



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



NVLAP LAB CODE: 200899-0

Moving Mirror Goniophotometer Test Report

Standard(s): ANSI C78.42-2004, IESNA LM-31-95, IESNA TM-15-07

Customer: ABC Technologies, 1st Avenue, City, Province, Country, 1A1-1A1

General Information		Lamp Details		Ballast Details	
Test Report	S0912092-R1	Description	Clear 100W HPS ED-23½	Type	Reference
Test Date	9 December 2009	Base	Mogul	Description	Reactor
Report Date	5 February 2010	Standard Designation	S54	Current	2.10 A
Ambient	23.3 °C	Rated Lumens	9500	Impedance	44.00 Ω
Humidity	18.5 %	Test Position	Horizontal	Voltage	92.40 V
Lamp Type	HID	Quantity	1	Power Factor	0.0750

Luminaire Data

General Information		Optics		Aperture (feet)	
Manufacturer	AAA	Reflector	Specular Hydroformed Aluminum	X	1.0833
Name	AAAA AAAA	Housing	Die Cast Aluminum	Y	0.9167
Catalog No.	AAAA-100HPS	Lens	Tempered Clear Flat Glass	Z	0.0000

SKT Position: Fixed

Tested By: Technician

Approved Signatory:

Signature:



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Photometric Report: S0912092-R1

Prepared for: ABC Technologies · Test Date: 09 December 2009

Luminaire: AAAA AAAA · Lumcat: AAAA-100HPS

Photometric Luminaire Characteristics as per IESNA RP-8-00

		Notes
Nominal Lamp Power	100.00 W	
Rated Lamp Lumens	9500	1) Luminaire tested in accordance to IES LM-31-95 at a distance great enough so that the inverse-square law applies.
Maximum Candela Value	18314	
Maximum Candela Location	85.0 °H, 65.0 °V	2) Field performance may differ from laboratory measurements.
Maximum Candela at 90° Vertical	0	3) Results are valid for the tested material only.
Maximum Candela at 80° Vertical	70	
IES Classification	Type I, Short, Full Cutoff	4) All data published in this report are based on relative photometry which assumes initial lamp lumens and a ballast factor of 1.0.
Downward Street Side Lumens	4372	5) The luminaire classification is based on IESNA RP-8-00.
Downward Street Side Efficiency	46.0 %	6) The original electronic file or paper report cannot be edited in whole or in part without written consent of Spectralux Industries Inc.
Downward House Side Lumens	3550	
Downward House Side Efficiency	37.4 %	7) The previous IESNA cutoff classifications (Full Cutoff, Cutoff, Semi-Cutoff and Non-Cutoff) are superseded by the Luminaire Classification System (LCS) which defines the standard solid angles for evaluation and comparison of outdoor luminaires.
Downward Total Efficiency	83.4 %	
Upward Street Side Lumens	0	
Upward Street Side Efficiency	0.0 %	
Upward House Side Lumens	0	
Upward House Side Efficiency	0.0 %	
Upward Total Efficiency	0.0 %	
Total Luminaire Lumens	7922	
Total Luminaire Efficiency	83.4 %	



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Photometric Report: S0912092-R1

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Luminaire: AAAA AAAA · Lumcat: AAAA-100HPS

Luminaire Classification System as per IESNA TM-15-07

Nominal Lamp Power	100.00 W
Rated Lamp Lumens	9500
Maximum Candela Value	18314
Maximum Candela Location	85.0 °H, 65.0 °V
IES Classification	Type I, Short
Downward Street Side Lumens	4372
Downward Street Side Efficiency	46.0 %
Downward House Side Lumens	3550
Downward House Side Efficiency	37.4 %
Downward Total Lumens	7922
Downward Total Efficiency	83.4 %
Upward Street Side Lumens	0
Upward Street Side Efficiency	0.0 %
Upward House Side Lumens	0
Upward House Side Efficiency	0.0 %
Upward Total Lumens	0
Upward Total Efficiency	0.0 %
Trapped Light Lumens	1578
Total Luminaire Lumens	7922
Total Luminaire Efficiency	83.4 %

