



Spectra Lux

2750 Sabourin, Saint-Laurent (Quebec) H4S 1M2 Canada
Tel.: (514) 332-0082 Fax: (514) 332-3590 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: CY4422		Driver Details: CY2019	
DUT Lab ID	SRIS 2824-6	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	SLA-20-P-30	Manufacturer	Meanwell
Current Mode	AC	Manufacturer	EPISTAR	Catalog No.	IDLV-45-12
Test Report	S2008067-R1	Lamp Catalog No.	OMNICHIP (320404-xx-300-12-4.4)	Maximum Power	45 W
Test Date	6 August 2020	Drive Current	180 mA	Input Voltage	120.00 V
Report Date	14 December 2020	Nominal Color	3000 K	Operating Frequency	60 Hz
Ambient	25.3 °C	Burning Position	Junction Horizontal	Input Power	3.55 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	None	X	0.0260
Name	SLAB	Housing	Black Body	Y	0.5417
Catalog No.	SLA-20-P-30	Lens	Polycarbonate	Z	0.4583

Stabilization Time: 45 minutes

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	iRDC	CIF-3000A	974998	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.

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	2019-09-05	2020-09-05

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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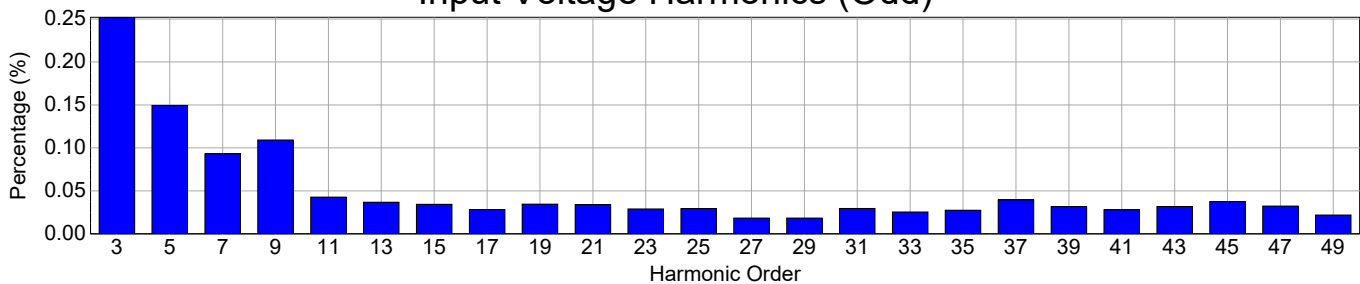
Lab Code: 200899-0

Electrical Measurements

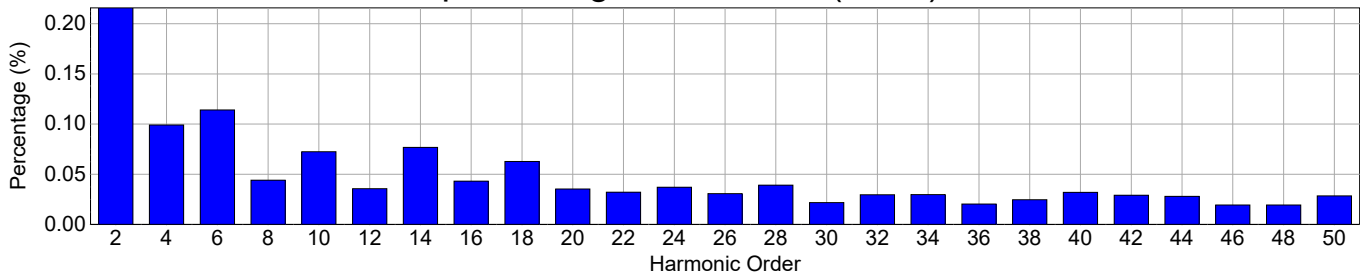
Input

Frequency	60 Hz	Active Power	3.55 W	THDV [ANSI]	0.47 %
Voltage	120.2 V(rms)	Apparent Power	6.46 VA	THDA [ANSI]	18.17 %
Current	0.0537 A(rms)	Power Factor	0.550	Max. Harmonic At	7th order

