



# Spectra Lux

2750 Sabourin, Saint-Laurent (Quebec) H4S 1M2 Canada  
Tel.: (514) 332-0082 Fax: (514) 332-3590 [www.spectralux.ca](http://www.spectralux.ca)



Lab Code: 200899-0

## Moving Mirror Goniophotometer Test Report

**Standard(s):** IES LM-63, IES LM-79, ANSI C82.77

**Customer** ANDlight, 1951 Franklin St., Vancouver, British Columbia , Canada, V5L 0C7

General Information		Lamp Details: CY4566		Driver Details: CY2075	
<b>DUT Lab ID</b>	SRIS 2824-9	<b>Seasoning</b>	0 Hour	<b>Type</b>	LED Power Supply
<b>Lamp Type</b>	LED/SSL	<b>Test Product</b>	SLA-30-P-30	<b>Manufacturer</b>	Meanwell
<b>Current Mode</b>	AC	<b>Manufacturer</b>	EPISTAR	<b>Catalog No.</b>	IDLV-45-12
<b>Test Report</b>	S2011251-R1	<b>Lamp Catalog No.</b>	OMNICHIP ( 320404-xx-300-12-4.4)	<b>Maximum Power</b>	45 W
<b>Test Date</b>	25 November 2020	<b>Drive Current</b>	330 mA	<b>Input Voltage</b>	120.00 V
<b>Report Date</b>	14 December 2020	<b>Nominal Color</b>	3000 K	<b>Operating Frequency</b>	60 Hz
<b>Ambient</b>	25.1 °C	<b>Burning Position</b>	Junction Horizontal	<b>Input Power</b>	5.54 W

### Luminaire Data

General Information		Optics		Aperture (feet)	
<b>Manufacturer</b>	ANDlight	<b>Reflector</b>	None	<b>X</b>	0.0260
<b>Name</b>	SLAB	<b>Housing</b>	Black Body	<b>Y</b>	0.9833
<b>Catalog No.</b>	SLA-30-P-30	<b>Lens</b>	Polycarbonate	<b>Z</b>	0.1875

Stabilization Time: 1 hour

**Approved Signatory: Chrisnel Blot**

**Signature:**



## Luminaire Test Method

Precise installation and alignment of the luminaire to the rotation axis of the photometer is governed by a servomotor controlled via a microcontroller. A laser is used to validate the luminaire positioning. Before photometric measurements are taken, luminaire is operated long enough to reach stabilization and temperature equilibrium.

All movement commands issued to the photometer axes are mediated by the software to ensure the motion is within the limits of operation. The photometric detector used is a silicon detector corrected to closely match the spectral luminous efficiency photopic curve with a quality index less than 1.5%. Proper shielding is incorporated to the photometric test bench such that only the light from the unit under test is measured.

Luminous intensity measurements are performed at a distance great enough so that the inverse-square law applies. During each measurement the computer records the luminous intensity associated to the corresponding angles of radiation, as well as input electrical operational parameters and temperature measurements. Candela values are reported in IES format as per LM-63.

Equipment, reference standards are traceable to National Institute of Standards and Technology (NIST) and National Research Council of Canada (NRC).





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### Electrical Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Power Supply	KIKUSUI	SPEC 77766A	1450001	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	27E116584	2020/07/22	2021/09/22
Output Power Meter	N/A	N/A	N/A	N.P.C.R.	N.P.C.R.

