



Les Industries Spectralux Inc. Spectralux Industries Inc.

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

ISO/IEC 17025
NVLAP
NVLAP LAB CODE: 200899-0

Moving Mirror Goniophotometer Test Report

Standard(s): IESNA LM-35-02, IES LM-79-08, ANSI C82.77-2002

Customer Lumenpulse, 1751 Richardson, suite 1505, Montréal, Québec, Canada, H3K 1G6

General Information		SSL Details	Driver Details	
Test Report	S1512093-R1	Description	34W White 4000K SSL	Type Commercial
Test Date	9 December 2015	Serial Number	SRIS 2222	Description 34SSL-CY1013
Report Date	23 December 2015	Photometric Method	Absolute	Manufacturer Meanwell
Ambient	25.4°C	Lamp Lumens	-1	Catalog No. LPF-40-24
Humidity	23.6 %	Test Position	Axial	Voltage Tap 120.00 V
Lamp Type	SSL	Comments	Clusters of 24 Cree XPE2 LED's	Power Factor 0.9900

Floodlight Data

General Information		Optics	Aperture (feet)	
Manufacturer	Lumenpulse	Reflector	48 Collimators	X 4.0000
Name	LUMENFACADE	Housing	Extruded Aluminum	Y 0.1667
Catalog No.	LOGI-RO-120/277-48-40K -10x60-SI-NO	Lens	Polycarbonate	Z 0.0000

Lamp Stabilization Time: 1 hour 15 minutes

Tested By: Marc Viwonou Sena

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	Elgar	CW801	30527	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	27E116584	2014/10/30	2016/10/30
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	2015/10/05	2016/10/05

Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	120504178	2014/04/16	2016/04/16



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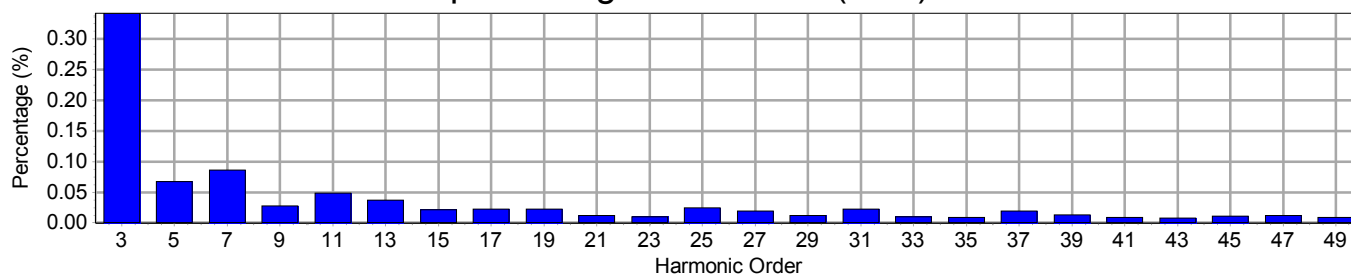
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Electrical Measurements

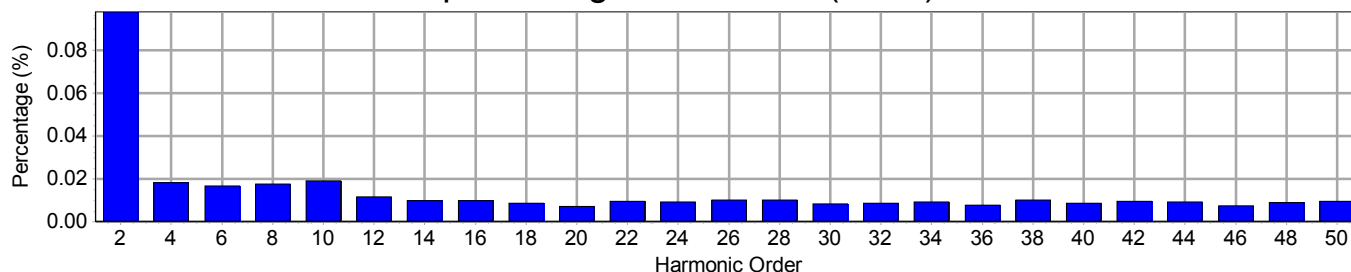
Input

Frequency	60 Hz	Active Power	31.12 W	THDV [ANSI]	0.39 %
Voltage	120.5 V(rms)	Apparent Power	31.45 VA	THDA [ANSI]	8.02 %
Current	0.2610 A(rms)	Power Factor	0.989	Max. Harmonic At	3rd order