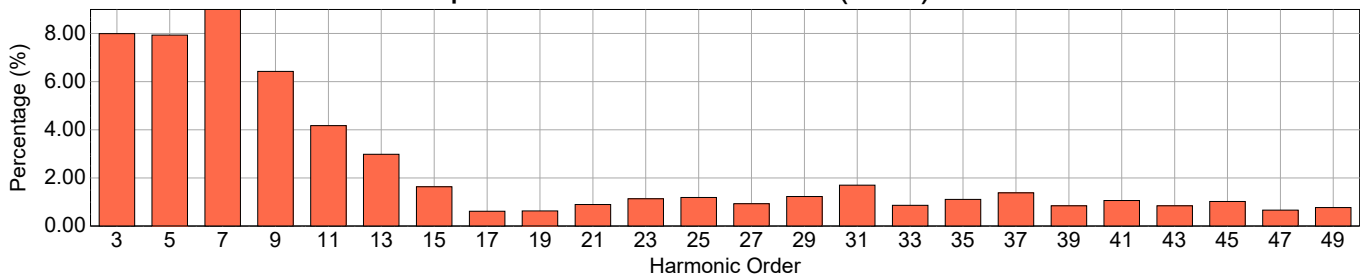
Input Voltage Harmonics (Odd)



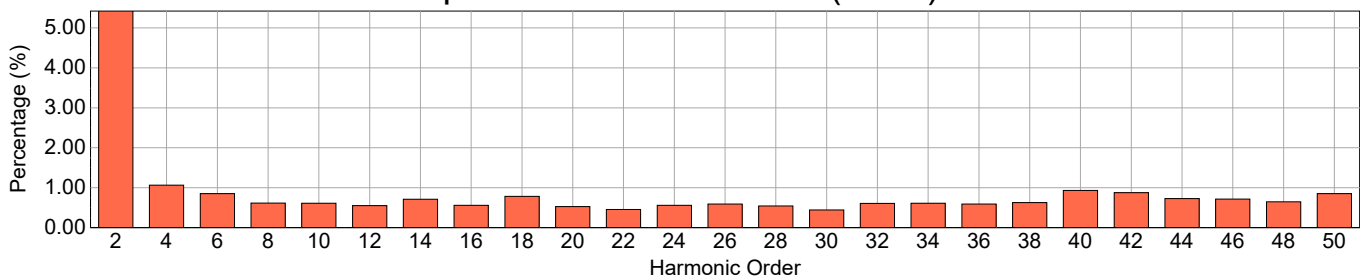
Input Voltage Harmonics (Even)



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	0.216	5.424
3	180	0.252	7.997	4	240	0.099	1.064
5	300	0.149	7.937	6	360	0.114	0.852
7	420	0.093	9.003	8	480	0.044	0.615
9	540	0.109	6.424	10	600	0.072	0.611
11	660	0.043	4.171	12	720	0.036	0.549
13	780	0.037	2.980	14	840	0.077	0.713
15	900	0.034	1.631	16	960	0.043	0.559
17	1020	0.028	0.618	18	1080	0.063	0.782
19	1140	0.035	0.631	20	1200	0.035	0.529
21	1260	0.034	0.891	22	1320	0.032	0.455
23	1380	0.029	1.132	24	1440	0.037	0.558
25	1500	0.029	1.188	26	1560	0.031	0.592
27	1620	0.018	0.926	28	1680	0.039	0.544
29	1740	0.018	1.229	30	1800	0.022	0.442
31	1860	0.030	1.697	32	1920	0.030	0.608
33	1980	0.026	0.860	34	2040	0.030	0.610
35	2100	0.028	1.110	36	2160	0.020	0.590
37	2220	0.040	1.378	38	2280	0.025	0.628
39	2340	0.032	0.839	40	2400	0.032	0.931
41	2460	0.028	1.062	42	2520	0.029	0.873
43	2580	0.032	0.840	44	2640	0.028	0.727
45	2700	0.038	1.018	46	2760	0.019	0.714
47	2820	0.032	0.661	48	2880	0.019	0.647
49	2940	0.022	0.768	50	3000	0.028	0.851



