



# 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](http://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	
<b>Test Report</b>	G1504071-R1	<b>Description</b>	61W White 3466K SSL	<b>Type</b> Commercial
<b>Test Date</b>	7 April 2015	<b>Serial Number</b>	SRIS 1881	<b>Description</b> 69SSL-CY809
<b>Report Date</b>	15 April 2015	<b>Photometric Method</b>	Absolute	<b>Manufacturer</b> MEAN WELL USA inc.
<b>Ambient</b>	24.4 °C	<b>Lamp Lumens</b>	-1	<b>Catalog No.</b> LPF-60-12
<b>Humidity</b>	17.0 %	<b>Test Position</b>	Axial	<b>Voltage Tap</b> 120.00 V
<b>Lamp Type</b>	SSL	<b>Comments</b>	CREE XPE2 LED's	<b>Power Factor</b> 0.9900

### Floodlight Data

General Information		Optics	Aperture (feet)	
<b>Manufacturer</b>	Lumenpulse	<b>Reflector</b>	48 Collimators	<b>X</b> 0.0000
<b>Name</b>	LUMENFACADE	<b>Housing</b>	Extruded Aluminum	<b>Y</b> 4.0000
<b>Catalog No.</b>	LOG HO-120-48-35K 12XPE2-10x60-SI-NO	<b>Lens</b>	Clear Flat Glass C/W Diffuse Film	<b>Z</b> 0.1667

SKT Position: None

Lamp Stabilization Time: 60 minutes, 51 seconds

**Tested By:** Jean-Paul Ojeil

**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	974997	N.P.C.R.	N.P.C.R.
Input Power Meter	Yokogawa	WT210	91L239798	2014/03/25	2015/04/15
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	Gigahertz-Optik	X11	4500	2014/12/12	2015/12/12
Photodetector	INPHORA	IPR-PDET 19	110803	2014/05/16	2015/05/16

## Environment Equipment

Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Temperature Humidity Sensor	Omega	HH311	051202970	2014/10/24	2016/10/24



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## Photometric Report: G1504071-R1

Prepared for: Lumenpulse · Test Date: 07 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG HO-120-48-35K 12XPE2-10x60-SI-NO

### Photometric Floodlight Characteristics

Nominal SSL Power	61.00 W	
Measured Input Voltage	121.38 V	<b>Notes</b>
Test SSL Current	0.0000 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	3780	
Measured Input Power	60.98 W	
Floodlight Luminous Efficacy	62.0 lm/W	2) Field performance may differ from laboratory measurements.
Maximum Candela Value	16891	
Maximum Candela Location	0.0 H, 0.0 V	3) Results are valid for the tested material only.
Horizontal Beam Angle (50%)	65.0 °	
Vertical Beam Angle (50%)	9.0 °	4) All data published in this report are based on absolute photometry.
Horizontal Field Angle (10%)	95.0 °	
Vertical Field Angle (10%)	21.5 °	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%)	1795	
Beam Efficiency (50%)	N/A	
Field Lumens (10%)	3132	
Field Efficiency (10%)	N/A	
Spill Lumens	647	
Total Floodlight Lumens	3780	
Total Floodlight Efficiency	N/A	