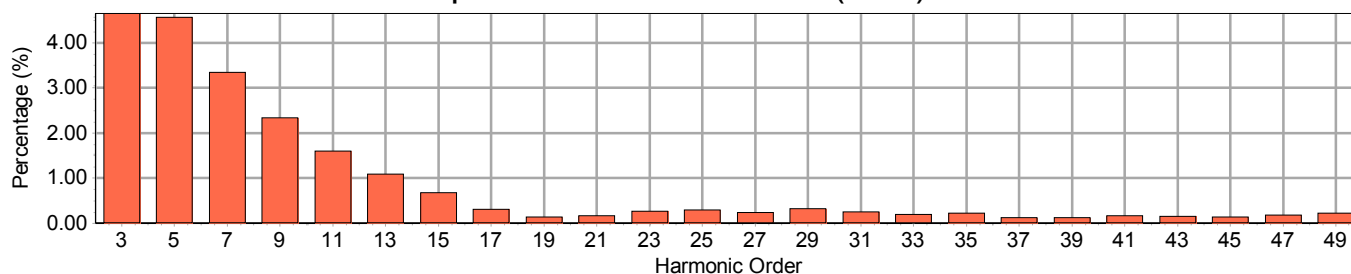
Input Voltage Harmonics (Odd)



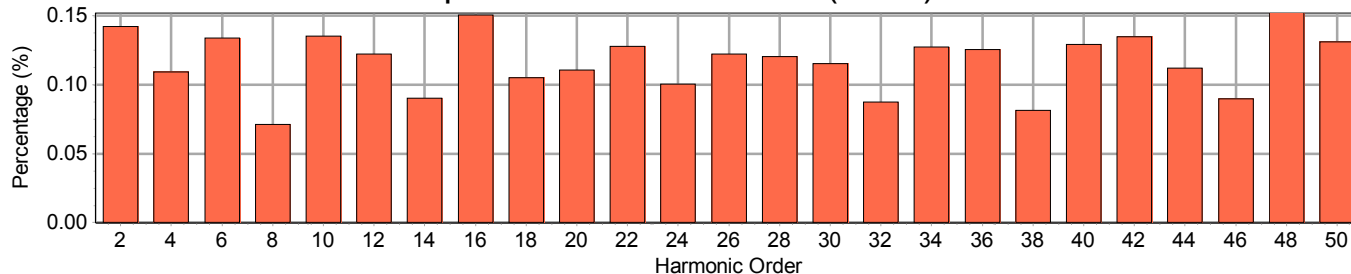
Input Voltage Harmonics (Even)



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	0.098	0.142
3	180	0.342	4.659	4	240	0.018	0.110
5	300	0.068	4.566	6	360	0.017	0.134
7	420	0.086	3.341	8	480	0.018	0.072
9	540	0.027	2.341	10	600	0.019	0.135
11	660	0.048	1.604	12	720	0.011	0.122
13	780	0.037	1.089	14	840	0.010	0.090
15	900	0.022	0.675	16	960	0.010	0.151
17	1020	0.022	0.302	18	1080	0.008	0.105
19	1140	0.022	0.141	20	1200	0.007	0.111
21	1260	0.012	0.164	22	1320	0.009	0.128
23	1380	0.010	0.260	24	1440	0.009	0.101
25	1500	0.025	0.293	26	1560	0.010	0.123
27	1620	0.019	0.238	28	1680	0.010	0.120
29	1740	0.012	0.322	30	1800	0.008	0.115
31	1860	0.022	0.254	32	1920	0.008	0.087
33	1980	0.010	0.185	34	2040	0.009	0.127
35	2100	0.009	0.225	36	2160	0.008	0.126
37	2220	0.019	0.126	38	2280	0.010	0.081
39	2340	0.013	0.121	40	2400	0.008	0.129
41	2460	0.009	0.165	42	2520	0.009	0.135
43	2580	0.008	0.156	44	2640	0.009	0.112
45	2700	0.011	0.130	46	2760	0.007	0.090
47	2820	0.012	0.178	48	2880	0.009	0.152
49	2940	0.009	0.219	50	3000	0.009	0.131



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Photometric Report: S1512093-R1

Prepared for: Lumenpulse · Test Date: 09 December 2015

Floodlight: LUMENFACADE · Lumcat: LOGI-RO-120/277-48-40K-10x60-SI-NO

Photometric Floodlight Characteristics

Nominal SSL Power	34.00 W	
Measured Input Voltage	120.52 V	Notes
Test SSL Current	0.300 A	1) Floodlight tested in accordance to IES LM-35-1989 at a distance great enough so that the inverse-square law applies.
Floodlight Luminous Flux	1729	
Measured Input Power	31.12 W	
Floodlight Luminous Efficacy	55.6 lm/W	2) Field performance may differ from laboratory measurements.
Maximum Candela Value	6933	
Maximum Candela Location	0.0 H, 0.5 V	3) Results are valid for the tested material only.
Horizontal Beam Angle (50%)	62.0 °	
Vertical Beam Angle (50%)	10.0 °	4) All data published in this report are based on absolute photometry.
Horizontal Field Angle (10%)	92.0 °	
Vertical Field Angle (10%)	24.0 °	5) The original electronic file or paper report cannot be edited in whole or in part without written consent of Spectralux Industries Inc.
IES/NEMA Type Classification	5Hx2V	
Beam Lumens (50%)	812	
Beam Efficiency (50%)	N/A	
Field Lumens (10%)	1388	
Field Efficiency (10%)	N/A	
Spill Lumens	341	
Total Floodlight Lumens	1729	
Total Floodlight Efficiency	N/A	



