



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 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	S1603141-R1	Description	61W White 3500K SSL	Type Commercial
Test Date	14 March 2016	Serial Number	SRIS 2254	Description 61SSL-CY963
Report Date	29 March 2016	Photometric Method	Absolute	Manufacturer Mean Well
Ambient	25.3 °C	Lamp Lumens	-1	Catalog No. LPF-60-24
Humidity	29.9 %	Test Position	Axial	Voltage Tap 120.00 V
Lamp Type	SSL	Comments	Clusters of 48 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.	LOG-HO-120-48-35K- WWLF-WH-NO	Lens	Polycarbonate	Z 0.0000

Lamp Stabilization Time: 1 hour 15 minutes

Tested By: George Hedrei

Approved Signatory: Chrisnel Blot

Signature:



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

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).





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

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



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



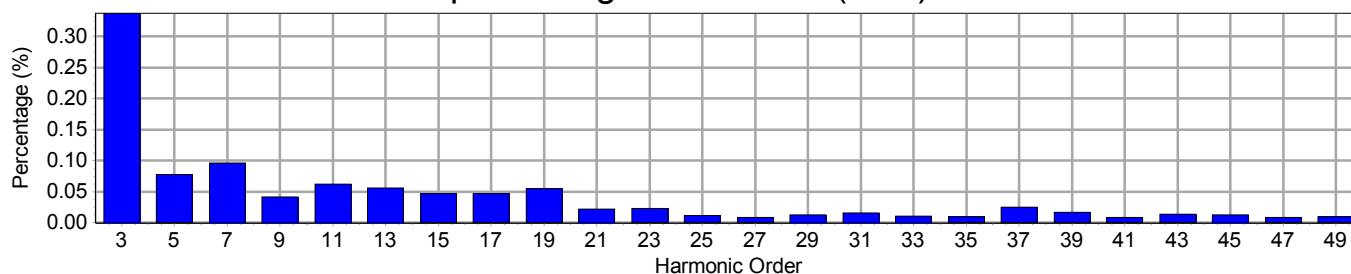
NVLAP LAB CODE: 200899-0

Electrical Measurements

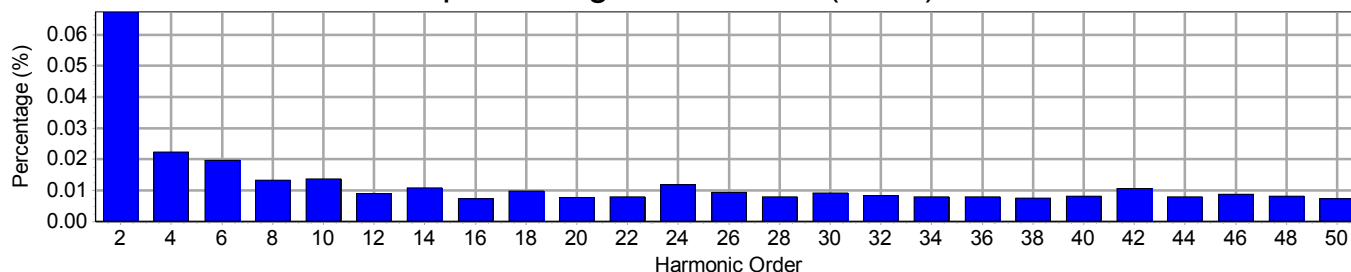
Input

Frequency	60 Hz	Active Power	61.20 W	THDV [ANSI]	0.39 %
Voltage	120.1 V(rms)	Apparent Power	61.49 VA	THDA [ANSI]	5.02 %
Current	0.5122 A(rms)	Power Factor	0.995	Max. Harmonic At	5th order

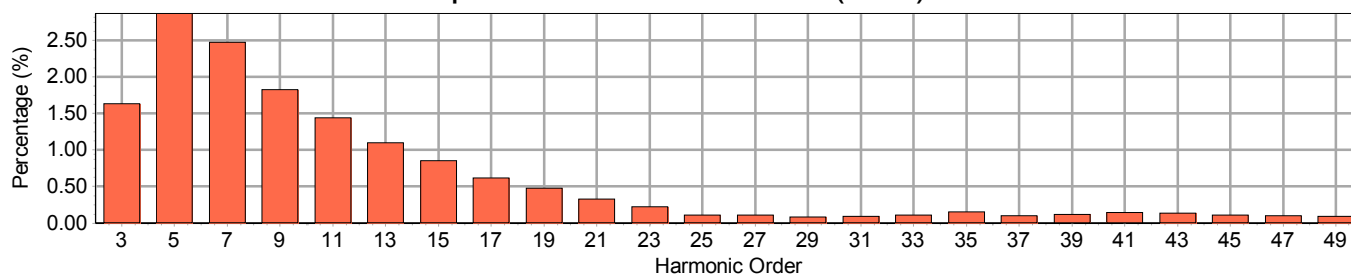
Input Voltage Harmonics (Odd)



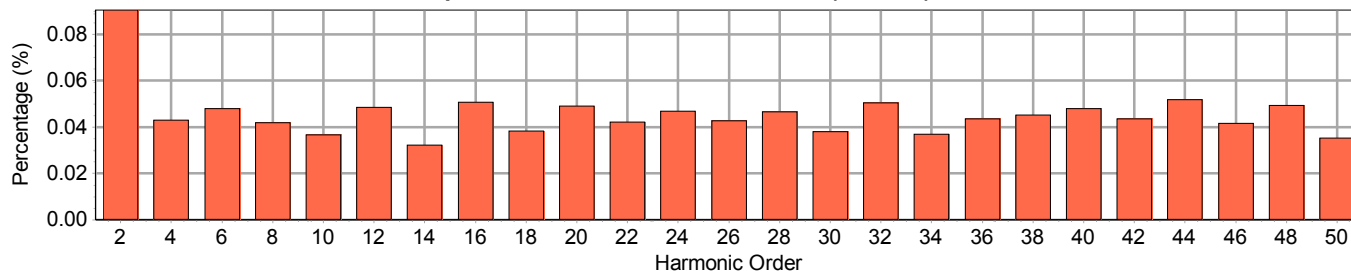
Input Voltage Harmonics (Even)



