



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: CY4451		Driver Details: CY2019	
DUT Lab ID	SRIS 2832-6	Seasoning	0 Hour	Type	LED Power Supply
Lamp Type	LED/SSL	Test Product	BUT-60-CW-30	Manufacturer	Meanwell
Current Mode	AC	Manufacturer	EPISTAR	Catalog No.	IDLV-45-12
Test Report	S2008171-R1	Lamp Catalog No.	OMNICHIP (320404-xx-300-12-4.4)	Maximum Power	45 W
Test Date	17 August 2020	Drive Current	30 mA	Input Voltage	120.00 V
Report Date	20 November 2020	Nominal Color	3000 K	Operating Frequency	60 Hz
Ambient	24.6 °C	Burning Position	Junction Axial	Input Power	22.81 W

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	ANDlight	Reflector	None	X	0.0000
Name	BUTTON	Housing	Aluminum Body c/w Nylon Rope	Y	-1.9583
Catalog No.	BUT-60-CW-30	Lens	Opalin Acrylic Diffuser	Z	-1.9583

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).





Spectra Lux

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



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

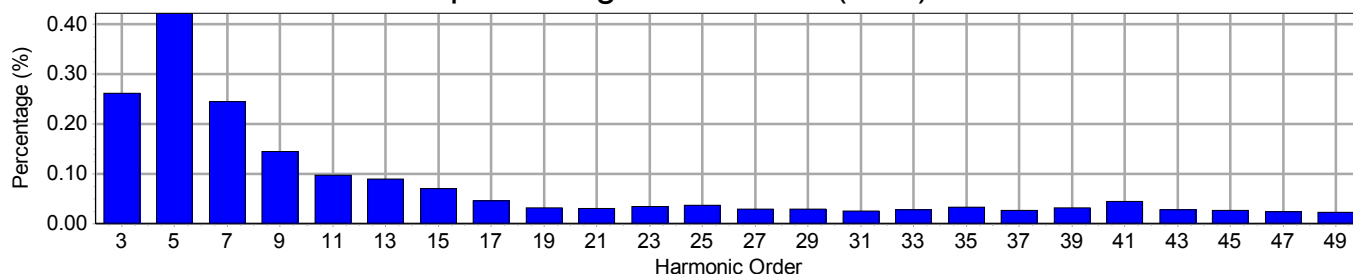


Electrical Measurements

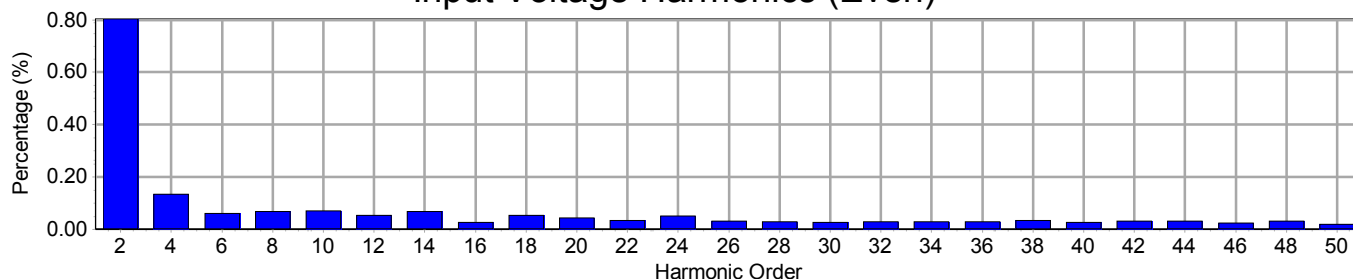
Input

Frequency	60 Hz	Active Power	22.81 W	THDV [ANSI]	1.03 %
Voltage	120.2 V(rms)	Apparent Power	23.53 VA	THDA [ANSI]	6.83 %
Current	0.1958 A(rms)	Power Factor	0.969	Max. Harmonic At	3rd order

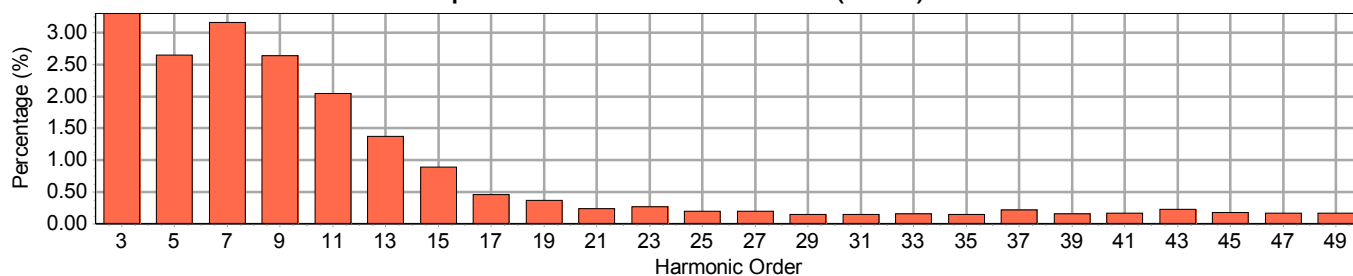
Input Voltage Harmonics (Odd)