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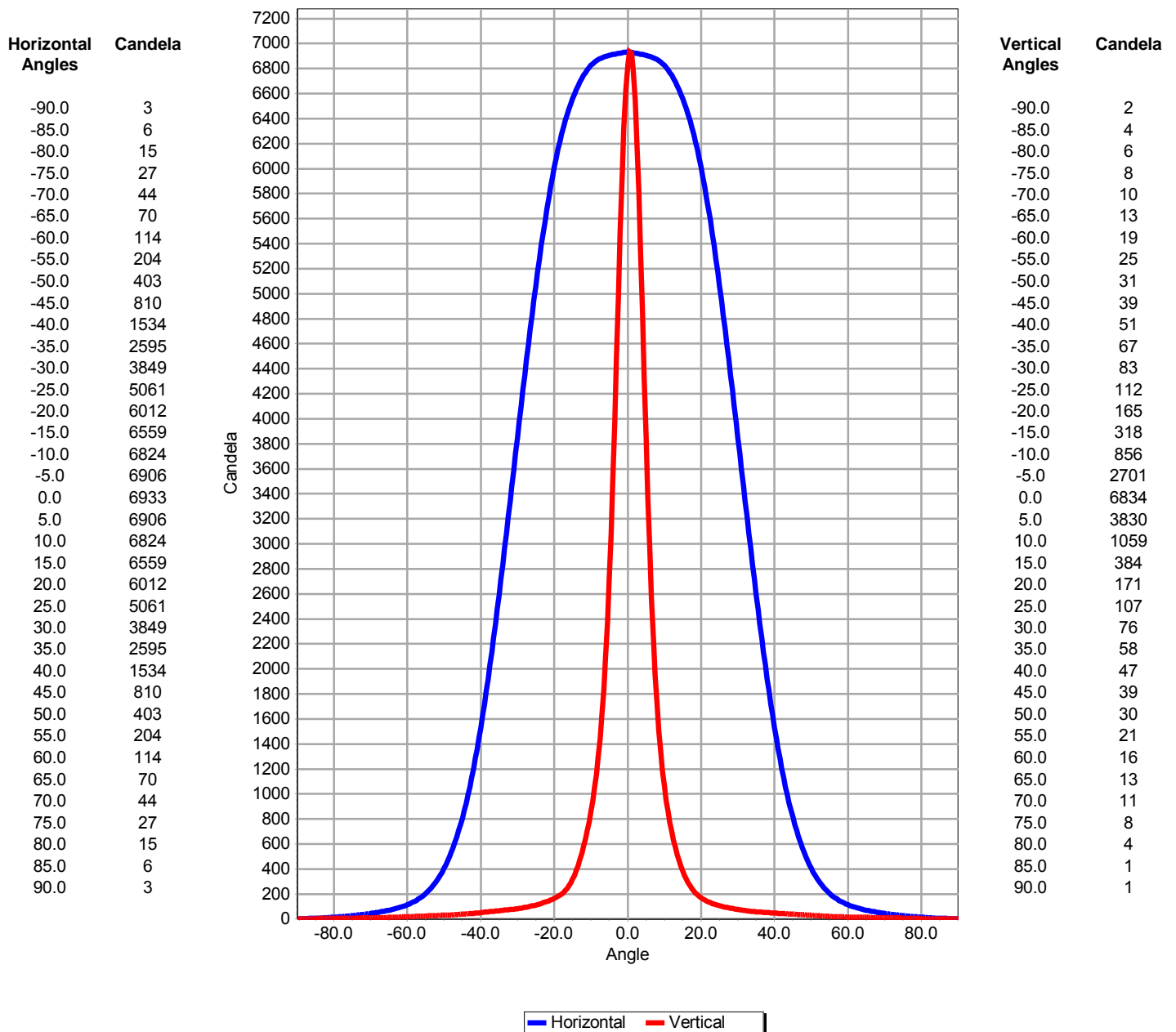
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Maximum Candela Trace (Max. Location: 0.0 H, 0.5 V)