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### Photometric Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Photometer	N/A	N/A	N/A	N.P.C.R.	N.P.C.R.
Photodetector	INPHORA	IPR-PDET 19	110802	2020/09/05	2021/09/05

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### Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504176	2020/07/16	2021/07/16

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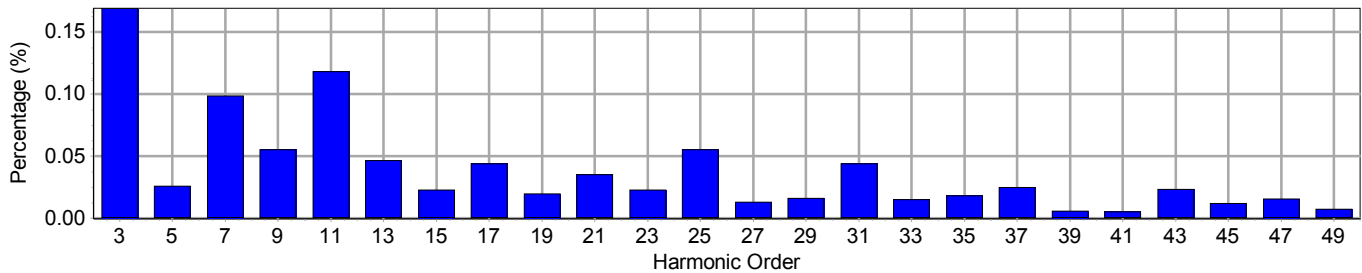


## Electrical Measurements

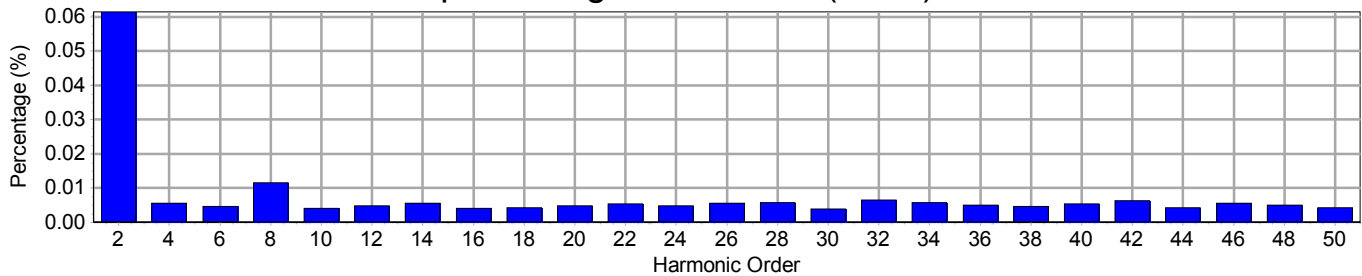
### Input

Frequency	60 Hz	Active Power	5.54 W	THDV [ANSI]	0.27 %
Voltage	120.1 V(rms)	Apparent Power	6.32 VA	THDA [ANSI]	11.92 %
Current	0.0526 A(rms)	Power Factor	0.877	Max. Harmonic At	3rd order

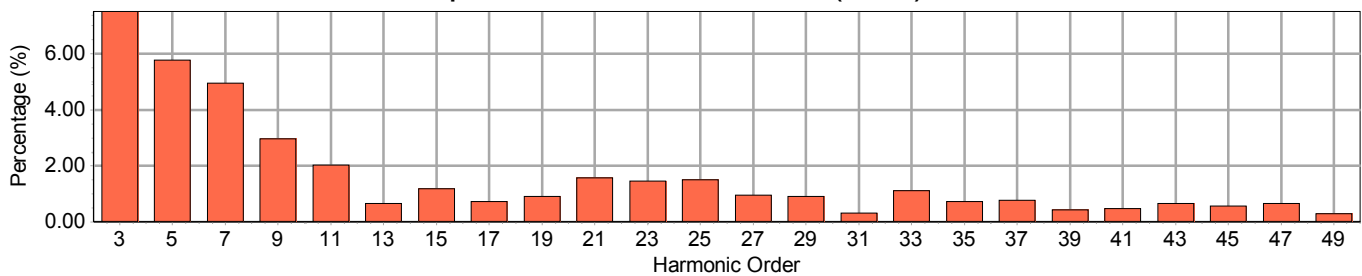
### Input Voltage Harmonics (Odd)



