
Colour	grey RAL 9006
Processing	Open pore anodizing + Powder Coating

Finishing diffuser	
Material	UV Resistant Polymethylmethacrylate
Colour	transparent

Finishing base	
Material	Galvanised Iron
Colour	grey RAL 9006
Processing	Powder coating

Opti-Pole

Bollard & Pole | 80-265 V | 18 topLED 8 W DC - 9.5 W AC | CRI 80 | Base
65395M07

Single emission bollard & pole for outdoor application. The super warm LED light source with a asymmetric wallwasher light distribution is composed of 18 topled LEDs with CCT of 2700 K and a CRI 80; the source luminous flux is 744 lm, with a 93.0 lm/W nominal luminous efficacy.

The device body is made of die-cast aluminium en ab - 46100 and features a grey ral 9006 finish, processed by means of open pore anodizing + powder coating; the diffuser is made of uv resistant polymethylmethacrylate. The ingress protection degree is IP65; the total weight is of 2,3 kg.

The total absorbed power is 9.5 W.

The device features protection class II and can be floor-mounted.

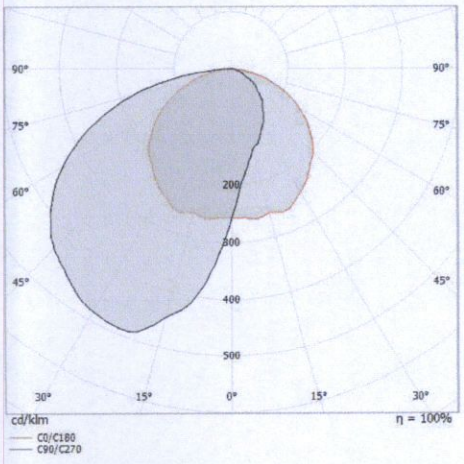
Compliant with the EN 60598-1 standard and its specific provisions.

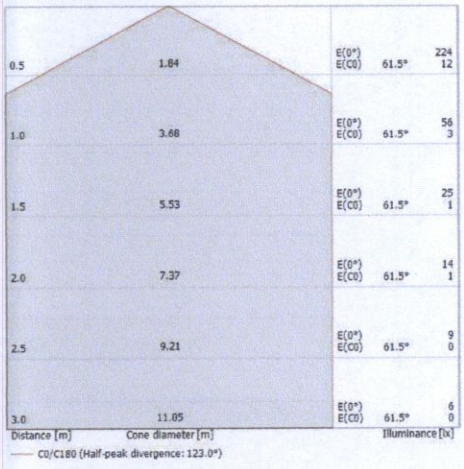
Energy efficiency class	

Illuminotechnical Features	
Light Output Ratio (LOR)	29 %
Source lumens	744 lm
Delivered lumens	217 lm
Consumption	9.5 W
Luminaire efficacy	22 lm/W
Colour temperature	2700 K
Standard Deviation of Colour Matching	3 Step MacAdam
Colour rendering index	80 Ra
Standard Operating Ambient Temperature	-20 / +50°C

LED Life / Failure Ratio
L70 B10 C0 145770h (at Tj 65 Ta 25)

OPTICAL	
Light distribution simmetry	Symmetrical 2 assis
C0/C180 optics	123°





Opti-Pole

Opti-Pole | Bollard & Pole | Accessories
65395M07

Pegs
installation position: floor,Cover material: aisi 304 steel

Code
64200

LightGraphix
Creative Lighting Solutions

LD42D / LD42DA

LD42D / LD42DA

ULTRA-LOW GLARE MINIATURE
SEMI-RECESSED DOMED LED WALL LIGHT

350 mA | 500 mA | IP67

he miniature LD42D and LD42DA are ideal for discreet ghting of steps and pathways within interior, exterior and marine applications. The fittings are an evolution of our opular LD42 range, offering a new bezel aesthetic. When iewed from above, the machined, domed bezel obscures ne light source, resulting in ultra-low glare. LD42D offers a powerful floor wash reaching up to 3 metres, whilst the LD42DA contains a 20° tilt film to focus the beam down onto ne lit surface. With narrow to oval beam angles available nd a high IP rating, a range of lighting effects can be created even in the harshest environments.