Input Current Harmonics (Odd)



Input Current Harmonics (Even)





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 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	0.067	0.091
3	180	0.338	1.633	4	240	0.022	0.043
5	300	0.078	2.868	6	360	0.020	0.048
7	420	0.096	2.466	8	480	0.013	0.042
9	540	0.042	1.824	10	600	0.014	0.037
11	660	0.062	1.434	12	720	0.009	0.049
13	780	0.056	1.094	14	840	0.011	0.032
15	900	0.047	0.855	16	960	0.007	0.051
17	1020	0.047	0.616	18	1080	0.010	0.038
19	1140	0.055	0.478	20	1200	0.008	0.049
21	1260	0.022	0.328	22	1320	0.008	0.042
23	1380	0.024	0.226	24	1440	0.012	0.047
25	1500	0.011	0.107	26	1560	0.009	0.043
27	1620	0.008	0.106	28	1680	0.008	0.047
29	1740	0.012	0.079	30	1800	0.009	0.038
31	1860	0.016	0.090	32	1920	0.008	0.051
33	1980	0.011	0.109	34	2040	0.008	0.037
35	2100	0.010	0.155	36	2160	0.008	0.044
37	2220	0.025	0.104	38	2280	0.008	0.045
39	2340	0.017	0.114	40	2400	0.008	0.048
41	2460	0.009	0.148	42	2520	0.011	0.043
43	2580	0.014	0.134	44	2640	0.008	0.052
45	2700	0.012	0.113	46	2760	0.009	0.042
47	2820	0.009	0.102	48	2880	0.008	0.049
49	2940	0.010	0.090	50	3000	0.007	0.035



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

Photometric Report: S1603141-R1

Prepared for: Lumenpulse · Test Date: 14 March 2016

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-48-35K-WWLF-WH-NO

Photometric Floodlight Characteristics

Nominal SSL Power	61.00 W	
Measured Input Voltage	120.05 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	3006	
Measured Input Power	61.20 W	
Floodlight Luminous Efficacy	49.1 lm/W	2) Field performance may differ from laboratory measurements.
Maximum Candela Value	4862	
Maximum Candela Location	0.0 H, -2.5 V	3) Results are valid for the tested material only.
Horizontal Beam Angle (50%)	83.0 °	
Vertical Beam Angle (50%)	18.0 °	4) All data published in this report are based on absolute photometry.
Horizontal Field Angle (10%)	130.0 °	
Vertical Field Angle (10%)	55.5 °	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	7Hx4V	
Beam Lumens (50%)	1193	
Beam Efficiency (50%)	N/A	
Field Lumens (10%)	2426	
Field Efficiency (10%)	N/A	
Spill Lumens	580	
Total Floodlight Lumens	3006	
Total Floodlight Efficiency	N/A	



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 LAB CODE: 200899-0

Photometric Report: S1603141-R1

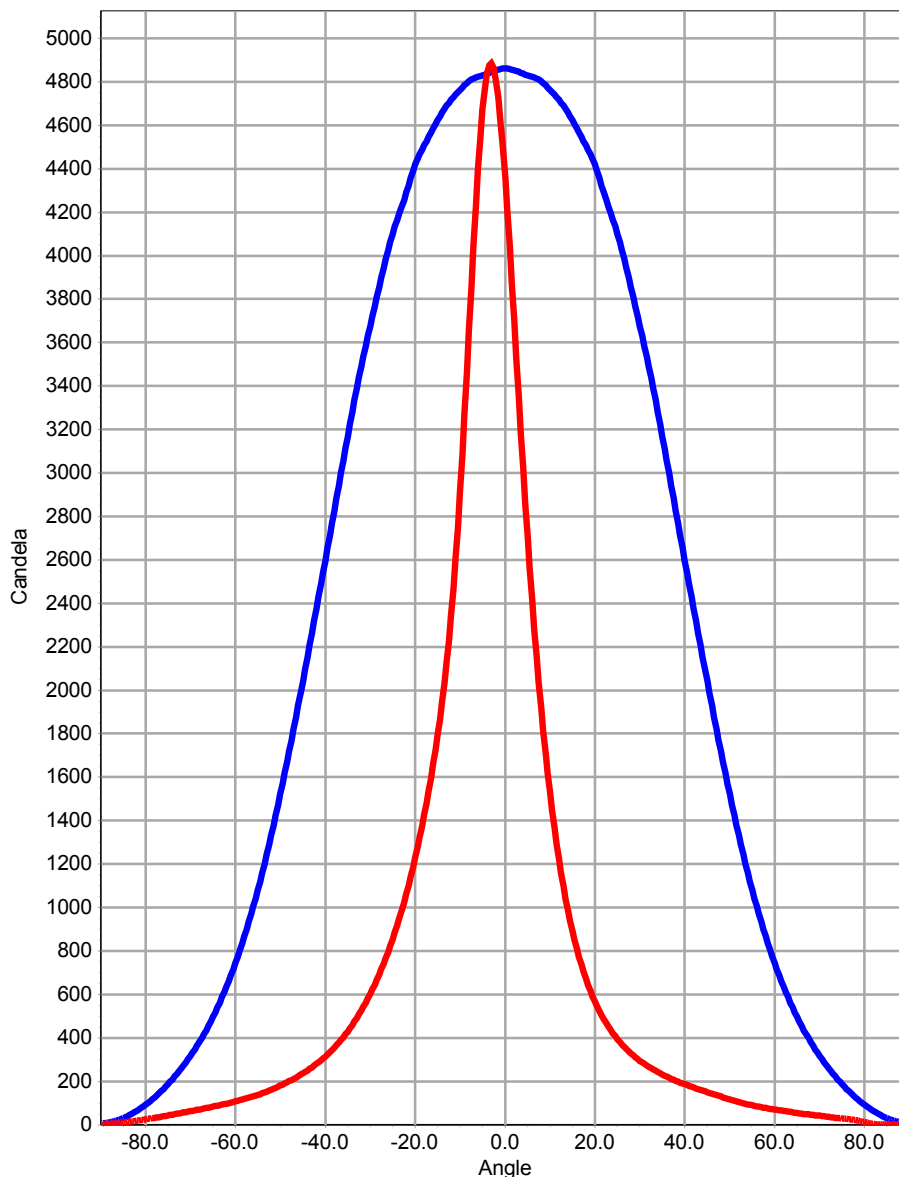
Prepared for: Lumenpulse · Test Date: 14 March 2016

