



# 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>	G1504217-R1	<b>Description</b>	46W White 3902K SSL	<b>Type</b> Commercial
<b>Test Date</b>	21 April 2015	<b>Serial Number</b>	SRIS 1900	<b>Description</b> 46SSL-CY828
<b>Report Date</b>	24 April 2015	<b>Photometric Method</b>	Absolute	<b>Manufacturer</b> MEAN WELL USA inc.
<b>Ambient</b>	24.6 °C	<b>Lamp Lumens</b>	-1	<b>Catalog No.</b> LPF-60-24
<b>Humidity</b>	28.5 %	<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>	36 Collimators	<b>X</b> 0.0000
<b>Name</b>	LUMENFACADE	<b>Housing</b>	Extruded Aluminum	<b>Y</b> 3.0000
<b>Catalog No.</b>	LOG-HO-120-36-40K-WWLF-SI-NO	<b>Lens</b>	Clear Flat Glass C/W Diffuse Film	<b>Z</b> 0.0167

SKT Position: None

Lamp Stabilization Time: 59 minutes, 42 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	2015/04/15	2016/04/16
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: G1504217-R1

Prepared for: Lumenpulse · Test Date: 21 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-36-40K-WWLF-SI-NO

### Photometric Floodlight Characteristics

Nominal SSL Power	46.00 W	
Measured Input Voltage	119.62 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	2595	
Measured Input Power	45.74 W	
Floodlight Luminous Efficacy	56.7 lm/W	2) Field performance may differ from laboratory measurements.
Maximum Candela Value	3936	
Maximum Candela Location	0.0 H, 3.0 V	3) Results are valid for the tested material only.
Horizontal Beam Angle (50%)	78.0 °	
Vertical Beam Angle (50%)	19.0 °	4) All data published in this report are based on absolute photometry.
Horizontal Field Angle (10%)	124.0 °	
Vertical Field Angle (10%)	57.5 °	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	6Hx4V	
Beam Lumens (50%)	982	
Beam Efficiency (50%)	N/A	
Field Lumens (10%)	2105	
Field Efficiency (10%)	N/A	
Spill Lumens	490	
Total Floodlight Lumens	2595	
Total Floodlight Efficiency	N/A	



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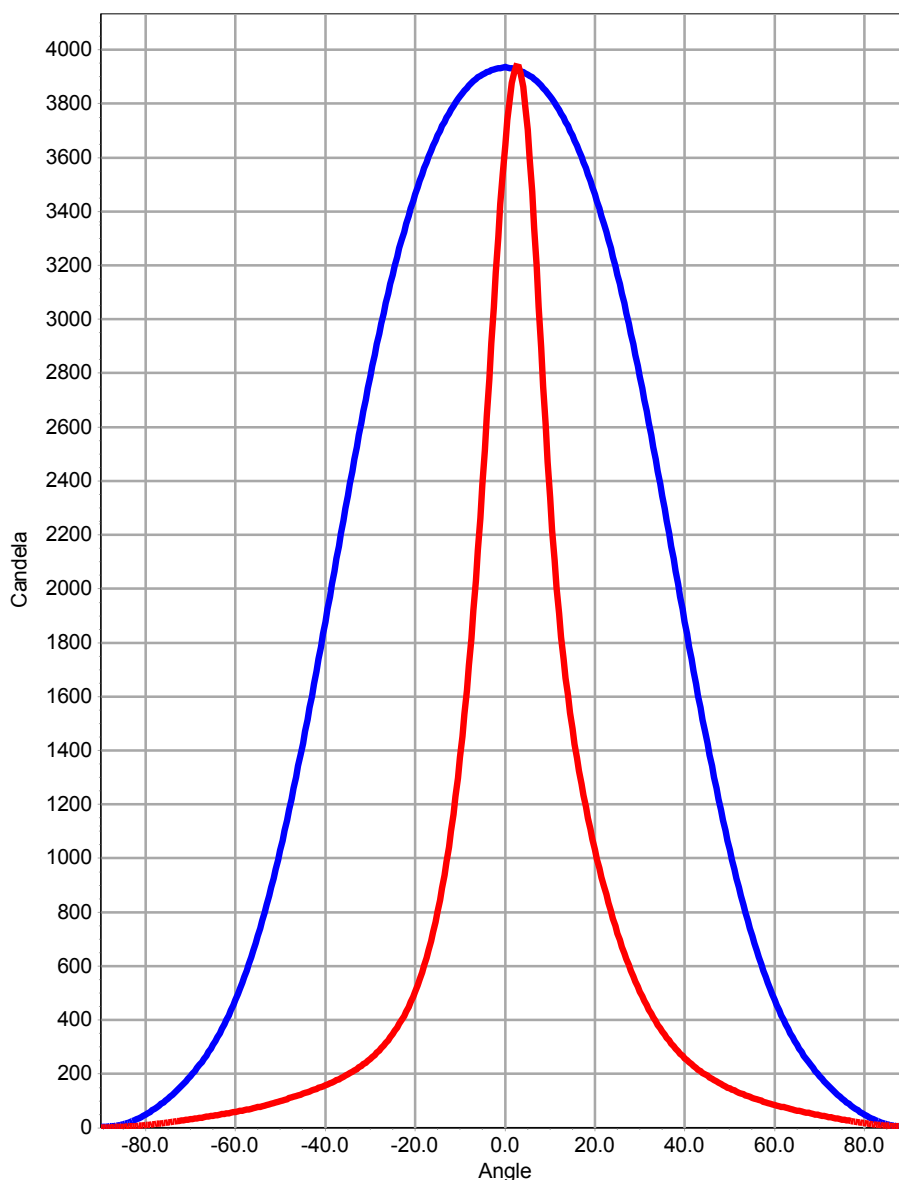
## Photometric Report: G1504217-R1

