



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, 505B Railway Street, Vancouver, BC, Canada, V6A 1A7

General Information		Lamp Details: CY4443		Driver Details: CY2023	
DUT Lab ID	SRIS 2823-19	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	SPO-P-D-B-VA-120	Manufacturer	Bulbrite
Current Mode	AC	Manufacturer	Bulbrite	Catalog No.	Integrated LED Driver
Test Report	S20081310-R1	Lamp Catalog No.	(2) G25 Frosted LED 7W	Nominal Power	14 W
Test Date	13 August 2020	Drive Current	116.7 mA	Input Voltage	120.00 V
Report Date	15 October 2020	Nominal Color	2700 K	Operating Frequency	60 Hz
Ambient	24.6 °C	Burning Position	Vertical Base Up & Down	Input Power	14.71 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	Vanilla Spun Aluminum	X	-0.4583
Name	SPOT LIGHT VOLUMES	Housing	Shades (D-D) - Aluminum Profile)	Y	-0.4583
Catalog No.	SPO-P-D-B-VA-120	Lens	None	Z	0.0000

Stabilization Time: 1 hour 15 minutes

Approved Signatory: Chrisnel Blot

Signature:



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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

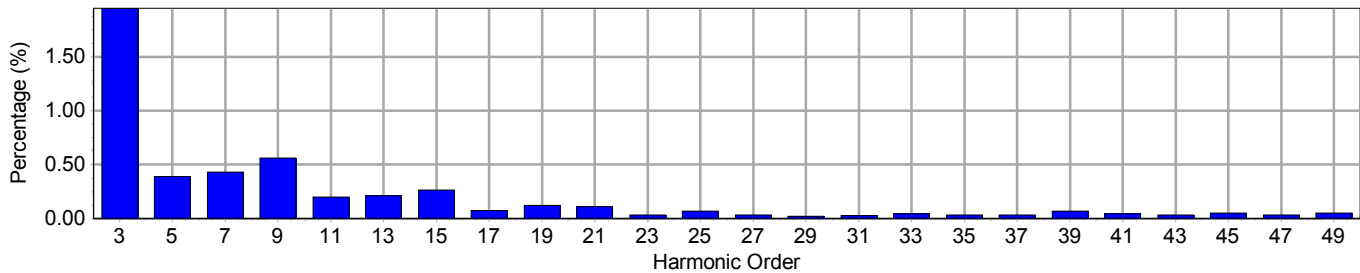


Electrical Measurements

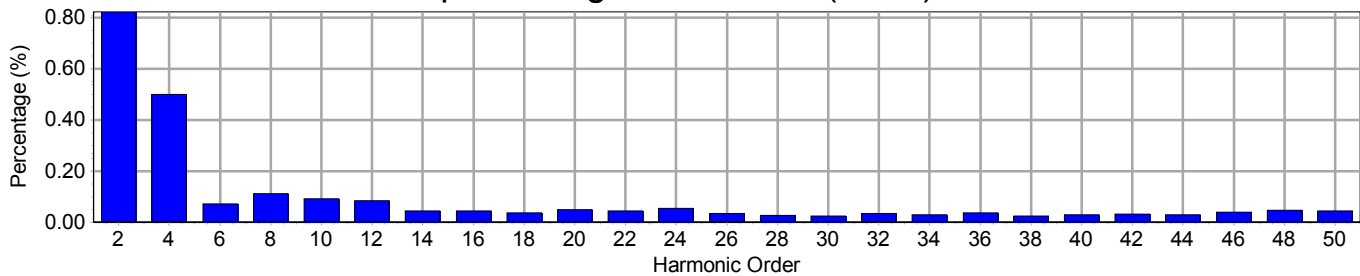
Input

Frequency	60 Hz	Active Power	14.71 W	THDV [ANSI]	2.37 %
Voltage	120.1 V(rms)	Apparent Power	15.89 VA	THDA [ANSI]	37.93 %
Current	0.1323 A(rms)	Power Factor	0.926	Max. Harmonic At	3rd order