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-48-35K-WWLF-WH-NO

Maximum Candela Trace (Max. Location: 0.0 H, -2.5 V)

Horizontal
Angles

-90.0	5
-85.0	30
-80.0	92
-75.0	186
-70.0	316
-65.0	495
-60.0	744
-55.0	1080
-50.0	1520
-45.0	2040
-40.0	2598
-35.0	3169
-30.0	3674
-25.0	4100
-20.0	4419
-15.0	4624
-10.0	4763
-5.0	4829
0.0	4862
5.0	4829
10.0	4763
15.0	4624
20.0	4419
25.0	4100
30.0	3674
35.0	3169
40.0	2598
45.0	2040
50.0	1520
55.0	1080
60.0	744
65.0	495
70.0	316
75.0	186
80.0	92
85.0	30
90.0	5



Vertical
Angles

-90.0	3
-85.0	10
-80.0	25
-75.0	42
-70.0	62
-65.0	84
-60.0	107
-55.0	137
-50.0	180
-45.0	237
-40.0	314
-35.0	430
-30.0	602
-25.0	853
-20.0	1230
-15.0	1794
-10.0	2911
-5.0	4670
0.0	4362
5.0	2705
10.0	1528
15.0	891
20.0	568
25.0	394
30.0	295
35.0	232
40.0	187
45.0	150
50.0	116
55.0	89
60.0	70
65.0	54
70.0	41
75.0	29
80.0	12
85.0	2
90.0	1

— Horizontal — Vertical



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



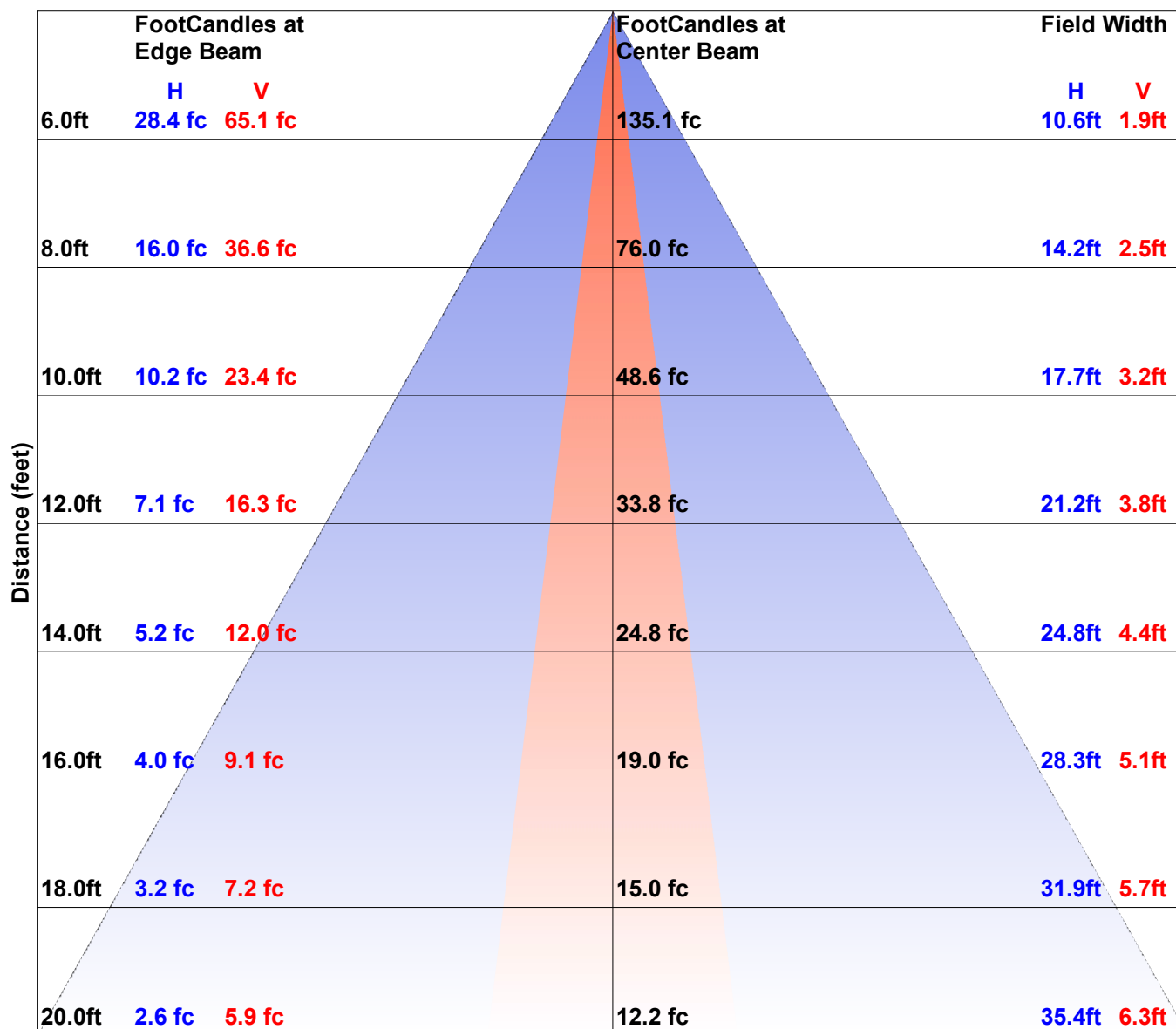
NVLAP LAB CODE: 200899-0

Photometric Report: S1603141-R1

Prepared for: Lumenpulse · Test Date: 14 March 2016

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-48-35K-WWLF-WH-NO

Downlight Beam



— Horizontal (83.0 °) — Vertical (18.0 °)