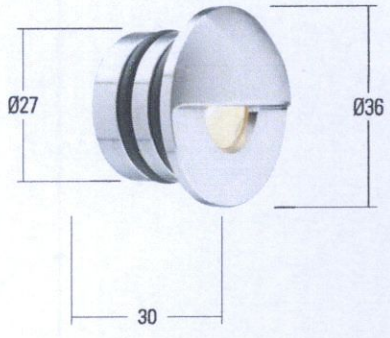
EY FEATURES

- Machined domed body offers an ultra low glare solution by obscuring the light source from view and directing it only onto the lit surface
- High-power C1 engine with NICHIA LED delivering up to 73lm
- Miniature fitting with very minimal body depth and bezel diameter
- LD42DA features a 20° tilt film to focus the light down onto to the lit surface
- Range of beam angles including new extra oval beam, a wall grazing optic now available for floor washing across the LD42 range
- Wide range of high-quality machined metal and painted bezel finishes available, including: 316 Stainless Steel, Polished & Passivated 316 Stainless Steel, Machined Brass, Flamed Solid Bronze, White (RAL 9016), Black (RAL 9005), Antique Bronze, Satin Antique Brass, Satin Brass, Anthracite Grey (RAL 7016) or any RAL colour
- Use with our LD43 uplight for a uniform floor and wall washing effect
- Hidden fixing options include spring clips or /480 first fix sleeve with o-rings
- Switched, 0-10V, casambi, DMX, DALI or mains dimmable drivers available

DIMENSIONS

Dimensions in mm

For fixing dimensions please go to page 3.



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ta sheet issued: 1 September 2022 1:09 pm | Issue 1

LD42D / LD42DA

WHITE LED ENGINE SPECIFICATION

Product	LD42D		LD42DA	
Engine	C1		C1	
Beam angles	12°, 31°, 50°, 30° x 66°		26°, 31°, 40°, 25° x 57°	
LED manufacturer	NICHIA		NICHIA	
Colour temperature*	2200K / 2700K / 3000K / 4000K / 5000K		2200K / 2700K / 3000K / 4000K / 5000K	
Current	350mA	500mA	350mA	500mA
LED power (Max)**	1.2W	1.7W	1.2W	1.7W
Delivered lumens (L_{100})*	61	73	57	69
Lumens per circuit watt	58	49	54	46
CRI (Typ)	93		93	
Forward voltage (V_{100})	3.2V		3.2V	
Colour consistency	2 SCDM		2 SCDM	
Peak intensity	448 cd		371 cd	
LED Lumens	157lm		157lm	
LOR	0.34		0.32	
TM30	RF92	RG100	RF92	RG99
LED lifetime	L90B5 at 90,000hrs			
Applications				

This data is based on LD42D-C1-500-NB and LD42DA-C1-500-NB
*Lumen output data applies to all colour temperatures
**Indicates the nominal power for the LED run at that particular current and includes losses associated with using an 85% efficient driver

MECHANICAL

Ambient temperature	-20°C to +35°C (500mA), or -20°C to +45°C (350mA)
Glass	1.2mm thick low iron glass
Materials	316 stainless steel bezel and body, stainless steel spring clips, acetal sleeve and rubber o-rings
Weight of product	0.078kg
IP rating	IP67
Wiring	In-series constant current wiring (pre-wired with 2 x single core cable at a length of 150mm)

AVAILABLE FINISHES

Please refer to our finishes guide for full details

16 STAINLESS STEEL

- Marine grade 316 Steel
- Standard machined finish
- Extremely durable
- Passivation recommended for marine environments to prevent corrosion and build up of brown stains caused by oxidation
- Interior & exterior use

POLISHED & PASSIVATED 316 STAINLESS STEEL

- Marine Grade 316 Steel
- Pristine, mirror like finish
- Recommended for pools and marine applications
- Extremely durable
- Passivated to extensively prolong resistance to corrosion and brown stains caused by oxidation in marine environments
- Interior & exterior use

MACHINED BRASS

- Solid CZ121 Brass
- Standard machined finish
- Corrosion resistance rated fair to excellent
- Please note a natural green/brown patination layer will form after long term exposure to the elements, the extent of this discolouration will be dependant on its location.
- Interior & exterior use

FLAMED SOLID BRONZE

- Solid Bronze
- Hand finished Flamed Bronze unique to LightGraphix
- Extremely durable with very high corrosion resistance
- Please note a natural dark patination layer will form after long term exposure to the elements, the extent of this discolouration will be dependant on its location.
- Interior & exterior use

