

Report of Test LL18548

Hawko Lighting Group. Product ID: Smoothflex IP20 3000K mounted in ES-45 extrusion with opal diffuser.

Extruded aluminium housing with silver finish, extent ~ 1150 x 18 x 18 mm deep.

Angled curved opal diffuser forms luminous volume of 1145 x 10 x 10 mm deep.

PCB strip containing 135 "Epistar 3850 style LED chip 3000K" centred 10 mm behind L/V.

Remote Tridonic LCU 035/12 E 020 120-240V 50/60Hz electronic driver.

Tested at 240 V 50 Hz, measured I = 77 mA, upper surface horizontal.

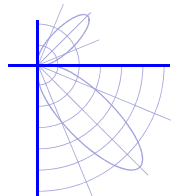


Performance Summary

Luminous flux	394 lm
Luminaire Power	15.7 W
Luminous Efficacy	25.1 lm/W

PREPARED FOR : Hawko Lighting Group, Caloundra. QLD. 4551.





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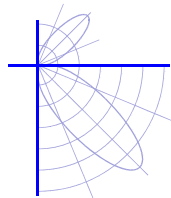
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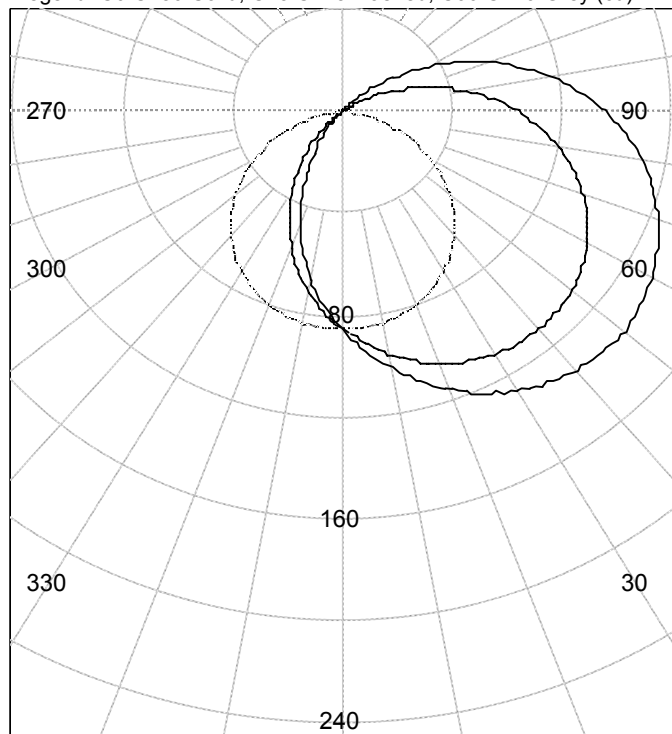
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Legend: C0/C180-Solid, C45/C225-Dashed, C90/C270-Grey (cd)



C180-C270 (Symmetric about C0/C180) C0-C90

INTENSITY SUMMARY (cd)

Gamma	C-Plane					Flux (lm)
	C0	C22.5	C45	C67.5	C90	
0.0	86	86	86	86	86	8
5.0	95	94	92	89	85	
10.0	103	101	97	91	84	
15.0	110	108	101	93	83	23
20.0	116	113	105	94	80	36
25.0	122	118	108	94	77	
30.0	127	122	110	93	73	
35.0	130	125	111	92	68	44
40.0	133	127	111	89	63	48
45.0	134	127	111	86	57	
50.0	134	127	109	83	51	
55.0	132	125	106	78	44	49
60.0	130	123	103	73	37	47
65.0	127	119	98	67	29	
70.0	122	115	93	60	22	
75.0	117	109	87	53	14	43
80.0	111	103	80	46	7	35
85.0	103	95	72	37	2	
90.0	95	87	64	29	0	

ZONAL FLUX AND PERCENTAGES

Zone	Flux (lm)	% Lamp	% Luminaire
0-30	67	N / A	17.0
0-40	111	N / A	28.2
0-60	208	N / A	52.8
0-90	333	N / A	84.6
40-90	222	N / A	56.4
60-90	125	N / A	31.8
90-180	61	N / A	15.4
0-180	394	N / A	100.0

Light Output Ratio = N / A

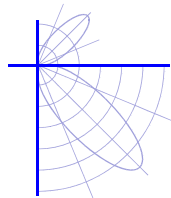
CERTIFIED BY:

K Monaghan

Kevin Monaghan
Authorised Signatory

Date of test 13-May-2015

Date of report 18-May-2015



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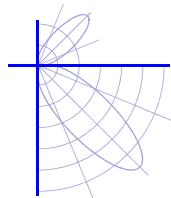
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
0.0	86	86	86	86	86
2.5	90	90	88	87	85
5.0	95	94	92	89	85
7.5	99	98	94	90	85
10.0	103	101	97	91	84
12.5	107	105	99	92	83
15.0	110	108	101	93	83
17.5	114	111	104	93	81
20.0	116	113	105	94	80
22.5	119	116	107	94	79
25.0	122	118	108	94	77
27.5	125	120	109	94	75
30.0	127	122	110	93	73
32.5	129	124	111	93	71
35.0	130	125	111	92	68
37.5	132	126	112	91	66
40.0	133	127	111	89	63
42.5	133	127	111	88	60
45.0	134	127	111	86	57
47.5	134	127	110	85	54
50.0	134	127	109	83	51
52.5	133	126	108	80	48
55.0	132	125	106	78	44
57.5	131	124	104	76	40
60.0	130	123	103	73	37
62.5	129	121	100	70	33
65.0	127	119	98	67	29
67.5	125	117	96	64	25
70.0	122	115	93	60	22
72.5	120	112	90	57	17
75.0	117	109	87	53	14
77.5	114	106	83	49	10
80.0	111	103	80	46	7
82.5	107	99	76	41	4
85.0	103	95	72	37	2
87.5	99	91	68	33	0
90.0	95	87	64	29	0