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



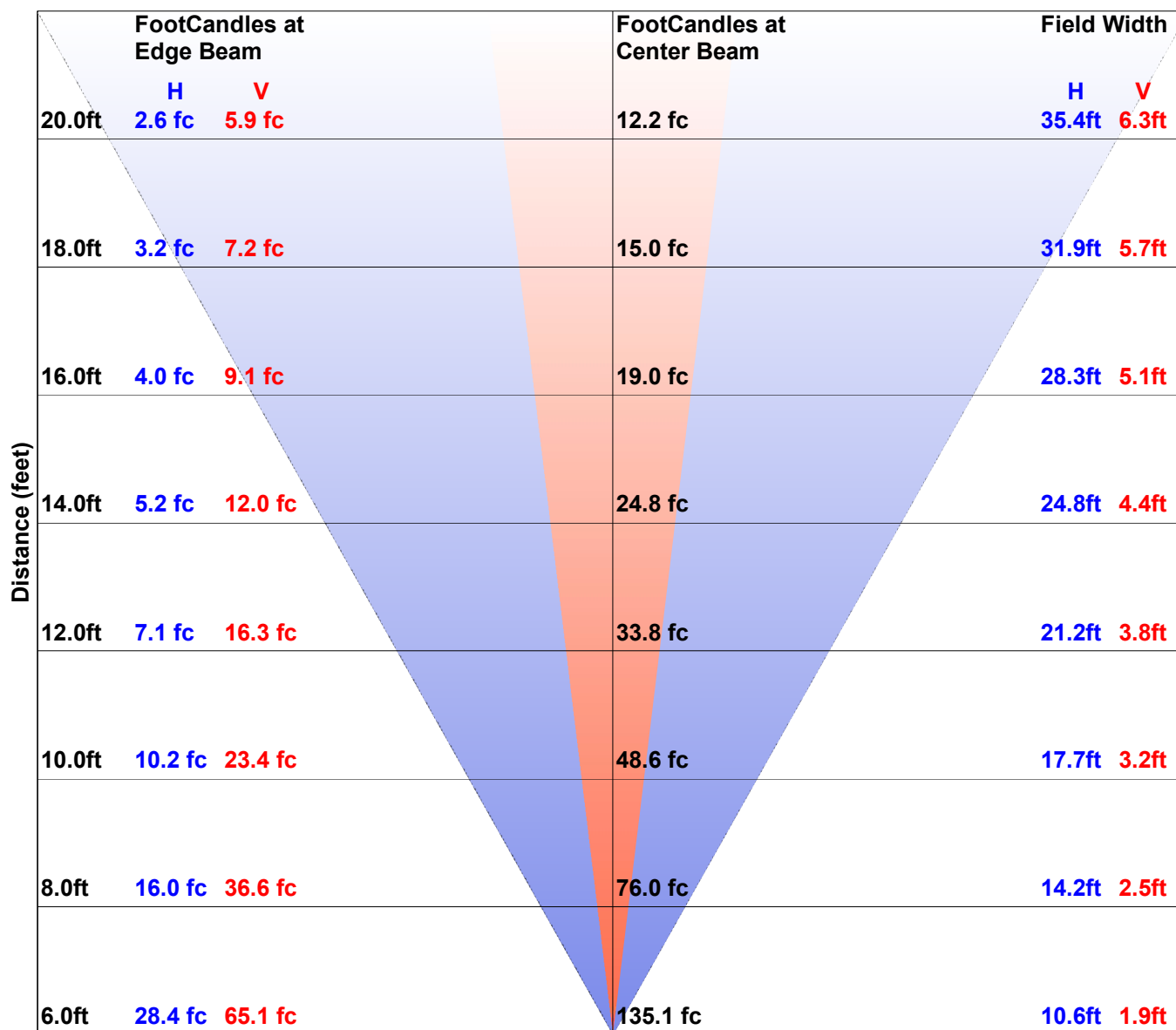
NVLAP LAB CODE: 200899-0

Photometric Report: S1603141-R1

Prepared for: Lumenpulse · Test Date: 14 March 2016

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-48-35K-WWLF-WH-NO

Uplight Beam



— Horizontal (83.0 °) — Vertical (18.0 °)