Prepared for: Lumenpulse · Test Date: 21 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-36-40K-WWLF-SI-NO

### Maximum Candela Trace (Max. Location: 0.0 H, 3.0 V)

Horizontal Angles	Candela
-90.0	3
-85.0	13
-80.0	49
-75.0	108
-70.0	191
-65.0	307
-60.0	474
-55.0	711
-50.0	1029
-45.0	1427
-40.0	1878
-35.0	2344
-30.0	2786
-25.0	3165
-20.0	3464
-15.0	3682
-10.0	3828
-5.0	3908
0.0	3936
5.0	3908
10.0	3828
15.0	3682
20.0	3464
25.0	3165
30.0	2786
35.0	2344
40.0	1878
45.0	1427
50.0	1029
55.0	711
60.0	474
65.0	307
70.0	191
75.0	108
80.0	49
85.0	13
90.0	3



Vertical Angles	Candela
-90.0	1
-85.0	4
-80.0	10
-75.0	19
-70.0	31
-65.0	45
-60.0	59
-55.0	76
-50.0	99
-45.0	126
-40.0	157
-35.0	198
-30.0	255
-25.0	347
-20.0	506
-15.0	802
-10.0	1374
-5.0	2386
0.0	3645
5.0	3703
10.0	2338
15.0	1481
20.0	1033
25.0	722
30.0	505
35.0	357
40.0	259
45.0	192
50.0	145
55.0	111
60.0	85
65.0	64
70.0	46
75.0	31
80.0	17
85.0	8
90.0	5