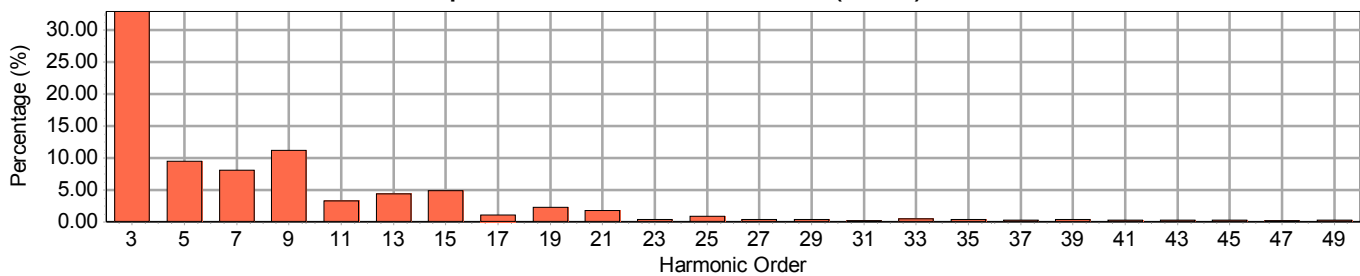
Input Voltage Harmonics (Odd)



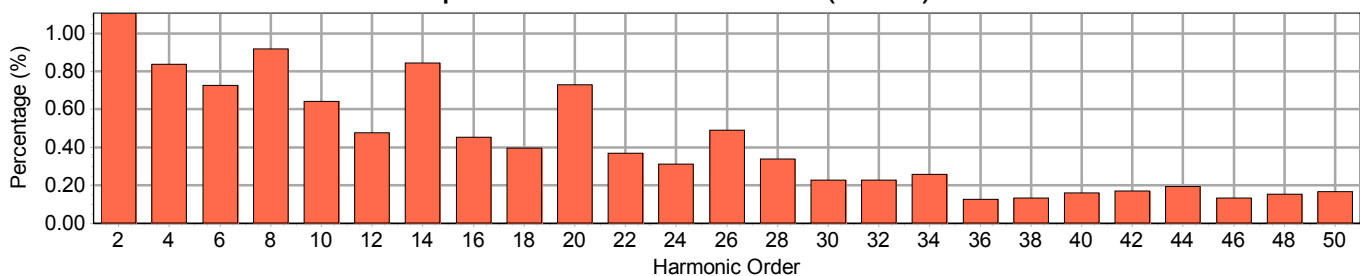
Input Voltage Harmonics (Even)



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	0.823	1.109
3	180	1.951	32.975	4	240	0.500	0.838
5	300	0.391	9.482	6	360	0.072	0.727
7	420	0.430	8.104	8	480	0.112	0.917
9	540	0.559	11.197	10	600	0.091	0.641
11	660	0.198	3.260	12	720	0.084	0.477
13	780	0.213	4.368	14	840	0.044	0.844
15	900	0.265	4.872	16	960	0.045	0.452
17	1020	0.072	1.084	18	1080	0.036	0.395
19	1140	0.122	2.227	20	1200	0.049	0.729
21	1260	0.109	1.755	22	1320	0.045	0.368
23	1380	0.031	0.395	24	1440	0.053	0.310
25	1500	0.071	0.853	26	1560	0.035	0.489
27	1620	0.030	0.323	28	1680	0.027	0.339
29	1740	0.022	0.372	30	1800	0.025	0.228
31	1860	0.025	0.200	32	1920	0.034	0.229
33	1980	0.042	0.462	34	2040	0.028	0.258
35	2100	0.035	0.332	36	2160	0.035	0.127
37	2220	0.030	0.278	38	2280	0.023	0.133
39	2340	0.070	0.393	40	2400	0.029	0.160
41	2460	0.047	0.234	42	2520	0.032	0.171
43	2580	0.035	0.275	44	2640	0.028	0.192
45	2700	0.053	0.231	46	2760	0.039	0.133
47	2820	0.035	0.179	48	2880	0.045	0.153
49	2940	0.049	0.229	50	3000	0.044	0.166