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



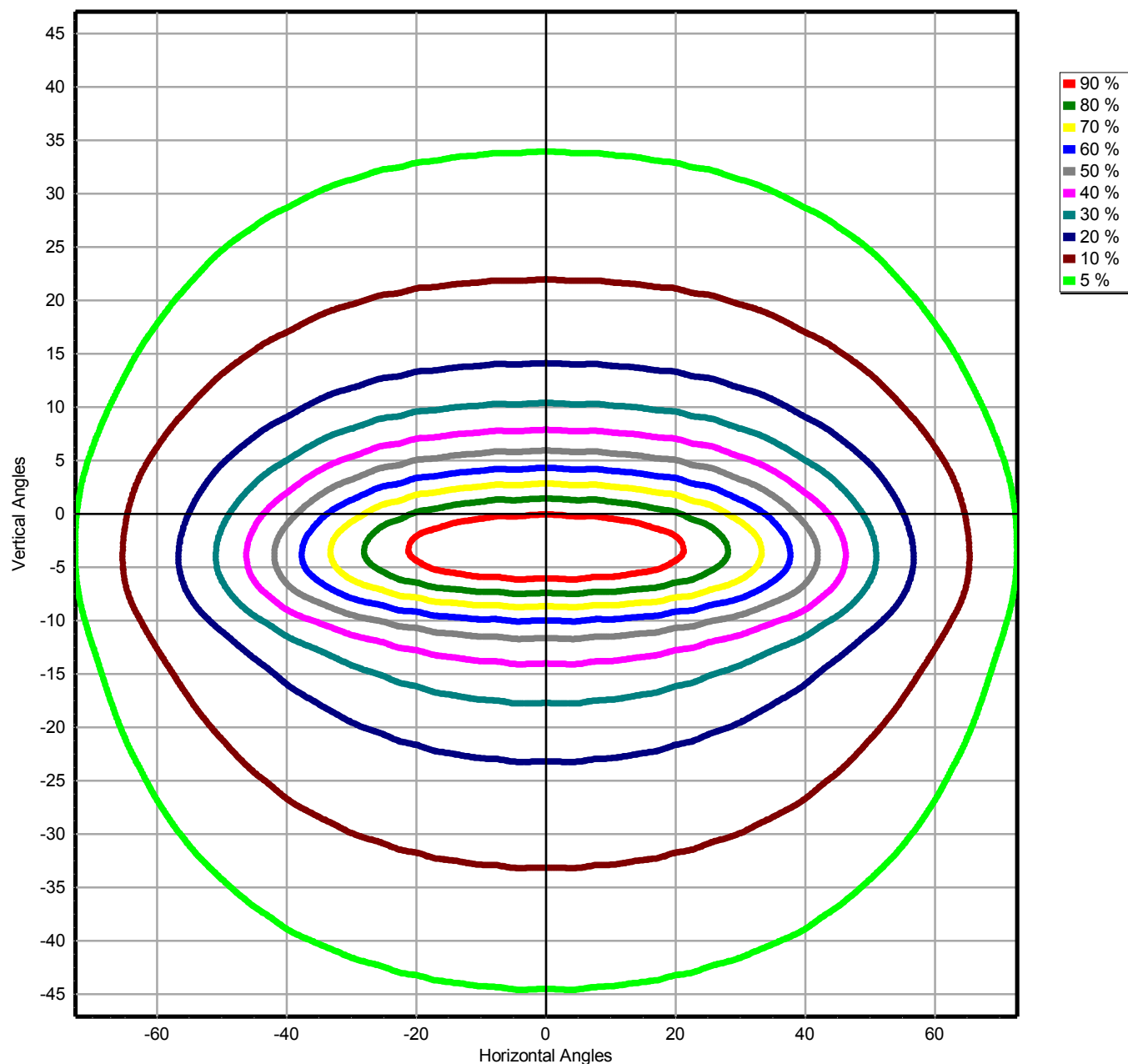
NVLAP LAB CODE: 200899-0

Photometric Report: S1603141-R1

Prepared for: Lumenpulse · Test Date: 14 March 2016

Floodlight: LUMENFACADE · Lumcat: LOG-HO-120-48-35K-WWLF-WH-NO

ISO Candela Diagram





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 LAB CODE: 200899-0

IES File Headers

IESNA:LM-63-2002
[ISSUEDATE] 14 March 2016
[TESTLAB] Spectra Lux Industries Inc.
[TEST] S1603141-R1
[MANUFAC] Lumenpulse
[LUMCAT] LOG-HO-120-48-35K-WWLF-WH-NO
[LUMINAIRE] LUMENFACADE
[LAMP] (Clusters of 48 Cree XPE2 LED's) White 61W SSL c/w Mean Well Driver LPF-60-24 @ 120.00V
[_BURNING] Axial (3,006 Luminaire Lumens)
[_REFLECTOR] 48 Collimators
[_LENS] Polycarbonate
[_HOUSING] Extruded Aluminum
[DISTRIBUTION] NEMA 7Hx4V (Max. CP at 0.0H, -2.5V)
[MORE] (Based on IES LM-35-1989)

Candela Table

Horizontal Angles

	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0
V e r t i c a l	-90.0	3	3	3	3	3	3	3	3
	-87.5	6	5	6	6	5	6	6	6
	-85.0	10	11	11	10	11	11	11	10
	-82.5	17	18	17	17	17	17	17	16
	-80.0	25	25	25	25	24	24	24	23
	-77.5	33	34	34	33	33	33	32	32
	-75.0	42	43	43	42	42	42	41	40
	-72.5	53	52	53	52	51	51	50	49
	-70.0	62	63	62	62	61	60	60	59
	-67.5	73	73	73	72	71	71	70	68
	-65.0	84	83	84	83	82	81	80	79
	-62.5	95	95	95	94	93	92	92	90
	-60.0	107	108	107	106	105	105	103	101
	-57.5	122	121	122	120	119	118	117	115
	-55.0	137	138	138	136	135	134	133	130
	-52.5	157	158	157	156	154	153	151	148
	-50.0	180	180	180	178	176	174	172	169
A n g l e s	-47.5	206	207	207	204	201	199	197	193
	-45.0	237	237	237	234	233	231	228	221
	-42.5	272	273	273	269	265	262	259	253
	-40.0	314	315	315	311	310	306	302	291
	-37.5	366	367	367	362	360	356	351	337
	-35.0	430	430	431	424	423	417	411	394
	-32.5	507	509	509	501	499	492	484	463
	-30.0	602	604	603	594	591	582	573	546
	-27.5	716	717	717	706	702	691	679	646
	-25.0	853	856	855	841	836	823	808	766
	-22.5	1023	1026	1025	1007	1002	985	967	914
	-20.0	1230	1234	1233	1211	1204	1184	1161	1096
	-17.5	1481	1486	1484	1458	1449	1425	1398	1317
	-15.0	1794	1800	1799	1766	1757	1728	1695	1597
	-12.5	2229	2239	2242	2197	2192	2157	2118	1997
	-10.0	2911	2929	2937	2876	2877	2835	2791	2638
	-7.5	3852	3873	3881	3812	3814	3764	3711	3524
	-5.0	4670	4678	4675	4624	4605	4548	4481	4273