Notes

- 1) Luminaire tested in accordance to IES LM-31-95 at a distance great enough so that the inverse-square law applies.
- 2) Field performance may differ from laboratory measurements.
- 3) Results are valid for the tested material only.
- 4) All data published in this report are based on relative photometry which assumes initial lamp lumens and a ballast factor of 1.0.
- 5) The luminaire classification is based on IESNA TM-15-07.
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Luminaire: AAAA AAAA · Lumcat: AAAA-100HPS

Luminaire Lumens Distribution based on 9500 total lamp lumens as per IESNA TM-15-07

	Lumens	%	Notes
Downward Forward Light			
Total	4372	46.02 %	
Lumens Distribution			
Forward Light Low (0° - 30°)	1396	14.69 %	1) Luminaire tested in accordance to IES LM-31-95 at a distance great enough so that the inverse-square law applies.
Forward Light Mid (30° - 60°)	1862	19.60 %	
Forward Light High (60° - 80°)	1105	11.63 %	
Forward Light Very High (80° - 90°)	9	0.09 %	
Downward Back Light			
Total	3550	37.37 %	2) Field performance may differ from laboratory measurements.
Lumens Distribution			
Back Light Low (0° - 30°)	1209	12.73 %	3) Results are valid for the tested material only.
Back Light Mid (30° - 60°)	1657	17.44 %	
Back Light High (60° - 80°)	675	7.11 %	
Back Light Very High (80° - 90°)	9	0.09 %	
Uplight			
Total	0	0.00 %	4) All data published in this report are based on relative photometry which assumes initial lamp lumens and a ballast factor of 1.0.
Lumens Distribution			
Uplight Low (90° - 100°)	0	0.00 %	
Uplight High (100° - 180°)	0	0.00 %	
Trapped Light			
Total	1578	16.61 %	5) The luminaire classification is based on IESNA TM-15-07.
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Addendum A for IESNA TM-15-07 : Backlight, Uplight and Glare (BUG) Ratings

Table A-1 : Backlight Ratings (maximal zonal lumens)

Control of Backlight / Trespass

Backlight Rating

Zone	B0	B1	B2	B3	B4	B5
BH	110	500	1000	2500	5000	>5000
BM	220	1000	2500	5000	8500	>8500
BL	110	500	1000	2500	5000	>5000

Backlight Ratings

Zone	Lumens	Rating
BH	675	B2
BM	1657	B2
BL	1209	B3

The Backlight Rating is B3.

Table A-2 : Uplight Ratings (maximal zonal lumens)

Control of Uplight / Skyglow

Uplight Rating

Zone	U0	U1	U2	U3	U4	U5
UH	0	10	100	500	1000	>1000
UL	0	10	100	500	1000	>1000
FVH	10	75	150	>150	N/A	N/A
BVH	10	75	150	>150	N/A	N/A

Uplight Ratings

Zone	Lumens	Rating
UH	0	U0
UL	0	U0
FVH	9	U0
BVH	9	U0

The Uplight Rating is U0.

Table A-3 : Glare Ratings (maximum zonal lumens)

Control of Glare / Offensive Light

Glare Rating for Asymmetrical Luminaire Types (Type I, Type II, Type III, Type IV)

Zone	G0	G1	G2	G3	G4	G5
FVH	10	250	375	500	750	>750
BVH	10	250	375	500	750	>750
FH	660	1800	5000	7500	12000	>12000
BH	110	500	1000	2500	5000	>5000

Glare Ratings for Typel

Zone	Lumens	Rating
FVH	9	G0
BVH	9	G0
FH	1105	G1
BH	675	G2

The Glare Rating is G2.