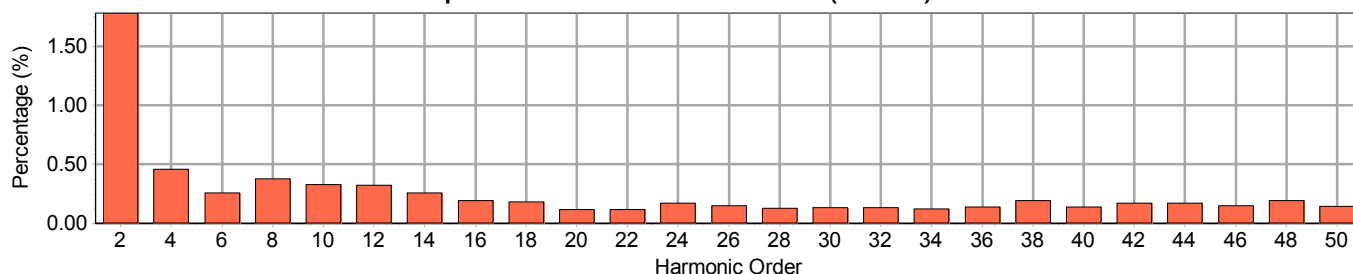
Input Voltage Harmonics (Even)



Input Current Harmonics (Odd)



Input Current Harmonics (Even)





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

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	0.805	1.787
3	180	0.261	3.310	4	240	0.133	0.458
5	300	0.422	2.650	6	360	0.059	0.260
7	420	0.244	3.163	8	480	0.068	0.378
9	540	0.144	2.639	10	600	0.070	0.328
11	660	0.097	2.042	12	720	0.051	0.326
13	780	0.089	1.370	14	840	0.067	0.258
15	900	0.070	0.889	16	960	0.027	0.194
17	1020	0.045	0.455	18	1080	0.052	0.182
19	1140	0.032	0.367	20	1200	0.042	0.118
21	1260	0.030	0.233	22	1320	0.034	0.119
23	1380	0.034	0.262	24	1440	0.050	0.170
25	1500	0.036	0.201	26	1560	0.029	0.148
27	1620	0.029	0.194	28	1680	0.027	0.129
29	1740	0.029	0.143	30	1800	0.025	0.134
31	1860	0.025	0.147	32	1920	0.028	0.131
33	1980	0.028	0.158	34	2040	0.027	0.125
35	2100	0.033	0.148	36	2160	0.029	0.137
37	2220	0.026	0.220	38	2280	0.034	0.195
39	2340	0.031	0.151	40	2400	0.026	0.139
41	2460	0.044	0.164	42	2520	0.031	0.171
43	2580	0.028	0.229	44	2640	0.030	0.169
45	2700	0.027	0.172	46	2760	0.024	0.152
47	2820	0.023	0.164	48	2880	0.030	0.194
49	2940	0.022	0.170	50	3000	0.019	0.146



Spectra Lux

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



Photometric Report: S2008171-R1

Prepared for: ANDlight · Test Date: 17 August 2020

Luminaire: BUTTON · Lumcat: BUT-60-CW-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		116	116	116	116	107	107	107	107	99	99	99	99	83	83	83	56	56	56	56	56	56	50
1		100	93	86	80	92	85	79	74	84	78	73	68	64	60	56	40	38	36	40	38	36	30
2		89	78	68	60	81	71	63	56	74	65	57	51	53	47	42	32	29	26	32	29	26	21
3		80	66	56	47	73	61	51	44	66	55	47	40	45	38	33	27	23	20	27	23	20	15
4		73	57	47	38	66	53	43	35	60	48	39	32	39	32	26	23	19	15	23	19	15	11
5		66	50	39	32	60	46	36	29	54	42	33	27	34	27	22	20	16	12	20	16	12	9
6		60	44	34	26	55	41	31	24	50	37	28	22	30	23	18	18	13	10	18	13	10	7
7		55	40	29	23	50	36	27	21	46	33	25	19	27	20	15	16	12	9	16	12	9	6
8		51	36	26	19	46	33	24	18	42	30	22	16	24	18	13	14	10	7	14	10	7	5
9		47	32	23	17	43	29	21	15	39	27	19	14	22	16	11	13	9	6	13	9	6	4
10		44	29	20	15	40	27	19	14	36	25	17	12	20	14	10	12	8	5	12	8	5	3