— Horizontal — Vertical



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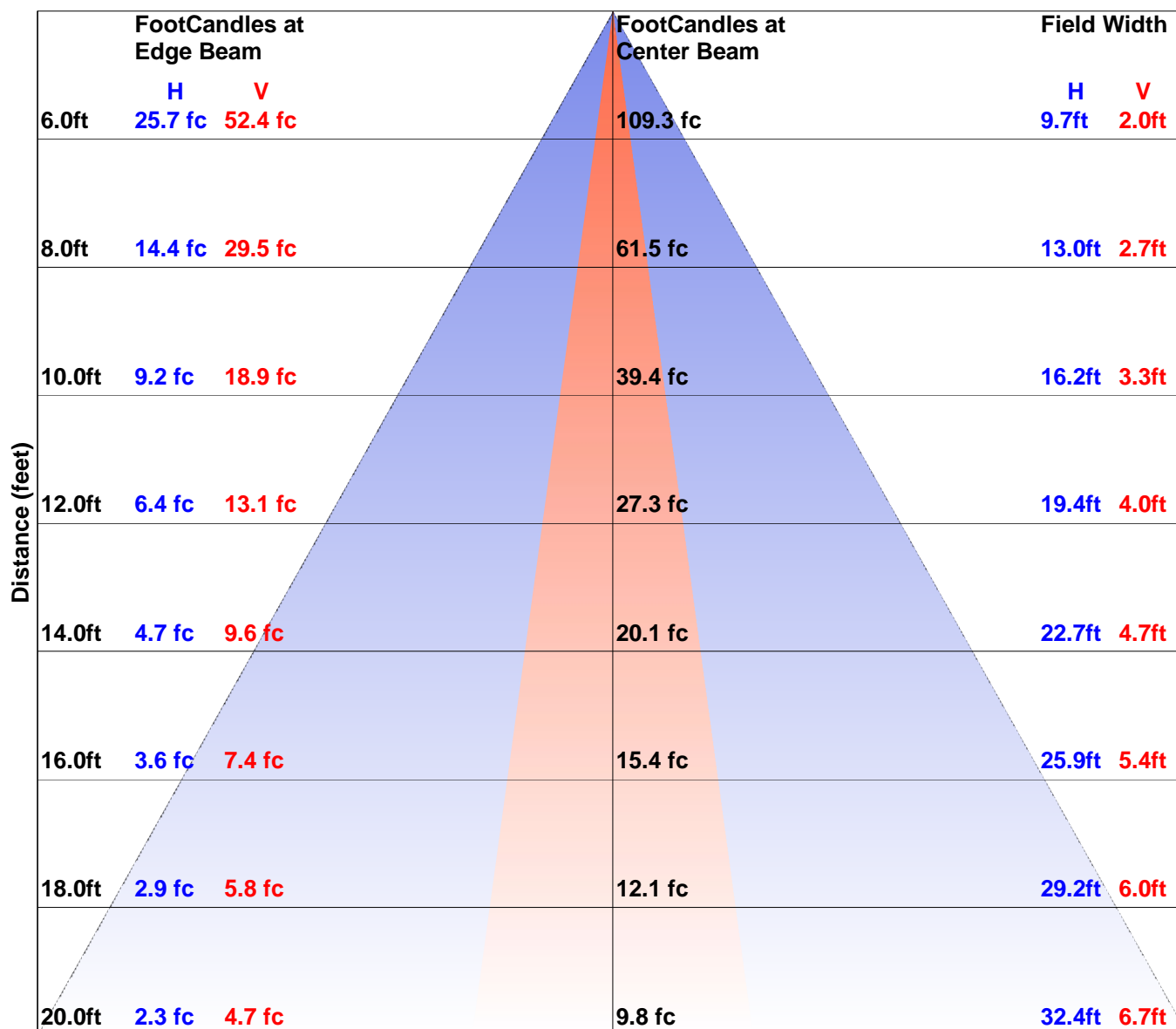
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## Photometric Report: G1504217-R1

Prepared for: Lumenpulse · Test Date: 21 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-36-40K-WWLF-SI-NO

### Downlight Beam



— Horizontal (78.0 °) — Vertical (19.0 °)