The BUG Rating is B3 U0 G2



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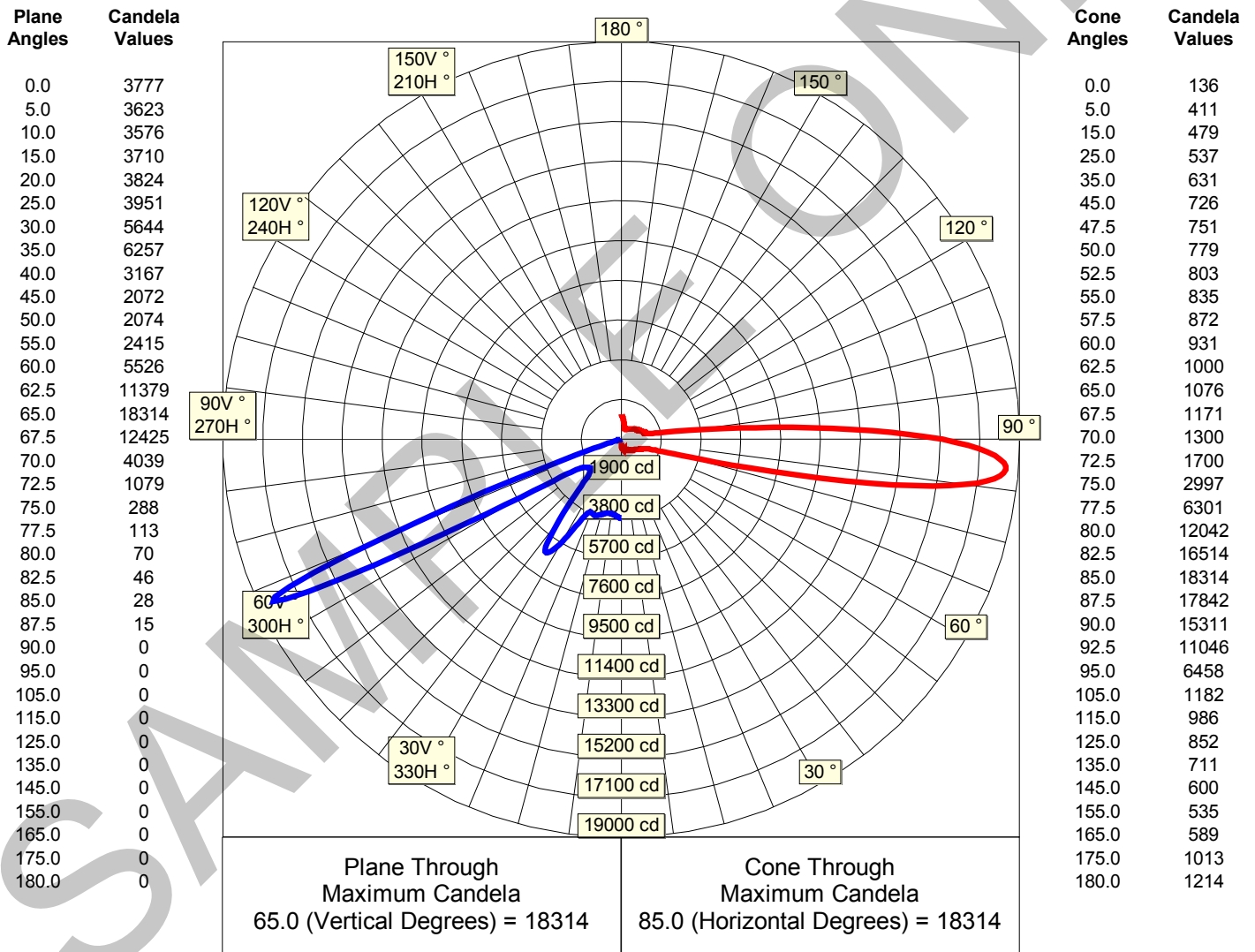
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Maximum Plane and Maximum Cone Plots of Candela (1)