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Photometric Report: S20081310-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-D-D-VA-120

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		116	116	116	116	107	107	107	107	99	99	99	99	83	83	83	56	56	56				50
1		107	103	99	95	99	95	92	89	91	88	85	83	75	73	71	52	51	50				45
2		99	91	85	80	91	85	79	75	84	79	74	70	67	64	61	47	46	44				40
3		91	82	74	68	84	76	70	64	78	71	65	61	61	57	53	43	41	40				36
4		84	73	65	59	78	69	61	56	72	64	58	53	55	51	47	40	38	36				32
5		78	66	58	52	73	62	55	49	67	58	52	47	51	46	42	37	34	32				29
6		73	60	52	46	68	57	49	44	63	53	47	42	46	41	38	34	32	30				27
7		68	55	47	41	63	52	45	40	58	49	42	38	43	38	34	32	29	27				25
8		63	51	43	37	59	48	41	36	55	45	39	34	40	35	31	30	27	25				23
9		59	47	39	34	55	44	37	33	52	42	36	31	37	32	29	28	25	23				21
10		56	43	36	31	52	41	34	30	49	39	33	29	35	30	26	27	24	22				20

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	10	4.47	4.47
10 - 20	23	10.64	10.64
20 - 30	23	10.78	10.78
30 - 40	19	8.81	8.81
40 - 50	14	6.39	6.39
50 - 60	9	4.32	4.32
60 - 70	6	2.74	2.74
70 - 80	3	1.44	1.44
80 - 90	1	0.40	0.40
90 - 120	10	4.58	4.58
90 - 130	19	8.90	8.90
90 - 150	51	24.11	24.11
90 - 180	107	50.00	50.00
0 - 180	213	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	1613	1613	1613
55.0	1148	1148	1148
65.0	912	912	912
75.0	743	743	743
85.0	548	548	548

Luminaire Luminous Flux: 213

Measured Input Power: 14.71 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 14.5 lm/W