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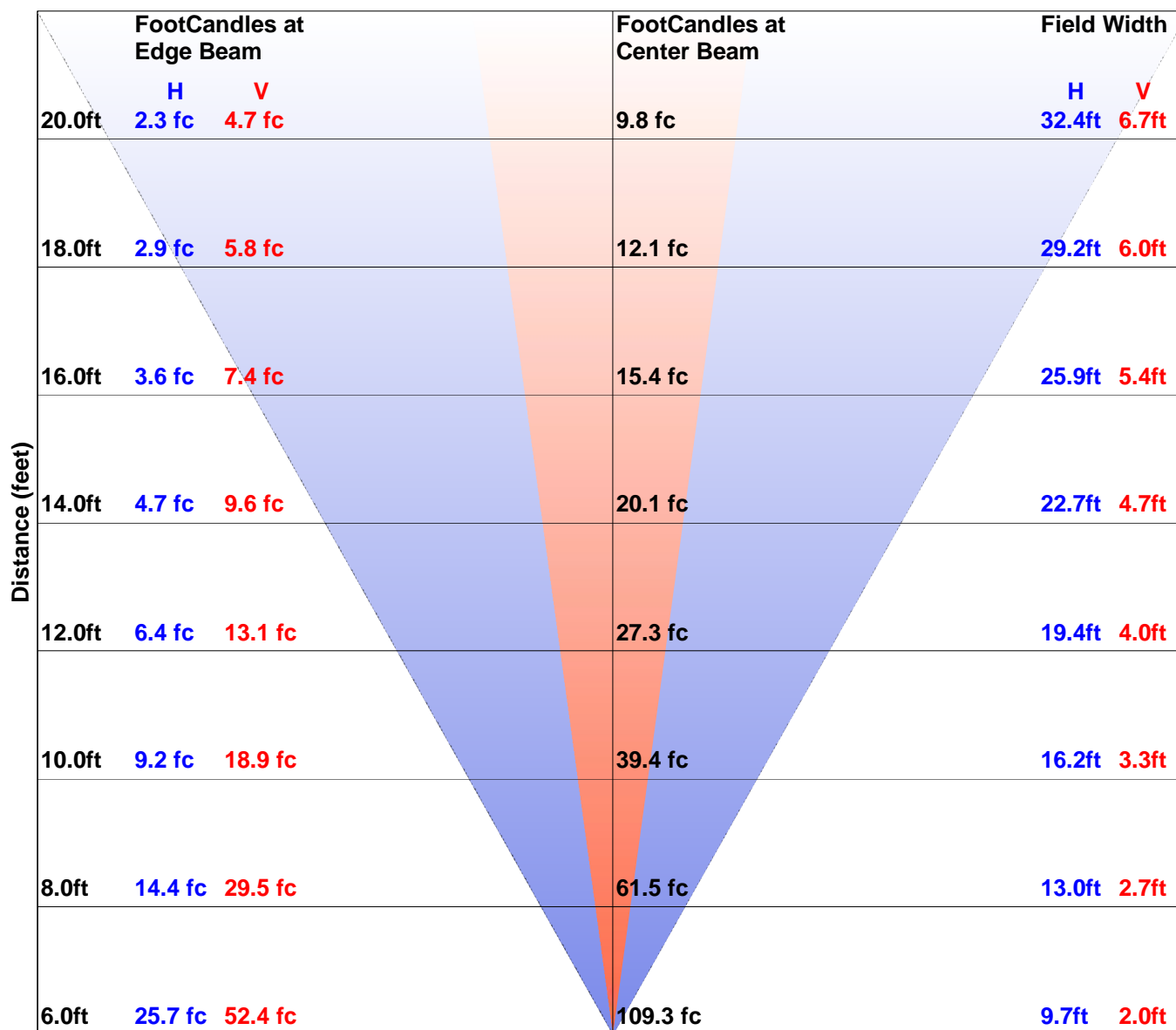
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Prepared for: Lumenpulse · Test Date: 21 April 2015

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-36-40K-WWLF-SI-NO

### Uplight Beam



— Horizontal (78.0 °) — Vertical (19.0 °)