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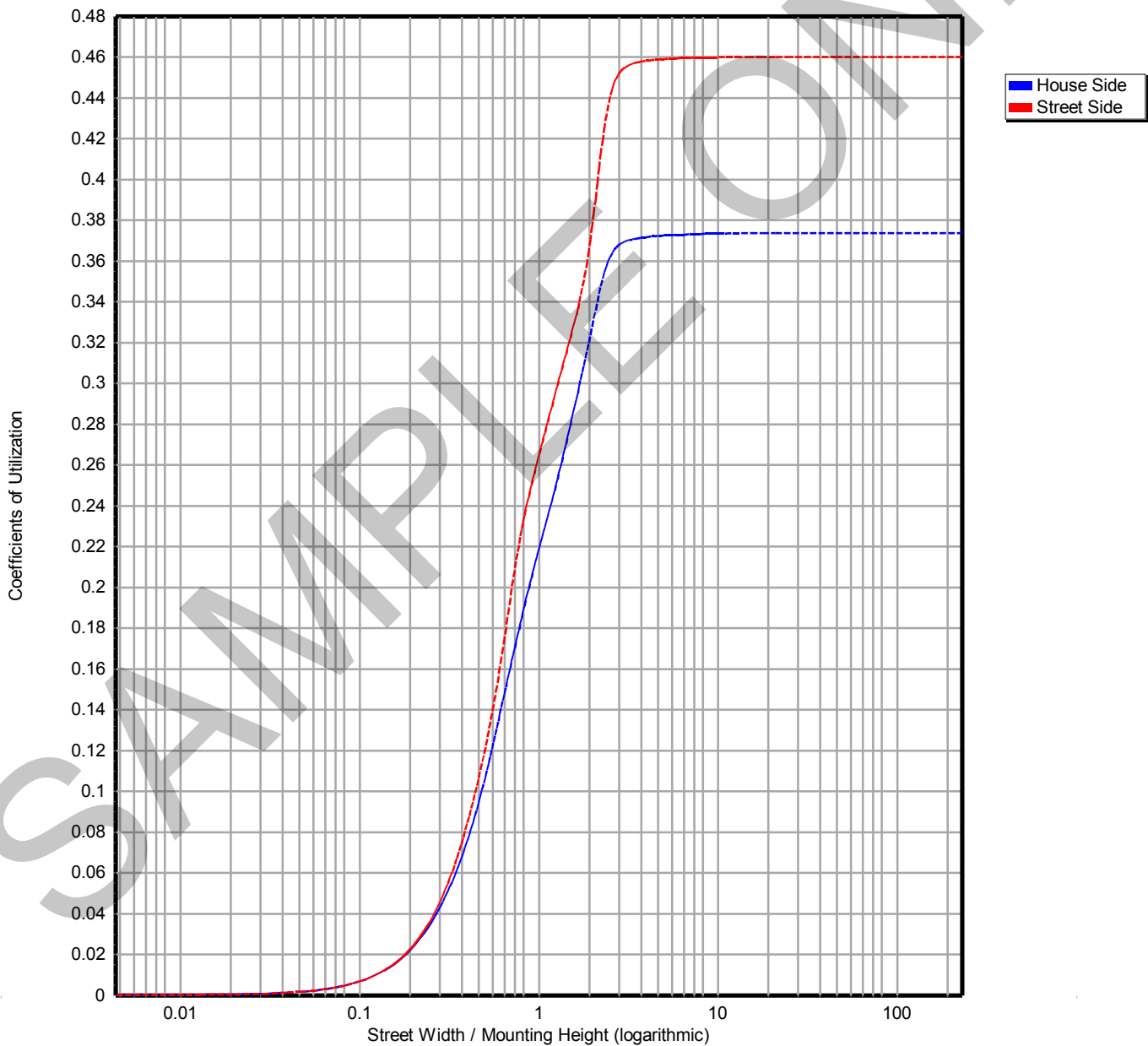


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Luminaire: AAAA AAAA · Lumcat: AAAA-100HPS