PAINT FINISH - WET SPRAY

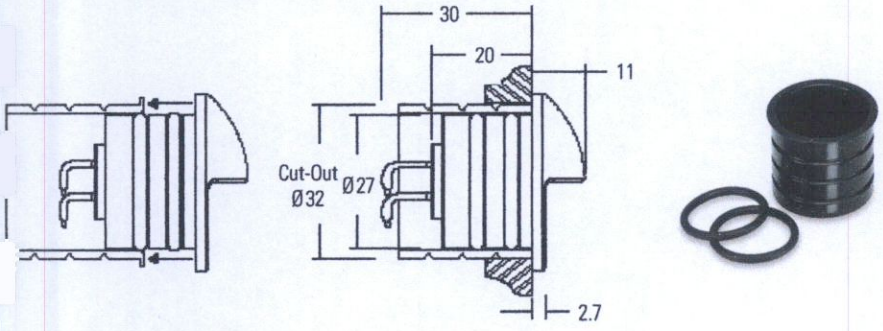
- Fine coating with slightly metallic finish
- White (RAL 9016), Black (RAL 9005), Antique Bronze, Satin Antique Brass, Satin Brass, Anthracite Grey (7016) or any RAL colour available
- Not recommended for footlights in high traffic areas
- Interior & exterior use

DIMENSIONS AND FIXING ACCESSORIES

Dimensions in mm

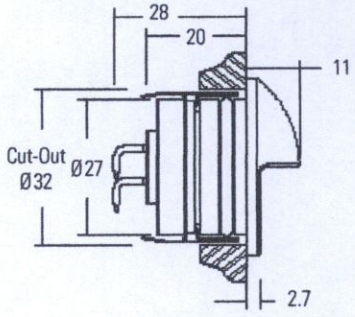
80 O-rings and sleeve

cetal sleeve rubber o-rings provide a robust, watertight method fixing.



/SC Spring clip fixing

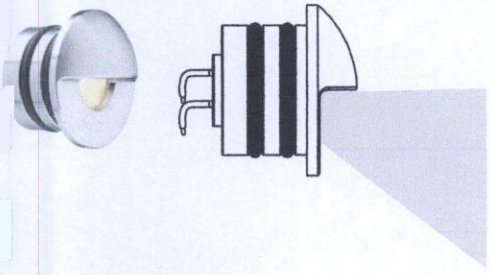
Stainless steel spring clips provide a simple single-fix mounting method.



LIGHT OUTPUT OPTIONS

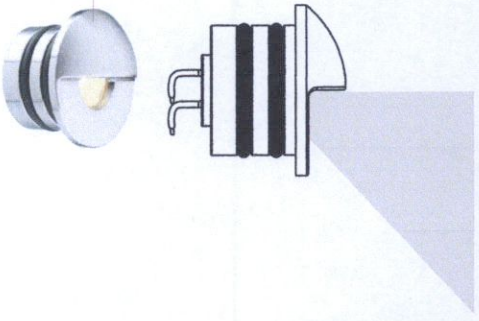
042D

ovides a throw of light up to 3 metres when specified at 500mA, ideal for lighting wide staircases and pathways.



LD42DA

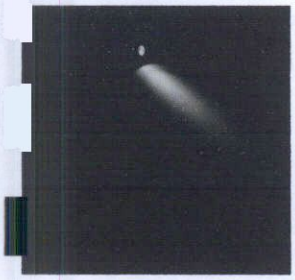
The addition of a 20° tilt film focuses the light down onto the lit surface for a concentrated effect. Ideal for discreet lighting or narrow applications.