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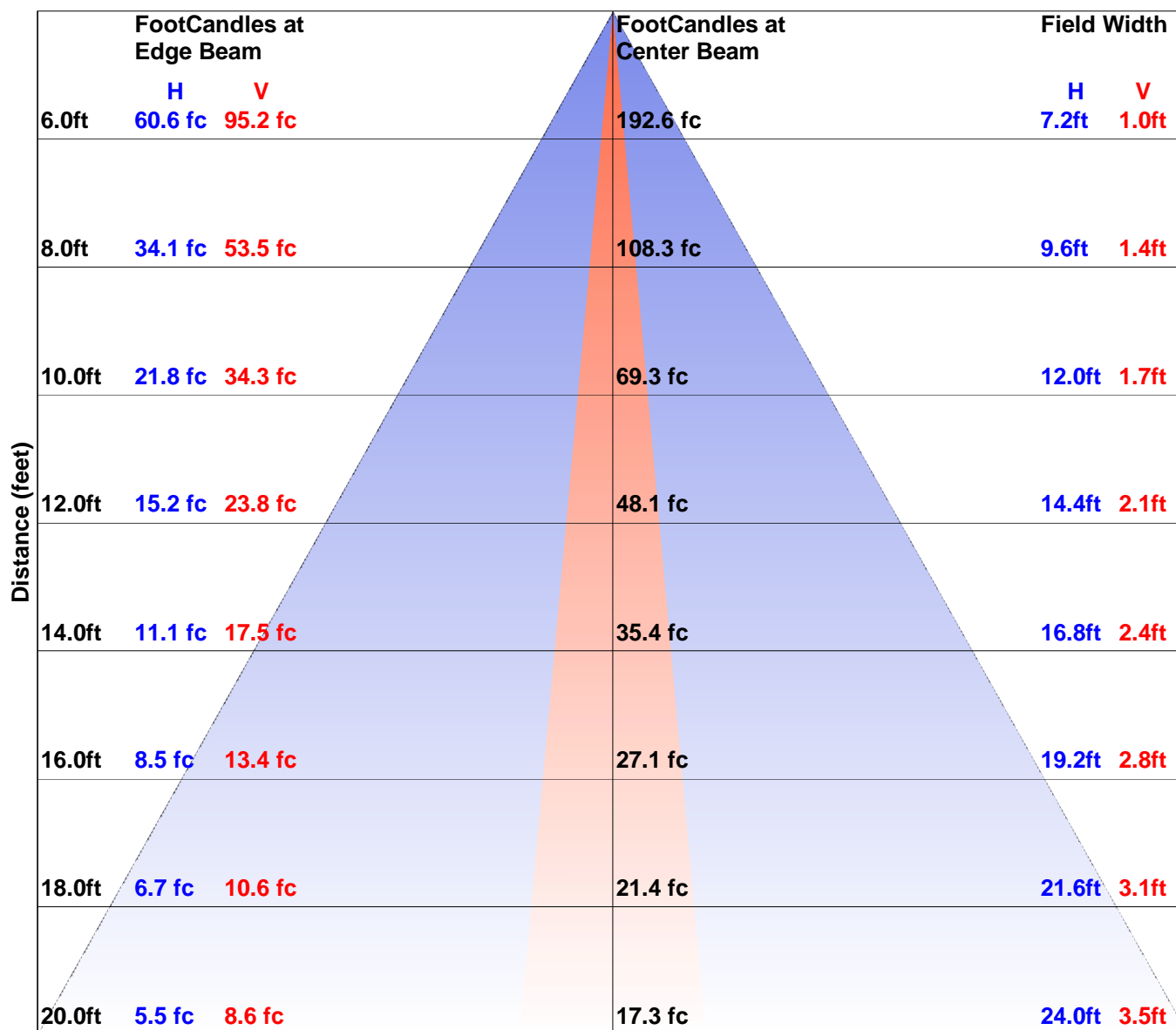
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Floodlight: LUMENFACADE · Lumcat: LOGI-RO-120/277-48-40K-10x60-SI-NO

Downlight Beam



— Horizontal (62.0 °) — Vertical (10.0 °)