Coefficients of Utilization



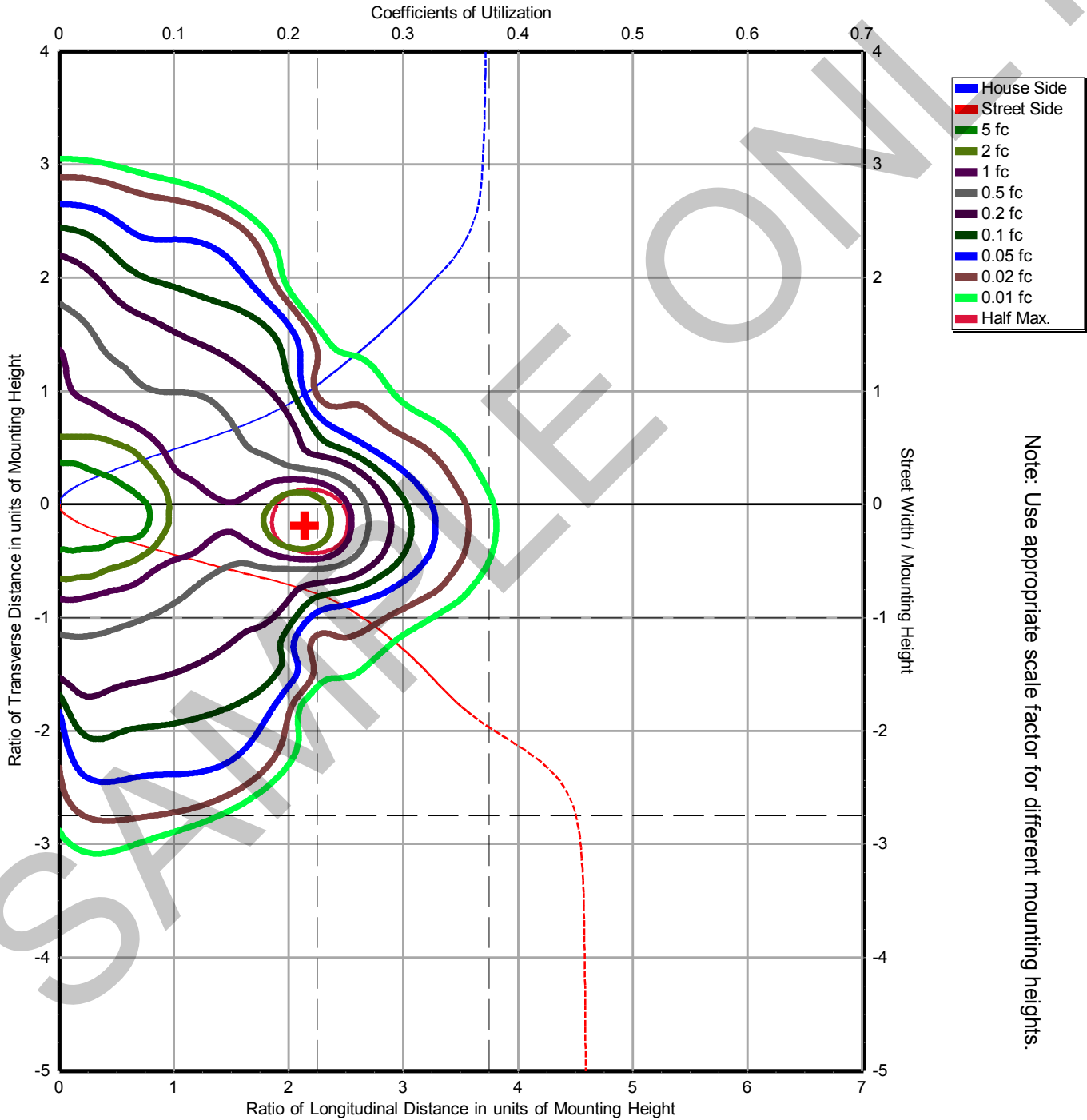


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Isoilluminance based on 20 feet of Mounting Height
 and Coefficients of Utilization Diagram (Right Side)



Note: Use appropriate scale factor for different mounting heights.