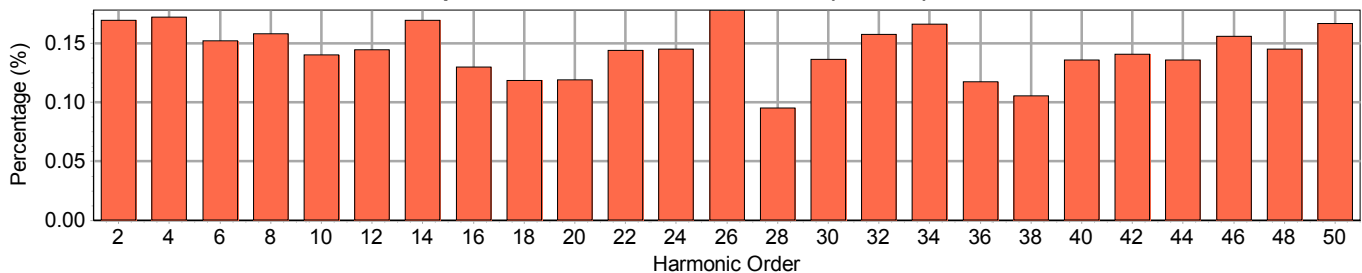
### Input Voltage Harmonics (Even)



### Input Current Harmonics (Odd)



### Input Current Harmonics (Even)





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### Harmonic Measurements

Odd Harmonics				Even Harmonics			
Harmonic Order	Frequency (HZ)	Voltage Harmonics (%)	Current Harmonics (%)	Harmonic Order	Frequency (HZ)	Voltage Harmonics (%)	Current Harmonics (%)
1	60	100.000	100.000	2	120	0.062	0.170
3	180	0.170	7.525	4	240	0.006	0.172
5	300	0.026	5.781	6	360	0.005	0.153
7	420	0.099	4.945	8	480	0.012	0.158
9	540	0.056	2.960	10	600	0.004	0.141
11	660	0.118	2.022	12	720	0.005	0.145
13	780	0.047	0.656	14	840	0.006	0.170
15	900	0.023	1.168	16	960	0.004	0.130
17	1020	0.044	0.728	18	1080	0.004	0.119
19	1140	0.020	0.897	20	1200	0.005	0.119
21	1260	0.035	1.573	22	1320	0.005	0.145
23	1380	0.023	1.456	24	1440	0.005	0.145
25	1500	0.056	1.489	26	1560	0.006	0.179
27	1620	0.013	0.950	28	1680	0.006	0.095
29	1740	0.016	0.905	30	1800	0.004	0.137
31	1860	0.044	0.314	32	1920	0.006	0.158
33	1980	0.015	1.119	34	2040	0.006	0.167
35	2100	0.018	0.716	36	2160	0.005	0.118
37	2220	0.025	0.765	38	2280	0.005	0.106
39	2340	0.006	0.418	40	2400	0.005	0.136
41	2460	0.005	0.460	42	2520	0.006	0.141
43	2580	0.024	0.660	44	2640	0.004	0.136
45	2700	0.012	0.565	46	2760	0.006	0.156
47	2820	0.016	0.659	48	2880	0.005	0.146
49	2940	0.008	0.297	50	3000	0.004	0.167



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## Photometric Report: S2011251-R1