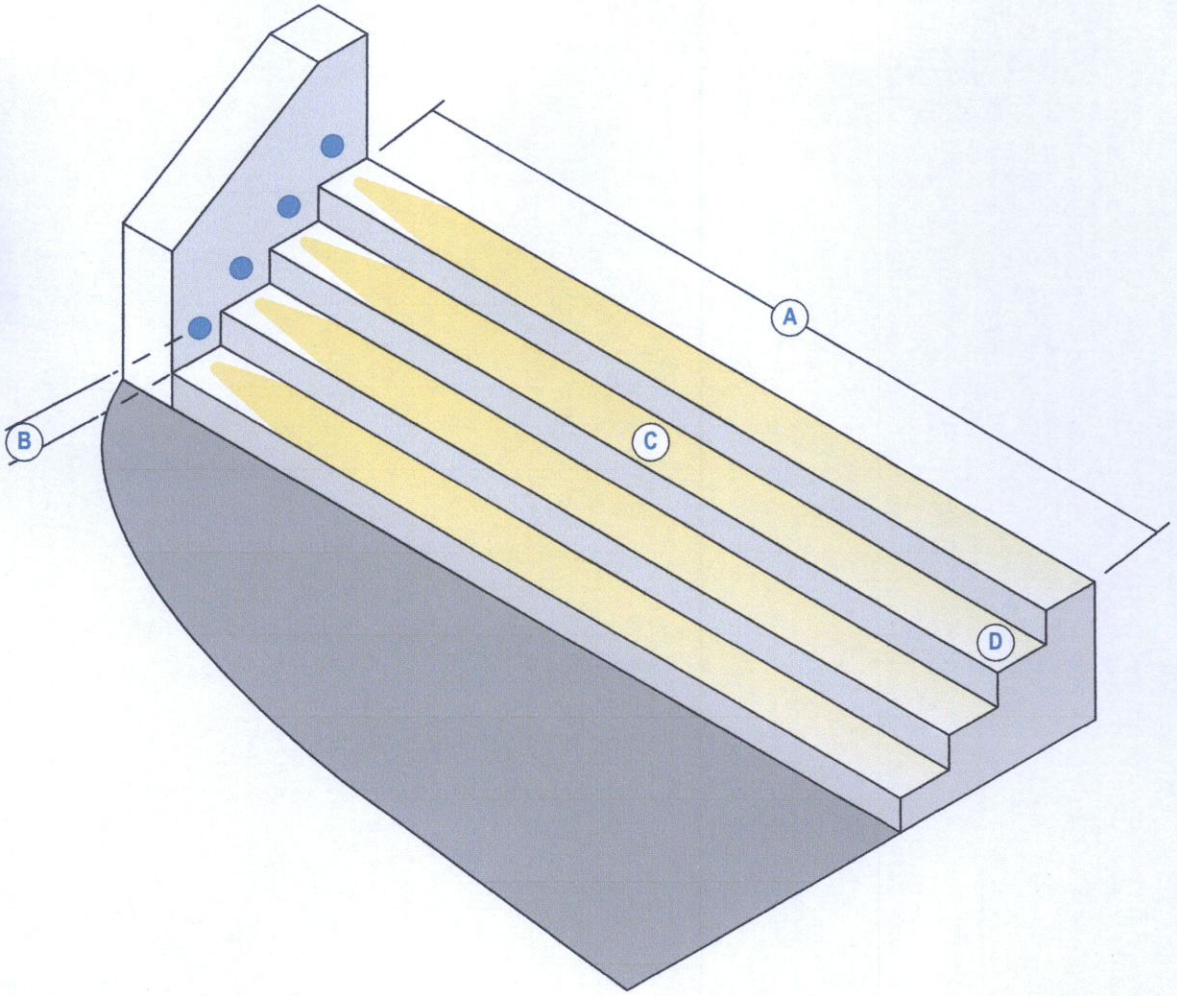
LD42D / LD42DA

NSTALLATION GUIDE - STEP LIGHTING

elow is a step application guide with suggested luminaire mounting heights for lighting across steps. Every project and lighting scenario will be different and the table below is to be used s a starting point. Please use our photometric files to further test the desired effect for your application. Files are available on the LD42D product page on our website.



D42D - NB



LD42D-350-NB

A	Step width	1000mm	1500mm	2000mm	2500mm	3000mm
B	Height of fittings	100mm (above step)				
C	Mid-step illuminance (Lux)	67 LX	44 LX	25 LX	15 LX	9 LX
D	End of step illuminance (Lux)	29 LX	10 LX	5 LX	3 LX	2 LX

LD42DA-350-MSB

A	Step width	1000mm	1500mm	2000mm	2500mm	3000mm
B	Height of fittings	175mm	200mm	225mm	250mm	275mm
C	Mid- step illuminance (Lux)	311 LX	84 LX	31 LX	14 LX	8 LX
D	End of step illuminance (Lux)	21 LX	5 LX	2 LX	1 LX	1 LX

LD42D-500-NB

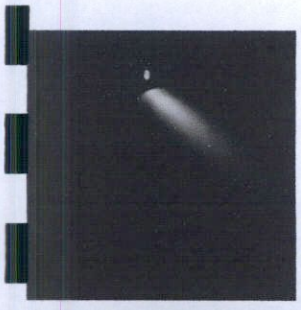
A	Step width	1000mm	1500mm	2000mm	2500mm	3000mm
B	Height of fittings	100mm (above step)				
C	Mid-step illuminance (Lux)	95 LX	53 LX	29 LX	17 LX	11 LX
D	End of step illuminance (Lux)	33 LX	12 LX	5 LX	3 LX	2 LX