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IES File Headers

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IESNA:LM-63-2002
[ISSUEDATE] 09 December 2009
[TESTLAB] Spectra Lux Industries Inc.
[TEST] S0912092-R1
[MANUFAC] AAA
[LUMCAT] AAAA-100HPS
[LUMINAIRE] AAAA AAAA
[LAMP] (1) 100W HPS ED-23½ Clear
[_LAMPDETAILS] Standard: S54 Voltage=55V LCI=5
[_BURNING] Horizontal (9,500 Lumens)
[_REFLECTOR] Specular Hydroformed Aluminum
[_LENS] Tempered Clear Flat Glass
[_HOUSING] Die Cast Aluminum
[_SKTPOSITION] Fixed
[DISTRIBUTION] Type I, Short
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Candela Table

Lateral Angles

	0.0	5.0	15.0	25.0	35.0	45.0	47.5	50.0	52.5
0.0	3777	3777	3777	3777	3777	3777	3777	3777	3777
5.0	3679	3670	3674	3688	3689	3682	3680	3671	3668
10.0	3619	3581	3559	3604	3623	3603	3603	3593	3605
15.0	3357	3311	3351	3409	3404	3461	3489	3515	3533
20.0	2761	2715	2887	3023	3128	3291	3358	3430	3511
25.0	2163	2144	2318	2467	2757	3154	3243	3332	3422
30.0	1647	1662	1753	2031	2265	2684	2790	2881	2970
35.0	1204	1273	1272	1437	1520	1882	1999	2110	2229
40.0	877	912	935	977	1101	1384	1460	1560	1658
45.0	766	792	822	857	925	1046	1077	1104	1137
50.0	694	721	758	775	832	912	936	960	993
55.0	606	646	699	706	780	868	892	916	940
60.0	248	543	598	628	719	814	839	862	880
62.5	151	471	538	582	676	772	797	823	847
65.0	136	411	479	537	631	726	751	779	803
67.5	127	344	419	483	589	669	694	708	704
70.0	118	213	277	384	454	250	166	111	112
72.5	99	126	102	87	86	75	77	79	83
75.0	69	75	58	51	56	56	57	58	59
77.5	40	38	36	34	39	42	42	42	42
80.0	23	23	23	24	28	31	31	30	30
82.5	17	17	17	18	21	22	22	22	22
85.0	12	12	12	13	15	16	16	16	16
87.5	8	9	9	10	11	11	11	11	11
90.0	0	0	0	0	0	0	0	0	0
95.0	0	0	0	0	0	0	0	0	0
105.0	0	0	0	0	0	0	0	0	0
115.0	0	0	0	0	0	0	0	0	0
125.0	0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0



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Lateral Angles

	55.0	57.5	60.0	62.5	65.0	67.5	70.0	72.5	75.0
0.0	3777	3777	3777	3777	3777	3777	3777	3777	3777
5.0	3657	3661	3659	3663	3653	3650	3654	3640	3634
10.0	3602	3598	3603	3599	3610	3606	3601	3595	3608
15.0	3584	3605	3652	3683	3720	3737	3762	3762	3768
20.0	3597	3686	3754	3829	3890	3943	3989	3992	3991
25.0	3484	3546	3622	3684	3742	3818	3883	3946	3968
30.0	3092	3220	3432	3688	3985	4286	4529	4760	4972
35.0	2390	2591	2885	3290	3793	4419	5088	5685	6179
40.0	1774	1893	2068	2258	2460	2674	2877	3031	3148
45.0	1188	1263	1367	1479	1603	1720	1834	1933	2033
50.0	1025	1064	1130	1212	1354	1535	1718	1867	2001
55.0	962	989	1027	1075	1146	1251	1403	1570	1727
60.0	904	936	976	1031	1104	1204	1359	1628	2110
62.5	872	906	961	1022	1123	1254	1487	1926	2910
65.0	835	872	931	1000	1076	1171	1300	1700	2997
67.5	626	385	268	262	323	439	658	1121	2206
70.0	121	132	149	171	206	268	377	590	1039
72.5	87	91	98	108	123	144	182	253	384
75.0	61	63	67	71	77	86	98	114	142
77.5	43	44	47	50	53	58	64	70	79
80.0	31	32	33	35	37	39	43	47	52
82.5	22	22	23	24	25	27	29	31	34
85.0	16	16	17	17	17	17	18	19	20
87.5	11	12	12	12	12	12	13	13	14
90.0	0	0	0	0	0	0	0	0	0
95.0	0	0	0	0	0	0	0	0	0
105.0	0	0	0	0	0	0	0	0	0
115.0	0	0	0	0	0	0	0	0	0
125.0	0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0