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0 - 10	1	0.08	0.08
10 - 20	10	0.62	0.62
20 - 30	28	1.81	1.81
30 - 40	54	3.50	3.50
40 - 50	86	5.51	5.51
50 - 60	117	7.51	7.51
60 - 70	144	9.22	9.22
70 - 80	164	10.56	10.56
80 - 90	174	11.19	11.19
90 - 120	482	30.97	30.97
90 - 130	599	38.48	38.48
90 - 150	739	47.49	47.49
90 - 180	778	50.00	50.00
0 - 180	1557	100.00	100.00

Average Luminance (Cd/m²)

Angle	0 Degree	45 Degree	90 Degree
45.0	908	652	36
55.0	1161	820	40
65.0	2152	1506	73
75.0	3404	2493	125
85.0	9298	6633	300

Luminaire Luminous Flux: 1557

Measured Input Power: 22.81 W

Total Luminaire Efficiency: N/A

Luminaire Luminous Efficacy: 68.3 lm/W

Luminaire Spacing Criterion (0 Degree): 8.1641

Luminaire Spacing Criterion (90 Degree): 1.5835

Category: Up and Down

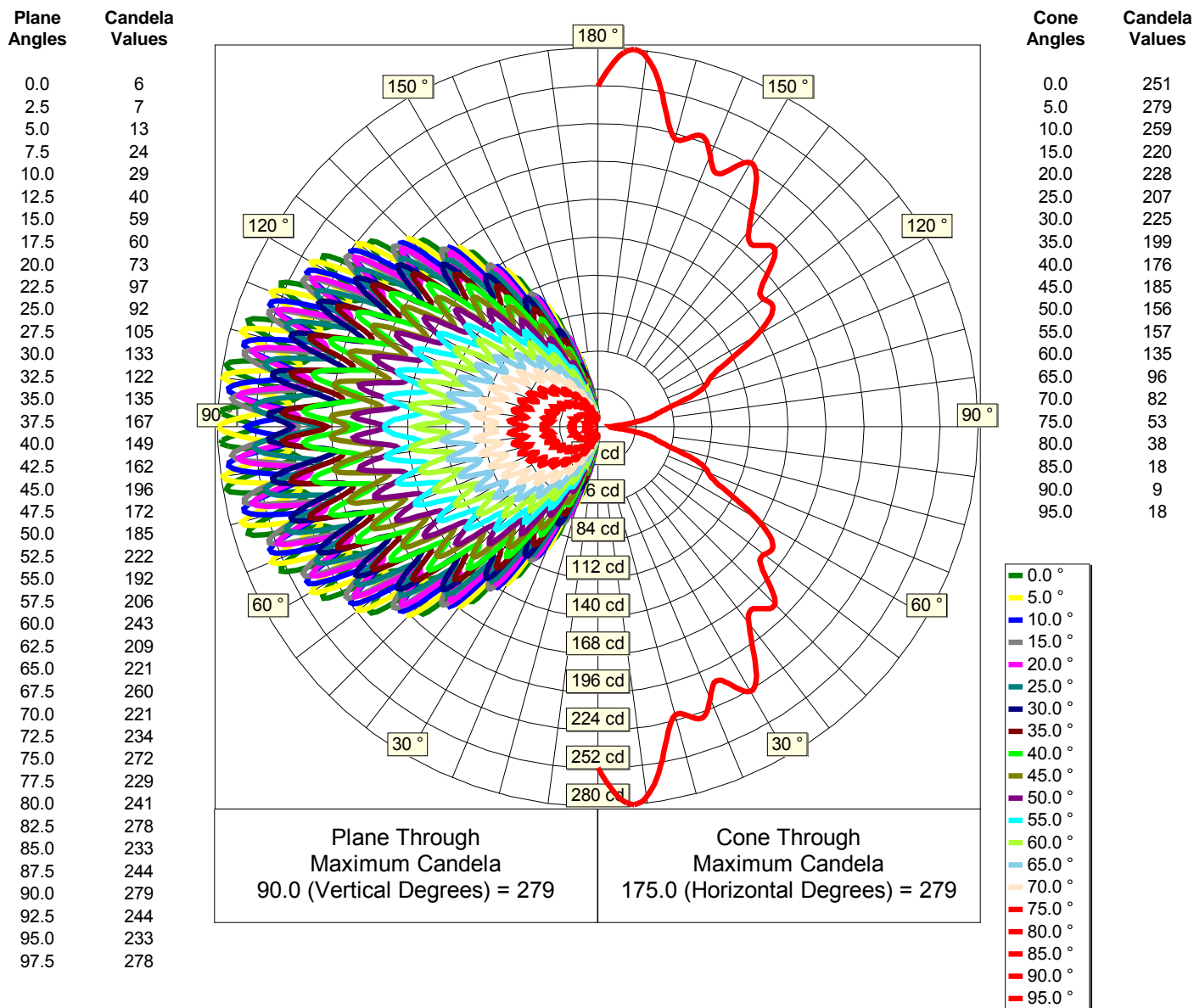


Photometric Report: S2008171-R1

Prepared for: ANDlight · Test Date: 17 August 2020

Luminaire: BUTTON · Lumcat: BUT-60-CW-30

Luminous Intensity - Polar Curve for each Plane(1)



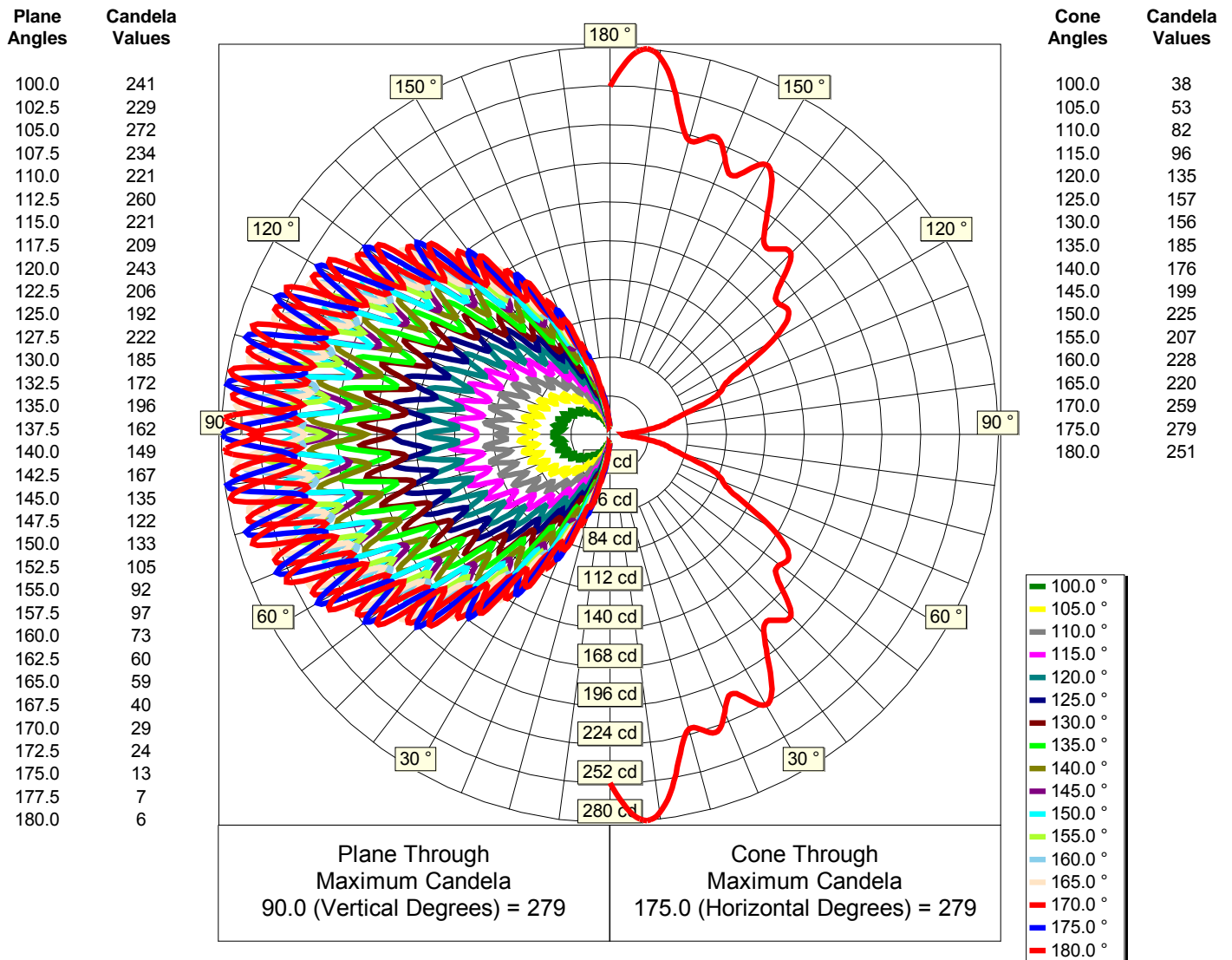


Photometric Report: S2008171-R1

Prepared for: ANDlight · Test Date: 17 August 2020

Luminaire: BUTTON · Lumcat: BUT-60-CW-30

Luminous Intensity - Polar Curve for each Plane(2)