Prepared for: ANDlight · Test Date: 25 November 2020

Luminaire: SLAB · Lumcat: SLA-30-P-30

### Coefficients of Utilization - Zonal Cavity Method

RCR	RC				0.9				0.8				0.7				0.5			0.1			0
	RW	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.7	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0.5	0.3	0.1	0
0		120	120	120	120	115	115	115	115	110	110	110	110	102	102	102	86	86	86	86	86	86	83
1		109	104	99	95	105	100	95	92	100	96	92	88	88	85	83	75	74	72	75	74	72	69
2		100	91	84	78	95	87	81	75	91	84	78	73	78	73	69	67	64	61	67	64	61	58
3		91	80	72	65	87	77	69	63	83	74	67	62	69	63	58	59	56	52	59	56	52	49
4		84	71	62	55	80	69	61	54	77	66	59	53	62	55	50	54	49	45	54	49	45	43
5		78	64	55	48	74	62	53	47	71	60	52	46	56	49	44	49	44	40	49	44	40	38
6		72	58	49	42	69	56	47	41	66	54	46	40	51	44	39	44	39	36	44	39	36	33
7		67	53	44	37	64	51	43	37	61	49	42	36	46	40	35	41	36	32	41	36	32	30
8		62	48	39	34	59	47	39	33	57	45	38	32	43	36	31	38	33	29	38	33	29	27
9		58	44	36	30	56	43	35	30	53	42	34	29	39	33	28	35	30	26	35	30	26	24
10		54	41	33	28	52	40	32	27	50	39	31	27	36	30	26	33	28	24	33	28	24	22

### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	9	3.56	3.56
10 - 20	25	9.62	9.62
20 - 30	34	13.18	13.18
30 - 40	37	14.48	14.48
40 - 50	35	13.54	13.54
50 - 60	29	11.15	11.15
60 - 70	21	8.28	8.28
70 - 80	14	5.56	5.56
80 - 90	9	3.47	3.47
90 - 120	23	9.05	9.05
90 - 130	30	11.92	11.92
90 - 150	41	15.92	15.92
90 - 180	44	17.16	17.16
0 - 180	256	100.00	100.00

### Average Luminance (Cd/m<sup>2</sup>)

Angle	0 Degree	45 Degree	90 Degree
0			
10			
20			
30			
40			
45.0	3752	3710	3677
50			
55.0	3107	3328	3182
60			
65.0	2702	3114	2700
70			
75.0	2591	3355	2477
80			
85.0	4001	6158	4073
90			

Luminaire Luminous Flux: 256

Measured Input Power: 5.54 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 46.2 lm/W