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Photometric Report: S2008067-R1

Prepared for: ANDlight · Test Date: 06 August 2020

Luminaire: SLAB · Lumcat: SLA-20-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		119	119	119	119	113	113	113	113	108	108	108	108	98	98	98	80	80	80				76
1		108	102	97	92	102	97	93	89	97	93	89	85	84	81	78	69	67	65				61
2		98	89	81	75	93	85	78	72	88	81	75	69	73	68	64	60	57	54				51
3		90	78	69	62	85	74	66	60	80	71	64	58	65	59	54	53	50	46				43
4		82	69	60	53	78	66	57	51	74	63	55	49	58	51	46	48	43	40				37
5		76	62	52	45	72	59	50	44	68	57	49	43	52	45	40	43	39	35				32
6		70	55	46	39	66	53	45	38	63	51	43	37	47	40	35	39	35	31				28
7		65	50	41	35	61	48	40	34	58	46	38	33	43	36	31	36	31	27				25
8		60	46	37	31	57	44	36	30	54	42	35	29	39	32	28	33	28	25				23
9		56	42	33	28	53	40	32	27	51	39	31	26	36	30	25	31	26	22				20
10		52	39	30	25	50	37	30	24	47	36	29	24	33	27	23	28	24	20				19

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	3	2.71	2.71
10 - 20	10	7.59	7.59
20 - 30	14	11.13	11.13
30 - 40	16	12.92	12.92
40 - 50	16	12.55	12.55
50 - 60	13	10.60	10.60
60 - 70	10	8.13	8.13
70 - 80	8	6.06	6.06
80 - 90	6	4.50	4.50
90 - 120	15	12.32	12.32
90 - 130	20	16.16	16.16
90 - 150	27	21.84	21.84
90 - 180	30	23.81	23.81
0 - 180	125	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	1241	1243	1274
55.0	1131	1138	1118
65.0	1071	1076	1047
75.0	1207	1238	1182
85.0	2570	2545	2392

Luminaire Luminous Flux: 125

Measured Input Power: 3.55 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 35.3 lm/W