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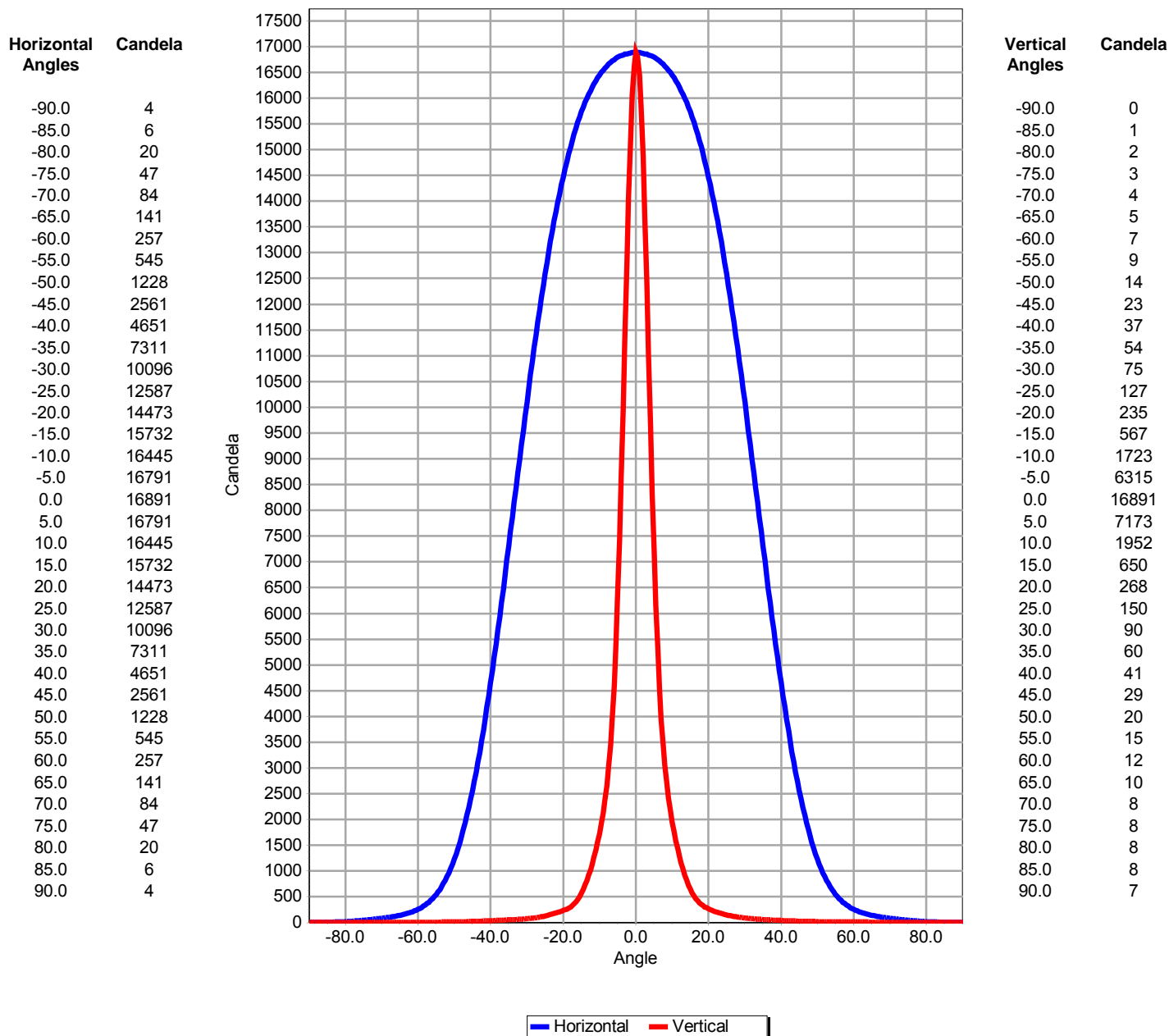
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Prepared for: Lumenpulse · Test Date: 07 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG HO-120-48-35K 12XPE2-10x60-SI-NO