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 LAB CODE: 200899-0

Horizontal Angles

	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	
V e r t i c a l	-2.5	4862	4851	4829	4811	4763	4704	4624	4527	4419
	0.0	4362	4336	4304	4312	4248	4195	4116	4016	3940
	2.5	3527	3500	3467	3486	3424	3380	3317	3232	3182
	5.0	2705	2683	2656	2674	2624	2591	2544	2479	2447
	7.5	2035	2018	1998	2013	1975	1952	1917	1870	1848
	10.0	1528	1515	1501	1512	1485	1468	1443	1409	1394
	12.5	1157	1148	1138	1145	1126	1114	1096	1071	1060
	15.0	891	885	878	883	869	861	848	831	823
	17.5	704	700	694	698	688	682	673	660	654
	20.0	568	565	561	564	556	551	544	535	531
	22.5	468	465	462	464	459	455	450	443	440
	25.0	394	392	390	391	387	384	380	375	372
	27.5	338	337	335	336	332	330	327	323	320
	30.0	295	294	292	293	290	288	286	282	280
	32.5	260	259	258	259	257	255	253	250	248
	35.0	232	231	230	231	228	227	225	223	221
	37.5	207	206	206	206	205	203	202	200	198
	40.0	187	186	185	186	184	183	182	180	179
	42.5	168	168	167	167	166	165	163	161	160
	45.0	150	150	149	149	148	147	145	144	143
A n g l e s	47.5	133	133	132	132	131	130	129	127	126
	50.0	116	116	115	115	114	113	112	110	109
	52.5	101	101	100	100	99	99	97	96	95
	55.0	89	88	88	88	88	87	86	85	84
	57.5	79	79	78	78	77	77	77	76	75
	60.0	70	70	70	70	69	69	68	68	67
	62.5	63	62	62	62	61	60	59	58	58
	65.0	54	54	53	54	53	52	52	51	51
	67.5	47	47	47	47	47	46	45	45	44
	70.0	41	41	41	41	40	39	39	36	34
	72.5	34	34	34	34	33	32	29	27	26
	75.0	29	29	29	29	25	23	22	21	21
	77.5	23	22	19	18	17	17	16	15	15
	80.0	12	13	12	12	10	10	10	9	9
	82.5	2	2	3	5	5	6	6	6	6
85.0	2	1	2	2	2	3	3	4	4	
87.5	1	2	1	1	2	2	2	2	3	
90.0	1	1	1	2	2	2	2	2	2	



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 LAB CODE: 200899-0

Horizontal Angles

	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5
V e r t i c a l	-90.0	3	3	3	4	3	4	3	4
	-87.5	6	5	6	6	6	6	6	6
	-85.0	11	10	10	10	10	10	10	9
	-82.5	16	16	16	16	15	15	14	14
	-80.0	23	23	22	22	21	20	20	19
	-77.5	32	31	30	30	29	28	27	26
	-75.0	40	38	38	38	36	35	34	32
	-72.5	49	47	47	46	45	43	42	41
	-70.0	58	57	56	55	53	52	51	49
	-67.5	68	66	65	64	62	60	59	57
	-65.0	78	76	75	73	72	70	68	66
	-62.5	89	87	85	84	82	80	78	75
	-60.0	101	98	97	95	92	90	88	85
	-57.5	114	111	109	107	105	102	99	96
	-55.0	129	126	124	122	118	115	112	109
	-52.5	147	143	140	138	134	130	127	123
	-50.0	167	163	160	156	152	148	143	139
	-47.5	191	186	182	178	172	168	163	157
	-45.0	218	212	208	203	196	190	184	178
	-42.5	250	242	237	231	224	217	209	201
A n g l e s	-40.0	287	279	272	265	256	247	239	229
	-37.5	333	322	314	306	294	283	273	262
	-35.0	388	375	365	354	340	327	314	300
	-32.5	455	438	426	413	395	379	363	346
	-30.0	536	515	500	484	461	441	421	400
	-27.5	633	607	588	567	540	515	490	463
	-25.0	750	719	694	668	634	603	572	539
	-22.5	894	855	825	792	749	709	671	631
	-20.0	1070	1021	983	941	888	839	790	739
	-17.5	1286	1224	1177	1125	1060	997	936	873
	-15.0	1560	1483	1426	1361	1280	1201	1126	1047
	-12.5	1958	1858	1790	1710	1607	1504	1409	1307
	-10.0	2599	2464	2380	2279	2137	1997	1871	1727
	-7.5	3466	3296	3180	3038	2845	2649	2464	2257
	-5.0	4161	3984	3817	3623	3391	3139	2885	2617
	-2.5	4256	4100	3898	3674	3439	3169	2884	2598
	0.0	3762	3643	3447	3235	3033	2791	2529	2276
	2.5	3026	2944	2781	2610	2455	2265	2055	1855
	5.0	2327	2270	2147	2019	1907	1766	1609	1461
	7.5	1760	1721	1632	1538	1459	1358	1244	1138
	10.0	1331	1304	1240	1173	1118	1046	964	888
	12.5	1016	997	952	905	866	816	757	704
	15.0	791	778	746	713	686	649	608	569
	17.5	632	622	599	575	555	528	498	469
	20.0	514	507	490	472	457	438	415	394
	22.5	427	422	409	396	385	370	353	337
	25.0	363	358	348	338	330	318	305	292
	27.5	313	309	302	294	287	278	267	257
	30.0	274	271	265	259	253	246	237	229
	32.5	243	241	236	230	226	219	212	204
	35.0	217	215	211	206	202	197	190	183
	37.5	195	193	189	185	181	177	171	165
	40.0	175	174	170	166	163	159	154	147
	42.5	157	156	153	149	146	142	136	130