IES File Headers

IESNA:LM-63
 [ISSUEDATE] 17 August 2020
 [TESTLAB] Spectra Lux
 [TEST] S2008171-R1
 [MANUFAC] ANDlight
 [LUMCAT] BUT-60-CW-30
 [LUMINAIRE] BUTTON
 [LAMP] EPISTAR OMNICHIP (320404-xx-300-12-4.4) LEDs c/w Meanwell Driver IDLV-45-12 @ 120.00V
 [_BURNING] Horizontal (1,557 Luminaire Lumens)
 [_REFLECTOR] None
 [_LENS] Opalin Acrylic Diffuser
 [_HOUSING] Aluminum Body c/w Nylon Rope
 [_NOMINAL COLOR] 3000 K
 [_DRIVE CURRENT] 30 mA

Candela Table

Lateral Angles

	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0
0.0	6	6	6	6	6	6	6	6	6	6
2.5	7	7	8	8	9	8	7	8	7	7
5.0	15	13	13	14	13	14	13	13	12	11
7.5	22	24	22	19	20	18	20	18	16	15
10.0	28	29	33	32	33	29	24	23	23	19
12.5	45	40	37	41	38	40	38	37	34	30
15.0	54	59	53	46	47	43	46	41	35	36
17.5	58	60	69	67	68	59	48	47	47	38
20.0	83	73	67	75	68	73	70	67	61	54
22.5	88	97	88	75	77	71	77	67	59	60
25.0	88	92	106	103	103	91	74	74	73	59
27.5	120	105	98	108	98	106	102	97	90	80
30.0	122	133	121	104	106	98	107	94	82	84
32.5	117	122	140	137	137	122	99	99	99	80
35.0	154	135	125	140	126	138	132	127	117	104
37.5	152	167	152	130	134	123	134	118	104	107
40.0	142	149	171	168	168	149	122	122	122	99
42.5	185	162	150	167	151	165	159	153	141	127
45.0	179	196	180	154	159	145	158	140	123	128
47.5	166	172	198	195	195	174	142	142	142	116
50.0	212	185	171	191	173	189	183	176	163	147
52.5	202	222	204	174	179	164	179	159	140	146
55.0	185	192	221	219	218	194	160	159	160	131
57.5	235	206	190	211	191	210	203	196	180	163
60.0	221	243	224	191	198	180	197	174	154	160
62.5	202	209	240	238	237	212	174	175	175	143
65.0	253	221	204	227	205	226	220	211	195	177
67.5	235	260	239	204	211	192	210	186	164	172
70.0	213	221	254	252	251	225	185	186	187	152
72.5	266	234	214	239	215	237	231	222	205	187
75.0	245	272	250	214	221	201	219	194	171	179
77.5	222	229	263	263	261	234	192	192	194	158
80.0	275	241	221	246	222	245	238	229	211	193
82.5	250	278	256	219	226	205	225	199	175	184
85.0	225	233	268	267	265	239	195	196	198	161
87.5	278	244	224	248	224	247	242	232	214	195
90.0	251	279	259	220	228	207	225	199	176	185