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





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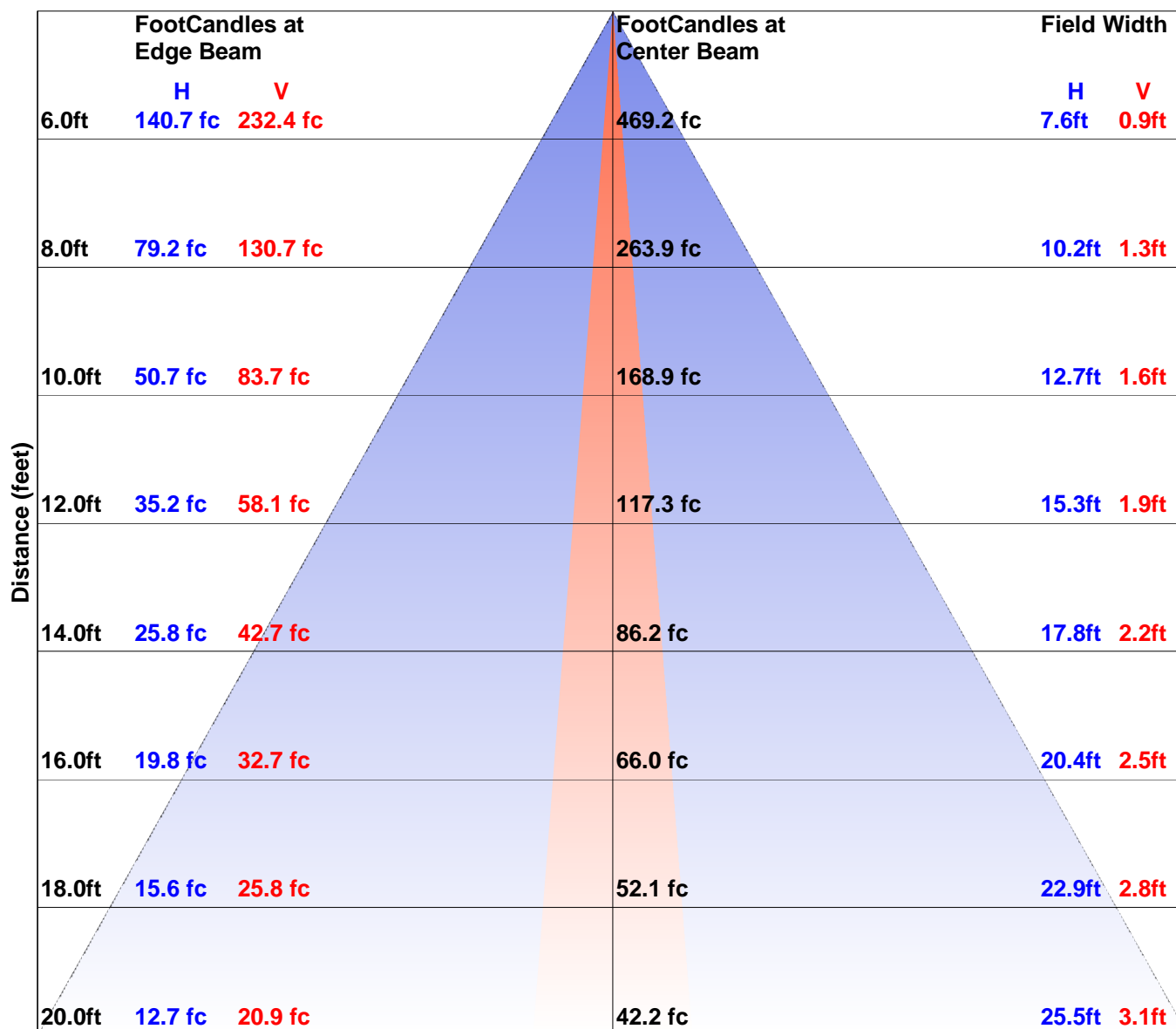
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## Photometric Report: G1504071-R1

Prepared for: Lumenpulse · Test Date: 07 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG HO-120-48-35K 12XPE2-10x60-SI-NO

### Downlight Beam



— Horizontal (65.0 °) — Vertical (9.0 °)