Luminaire Spacing Criterion (0 Degree): 0.7642

Luminaire Spacing Criterion (90 Degree): 0.7642

Category: Up and Down

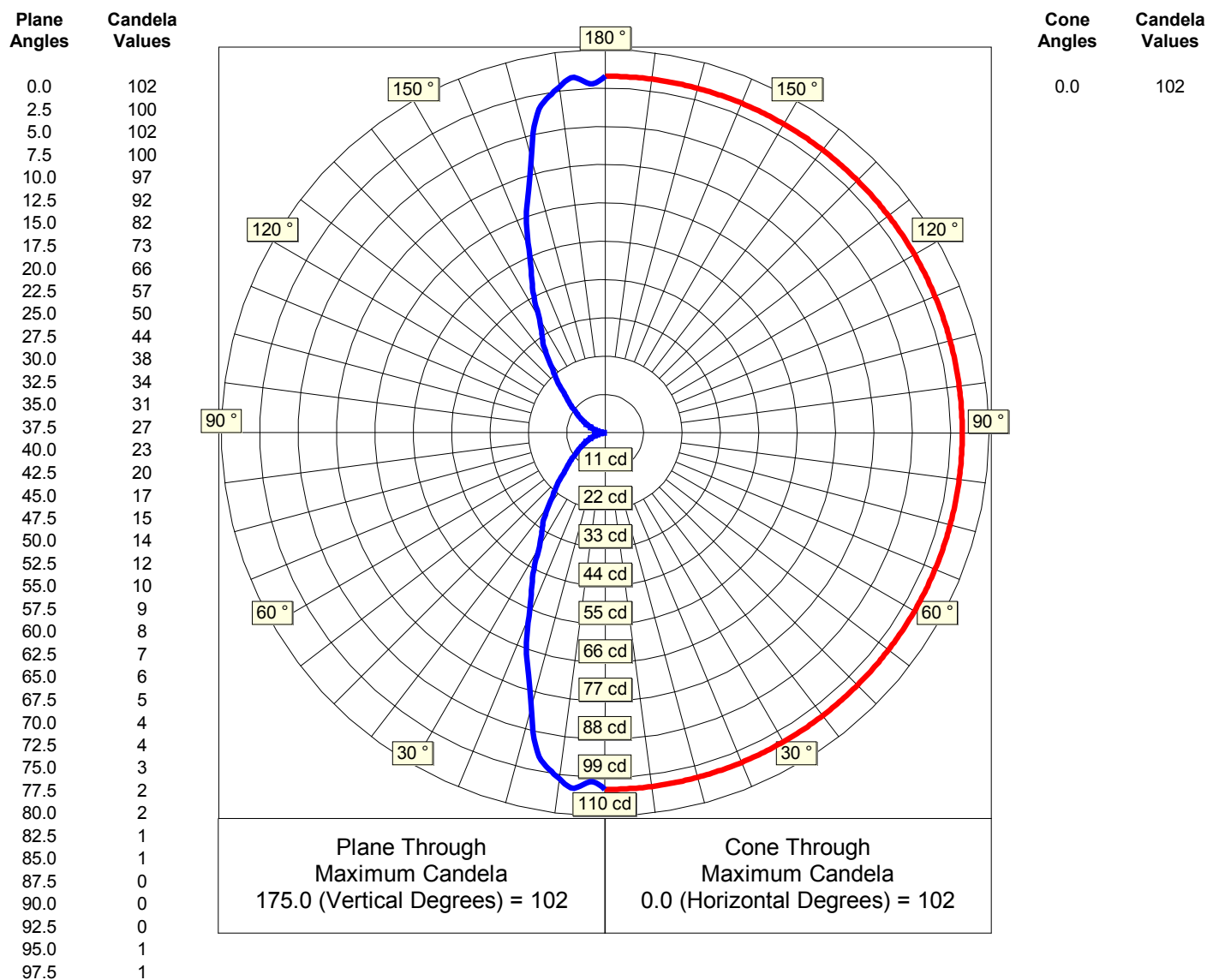


Photometric Report: S20081310-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-D-D-VA-120

Luminous Intensity - Polar Curve for each Plane(1)