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 LAB CODE: 200899-0

Horizontal Angles

		22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5
V e r t i c a l A n g l e s	45.0	140	138	135	132	128	124	118	113	109
	47.5	123	121	118	114	111	107	103	98	95
	50.0	106	105	102	99	97	94	91	88	85
	52.5	93	92	90	88	86	84	81	79	76
	55.0	83	82	80	79	77	75	72	70	67
	57.5	74	73	72	70	68	66	62	58	56
	60.0	66	65	63	60	58	54	51	49	47
	62.5	56	56	54	51	48	46	43	41	39
	65.0	49	48	45	42	40	38	36	34	33
	67.5	40	38	36	34	33	31	30	29	28
	70.0	32	30	29	28	27	26	25	24	24
	72.5	25	25	24	23	22	22	21	20	20
	75.0	20	19	19	18	18	17	16	16	16
	77.5	14	14	14	13	13	13	13	13	13
	80.0	9	9	10	10	10	11	11	11	11
	82.5	6	7	7	7	8	8	8	8	8
	85.0	5	5	5	5	5	5	5	5	6
	87.5	3	3	3	3	3	3	4	4	4
	90.0	2	2	2	2	3	2	2	3	3



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 LAB CODE: 200899-0

Horizontal Angles

	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
V e r t i c a l	-90.0	4	4	4	4	5	5	5	5
	-87.5	6	6	6	6	6	6	6	6
	-85.0	9	9	8	8	8	8	7	7
	-82.5	13	13	12	12	11	10	10	9
	-80.0	18	18	17	16	15	14	13	12
	-77.5	24	23	22	21	20	18	17	15
	-75.0	31	29	27	26	24	23	21	19
	-72.5	37	36	34	32	30	28	26	23
	-70.0	44	42	40	38	36	33	30	27
	-67.5	52	50	47	44	41	39	35	32
	-65.0	60	57	54	51	48	44	41	37
	-62.5	69	66	62	59	55	51	47	43
	-60.0	79	75	71	67	63	58	54	48
	-57.5	89	85	80	76	71	66	61	55
	-55.0	100	95	90	85	81	74	68	62
	-52.5	113	107	102	96	90	84	77	69
	-50.0	127	121	114	108	101	93	86	78
	-47.5	143	136	128	121	113	105	96	87
	-45.0	161	153	144	136	127	117	107	97
	-42.5	182	172	162	152	142	131	120	108
A n g l e s	-40.0	206	195	183	171	160	147	134	120
	-37.5	235	221	206	193	179	165	150	134
	-35.0	267	251	234	218	202	184	168	150
	-32.5	305	286	265	246	228	207	188	167
	-30.0	350	326	302	279	256	233	210	187
	-27.5	402	374	344	317	290	262	236	209
	-25.0	465	429	393	361	329	296	265	233
	-22.5	538	495	451	412	373	334	297	260
	-20.0	625	571	518	470	423	376	333	290
	-17.5	730	663	598	539	482	426	374	323
	-15.0	867	782	699	627	556	487	424	363
	-12.5	1068	956	847	752	660	571	491	416
	-10.0	1387	1228	1074	942	815	694	586	488
	-7.5	1786	1562	1350	1164	989	829	690	566
	-5.0	2054	1783	1531	1302	1094	910	751	613
	-2.5	2040	1769	1520	1288	1080	901	744	611
	0.0	1805	1575	1363	1161	981	827	691	574
	2.5	1496	1318	1154	993	850	726	614	519
	5.0	1198	1067	944	822	712	616	528	452
	7.5	948	853	762	672	589	516	448	388
	10.0	752	684	618	551	489	433	380	333
	12.5	606	557	508	458	411	368	326	288
	15.0	498	461	425	386	350	316	282	251
	17.5	416	388	361	331	302	274	247	221
	20.0	353	332	311	287	263	241	218	196
	22.5	306	289	271	252	233	214	194	175
	25.0	267	254	240	224	207	190	173	157
	27.5	237	226	213	199	185	170	155	140
	30.0	211	201	190	178	165	152	138	125
	32.5	189	180	170	159	147	136	123	112
	35.0	170	162	153	143	132	121	110	99
	37.5	153	145	136	127	117	107	97	88
	40.0	135	128	121	112	103	94	86	78
	42.5	119	112	106	98	91	84	78	70



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 LAB CODE: 200899-0

Horizontal Angles

V e r t i c a l A n g l e s		45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0
	45.0	104	98	93	87	81	76	69	62	55
	47.5	91	87	83	78	73	67	60	55	49
	50.0	82	78	75	70	64	59	53	49	44
	52.5	73	70	65	59	55	51	47	43	39
	55.0	62	58	55	51	47	44	41	38	34
	57.5	52	49	47	44	41	39	36	33	30
	60.0	45	42	40	37	35	33	31	29	26
	62.5	37	36	34	32	30	28	26	24	22
	65.0	32	30	29	28	26	25	23	21	20
	67.5	27	26	25	24	22	21	20	19	17
	70.0	23	22	21	20	19	18	17	17	15
	72.5	19	19	18	17	17	16	15	15	14
	75.0	16	16	15	15	14	14	13	13	12
	77.5	13	13	13	12	12	11	11	11	10
	80.0	10	10	10	10	10	10	9	9	9
	82.5	8	8	8	8	8	7	8	7	7
	85.0	6	6	6	6	6	6	6	6	6
	87.5	4	4	4	4	4	5	5	5	5
	90.0	3	3	3	3	3	3	4	4	4