Luminaire Spacing Criterion (0 Degree): 1.2436

Luminaire Spacing Criterion (90 Degree): 1.2310

Category: Up and Down

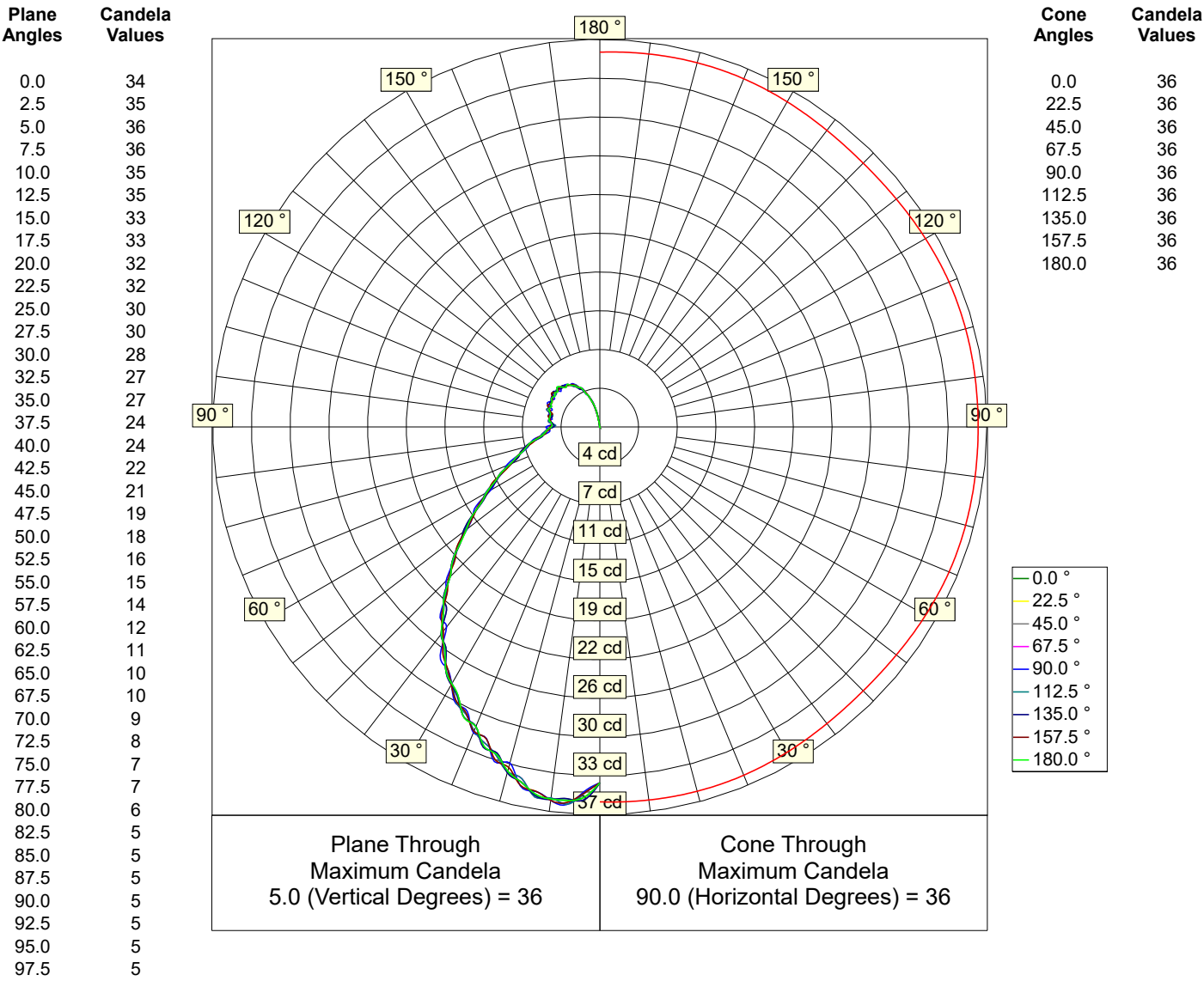


Photometric Report: S2008067-R1

Prepared for: ANDlight · Test Date: 06 August 2020

Luminaire: SLAB · Lumcat: SLA-20-P-30

Luminous Intensity - Polar Curve for each Plane(1)