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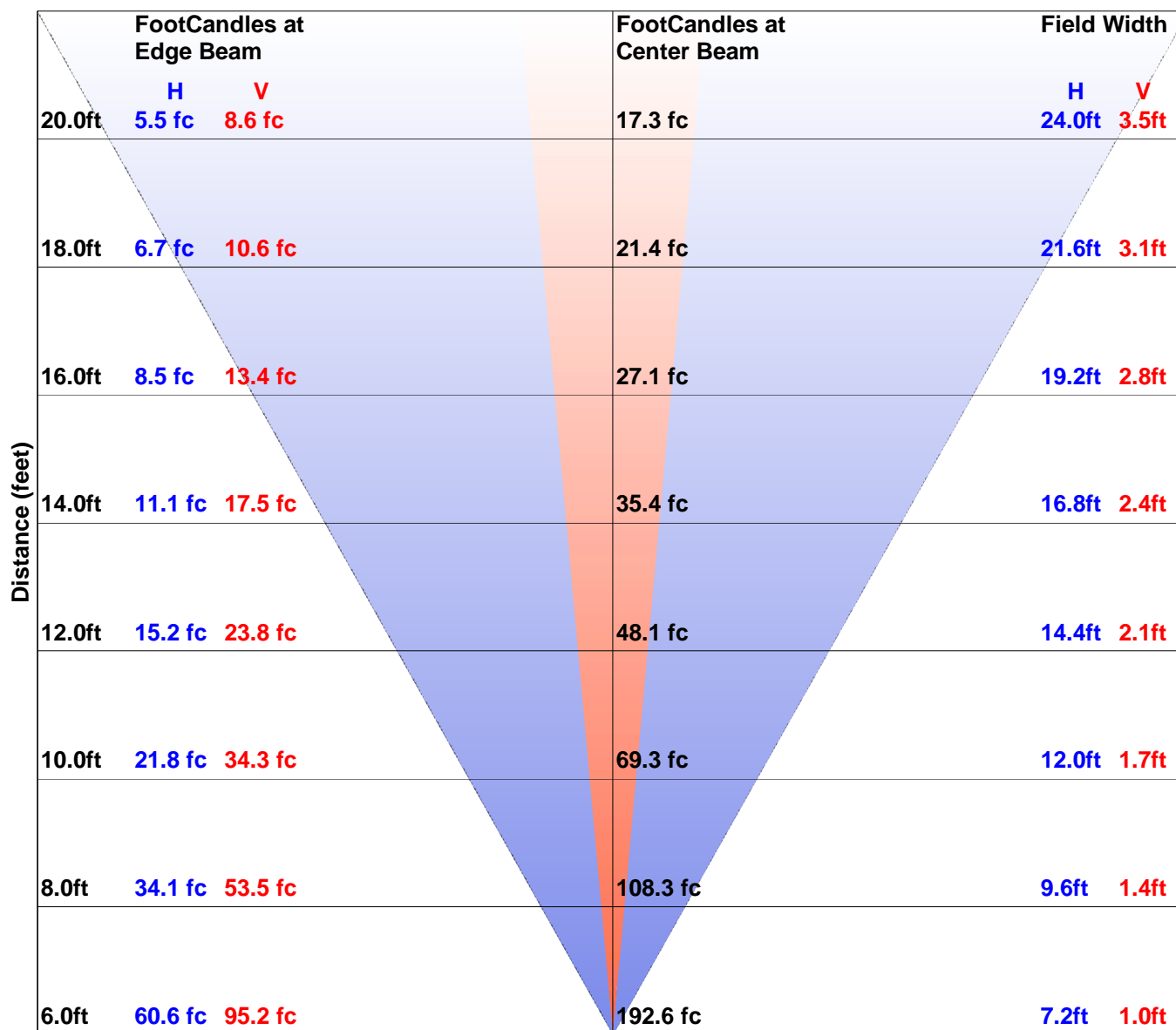
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Floodlight: LUMENFACADE · Lumcat: LOGI-RO-120/277-48-40K-10x60-SI-NO

Uplight Beam



— Horizontal (62.0 °) — Vertical (10.0 °)