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 LAB CODE: 200899-0

Horizontal Angles

	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5
V e r t i c a l	-90.0	5	5	5	5	5	5	5	5
	-87.5	6	6	5	5	5	5	5	5
	-85.0	7	7	6	6	6	6	5	5
	-82.5	9	8	8	7	7	6	6	5
	-80.0	11	10	9	8	7	6	6	5
	-77.5	13	12	11	9	8	7	6	5
	-75.0	16	14	13	11	10	8	7	6
	-72.5	19	17	15	13	11	9	8	7
	-70.0	22	20	17	15	12	10	8	7
	-67.5	26	23	20	17	14	11	9	7
	-65.0	30	26	23	19	15	12	10	8
	-62.5	34	30	25	21	17	14	11	8
	-60.0	39	34	29	24	19	15	11	8
	-57.5	44	38	33	27	22	17	12	9
	-55.0	50	43	36	30	24	18	13	9
	-52.5	55	48	41	34	27	20	15	10
	-50.0	62	54	46	37	30	22	16	11
	-47.5	69	60	50	41	33	24	17	11
	-45.0	77	67	56	46	36	27	19	12
	-42.5	85	74	62	51	40	30	21	13
A n g l e s	-40.0	95	82	69	56	44	33	22	14
	-37.5	106	91	77	62	49	36	25	15
	-35.0	117	101	85	69	54	40	27	17
	-32.5	131	112	94	76	59	43	29	18
	-30.0	145	124	104	84	65	47	32	19
	-27.5	160	137	114	92	71	52	35	21
	-25.0	178	151	125	101	78	56	38	22
	-22.5	196	166	137	110	85	61	41	24
	-20.0	216	182	149	119	91	66	44	25
	-17.5	238	199	162	128	98	70	46	26
	-15.0	262	217	176	138	104	74	48	28
	-12.5	293	240	192	149	111	78	50	28
	-10.0	334	270	212	162	119	82	52	29
	-7.5	375	299	233	176	128	87	54	29
	-5.0	399	315	245	185	133	90	56	30
	-2.5	398	316	246	186	135	92	57	30
	0.0	381	305	240	183	134	92	58	31
	2.5	351	284	226	175	130	91	58	32
	5.0	313	256	206	162	121	86	56	31
	7.5	275	227	185	146	110	80	52	29
	10.0	241	201	165	132	101	73	48	26
	12.5	212	178	148	119	91	66	43	23
	15.0	188	159	133	107	82	60	38	21
	17.5	167	143	119	97	74	53	34	19
	20.0	150	128	107	86	66	47	30	17
	22.5	134	115	96	77	59	42	27	16
	25.0	120	103	86	69	53	38	25	15
	27.5	108	92	76	61	47	34	23	14
	30.0	96	82	68	55	42	31	21	13
	32.5	85	72	60	50	39	28	20	13
	35.0	76	65	54	45	35	26	18	12
	37.5	68	59	50	42	32	24	17	12
	40.0	62	54	46	39	30	22	16	11
	42.5	56	49	42	35	27	21	15	11



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 LAB CODE: 200899-0

Horizontal Angles

	67.5	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	
V e r t i c a l	45.0	49	44	38	31	24	19	14	10	7
	47.5	44	39	34	28	22	17	13	9	6
	50.0	40	35	29	25	20	16	12	9	6
	52.5	35	31	26	21	18	14	11	8	6
	55.0	31	26	23	19	16	13	10	8	6
	57.5	27	23	20	17	14	12	9	7	6
	60.0	23	20	18	15	13	11	9	7	6
	62.5	20	18	16	14	12	10	9	7	5
	65.0	18	16	15	13	11	9	8	6	5
	67.5	16	15	13	12	10	9	7	6	5
	70.0	14	13	12	11	9	8	7	6	5
	72.5	13	11	11	10	8	7	6	6	5
	75.0	11	10	9	8	8	7	6	5	5
	77.5	9	9	8	8	7	6	6	5	5
	80.0	8	8	7	7	6	6	5	5	5
	82.5	7	7	6	6	6	5	5	5	5
	85.0	5	5	5	5	5	5	5	5	4
	87.5	5	5	5	5	5	5	5	5	5
	90.0	4	4	4	4	5	5	4	5	5
A n g l e s										



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 LAB CODE: 200899-0

Horizontal Angles

	90.0
V e r t i c a l	-90.0 5
	-87.5 5
	-85.0 5
	-82.5 5
	-80.0 5
	-77.5 5
	-75.0 5
	-72.5 5
	-70.0 5
	-67.5 5
	-65.0 5
	-62.5 5
	-60.0 5
	-57.5 5
	-55.0 5
	-52.5 5
	-50.0 5
	-47.5 5
	-45.0 5
	-42.5 5
A n g l e s	-40.0 5
	-37.5 5
	-35.0 5
	-32.5 5
	-30.0 5
	-27.5 5
	-25.0 5
	-22.5 5
	-20.0 5
	-17.5 6
	-15.0 5
	-12.5 5
	-10.0 6
	-7.5 5
	-5.0 5
	-2.5 5
	0.0 5
	2.5 5
	5.0 5
	7.5 5
	10.0 5
	12.5 5
	15.0 4
	17.5 4
	20.0 5
	22.5 4
	25.0 5
	27.5 5
	30.0 4
	32.5 5
	35.0 5
	37.5 4
	40.0 5
	42.5 5



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

Horizontal Angles

	90.0
V e r t i c a l	45.0 4
	47.5 5
	50.0 5
	52.5 4
	55.0 5
	57.5 4
	60.0 5
	62.5 5
	65.0 4
	67.5 5
	70.0 4
	72.5 4
	75.0 5
	77.5 4
	80.0 4
	82.5 5
	85.0 4
	87.5 5
	90.0 5
A n g l e s	