LD42DA-500-MSB

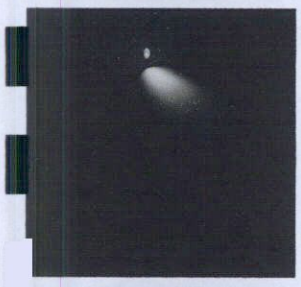
A	Step width	1000mm	1500mm	2000mm	2500mm	3000mm
B	Height of fittings	175mm	200mm	225mm	250mm	275mm
C	Mid-step illuminance (Lux)	372 LX	104 LX	3 LX	1 LX	1 LX
D	End of step illuminance (Lux)	26 LX	6 LX	38 LX	17 LX	10 LX

INSTALLATION GUIDE - BULWARK/PATHWAY LIGHTING

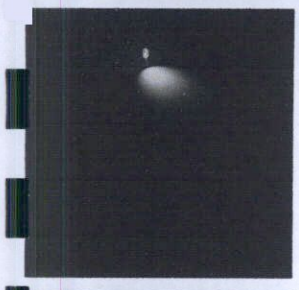
Below is an application guide for narrow corridors and pathways with suggested luminaire spacing and mounting heights for achieving an even floor wash. Every project and lighting scenario will be different and the table below is to be used as a starting point. Please use our photometric files to further test the desired effect for your application. Files are available on the LD42D product page on our website.



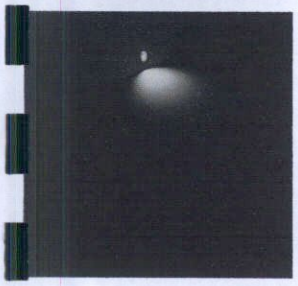
LD42D - NB



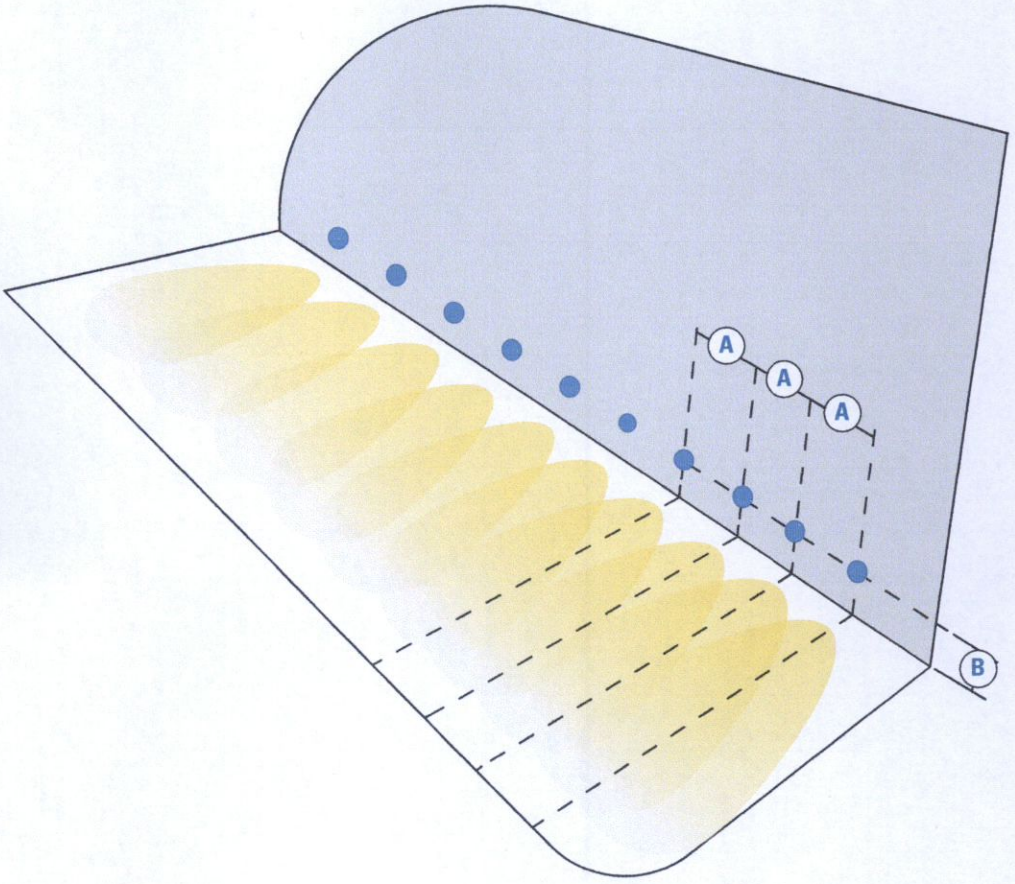
LD42D - MB



LD42D - WB



LD42D - EOB



LD42D-500		/NB	/MB	/WB	/EOB
A	Space between fittings	250mm	400mm	450mm	600mm
B	Height of fitting (from floor)	150mm	200mm	300mm	200mm
	Average (Lux)	77 LX	54 LX	48 LX	46 LX