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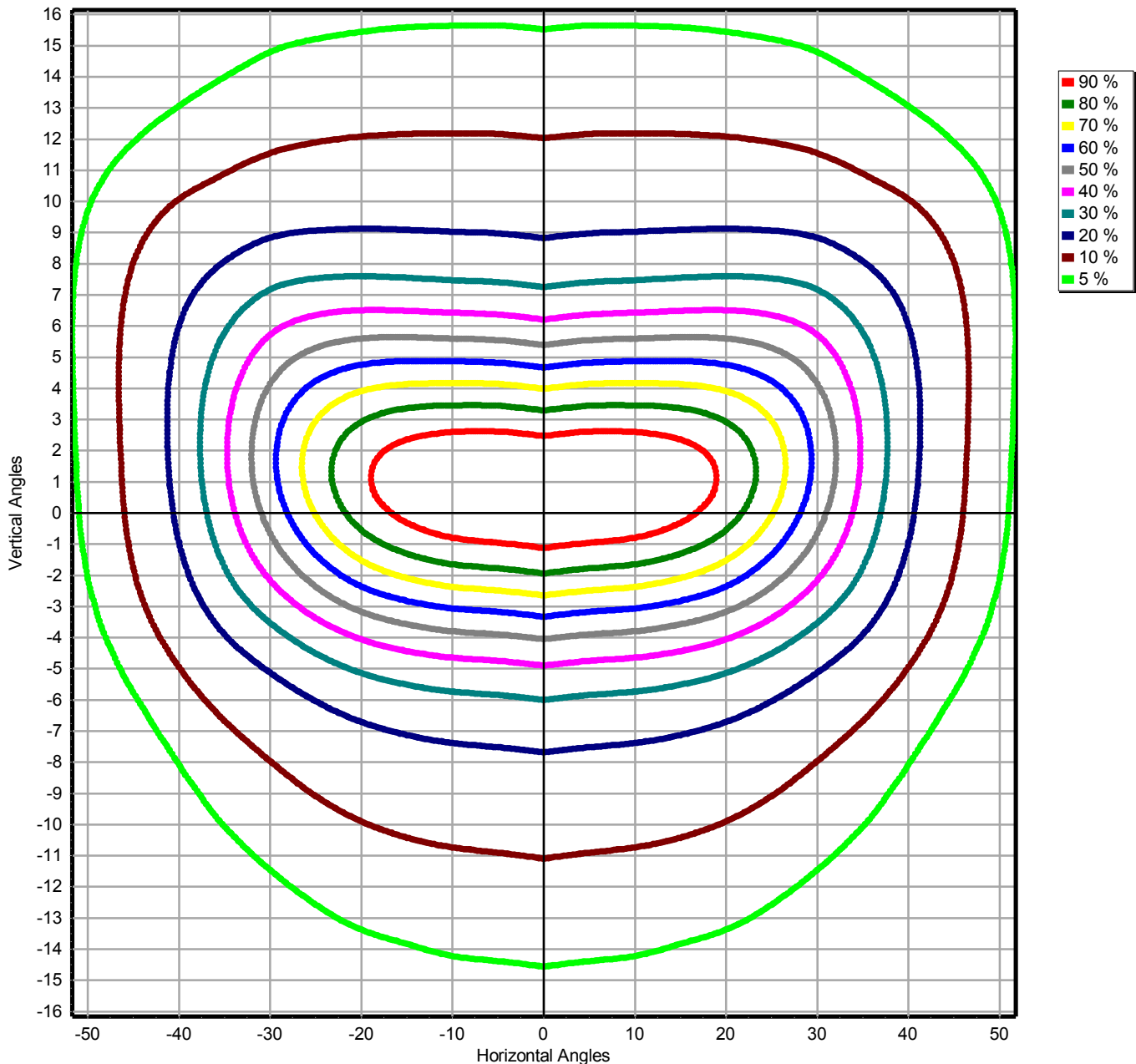
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ISO Candela Diagram





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IES File Headers

IESNA:LM-63-2002
[ISSUEDATE] 09 December 2015
[TESTLAB] Spectra Lux Industries Inc.
[TEST] S1512093-R1
[MANUFAC] Lumenpulse
[LUMCAT] LOGI-RO-120/277-48-40K-10x60-SI-NO
[LUMINAIRE] LUMENFACADE
[LAMP] (Clusters of 24 Cree XPE2 LED's) 34W SSL c/w Driver LPF-40-24 @ 120.00V
[_BURNING] Axial (1,729 Luminaire Lumens)
[_REFLECTOR] 48 Collimators
[_LENS] Polycarbonate
[_HOUSING] Extruded Aluminum
[DISTRIBUTION] NEMA 5Hx2V (Max. CP at 0.0H,0.5V)
[MORE] (Based on IES LM-35-1989)