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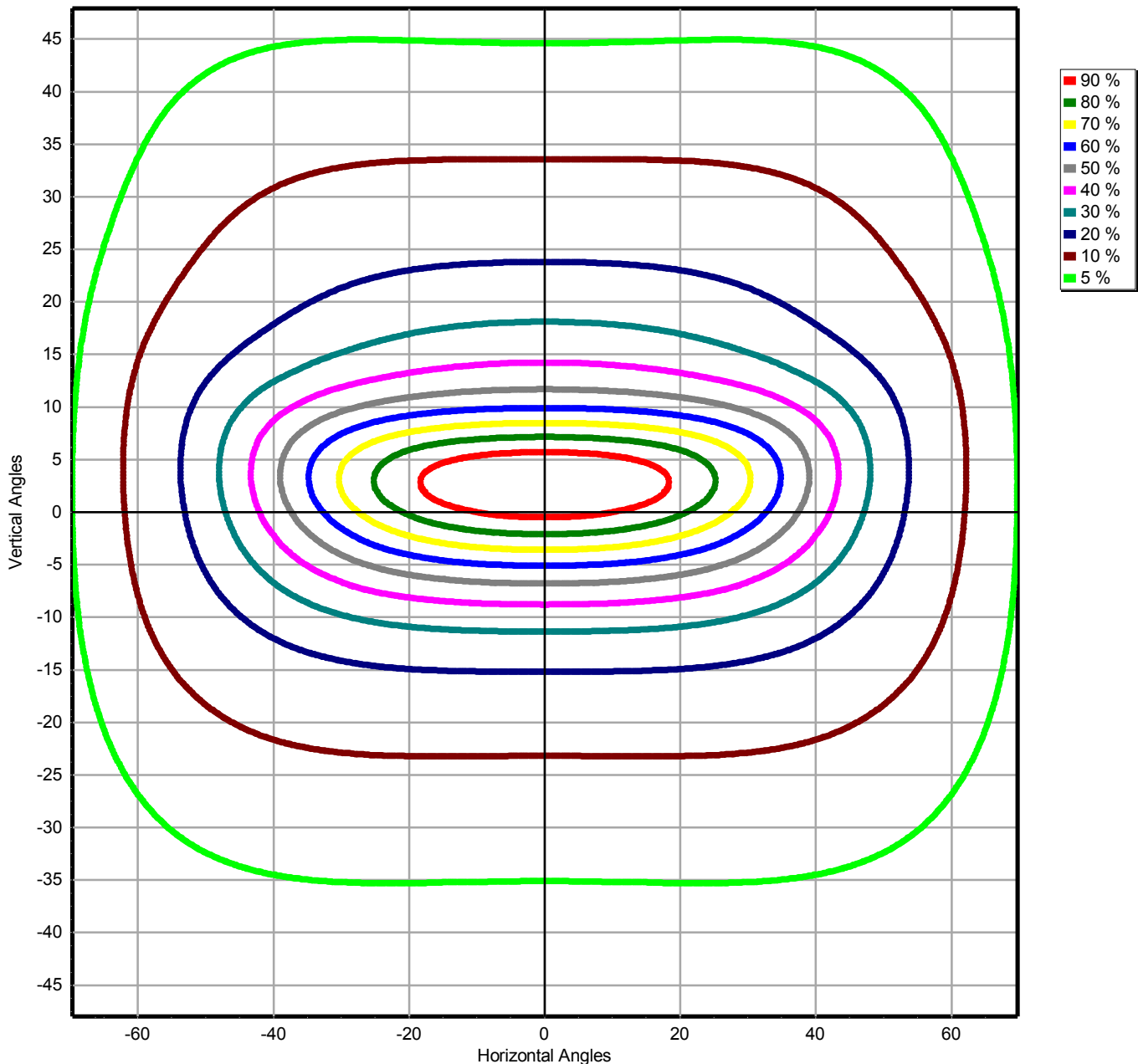
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Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-36-40K-WWLF-SI-NO