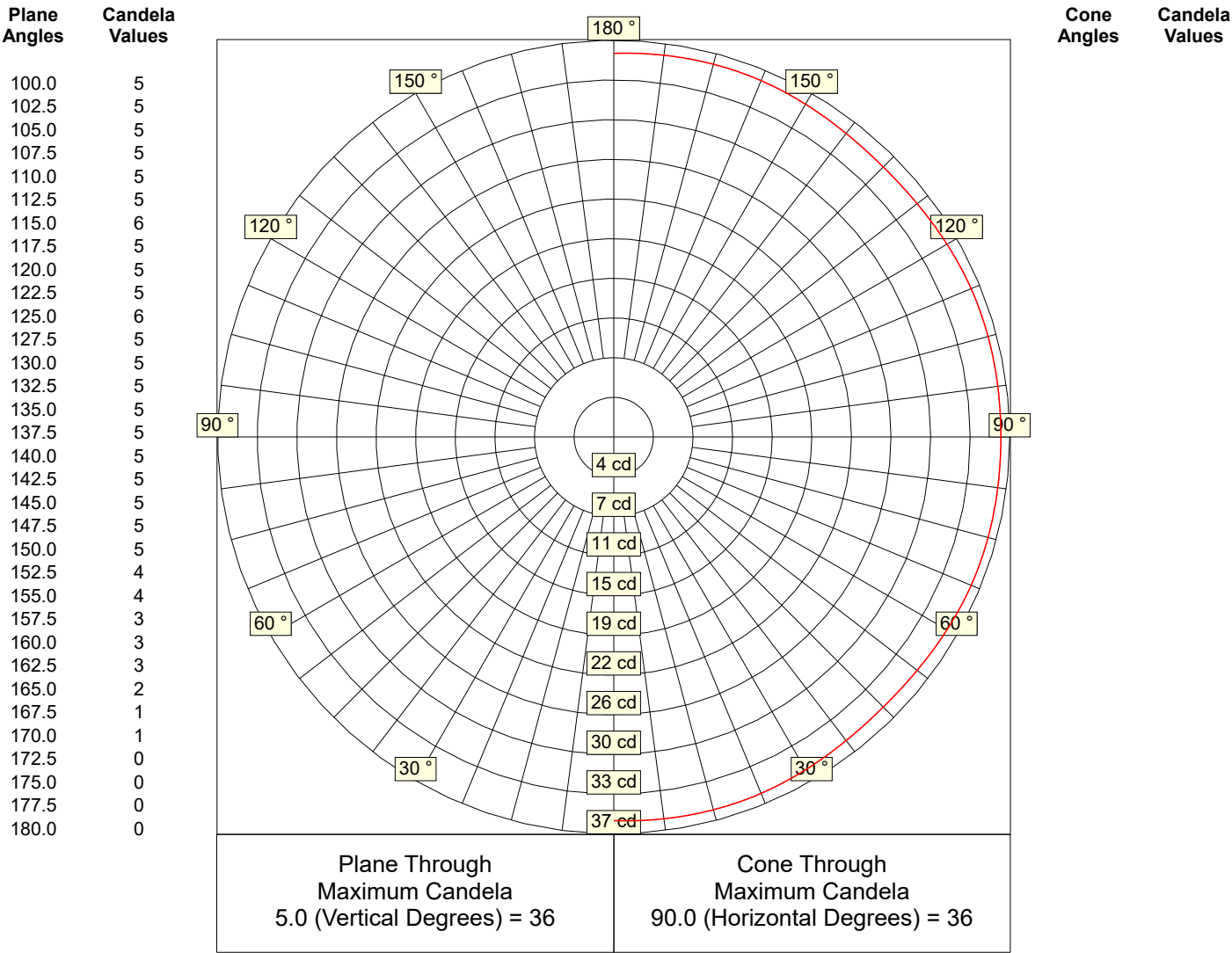


Photometric Report: S2008067-R1

Prepared for: ANDlight · Test Date: 06 August 2020

Luminaire: SLAB · Lumcat: SLA-20-P-30

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

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IESNA:LM-63
[ISSUEDATE]      06 August 2020
[TESTLAB]        Spectra Lux
[TEST]           S2008067-R1
[MANUFAC]        ANDlight
[LUMCAT]          SLA-20-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 (125 Luminaire Lumens)
[_REFLECTOR]      None
[_LENS]           Polycarbonate
[_HOUSING]        Black Body
[_NOMINAL COLOR] 3000 K
[_DRIVE CURRENT] 180 mA
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Candela Table