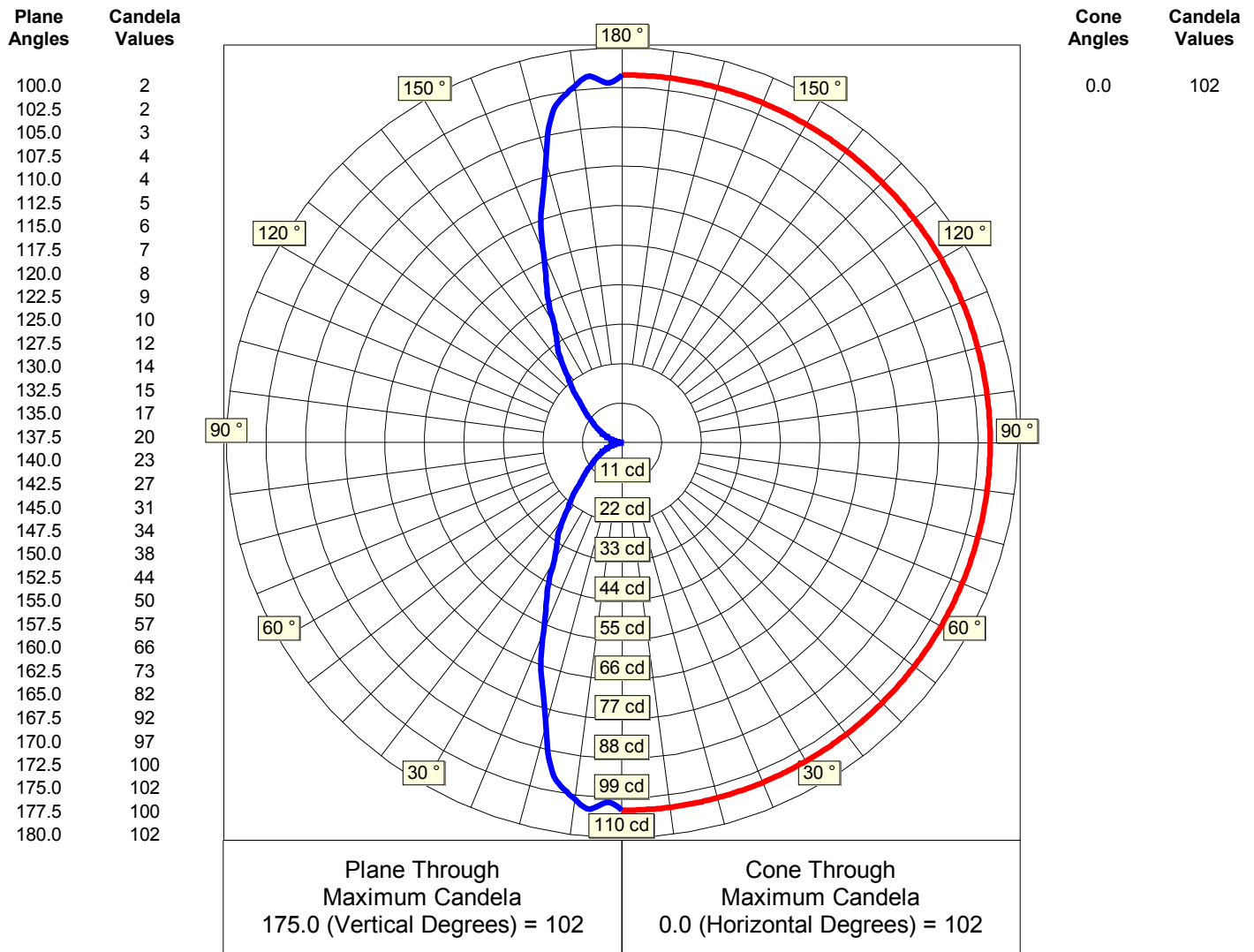


Photometric Report: S20081310-R1

Prepared for: ANDlight · Test Date: 13 August 2020

Luminaire: SPOT LIGHT VOLUMES · Lumcat: SPO-P-D-D-VA-120

Luminous Intensity - Polar Curve for each Plane(2)





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IES File Headers

IESNA:LM-63
[ISSUEDATE] 13 August 2020
[TESTLAB] Spectra Lux
[TEST] S20081310-R1
[MANUFAC] ANDlight
[LUMCAT] SPO-P-D-D-VA-120
[LUMINAIRE] SPOT LIGHT VOLUMES
[LAMP] (2)BulBrite G25 Frosted LED 7W Bulb c/w Integrated LED Driver @ 120.00V
[_BURNING] Vertical Base Up & Down (213 Luminaire Lumens)
[_REFLECTOR] Vanilla Spun Aluminum
[_LENS] None
[_HOUSING] Shades (D-D)-Aluminum Profile
[_NOMINAL COLOR] 2700 K
[_DRIVE CURRENT] 116.7 mA

Candela Table

Lateral Angles

	0.0
	0.0
	2.5
	5.0
	7.5
	10.0
	12.5
	15.0
	17.5
	20.0
V	22.5
e	25.0
r	27.5
t	30.0
i	32.5
c	35.0
a	37.5
l	40.0
	42.5
	45.0
	47.5
A	50.0
n	52.5
g	55.0
l	57.5
e	60.0
s	62.5
	65.0
	67.5
	70.0
	72.5
	75.0
	77.5
	80.0
	82.5
	85.0
	87.5
	90.0



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Lateral Angles

	0.0
V e r t i c a l	92.5 0
	95.0 1
	97.5 1
	100.0 2
	102.5 2
	105.0 3
	107.5 4
	110.0 4
	112.5 5
	115.0 6
	117.5 7
	120.0 8
	122.5 9
	125.0 10
	127.5 12
	130.0 14
	132.5 15
	135.0 17
A n g l e s	137.5 20
	140.0 23
	142.5 27
	145.0 31
	147.5 34
	150.0 38
	152.5 44
	155.0 50
	157.5 57
	160.0 66
	162.5 73
	165.0 82
	167.5 92
	170.0 97
	172.5 100
	175.0 102
	177.5 100
	180.0 102