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

Lateral Angles

	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	
V e r t i c a l	92.5	278	244	224	248	224	247	242	232	214	195
	95.0	225	233	268	267	265	239	195	196	198	161
	97.5	250	278	256	219	226	205	225	199	175	184
	100.0	275	241	221	246	222	245	238	229	211	193
	102.5	222	229	263	263	261	234	192	192	194	158
	105.0	245	272	250	214	221	201	219	194	171	179
	107.5	266	234	214	239	215	237	231	222	205	187
	110.0	213	221	254	252	251	225	185	186	187	152
	112.5	235	260	239	204	211	192	210	186	164	172
	115.0	253	221	204	227	205	226	220	211	195	177
	117.5	202	209	240	238	237	212	174	175	175	143
	120.0	221	243	224	191	198	180	197	174	154	160
	122.5	235	206	190	211	191	210	203	196	180	163
	125.0	185	192	221	219	218	194	160	159	160	131
	127.5	202	222	204	174	179	164	179	159	140	146
	130.0	212	185	171	191	173	189	183	176	163	147
	132.5	166	172	198	195	195	174	142	142	142	116
	135.0	179	196	180	154	159	145	158	140	123	128
A n g l e s	137.5	185	162	150	167	151	165	159	153	141	127
	140.0	142	149	171	168	168	149	122	122	122	99
	142.5	152	167	152	130	134	123	134	118	104	107
	145.0	154	135	125	140	126	138	132	127	117	104
	147.5	117	122	140	137	137	122	99	99	99	80
	150.0	122	133	121	104	106	98	107	94	82	84
	152.5	120	105	98	108	98	106	102	97	90	80
	155.0	88	92	106	103	103	91	74	74	73	59
	157.5	88	97	88	75	77	71	77	67	59	60
	160.0	83	73	67	75	68	73	70	67	61	54
	162.5	58	60	69	67	68	59	48	47	47	38
	165.0	54	59	53	46	47	43	46	41	35	36
	167.5	45	40	37	41	38	40	38	37	34	30
	170.0	28	29	33	32	33	29	24	23	23	19
	172.5	22	24	22	19	20	18	20	18	16	15
	175.0	15	13	13	14	13	14	13	13	12	11
	177.5	7	7	8	8	9	8	7	8	7	7
	180.0	6	6	6	6	6	6	6	6	6	6



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

Lateral Angles

	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0
V e r t i c a l	0.0	6	6	6	6	6	6	6	6	6
	2.5	8	7	8	7	8	7	6	7	7
	5.0	11	10	8	8	7	7	6	7	6
	7.5	14	13	12	9	9	7	7	7	7
	10.0	19	16	15	13	11	9	7	5	7
	12.5	27	22	16	15	11	10	8	7	7
	15.0	30	29	24	18	15	10	9	7	6
	17.5	35	30	29	24	19	14	8	7	5
	20.0	49	38	28	25	19	15	11	7	6
	22.5	50	48	40	28	23	16	12	8	6
	25.0	55	47	45	37	29	20	12	8	5
	27.5	73	57	42	38	27	22	15	9	6
	30.0	71	69	57	40	33	21	15	9	7
	32.5	75	64	62	52	40	27	15	9	5
	35.0	96	75	56	51	36	29	19	10	7
	37.5	90	89	74	52	43	28	20	10	7
	40.0	93	80	78	66	51	35	19	11	6
	42.5	117	93	69	63	45	37	24	12	7
	45.0	108	106	89	63	52	34	24	12	7
	47.5	110	94	92	79	62	42	23	12	6
A n g l e s	50.0	135	108	81	73	54	44	28	14	8
	52.5	123	122	103	73	61	40	28	14	8
	55.0	124	106	105	91	71	49	26	14	6
	57.5	151	121	91	83	61	50	32	16	8
	60.0	136	135	115	81	68	44	31	15	8
	62.5	135	116	115	100	78	54	29	16	6
	65.0	163	132	99	91	66	55	36	18	9
	67.5	145	145	124	88	74	48	34	16	9
	70.0	144	124	123	107	84	59	32	17	7
	72.5	172	139	105	96	71	59	38	19	9
	75.0	152	152	130	92	78	51	36	17	9
	77.5	150	129	128	112	88	61	33	18	7
	80.0	178	144	108	99	73	61	40	20	9
	82.5	156	156	134	95	81	53	38	18	9
	85.0	153	132	130	115	90	63	34	18	7
	87.5	180	146	110	101	75	62	41	20	9
	90.0	156	157	135	96	82	53	38	18	9
	92.5	180	146	110	101	75	62	41	20	9
	95.0	153	132	130	115	90	63	34	18	7
	97.5	156	156	134	95	81	53	38	18	9
	100.0	178	144	108	99	73	61	40	20	9
	102.5	150	129	128	112	88	61	33	18	7
	105.0	152	152	130	92	78	51	36	17	9
	107.5	172	139	105	96	71	59	38	19	9
	110.0	144	124	123	107	84	59	32	17	7
	112.5	145	145	124	88	74	48	34	16	9
	115.0	163	132	99	91	66	55	36	18	9
	117.5	135	116	115	100	78	54	29	16	6
	120.0	136	135	115	81	68	44	31	15	8
	122.5	151	121	91	83	61	50	32	16	8
	125.0	124	106	105	91	71	49	26	14	6
	127.5	123	122	103	73	61	40	28	14	8
	130.0	135	108	81	73	54	44	28	14	8
	132.5	110	94	92	79	62	42	23	12	6