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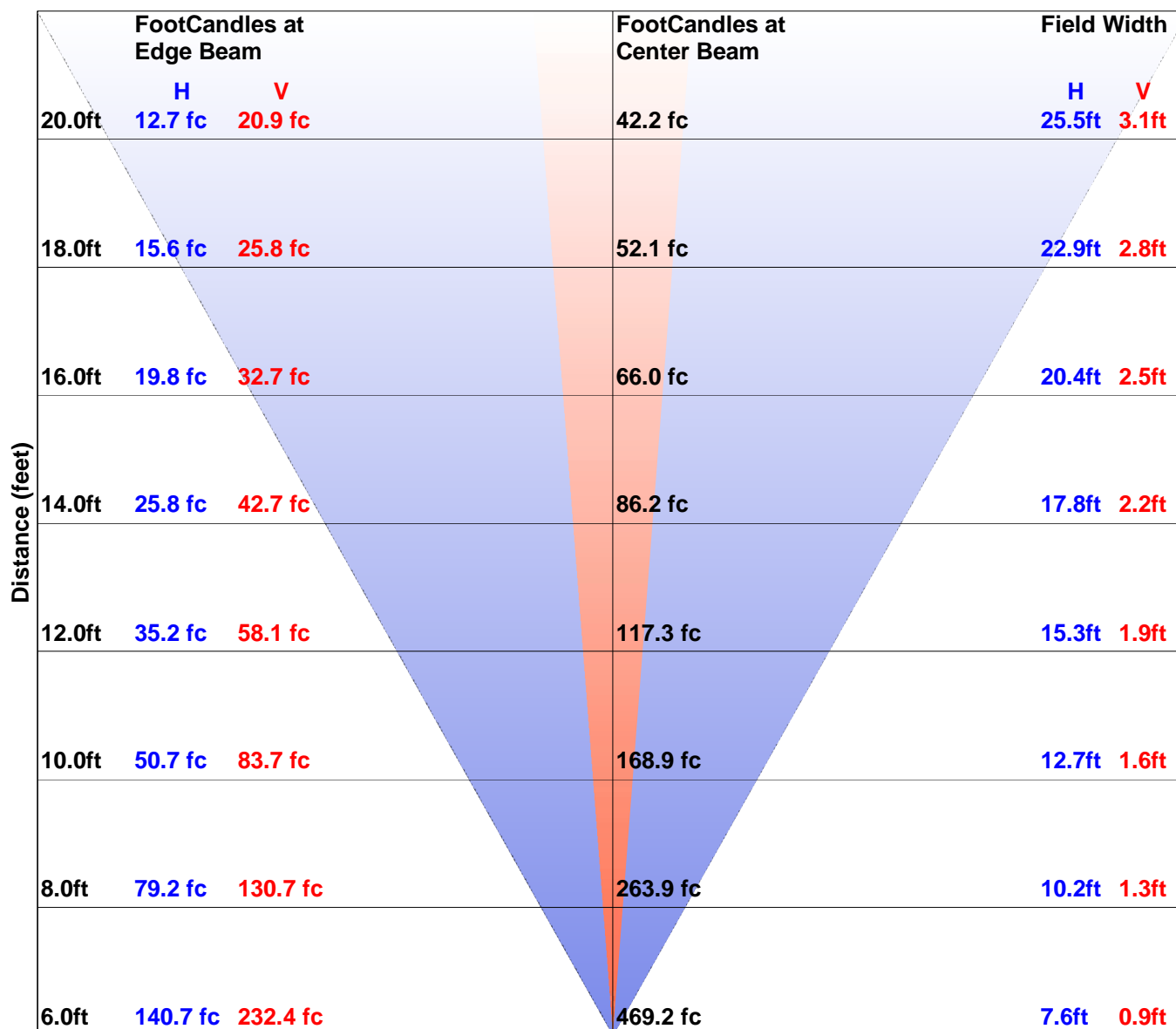
NVLAP LAB CODE: 200899-0

## Photometric Report: G1504071-R1

Prepared for: Lumenpulse · Test Date: 07 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG HO-120-48-35K 12XPE2-10x60-SI-NO

### Uplight Beam



— Horizontal (65.0 °) — Vertical (9.0 °)