### ISO Candela Diagram







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## IES File Headers

```
IESNA:LM-63-2002
[ISSUEDATE]      21 April 2015
[TESTLAB]        Spectra Lux Industries Inc.
[TEST]           G1504217-R1
[MANUFAC]        Lumenpulse
[LUMCAT]          LOG-HO-120-36-40K-WWLF-SI-NO
[LUMINAIRE]       LUMENFACADE
[LAMP]            (CREE XPE2 LED's) White 46W SSL c/w MEAN WELL USA inc. Driver LPF-60-24 @ 120.00V
[_LAMPDETAILS]   DC Voltage=24V, Current=1.91667A, CCT=3902K, CRI=83, x=0.3858, y=0.3826
[_BURNING]        Axial (2,595 Luminaire Lumens)
[_REFLECTOR]      36 Collimators
[_LENS]           Clear Flat Glass C/W Diffuse Film
[_HOUSING]        Extruded Aluminum
[_SKTPOSITION]    None
[DISTRIBUTION]    NEMA 6Hx4V (Max. CP at 0.0H,3.0V)
[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	1	1	1	1	1	2	2	2
	-85.0	4	4	4	4	4	4	4	3
	-75.0	19	19	19	19	18	18	17	17
	-65.0	45	45	45	44	44	43	42	41
	-55.0	76	76	76	77	77	78	78	77
	-45.0	126	126	127	127	128	128	127	124
	-35.0	198	198	198	199	199	199	196	192
	-32.5	223	224	224	225	225	224	221	216
	-30.0	255	256	256	257	257	255	251	245
	-27.5	295	295	296	297	296	294	288	279
	-25.0	347	347	348	348	346	342	334	321
	-22.5	414	415	415	414	411	404	392	373
	-20.0	506	506	506	505	496	484	465	438
	-17.5	630	630	629	626	609	589	560	520
	-15.0	802	802	799	793	781	730	685	626
	-14.0	888	887	884	876	861	835	797	674
	-13.0	987	986	981	970	951	920	874	729
	-12.0	1101	1099	1092	1078	1054	1015	958	882
A n g l e s	-11.0	1228	1226	1217	1199	1168	1120	1052	962
	-10.0	1374	1371	1359	1335	1297	1239	1155	1048
	-9.0	1536	1532	1517	1487	1439	1368	1269	1143
	-8.0	1715	1710	1691	1653	1594	1509	1394	1245
	-7.0	1920	1914	1891	1844	1770	1668	1528	1354
	-6.0	2144	2135	2104	2047	1959	1834	1666	1467
	-5.0	2386	2375	2339	2269	2162	2014	1821	1588
	-4.0	2643	2629	2583	2500	2375	2202	1975	1709
	-3.0	2911	2896	2843	2744	2597	2395	2138	1834
	-2.0	3174	3153	3091	2978	2810	2581	2290	1954
	-1.0	3427	3406	3335	3207	3019	2763	2442	2071
	0.0	3645	3621	3543	3404	3198	2919	2571	2169
	1.0	3817	3793	3710	3565	3347	3052	2685	2257
	2.0	3918	3891	3807	3659	3436	3134	2754	2314
	3.0	3936	3908	3828	3682	3464	3165	2786	2344
	4.0	3862	3837	3762	3627	3420	3132	2767	2337
	5.0	3703	3680	3614	3492	3305	3043	2703	2296



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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	6.0	3472	3453	3397	3293	3129	2895	2588	2217	1803
	7.0	3195	3177	3130	3043	2907	2706	2439	2107	1738
	8.0	2895	2884	2844	2772	2656	2489	2262	1974	1642
	9.0	2610	2598	2565	2505	2409	2270	2077	1829	1545
	10.0	2338	2330	2302	2250	2166	2049	1887	1678	1432
	11.0	2106	2097	2072	2026	1953	1851	1715	1537	1325
	12.0	1909	1902	1878	1835	1767	1677	1557	1405	1222
	13.0	1740	1730	1709	1669	1609	1526	1416	1279	1123
	14.0	1604	1597	1575	1536	1478	1400	1301	1178	1036
	15.0	1481	1473	1453	1417	1363	1291	1198	1086	959
	17.5	1233	1228	1211	1181	1137	1077	1001	909	806
	20.0	1033	1029	1017	995	961	914	853	779	694
	22.5	865	862	854	839	814	780	733	675	605
	25.0	722	720	715	705	689	664	630	585	531
	27.5	604	603	600	594	583	567	542	509	467
	30.0	505	505	504	500	494	483	467	443	411
	32.5	423	423	423	422	418	412	401	384	361
	35.0	357	357	357	357	356	352	345	334	317
A n g l e s	45.0	192	193	193	194	195	196	196	194	190