Spectra Lux

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



Lateral Angles

	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	
V e r t i c a l	135.0	108	106	89	63	52	34	24	12	7	12
	137.5	117	93	69	63	45	37	24	12	7	12
	140.0	93	80	78	66	51	35	19	11	6	11
	142.5	90	89	74	52	43	28	20	10	7	10
	145.0	96	75	56	51	36	29	19	10	7	10
	147.5	75	64	62	52	40	27	15	9	5	9
	150.0	71	69	57	40	33	21	15	9	7	9
	152.5	73	57	42	38	27	22	15	9	6	9
	155.0	55	47	45	37	29	20	12	8	5	8
	157.5	50	48	40	28	23	16	12	8	6	8
	160.0	49	38	28	25	19	15	11	7	6	7
	162.5	35	30	29	24	19	14	8	7	5	7
	165.0	30	29	24	18	15	10	9	7	6	7
	167.5	27	22	16	15	11	10	8	7	6	7
	170.0	19	16	15	13	11	9	7	7	5	7
	172.5	14	13	12	9	9	7	7	7	7	7
	175.0	11	10	8	8	7	7	7	6	7	6
	177.5	8	7	8	7	8	7	6	7	6	7
	180.0	6	6	6	6	6	6	6	6	6	6
A n g l e s											



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

Lateral Angles

	100.0	105.0	110.0	115.0	120.0	125.0	130.0	135.0	140.0	145.0
V e r t i c a l	0.0	6	6	6	6	6	6	6	6	6
	2.5	6	7	8	7	8	7	8	7	8
	5.0	7	7	7	8	8	10	11	11	13
	7.5	7	7	9	9	12	13	14	15	18
	10.0	7	9	11	13	15	16	19	19	23
	12.5	8	10	11	15	16	22	27	30	37
	15.0	9	10	15	18	24	29	30	36	41
	17.5	8	14	19	24	29	30	35	38	47
	20.0	11	15	19	25	28	38	49	54	67
	22.5	12	16	23	28	40	48	50	60	67
	25.0	12	20	29	37	45	47	55	59	74
	27.5	15	22	27	38	42	57	73	80	97
	30.0	15	21	33	40	57	69	71	84	94
	32.5	15	27	40	52	62	64	75	80	99
	35.0	19	29	36	51	56	75	96	104	127
	37.5	20	28	43	52	74	89	90	107	118
	40.0	19	35	51	66	78	80	93	99	122
	42.5	24	37	45	63	69	93	117	127	153
	45.0	24	34	52	63	89	106	108	128	140
A n g l e s	47.5	23	42	62	79	92	94	110	116	142
	50.0	28	44	54	73	81	108	135	147	176
	52.5	28	40	61	73	103	122	123	146	159
	55.0	26	49	71	91	105	106	124	131	159
	57.5	32	50	61	83	91	121	151	163	196
	60.0	31	44	68	81	115	135	136	160	174
	62.5	29	54	78	100	115	116	135	143	175
	65.0	36	55	66	91	99	132	163	177	211
	67.5	34	48	74	88	124	145	145	172	186
	70.0	32	59	84	107	123	124	144	152	187
	72.5	38	59	71	96	105	139	172	187	205
	75.0	36	51	78	92	130	152	152	179	194
	77.5	33	61	88	112	128	129	150	158	194
	80.0	40	61	73	99	108	144	178	193	211
	82.5	38	53	81	95	134	156	156	184	199
	85.0	34	63	90	115	130	132	153	161	198
	87.5	41	62	75	101	110	146	180	195	214
	90.0	38	53	82	96	135	157	156	185	199
	92.5	41	62	75	101	110	146	180	195	214
	95.0	34	63	90	115	130	132	153	161	198
	97.5	38	53	81	95	134	156	156	184	199
	100.0	40	61	73	99	108	144	178	193	211
	102.5	33	61	88	112	128	129	150	158	194
	105.0	36	51	78	92	130	152	152	179	194
	107.5	38	59	71	96	105	139	172	187	205
	110.0	32	59	84	107	123	124	144	152	187
	112.5	34	48	74	88	124	145	145	172	186
	115.0	36	55	66	91	99	132	163	177	211
	117.5	29	54	78	100	115	116	135	143	175
	120.0	31	44	68	81	115	135	136	160	174
	122.5	32	50	61	83	91	121	151	163	196
	125.0	26	49	71	91	105	106	124	131	160
	127.5	28	40	61	73	103	122	123	146	159
	130.0	28	44	54	73	81	108	135	147	176
	132.5	23	42	62	79	92	94	110	116	142