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	0.0	34	34	34	34	34	34	34	34	34
	2.5	35	35	36	35	35	35	36	35	35
	5.0	36	36	36	36	36	36	36	36	36
	7.5	36	36	36	36	36	36	36	36	36
	10.0	36	35	36	36	35	36	36	35	36
	12.5	35	35	35	34	35	34	35	35	35
	15.0	34	34	34	34	33	34	34	34	34
	17.5	33	33	33	33	33	33	33	33	33
	20.0	32	32	33	32	32	32	33	32	32
	22.5	31	31	31	31	32	31	31	31	31
	25.0	31	30	31	30	30	30	31	30	31
	27.5	29	30	29	30	30	30	29	30	29
	30.0	28	28	28	28	28	28	28	28	28
	32.5	27	27	27	27	27	27	27	27	27
	35.0	26	26	26	26	27	26	26	26	26
	37.5	25	25	25	25	24	25	25	25	25
	40.0	23	24	23	23	24	23	23	24	23
	42.5	22	22	22	22	22	22	22	22	22
	45.0	20	20	20	20	21	20	20	20	20
	47.5	19	19	19	19	19	19	19	19	19
A n g l e s	50.0	18	18	17	18	18	18	17	18	18
	52.5	16	16	16	16	16	16	16	16	16
	55.0	15	15	15	15	15	15	15	15	15
	57.5	13	14	13	13	14	13	13	14	13
	60.0	12	12	12	13	12	13	12	12	12
	62.5	11	12	11	11	11	11	11	12	11
	65.0	10	10	10	10	10	10	10	10	10
	67.5	9	9	9	9	10	9	9	9	9
	70.0	9	8	8	8	9	8	8	8	9
	72.5	8	8	8	8	8	8	8	8	8
	75.0	7	7	7	7	7	7	7	7	7
	77.5	7	6	7	7	7	7	7	6	7
	80.0	6	6	6	6	6	6	6	6	6
	82.5	5	5	5	6	5	6	5	5	5
	85.0	5	5	5	5	5	5	5	5	5
	87.5	5	5	5	5	5	5	5	5	5
	90.0	5	5	4	4	5	4	4	5	5



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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 A n g l e s	92.5	5	5	4	4	5	4	4	5	5
	95.0	5	5	5	5	5	5	5	5	5
	97.5	5	5	5	5	5	5	5	5	5
	100.0	5	5	5	5	5	5	5	5	5
	102.5	5	5	5	5	5	5	5	5	5
	105.0	5	5	5	5	5	5	5	5	5
	107.5	5	5	5	5	5	5	5	5	5
	110.0	5	5	5	5	5	5	5	5	5
	112.5	5	5	5	5	5	5	5	5	5
	115.0	5	5	5	5	6	5	5	5	5
	117.5	5	5	5	5	5	5	5	5	5
	120.0	5	5	5	5	5	5	5	5	5
	122.5	5	5	5	5	5	5	5	5	5
	125.0	5	6	5	5	6	5	5	6	5
	127.5	5	5	6	5	5	5	6	5	5
	130.0	5	5	5	5	5	5	5	5	5
	132.5	6	5	5	5	5	5	5	5	6
	135.0	5	5	5	5	5	5	5	5	5
	137.5	5	5	5	5	5	5	5	5	5
	140.0	5	5	5	5	5	5	5	5	5
	142.5	5	5	5	5	5	5	5	5	5
	145.0	5	5	5	5	5	5	5	5	5
	147.5	5	5	5	5	5	5	5	5	5
	150.0	4	5	4	5	5	5	4	5	4
	152.5	4	4	4	4	4	4	4	4	4
	155.0	4	4	4	4	4	4	4	4	4
	157.5	3	4	4	4	3	4	4	4	3
	160.0	3	3	3	3	3	3	3	3	3
	162.5	3	3	3	3	3	3	3	3	3
	165.0	2	2	2	2	2	2	2	2	2
	167.5	2	1	2	1	1	1	2	1	2
	170.0	1	1	1	1	1	1	1	1	1
	172.5	0	0	0	0	0	0	0	0	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