Luminaire Spacing Criterion (0 Degree): 1.1162

Luminaire Spacing Criterion (90 Degree): 1.0041

Category: Up and Down

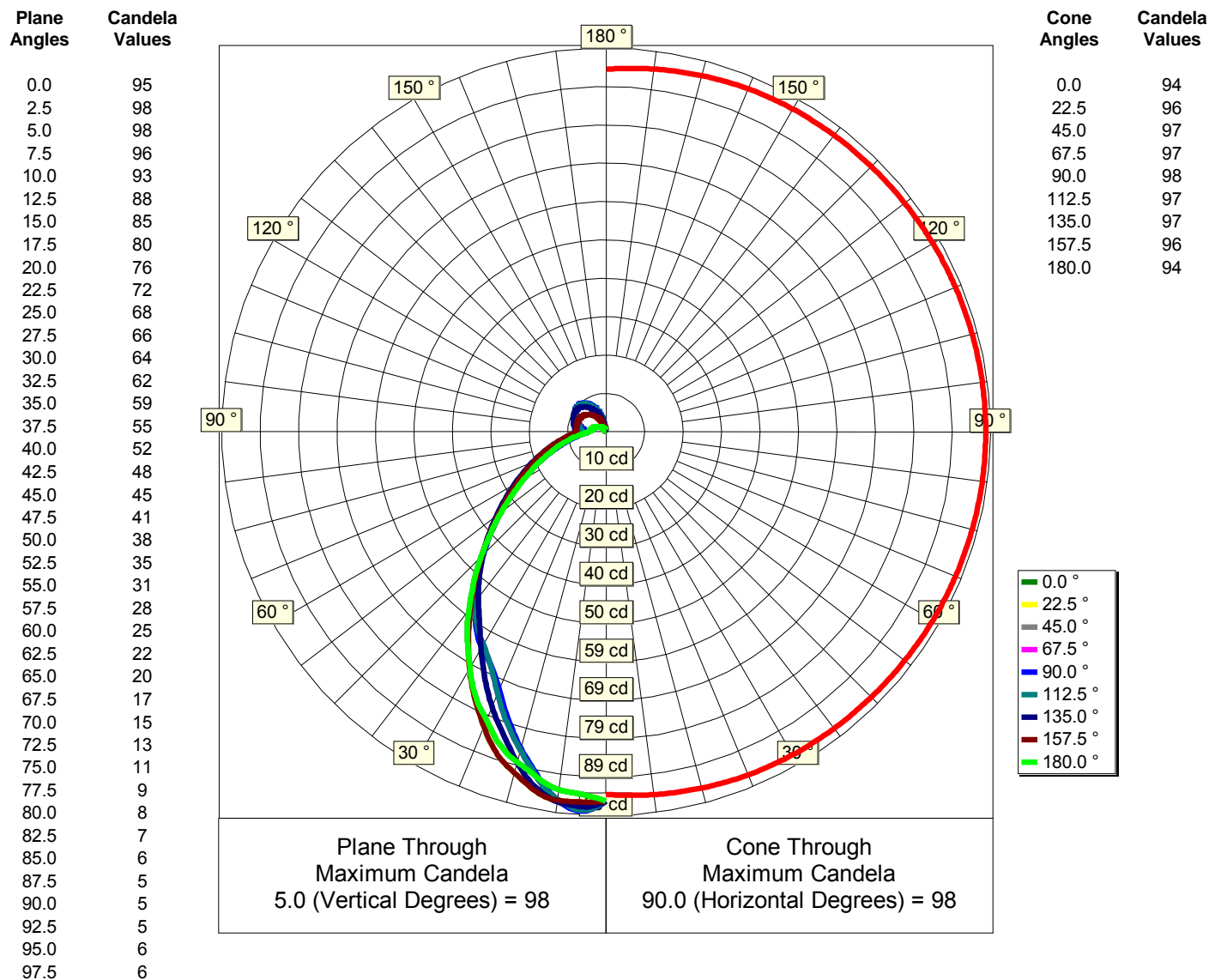


## Photometric Report: S2011251-R1

Prepared for: ANDlight · Test Date: 25 November 2020

Luminaire: SLAB · Lumcat: SLA-30-P-30

### Luminous Intensity - Polar Curve for each Plane(1)





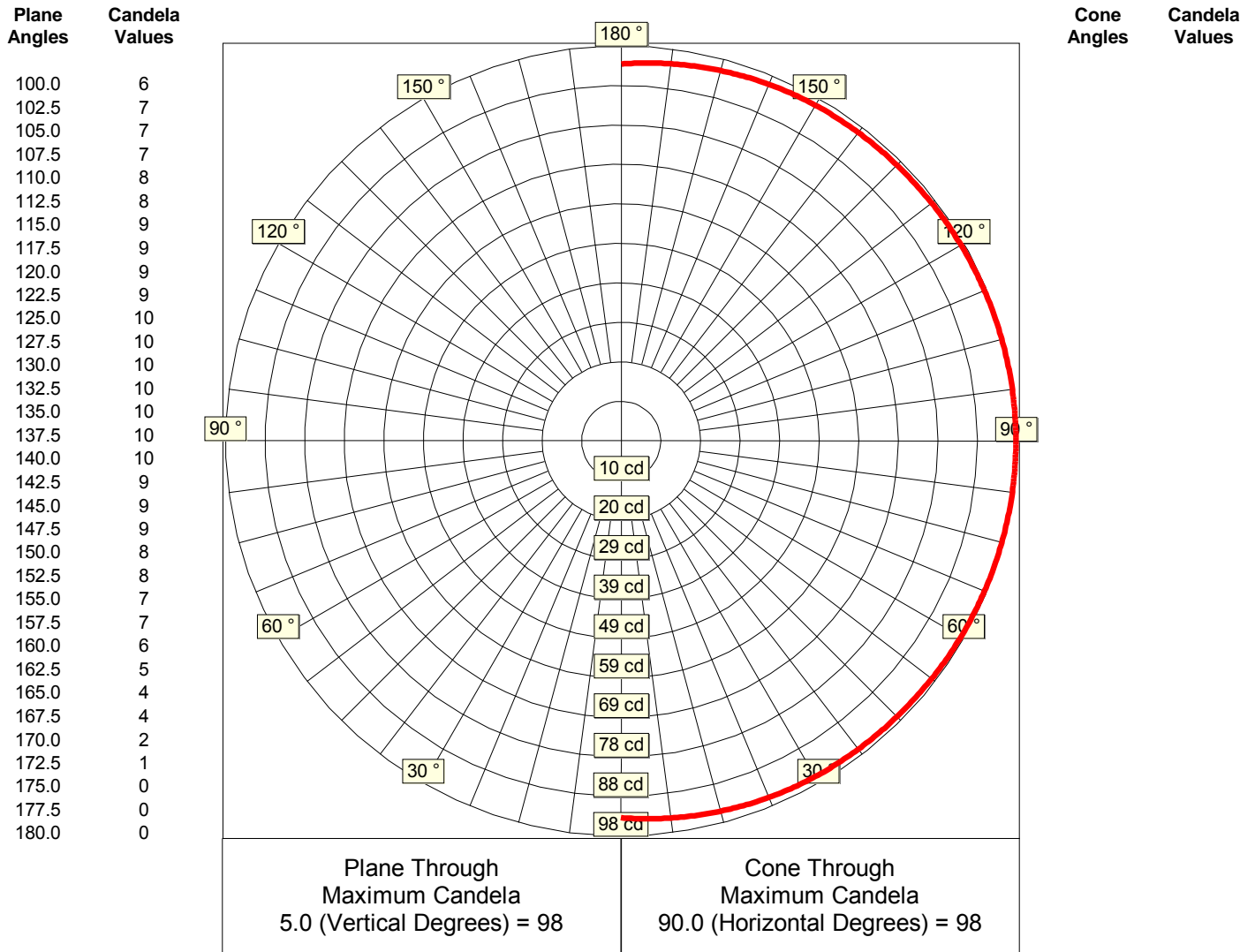


## Photometric Report: S2011251-R1

Prepared for: ANDlight · Test Date: 25 November 2020

Luminaire: SLAB · Lumcat: SLA-30-P-30

### Luminous Intensity - Polar Curve for each Plane(2)







## IES File Headers

IESNA:LM-63  
 [ISSUEDATE] 25 November 2020  
 [TESTLAB] Spectra Lux  
 [TEST] S2011251-R1  
 [MANUFAC] ANDlight  
 [LUMCAT] SLA-30-P-30  
 [LUMINAIRE] SLAB  
 [LAMP] Clusters of EPISTAR OMNICHIP (320404-xx-300-12-4.4)LEDs c/w Meanwell Driver IDLV-45-12 @ 120.00V  
 [\_BURNING] Horizontal (256 Luminaire Lumens)  
 [\_REFLECTOR] None  
 [\_LENS] Polycarbonate  
 [\_HOUSING] Black Body  
 [\_NOMINAL COLOR] 3000 K  
 [\_DRIVE CURRENT] 3G0 mA