Candela Table

Horizontal Angles

	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	
V e r t i c a l	-90.0	2	2	1	1	2	4	4	3	2
	-85.0	4	3	4	3	4	3	5	4	3
	-75.0	8	7	8	7	7	7	6	7	6
	-65.0	13	14	12	13	13	12	13	11	11
	-55.0	25	24	24	23	23	23	22	21	19
	-45.0	39	40	40	38	39	36	35	34	30
	-35.0	67	66	65	64	61	58	55	51	47
	-25.0	112	112	110	107	102	98	90	82	73
	-20.0	165	163	159	154	147	135	123	111	95
	-15.0	318	309	298	280	258	226	194	161	132
A n g l e s	-12.5	523	504	487	454	411	351	285	226	171
	-12.0	578	558	538	505	454	386	314	245	182
	-11.5	640	617	597	557	503	426	344	268	196
	-11.0	706	681	658	617	556	472	379	292	211
	-10.5	775	750	726	683	615	521	417	319	228
	-10.0	856	828	803	752	680	576	460	351	248
	-9.5	946	914	886	831	751	637	507	385	270
	-9.0	1049	1011	981	922	833	706	560	422	292
	-8.5	1162	1123	1089	1024	924	783	620	467	321
	-8.0	1292	1248	1209	1137	1029	870	688	517	352
	-7.5	1444	1392	1350	1272	1150	973	767	574	388
	-7.0	1620	1561	1515	1428	1292	1092	859	642	430
	-6.5	1835	1763	1712	1613	1459	1234	970	723	480
	-6.0	2080	1997	1941	1831	1657	1402	1103	818	538
	-5.5	2367	2274	2211	2086	1890	1598	1257	930	608
-5.0	2701	2592	2522	2380	2157	1823	1431	1058	684	
-4.5	3083	2960	2882	2724	2466	2083	1634	1200	770	
-4.0	3511	3376	3288	3107	2815	2372	1854	1354	862	
-3.5	3989	3836	3737	3530	3196	2688	2093	1518	958	
-3.0	4489	4329	4220	3988	3607	3025	2345	1681	1052	
-2.5	4998	4839	4723	4465	4037	3373	2600	1846	1146	
-2.0	5489	5335	5215	4935	4462	3720	2852	2003	1231	
-1.5	5936	5796	5677	5385	4868	4056	3095	2148	1309	
-1.0	6324	6206	6089	5789	5246	4369	3321	2284	1379	
-0.5	6629	6536	6427	6129	5573	4648	3527	2405	1442	



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Horizontal Angles

	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	
V e r t i c a l	0.0	6834	6774	6678	6392	5833	4887	3706	2510	1492
	0.5	6933	6906	6824	6559	6012	5061	3849	2595	1534
	1.0	6922	6927	6863	6620	6099	5166	3947	2657	1569
	1.5	6792	6834	6786	6571	6086	5194	3995	2693	1591
	2.0	6548	6628	6594	6414	5976	5143	3990	2706	1608
	2.5	6220	6323	6308	6161	5778	5021	3937	2691	1615
	3.0	5808	5938	5937	5829	5502	4835	3838	2652	1611
	3.5	5345	5490	5505	5430	5168	4592	3696	2590	1599
	4.0	4842	4998	5025	4982	4783	4304	3522	2506	1576
	4.5	4329	4489	4525	4514	4374	3992	3321	2404	1542
	5.0	3830	3987	4030	4044	3959	3665	3103	2290	1501
	5.5	3367	3510	3559	3591	3549	3334	2875	2161	1450
	6.0	2939	3072	3122	3166	3154	3004	2638	2019	1386
	6.5	2557	2676	2721	2768	2781	2680	2395	1872	1316
	7.0	2228	2329	2371	2418	2443	2377	2160	1720	1239
	7.5	1944	2030	2065	2110	2137	2098	1931	1563	1153
	8.0	1704	1778	1806	1843	1870	1843	1713	1410	1064
	8.5	1502	1561	1584	1612	1634	1611	1511	1258	972
	9.0	1329	1379	1398	1419	1431	1411	1329	1117	879
A n g l e s	9.5	1183	1225	1236	1250	1259	1235	1162	984	789
	10.0	1059	1091	1102	1110	1111	1084	1018	867	705
	10.5	949	977	985	988	984	955	895	762	626
	11.0	855	879	883	885	878	848	791	676	557
	11.5	771	792	796	794	786	755	701	598	495
	12.0	698	716	719	717	706	678	627	530	440
	12.5	631	649	650	647	636	608	559	475	392
	15.0	384	394	392	389	379	361	334	284	239
	20.0	171	175	175	172	169	163	153	137	120
	25.0	107	107	107	105	105	102	98	91	82
	35.0	58	61	61	60	59	57	57	54	50
	45.0	39	37	37	37	36	35	33	30	30
	55.0	21	20	21	20	21	20	18	19	18
	65.0	13	13	11	12	12	12	11	9	10
	75.0	8	7	6	5	6	6	7	6	5
	85.0	1	2	3	3	2	3	4	3	5
	90.0	1	2	2	1	2	2	1	3	2