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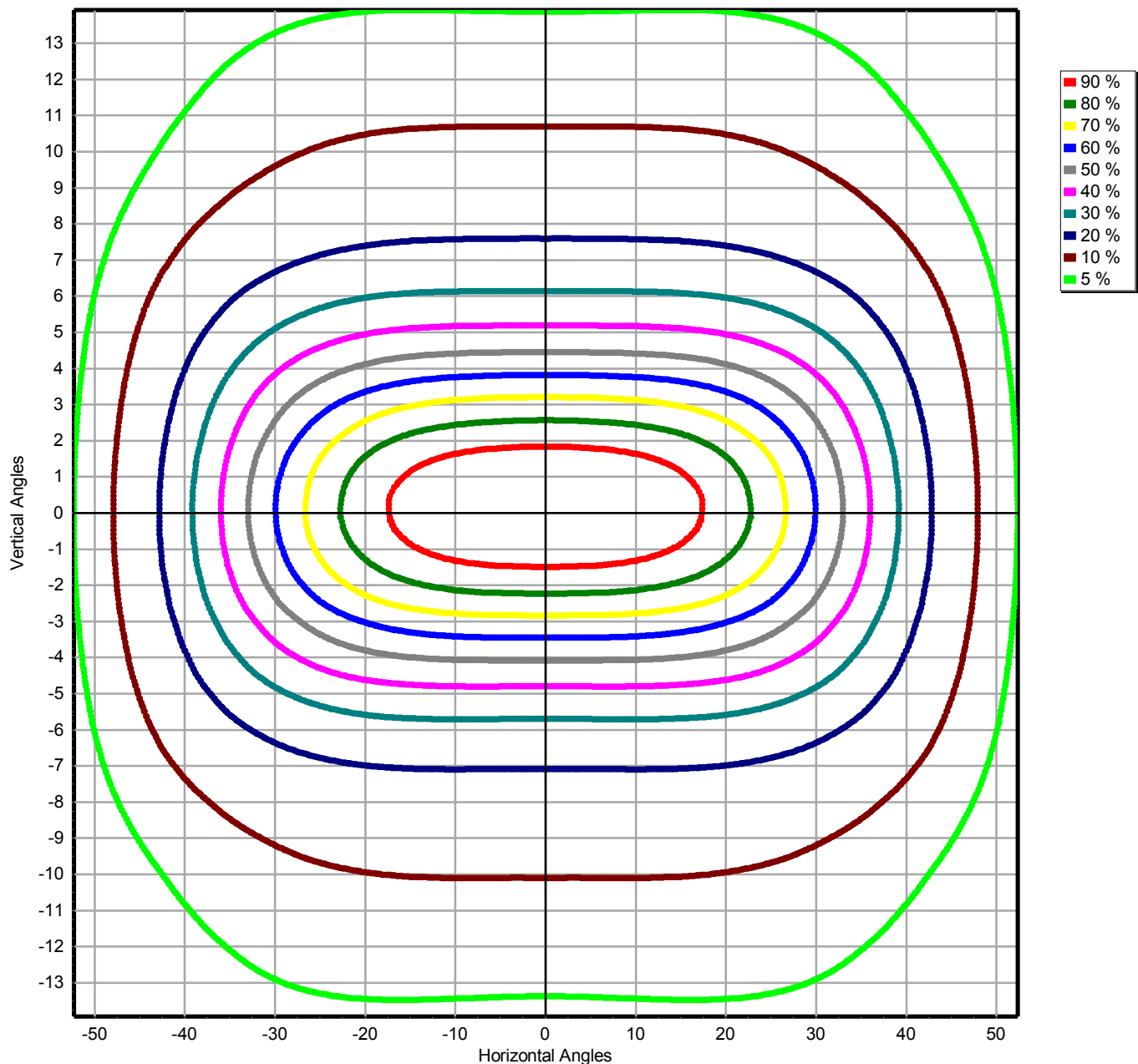
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## Photometric Report: G1504071-R1

Prepared for: Lumenpulse · Test Date: 07 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG HO-120-48-35K 12XPE2-10x60-SI-NO