## Candela Table

## Lateral Angles

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
<b>0.0</b>	95	95	95	95	95	95	95	95	95
<b>2.5</b>	94	96	97	97	98	97	97	96	94
<b>5.0</b>	94	96	97	97	98	97	97	96	94
<b>7.5</b>	93	96	96	96	96	96	96	96	93
<b>10.0</b>	92	95	95	93	93	93	95	95	92
<b>12.5</b>	90	93	92	89	88	89	92	93	90
<b>15.0</b>	88	91	88	85	85	85	88	91	88
<b>17.5</b>	86	89	84	81	80	81	84	89	86
<b>20.0</b>	84	86	81	77	76	77	81	86	84
<b>22.5</b>	80	82	77	73	72	73	77	82	80
<b>25.0</b>	78	78	73	69	68	69	73	78	78
<b>27.5</b>	74	75	69	66	66	66	69	75	74
<b>30.0</b>	70	70	64	63	64	63	64	70	70
<b>32.5</b>	66	66	61	61	62	61	61	66	66
<b>35.0</b>	62	62	57	58	59	58	57	62	62
<b>37.5</b>	58	57	54	55	55	55	54	57	58
<b>40.0</b>	54	53	51	52	52	52	51	53	54
<b>42.5</b>	50	49	48	48	48	48	48	49	50
<b>45.0</b>	45	45	45	45	45	45	45	45	45
<b>47.5</b>	41	42	42	41	41	41	42	42	41
<b>50.0</b>	38	38	39	38	38	38	39	38	38
<b>52.5</b>	34	35	36	35	35	35	36	35	34
<b>55.0</b>	31	32	33	32	31	32	33	32	31
<b>57.5</b>	27	29	30	29	28	29	30	29	27
<b>60.0</b>	25	27	27	26	25	26	27	27	25
<b>62.5</b>	22	24	25	24	22	24	25	24	22
<b>65.0</b>	20	22	23	21	20	21	23	22	20
<b>67.5</b>	17	20	21	19	17	19	21	20	17
<b>70.0</b>	15	18	18	16	15	16	18	18	15
<b>72.5</b>	13	16	16	14	13	14	16	16	13
<b>75.0</b>	11	15	15	13	11	13	15	15	11
<b>77.5</b>	10	13	13	11	9	11	13	13	10
<b>80.0</b>	9	12	12	9	8	9	12	12	9
<b>82.5</b>	7	10	10	8	7	8	10	10	7
<b>85.0</b>	6	9	9	7	6	7	9	9	6
<b>87.5</b>	5	8	8	6	5	6	8	8	5
<b>90.0</b>	4	8	8	6	5	6	8	8	4



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## Lateral Angles

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0	
V e r t i c a l	92.5	4	8	8	6	5	6	8	8	4
	95.0	4	8	8	6	6	6	8	8	4
	97.5	4	8	8	7	6	7	8	8	4
	100.0	4	8	8	7	6	7	8	8	4
	102.5	4	8	8	7	7	7	8	8	4
	105.0	3	8	9	8	7	8	9	8	3
	107.5	3	8	9	8	7	8	9	8	3
	110.0	3	8	9	8	8	8	9	8	3
	112.5	3	8	9	9	8	9	9	8	3
	115.0	3	8	9	9	9	9	9	8	3
	117.5	3	8	9	9	9	9	9	8	3
	120.0	3	8	9	9	9	9	9	8	3
	122.5	3	7	10	10	9	10	10	7	3
	125.0	2	7	10	10	10	10	10	7	2
	127.5	2	7	9	10	10	10	9	7	2
	130.0	2	7	9	10	10	10	9	7	2
	132.5	2	7	9	10	10	10	9	7	2
	135.0	2	6	9	10	10	10	9	6	2
	137.5	2	6	9	10	10	10	9	6	2
	A n g l e s	140.0	1	6	8	9	10	9	8	6
142.5		1	5	8	9	9	9	8	5	1
145.0		1	5	8	9	9	9	8	5	1
147.5		1	5	7	8	9	8	7	5	1
150.0		1	4	7	8	8	8	7	4	1
152.5		1	4	6	7	8	7	6	4	1
155.0		1	3	6	7	7	7	6	3	1
157.5		1	3	5	6	7	6	5	3	1
160.0		1	2	4	6	6	6	4	2	1
162.5		1	1	4	5	5	5	4	1	1
165.0	1	1	3	4	4	4	3	1	1	
167.5	1	1	2	3	4	3	2	1	1	
170.0	1	1	1	2	2	2	1	1	1	
172.5	0	1	1	1	1	1	1	1	0	
175.0	0	0	0	0	0	0	0	0	0	
177.5	0	0	0	0	0	0	0	0	0	
180.0	0	0	0	0	0	0	0	0	0	