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Horizontal Angles

	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
V e r t i c a l A n g l e s	-90.0	3	4	3	4	3	4	4	5
	-85.0	4	3	3	5	4	5	4	4
	-75.0	7	7	7	5	6	5	4	3
	-65.0	11	9	9	8	7	6	5	4
	-55.0	16	15	14	12	10	9	6	5
	-45.0	28	26	23	19	16	11	9	4
	-35.0	42	38	34	27	22	16	12	5
	-25.0	64	55	47	39	31	24	15	5
	-20.0	79	67	54	43	36	27	18	6
	-15.0	105	84	65	52	40	30	21	6
	-12.5	127	97	73	56	43	31	21	5
	-12.0	133	100	75	58	44	32	22	6
	-11.5	142	103	76	59	43	33	20	5
	-11.0	150	108	80	59	45	33	22	7
	-10.5	157	112	82	62	45	32	23	6
	-10.0	170	117	83	63	47	33	22	6
	-9.5	182	124	87	62	47	33	21	7
	-9.0	194	130	91	66	48	34	23	7
	-8.5	211	139	93	67	49	34	22	6
	-8.0	227	148	100	69	49	36	23	6
	-7.5	247	156	103	72	51	35	24	5
	-7.0	272	168	107	74	51	36	24	6
	-6.5	297	182	115	76	54	37	24	6
	-6.0	329	196	122	80	55	37	25	7
	-5.5	367	214	128	83	56	38	23	6
	-5.0	407	233	137	86	57	38	24	7
	-4.5	449	251	145	89	58	38	25	5
	-4.0	498	272	151	91	59	39	24	5
	-3.5	545	294	161	95	61	40	26	7
	-3.0	591	312	169	99	63	41	26	6
	-2.5	637	332	174	101	63	42	26	5
	-2.0	677	349	183	104	66	42	26	7
	-1.5	711	363	188	108	66	41	27	7
	-1.0	744	376	193	109	68	43	27	6
	-0.5	770	388	198	110	70	43	26	7
	0.0	792	396	202	114	69	44	27	7
	0.5	810	403	204	114	70	44	27	6
	1.0	823	409	208	115	72	44	27	6
	1.5	833	413	209	118	72	45	28	6
	2.0	844	418	210	117	72	44	28	7
	2.5	851	423	214	119	73	45	28	7
	3.0	855	426	214	121	73	45	28	7
	3.5	860	429	216	119	74	45	26	6
	4.0	859	432	219	121	75	46	27	7
	4.5	856	435	219	122	74	46	28	7
	5.0	848	435	220	122	75	46	27	6
	5.5	836	438	223	122	75	45	29	7
	6.0	818	434	223	124	75	46	28	7
	6.5	795	431	222	123	75	46	28	6
	7.0	767	425	223	124	75	45	28	8
	7.5	734	415	222	125	76	46	28	7
	8.0	696	403	218	123	75	45	28	6
	8.5	652	390	216	123	74	46	28	7
	9.0	608	373	212	123	74	46	28	6



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Horizontal Angles

	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
V e r t i c a l	9.5	561	354	205	119	74	46	27	15	5
	10.0	512	334	198	119	74	45	28	14	6
	10.5	465	311	191	117	72	45	27	14	7
	11.0	421	288	181	112	71	46	26	13	5
	11.5	378	266	173	110	70	44	27	15	6
	12.0	339	245	163	107	68	44	27	14	6
	12.5	306	223	152	101	66	43	26	14	6
	15.0	192	148	109	82	56	39	24	14	6
	20.0	103	84	69	55	42	29	20	12	6
	25.0	73	62	53	44	34	25	16	11	5
	35.0	46	41	35	29	24	18	13	8	5
	45.0	27	24	23	20	15	13	10	7	5
	55.0	16	15	13	11	10	9	6	6	4
	65.0	8	9	9	8	7	6	5	4	4
	75.0	6	6	6	5	5	5	4	3	2
	85.0	4	4	4	3	4	3	3	2	3
	90.0	3	3	4	2	3	3	4	4	3

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Les Industries Spectralux Inc. Spectralux Industries Inc.

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Tel.: (514) 332-0082 Fax: (514) 332-3590 www.spectralux.ca

ISO/IEC 17025



NVLAP LAB CODE: 200899-0

Horizontal Angles

	90.0
V e r t i c a l	-90.0 3
	-85.0 3
	-75.0 4
	-65.0 4
	-55.0 3
	-45.0 3
	-35.0 4
	-25.0 4
	-20.0 4
	-15.0 2
	-12.5 4
	-12.0 3
	-11.5 3
	-11.0 4
	-10.5 2
	-10.0 4
	-9.5 4
	-9.0 3
	-8.5 4
	-8.0 4
A n g l e s	-7.5 3
	-7.0 3
	-6.5 3
	-6.0 3
	-5.5 4
	-5.0 3
	-4.5 3
	-4.0 3
	-3.5 4
	-3.0 3
	-2.5 3
	-2.0 4
	-1.5 3
	-1.0 3
	-0.5 4
	0.0 2
	0.5 3
	1.0 3
	1.5 2
	2.0 2
	2.5 2
	3.0 3
	3.5 2
	4.0 4
	4.5 3
	5.0 2
	5.5 3
	6.0 3
	6.5 3
	7.0 2
	7.5 4
	8.0 2
	8.5 3
	9.0 3



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Horizontal Angles

	90.0
	9.5
	10.0
	10.5
	11.0
	11.5
	12.0
	12.5
	15.0
	20.0
	25.0
	35.0
	45.0
	55.0
	65.0
	75.0
	85.0
	90.0
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