### ISO Candela Diagram







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## IES File Headers

```
IESNA:LM-63-2002
[ISSUEDATE]      07 April 2015
[TESTLAB]        Spectra Lux Industries Inc.
[TEST]           G1504071-R1
[MANUFAC]        Lumenpulse
[LUMCAT]          LOG HO-120-48-35K 12XPE2-10x60-SI-NO
[LUMINAIRE]       LUMENFACADE
[LAMP]           (CREE XPE2 LED's) White 61W SSL c/w MEAN WELL USA inc. Driver LPF-60-12 @ 120.00V
[_LAMPDETAILS]   DC Voltage=24V, Current=2.54167A, CCT=3466K, CRI=81, x=0.4083, y=0.3946
[_BURNING]        Axial (3,780 Luminaire Lumens)
[_REFLECTOR]     48 Collimators
[_LENS]           Clear Flat Glass C/W Diffuse Film
[_HOUSING]        Extruded Aluminum
[_SKTPOSITION]    None
[DISTRIBUTION]    NEMA 5Hx2V (Max. CP at 0.0H,0.0V)
[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	0	0	0	0	1	1	1	1
	-85.0	1	1	1	1	1	1	1	1
	-75.0	3	3	3	3	3	3	2	2
	-65.0	5	5	5	5	5	5	5	5
	-55.0	9	9	10	10	11	12	12	13
	-45.0	23	24	24	25	26	27	28	30
	-35.0	54	54	55	56	57	59	60	60
	-25.0	127	128	129	131	134	136	137	127
	-20.0	235	236	237	238	238	235	229	202
	-15.0	567	570	579	589	595	589	563	437
A n g l e s	-12.5	1027	1030	1036	1038	1025	985	907	646
	-12.0	1141	1143	1148	1148	1129	1080	990	695
	-11.5	1272	1274	1279	1275	1251	1192	1088	757
	-11.0	1410	1412	1414	1408	1378	1309	1190	819
	-10.5	1561	1563	1566	1555	1519	1440	1306	894
	-10.0	1723	1723	1724	1711	1669	1580	1432	975
	-9.5	1911	1915	1916	1901	1853	1755	1586	1076
	-9.0	2131	2134	2134	2118	2063	1951	1761	1188
	-8.5	2379	2382	2386	2366	2308	2182	1970	1321
	-8.0	2667	2670	2671	2654	2590	2449	2209	1462
	-7.5	3016	3024	3032	3011	2941	2780	2505	1635
	-7.0	3449	3456	3463	3445	3364	3177	2850	1825
	-6.5	3966	3979	3993	3968	3872	3647	3257	2039
	-6.0	4605	4615	4625	4597	4475	4195	3716	2259
	-5.5	5382	5397	5410	5359	5197	4841	4250	2508
	-5.0	6315	6323	6320	6247	6023	5569	4833	2754
	-4.5	7420	7435	7422	7296	6991	6404	5492	3026
	-4.0	8645	8644	8598	8424	8012	7269	6158	3276
	-3.5	9984	9982	9910	9652	9118	8196	6866	3547
	-3.0	11353	11329	11204	10876	10204	9096	7536	3779
	-2.5	12794	12766	12604	12169	11354	10038	8242	4038
	-2.0	14084	14031	13816	13303	12346	10851	8833	4232
	-1.5	15183	15123	14873	14275	13202	11545	9348	4419
	-1.0	16058	15982	15685	15032	13856	12076	9730	4536
	-0.5	16617	16553	16224	15525	14289	12441	10000	4636



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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	16891	16791	16445	15732	14473	12587	10096	7311	4651
	0.5	16813	16754	16411	15688	14423	12510	10060	7279	4645
	1.0	16450	16369	16033	15352	14121	12282	9859	7149	4555
	1.5	15827	15738	15430	14772	13605	11841	9537	6932	4451
	2.0	14857	14777	14502	13906	12836	11212	9064	6628	4271
	2.5	13675	13606	13367	12857	11916	10457	8512	6265	4088
	3.0	12398	12342	12153	11721	10909	9633	7895	5870	3859
	3.5	11018	10976	10825	10487	9819	8736	7231	5430	3630
	4.0	9641	9611	9508	9246	8709	7814	6532	4975	3366
	4.5	8337	8316	8240	8055	7639	6914	5850	4513	3114
	5.0	7173	7162	7117	6979	6656	6075	5197	4071	2849
	5.5	6146	6138	6107	6012	5765	5305	4587	3640	2599
	6.0	5297	5293	5276	5202	5007	4635	4044	3255	2355
	6.5	4546	4542	4526	4473	4317	4018	3535	2875	2122
	7.0	3947	3945	3934	3886	3756	3505	3099	2548	1900
	7.5	3458	3457	3444	3403	3291	3076	2731	2259	1709
	8.0	3059	3057	3049	3009	2909	2721	2420	2013	1537
A n g l e s	8.5	2709	2707	2697	2663	2575	2409	2148	1792	1382
	9.0	2419	2419	2412	2380	2299	2150	1919	1610	1247
	9.5	2168	2167	2158	2131	2062	1930	1724	1448	1131
	10.0	1952	1951	1946	1920	1859	1742	1560	1316	1027