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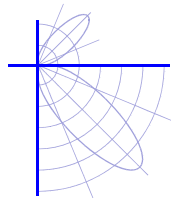
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Intensity data (cd)

Gamma	C-Plane				
	C0	C22.5	C45	C67.5	C90
90.0	95	87	64	29	0
92.5	91	83	60	25	0
95.0	87	78	55	21	0
97.5	82	74	51	17	0
100.0	78	69	46	14	0
102.5	73	64	41	10	0
105.0	67	59	37	8	0
107.5	62	54	32	5	0
110.0	56	49	27	4	0
112.5	51	43	23	2	0
115.0	45	38	19	1	0
117.5	40	32	15	1	0
120.0	35	28	12	1	0
122.5	29	22	9	0	0
125.0	24	18	6	0	0
127.5	20	14	4	0	0
130.0	15	11	3	0	0
132.5	12	8	2	0	0
135.0	8	5	1	0	0
137.5	6	4	0	0	0
140.0	4	2	0	0	0
142.5	3	1	0	0	0
145.0	1	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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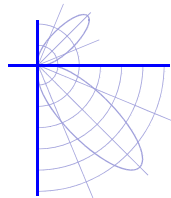
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Intensity data (cd)

Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
0.0	86	86	86	86	86
2.5	85	84	83	82	81
5.0	85	82	79	77	77
7.5	85	80	76	73	72
10.0	84	77	72	68	67
12.5	83	75	68	63	61
15.0	83	72	64	58	56
17.5	81	70	60	53	51
20.0	80	67	55	48	45
22.5	79	63	51	43	40
25.0	77	60	46	37	34
27.5	75	57	42	32	29
30.0	73	53	37	27	24
32.5	71	50	32	22	19
35.0	68	46	28	18	15
37.5	66	42	23	14	11
40.0	63	38	20	11	8
42.5	60	34	16	8	6
45.0	57	30	12	5	3
47.5	54	26	9	3	2
50.0	51	22	6	2	1
52.5	48	18	4	1	0
55.0	44	14	3	0	0
57.5	40	11	1	0	0
60.0	37	8	0	0	0
62.5	33	6	0	0	0
65.0	29	3	0	0	0
67.5	25	2	0	0	0
70.0	22	1	0	0	0
72.5	17	0	0	0	0
75.0	14	0	0	0	0
77.5	10	0	0	0	0
80.0	7	0	0	0	0
82.5	4	0	0	0	0
85.0	2	0	0	0	0
87.5	0	0	0	0	0
90.0	0	0	0	0	0



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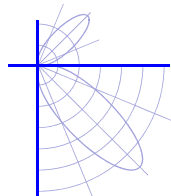
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Gamma	C-Plane				
	C90	C112.5	C135	C157.5	C180
90.0	0	0	0	0	0
92.5	0	0	0	0	0
95.0	0	0	0	0	0
97.5	0	0	0	0	0
100.0	0	0	0	0	0
102.5	0	0	0	0	0
105.0	0	0	0	0	0
107.5	0	0	0	0	0
110.0	0	0	0	0	0
112.5	0	0	0	0	0
115.0	0	0	0	0	0
117.5	0	0	0	0	0
120.0	0	0	0	0	0
122.5	0	0	0	0	0
125.0	0	0	0	0	0
127.5	0	0	0	0	0
130.0	0	0	0	0	0
132.5	0	0	0	0	0
135.0	0	0	0	0	0
137.5	0	0	0	0	0
140.0	0	0	0	0	0
142.5	0	0	0	0	0
145.0	0	0	0	0	0
147.5	0	0	0	0	0
150.0	0	0	0	0	0
152.5	0	0	0	0	0
155.0	0	0	0	0	0
157.5	0	0	0	0	0
160.0	0	0	0	0	0
162.5	0	0	0	0	0
165.0	0	0	0	0	0
167.5	0	0	0	0	0
170.0	0	0	0	0	0
172.5	0	0	0	0	0
175.0	0	0	0	0	0
177.5	0	0	0	0	0
180.0	0	0	0	0	0



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Test Distance: 8.0 metres

Test Temperature: 25.4 degrees Celsius

Significance: This laboratory has no control over the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Special Notes: The intensity values contained in this report are shown as tested. When using these values in calculations the appropriate Ballast Factor and Manufacturer's rated lumens MUST be taken into account.

It should also be noted that prorating the lumen output for the use of other lamp/ballast combinations, or for use in different environmental conditions, than that tested may produce erroneous results.

The generic term "LOR" is used in this report, it denotes the "Light Output Ratio Luminaire" as defined in Australian Standard AS1680, Part 3, 1991, Section 1.3.9.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Cgamma coordinate system as described in CIE Publication number 121.

Uncertainties: At the 95% confidence interval with a factor k = 2, the uncertainties for this report are :-

Temperature +/- 1 degree Celsius

Light Output Ratio +/- 4%

Luminous Intensity +/- 4%

Angular displacement +/- 0.5 degrees.

Testing Procedure: Tested in accordance with the applicable sections of CIE Publication Number 121; and with reference to Australian Standard AS1680, Part 3, 1991.