Spectra Lux

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



Lateral Angles

	100.0	105.0	110.0	115.0	120.0	125.0	130.0	135.0	140.0	145.0
135.0	24	34	52	63	89	106	108	128	123	140
137.5	24	37	45	63	69	93	117	127	141	153
140.0	19	35	51	66	78	80	93	99	122	122
142.5	20	28	43	52	74	89	90	107	104	118
145.0	19	29	36	51	56	75	96	104	117	127
147.5	15	27	40	52	62	64	75	80	99	99
150.0	15	21	33	40	57	69	71	84	82	94
152.5	15	22	27	38	42	57	73	80	90	97
155.0	12	20	29	37	45	47	55	59	73	74
157.5	12	16	23	28	40	48	50	60	59	67
160.0	11	15	19	25	28	38	49	54	61	67
162.5	8	14	19	24	29	30	35	38	47	47
165.0	9	10	15	18	24	29	30	36	35	41
167.5	8	10	11	15	16	22	27	30	34	37
170.0	7	9	11	13	15	16	19	19	23	23
172.5	7	7	9	9	12	13	14	15	16	18
175.0	7	7	7	8	8	10	11	11	12	13
177.5	6	7	8	7	8	7	8	7	7	8
180.0	6	6	6	6	6	6	6	6	6	6

**V
e
r
t
i
c
a
l**

**A
n
g
l
e
s**



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

Lateral Angles

	150.0	155.0	160.0	165.0	170.0	175.0	180.0
V e r t i c a l A n g l e s	0.0	6	6	6	6	6	6
	2.5	7	8	9	8	7	7
	5.0	13	14	13	14	13	15
	7.5	20	18	20	19	22	22
	10.0	24	29	33	32	33	29
	12.5	38	40	38	41	37	40
	15.0	46	43	47	46	53	59
	17.5	48	59	68	67	69	60
	20.0	70	73	68	75	67	73
	22.5	77	71	77	75	88	97
	25.0	74	91	103	103	106	92
	27.5	102	106	98	108	98	105
	30.0	107	98	106	104	121	133
	32.5	99	122	137	137	140	122
	35.0	132	138	126	140	125	135
	37.5	134	123	134	130	152	167
	40.0	122	149	168	168	171	149
	42.5	159	165	151	167	150	162
	45.0	158	145	159	154	180	196
	47.5	142	174	195	195	198	172
	50.0	183	189	173	191	171	185
	52.5	179	164	179	174	204	222
	55.0	160	194	218	219	221	192
	57.5	203	210	191	211	190	206
	60.0	197	180	198	191	224	243
	62.5	174	212	237	238	240	209
	65.0	220	226	205	227	204	221
	67.5	210	192	211	204	239	260
	70.0	185	225	251	252	254	221
	72.5	231	237	215	239	214	234
	75.0	219	201	221	214	250	272
	77.5	192	234	261	263	263	229
	80.0	238	245	222	246	221	241
	82.5	225	205	226	219	256	278
	85.0	195	239	265	267	268	233
	87.5	242	247	224	248	224	244
	90.0	225	207	228	220	259	279
	92.5	242	247	224	248	224	244
	95.0	195	239	265	267	268	233
	97.5	225	205	226	219	256	278
	100.0	238	245	222	246	221	241
	102.5	192	234	261	263	263	229
	105.0	219	201	221	214	250	272
	107.5	231	237	215	239	214	234
	110.0	185	225	251	252	254	221
	112.5	210	192	211	204	239	260
	115.0	220	226	205	227	204	221
	117.5	174	212	237	238	240	209
	120.0	197	180	198	191	224	243
	122.5	203	210	191	211	190	206
	125.0	160	194	218	219	221	192
	127.5	179	164	179	174	204	222
	130.0	183	189	173	191	171	185
	132.5	142	174	195	195	198	172



Spectra Lux

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



Lateral Angles

	150.0	155.0	160.0	165.0	170.0	175.0	180.0
135.0	158	145	159	154	180	196	179
137.5	159	165	151	167	150	162	185
140.0	122	149	168	168	171	149	142
142.5	134	123	134	130	152	167	152
145.0	132	138	126	140	125	135	154
147.5	99	122	137	137	140	122	117
150.0	107	98	106	104	121	133	122
152.5	102	106	98	108	98	105	120
155.0	74	91	103	103	106	92	88
157.5	77	71	77	75	88	97	88
160.0	70	73	68	75	67	73	83
162.5	48	59	68	67	69	60	58
165.0	46	43	47	46	53	59	54
167.5	38	40	38	41	37	40	45
170.0	24	29	33	32	33	29	28
172.5	20	18	20	19	22	24	22
175.0	13	14	13	14	13	13	15
177.5	7	8	9	8	8	7	7
180.0	6	6	6	6	6	6	6

**V
e
r
t
i
c
a
l**

**A
n
g
l
e
s**