	55.0	111	111	112	113	113	114	115	115	114
	65.0	64	64	64	65	65	65	65	65	64
	75.0	31	31	31	31	31	30	30	29	28
	85.0	8	8	8	8	8	8	7	7	7
	90.0	5	5	5	5	5	5	5	5	4



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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	-90.0	2	2	2	2	2	2	2	2
	-85.0	3	3	3	3	2	2	2	2
	-75.0	16	15	14	12	9	7	4	2
	-65.0	39	38	35	32	28	23	16	9
	-55.0	76	73	68	62	54	44	32	18
	-45.0	121	116	109	99	86	69	49	27
	-35.0	186	176	162	145	123	97	67	36
	-32.5	208	196	180	159	134	105	72	38
	-30.0	234	219	199	175	146	113	77	40
	-27.5	265	246	221	192	158	121	81	42
	-25.0	302	277	247	211	172	129	85	44
	-22.5	347	315	276	233	186	137	89	45
	-20.0	403	359	310	256	201	146	94	47
	-17.5	471	412	348	282	217	154	97	48
	-15.0	555	476	393	310	233	163	101	49
	-14.0	593	504	411	322	239	166	102	49
	-13.0	635	533	432	334	246	169	103	49
	-12.0	680	565	452	346	252	171	104	50
	-11.0	727	598	473	358	258	174	105	50
	-10.0	778	633	494	370	264	177	105	50
A n g l e s	-9.0	832	669	516	382	270	179	106	50
	-8.0	887	705	537	393	275	181	107	50
	-7.0	946	742	560	404	280	183	108	50
	-6.0	1005	779	580	414	284	185	108	50
	-5.0	1066	817	601	425	289	186	108	50
	-4.0	1125	853	619	433	292	187	108	50
	-3.0	1185	888	639	442	296	189	109	50
	-2.0	1240	920	655	449	299	189	109	50
	-1.0	1291	951	672	457	302	190	109	50
	0.0	1339	977	684	462	303	190	109	50
	1.0	1379	1001	697	468	305	191	109	50
	2.0	1407	1018	704	471	306	191	108	49
	3.0	1427	1029	711	474	307	191	108	49
	4.0	1428	1033	712	474	307	191	108	49
	5.0	1419	1029	713	474	307	190	107	49
	6.0	1393	1017	706	472	305	189	107	48
	7.0	1352	997	699	468	304	189	106	48
	8.0	1298	968	684	462	301	187	105	48
	9.0	1237	934	669	456	299	186	105	47
	10.0	1163	893	647	446	294	184	104	47
	11.0	1092	850	626	437	290	182	103	46
	12.0	1017	804	601	425	285	180	102	46
	13.0	945	757	576	412	280	177	101	45
	14.0	878	713	549	399	273	174	99	45
	15.0	819	670	524	386	267	172	98	44
	17.5	694	578	462	351	250	164	94	43
	20.0	602	506	412	319	232	155	91	41
	22.5	529	449	369	290	215	146	86	39
	25.0	469	402	333	265	199	137	82	37
	27.5	417	362	303	243	184	128	77	36
	30.0	372	326	276	223	171	120	73	34
	32.5	330	293	251	205	158	112	68	32
	35.0	294	264	228	189	146	104	64	30
	45.0	182	170	153	131	105	76	47	22



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## Horizontal Angles

	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
55.0	111	105	97	86	70	52	33	16	5
65.0	62	59	55	49	40	30	19	10	5
75.0	27	26	23	20	16	12	8	6	5
85.0	7	6	6	5	5	5	5	5	5
90.0	4	4	4	4	4	4	4	5	6

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## Horizontal Angles

	90.0
V e r t i c a l	-90.0 2
	-85.0 2
	-75.0 2
	-65.0 2
	-55.0 2
	-45.0 2
	-35.0 3
	-32.5 3
	-30.0 3
	-27.5 3
	-25.0 3
	-22.5 3
	-20.0 3
	-17.5 3
	-15.0 3
	-14.0 3
	-13.0 3
	-12.0 3
	-11.0 3
	-10.0 3
A n g l e s	-9.0 3
	-8.0 3
	-7.0 3
	-6.0 3
	-5.0 3
	-4.0 3
	-3.0 3
	-2.0 3
	-1.0 3
	0.0 3
	1.0 3
	2.0 3
	3.0 3
	4.0 3
	5.0 3
	6.0 3
	7.0 3
	8.0 3
	9.0 3
	10.0 3
	11.0 3
	12.0 3
	13.0 3
	14.0 3
	15.0 3
	17.5 3
	20.0 3
	22.5 3
	25.0 3
	27.5 3
	30.0 3
	32.5 3
	35.0 3
	45.0 3



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

Horizontal Angles

	90.0
55.0	4
65.0	5
75.0	4
85.0	3
90.0	3

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