LD42DA-500		/MSB	/MB	/WB	/EOB
A	Space between fittings	180mm	250mm	350mm	500mm
B	Height of fitting (from floor)	350mm	400mm	450mm	450mm
	Average (Lux)	202 LX	116 LX	76 LX	43 LX

Results based on achieving >0.6 uniformity on a 1.5M wide bulwark/pathway

FDS2D / FDS2DA

Flatlabux

creative flooring solutions

ORDER CODES & OPTIONS

Example: LD42D-C1-350 / LW30 / MB / 316 Stainless Steel / 480

Light Engine & Drive Current		LED Colour		Beam Angle		Finish		Fixing & Accessories
LD42D(A) -	/		/		/		/	

WHITE LED ENGINES

C1

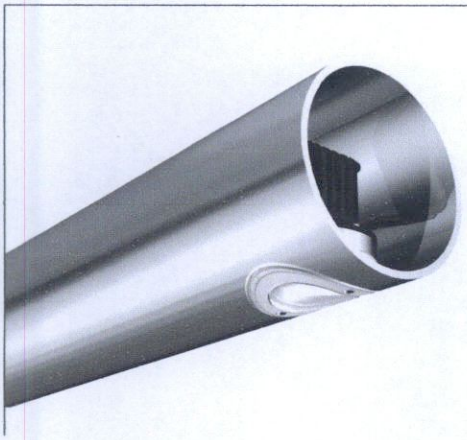
LD42D		Super Warm White (2200K)	/LW22	12° Narrow spot	/NB	316 Stainless Steel	/480
1.2W LED at 350mA	LD42D-C1-350	Extra Warm White (2700K)	/LW27	31° Medium	/MB	Polished & Passivated 316 Stainless Steel (for marine environments)	/SC
1.7W LED at 500mA	LD42D-C1-500	Warm White (3000K)	/LW30	50° Wide	/WB	Machined Brass	
LD42DA		White (4000K) on request	/LW40	30° x 66° Extra Oval	/EOB	Flamed Solid Bronze	
1.2W LED at 350mA	LD42DA-C1-350	Cool White (5000K)	/LW50	26° Medium spot	/MSB	Paint Finish - Antique Bronze	
1.7W LED at 500mA	LD42DA-C1-500			31° Medium	/MB	Paint Finish - Satin Antique Brass	
				40° Wide	/WB	Paint Finish - Satin Brass	
				25° x 57° Extra Oval	/EOB	Paint Finish - Black (RAL 9005)	
						Paint Finish - Anthracite Grey (RAL 7016)	
						Paint Finish - White (RAL 9016)	
						Paint Finish - Any RAL	

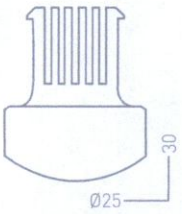
Drivers

Use with 350mA & 500mA constant current LED drivers
We have a range of dimmable LED drivers including DMX and DALI compatible. Please see the downloads section on our website.

LEDpod 40 Patented

DATASHEET





KLIKLED® LEDpod

Optics			Lens/Reflector	
Beam Angle			Symmetrical	Asymmetrical
lm	**W**	**mA**	**System Lumens** [1]	
165	1.4	350	118	106
235	2.0	500	167	151

Colour	2200°K · 2700°K · 3000°K · 3500°K · 4000°K · 5000°K · Red · Green · Blue · Amber · PC Amber
CRI	80-85
Binning	2 McAdam Step
Driver	Input 24VDC (42VDC optional) / Output 350 - 500mA Constant Current
Control	DALI · 1-10V · DMX*
Distribution	Symmetrical · Asymmetrical
Tube Size	Ø38 - Ø45mm, Max. wall 3.5mm †
Cut out	Ø25mm
Weight	0.020kg

* DMX control is for overall dimming only and not for individually addressed LEDpods
† Others sizes available upon request
1 Lumen output based on 4000K

LPOD40 20191122

Carrum Foreshore Precinct – Melbourne, VIC · Kingston City Council · Andrew Lloyd Photography

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