	10.5	1760	1758	1753	1734	1683	1580	1417	1198	942
	11.0	1588	1588	1586	1569	1523	1433	1289	1093	861
	11.5	1428	1428	1426	1415	1376	1299	1173	997	792
	12.0	1290	1291	1292	1283	1251	1184	1073	918	731
	12.5	1158	1159	1161	1156	1131	1075	979	842	676
	15.0	650	652	658	663	662	646	608	544	457
	20.0	268	269	269	268	266	259	248	232	211
	25.0	150	151	152	154	157	158	157	151	139
	35.0	60	60	61	62	63	65	66	67	66
	45.0	29	29	29	30	31	31	32	33	34
	55.0	15	15	15	15	16	17	17	18	19
	65.0	10	10	10	10	10	10	10	10	10
	75.0	8	8	8	8	8	7	7	7	7
	85.0	8	8	8	8	8	8	8	8	8
	90.0	7	7	7	7	7	7	7	7	7



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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	1	2	2	2	2	2	2	2
	-85.0	1	2	2	2	2	2	2	2
	-75.0	2	2	2	2	3	3	3	2
	-65.0	5	6	6	5	5	4	3	3
	-55.0	14	14	14	14	12	10	8	3
	-45.0	31	30	29	26	23	19	14	4
	-35.0	58	54	50	44	38	31	22	5
	-25.0	115	101	88	74	61	47	32	6
	-20.0	181	155	126	100	77	57	37	6
	-15.0	349	262	190	137	99	68	41	6
	-12.5	490	349	239	163	110	73	43	6
	-12.0	524	371	251	168	112	74	43	6
	-11.5	566	396	265	174	115	75	43	6
	-11.0	610	424	279	180	117	76	44	6
	-10.5	661	454	295	185	119	76	44	6
	-10.0	718	488	310	191	121	77	44	6
	-9.5	785	526	327	197	123	78	45	6
	-9.0	861	568	344	203	125	78	45	6
	-8.5	945	612	362	208	126	79	45	6
	-8.0	1036	657	377	213	128	80	45	6
	-7.5	1139	705	395	218	130	80	45	6
	-7.0	1249	755	411	223	131	81	46	6
	-6.5	1365	802	427	227	132	81	46	6
	-6.0	1481	852	441	231	134	82	46	6
	-5.5	1601	897	457	235	135	82	46	6
	-5.0	1725	945	469	238	136	83	46	6
	-4.5	1849	989	484	242	137	83	46	6
	-4.0	1966	1034	494	245	138	83	46	6
	-3.5	2085	1072	506	247	139	84	47	6
	-3.0	2190	1110	514	250	139	84	47	6
	-2.5	2300	1144	526	252	140	84	47	6
	-2.0	2386	1175	531	253	140	84	47	6
	-1.5	2463	1197	539	255	141	84	47	6
	-1.0	2514	1214	541	256	141	84	47	6
	-0.5	2553	1226	546	256	141	84	47	6
	0.0	2561	1228	545	257	141	84	47	6
	0.5	2554	1225	546	256	141	84	47	6
	1.0	2517	1215	542	256	141	84	47	6
	1.5	2469	1197	539	255	141	84	47	6
	2.0	2392	1173	531	254	140	84	47	6
	2.5	2311	1144	525	252	140	84	47	6
	3.0	2212	1112	515	250	139	84	46	6
	3.5	2111	1075	506	247	138	83	46	6
	4.0	1992	1035	493	244	137	83	46	6
	4.5	1876	991	482	241	136	82	46	6
	5.0	1753	948	467	237	135	82	46	6
	5.5	1630	898	454	233	134	82	46	6
	6.0	1510	851	438	229	133	81	45	6
	6.5	1390	800	422	224	131	81	45	6
	7.0	1268	750	404	219	130	80	45	6
	7.5	1162	701	388	214	128	79	45	6
	8.0	1060	654	370	209	126	79	45	6
	8.5	966	607	354	204	124	78	44	6
	9.0	880	565	336	198	122	77	44	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	806	524	319	192	120	76	44	19	6
	10.0	738	488	303	186	118	76	43	19	6
	10.5	681	455	288	181	116	75	43	19	6
	11.0	627	424	273	174	114	74	43	19	6
	11.5	581	396	259	169	112	73	42	19	6
	12.0	540	373	247	163	109	72	42	19	6
	12.5	504	351	235	158	107	71	42	19	6
	15.0	358	264	188	133	96	66	40	18	6
	20.0	185	155	125	98	75	55	35	16	5
	25.0	123	105	88	73	59	45	30	15	5
	35.0	64	59	53	45	37	29	20	11	4
	45.0	34	34	32	29	25	19	14	8	4
	55.0	19	20	19	19	17	15	12	9	7
	65.0	11	11	10	10	10	9	9	9	9
	75.0	7	6	6	6	6	6	6	6	6
	85.0	8	7	7	7	7	7	7	7	8
	90.0	6	6	6	6	6	6	7	9	14

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## Horizontal Angles

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



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ISO/IEC 17025  
**NVLAP**<sup>®</sup>  
NVLAP LAB CODE: 200899-0

Horizontal Angles

	90.0
	9.5
	10.0
	10.5
	11.0
	11.5
	12.0
	12.5
	15.0
	20.0
V e r t i c a l	25.0
	35.0
	45.0
	55.0
	65.0
	75.0
	85.0
	90.0
A n g l e s	