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Lateral Angles

	77.5	80.0	82.5	85.0	87.5	90.0	92.5	95.0	105.0
0.0	3777	3777	3777	3777	3777	3777	3777	3777	3777
5.0	3643	3635	3629	3623	3627	3626	3623	3617	3629
10.0	3599	3600	3579	3576	3565	3569	3555	3543	3503
15.0	3777	3761	3733	3710	3676	3651	3603	3582	3405
20.0	3981	3948	3891	3824	3740	3673	3595	3527	3261
25.0	3977	4000	3979	3951	3911	3852	3789	3715	3330
30.0	5215	5430	5578	5644	5562	5337	5042	4646	3287
35.0	6563	6750	6674	6257	5613	4915	4270	3766	2615
40.0	3220	3245	3241	3167	3086	2988	2860	2747	2200
45.0	2109	2149	2119	2072	2033	1995	1943	1886	1404
50.0	2097	2150	2126	2074	2002	1921	1832	1729	1278
55.0	1946	2158	2327	2415	2382	2220	2003	1773	1340
60.0	3006	4171	5060	5526	5395	4775	3923	2991	1644
62.5	4929	8016	10364	11379	11094	9603	7469	5044	1730
65.0	6301	12042	16514	18314	17842	15311	11046	6458	1182
67.5	4714	8366	11309	12425	12252	10576	7645	4572	528
70.0	1769	2842	3678	4039	3963	3383	2468	1554	277
72.5	582	797	994	1079	1056	926	704	525	157
75.0	179	224	267	288	288	267	225	187	102
77.5	88	98	107	113	114	112	105	97	73
80.0	57	62	67	70	70	69	65	62	52
82.5	37	41	44	46	47	46	44	42	38
85.0	22	24	27	28	29	29	28	28	24
87.5	14	15	15	15	16	16	16	16	15
90.0	0	0	0	0	0	0	0	0	0
95.0	0	0	0	0	0	0	0	0	0
105.0	0	0	0	0	0	0	0	0	0
115.0	0	0	0	0	0	0	0	0	0
125.0	0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0



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Lateral Angles

	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
0.0	3777	3777	3777	3777	3777	3777	3777	3777
5.0	3625	3646	3676	3693	3730	3749	3820	3844
10.0	3438	3390	3378	3390	3435	3504	3567	3573
15.0	3223	3077	2999	2930	2898	2895	2963	2975
20.0	3041	2842	2667	2576	2545	2461	2429	2471
25.0	2987	2664	2430	2263	2182	2075	1938	1972
30.0	2718	2418	2054	1789	1646	1450	1344	1324
35.0	2152	1954	1676	1450	1268	1153	1143	1144
40.0	1791	1590	1306	1085	1066	1063	1082	1128
45.0	1229	1135	1020	963	959	1035	1166	1288
50.0	1180	1167	989	875	918	1058	1422	1611
55.0	1359	1391	1017	831	922	1070	1695	1980
60.0	1425	1221	906	763	771	893	1452	1715
62.5	1187	990	806	688	645	753	1273	1548
65.0	986	852	711	600	535	589	1013	1214
67.5	201	609	619	531	460	417	699	778
70.0	128	95	130	353	345	262	341	349
72.5	94	72	61	56	72	72	83	90
75.0	73	56	48	45	43	46	51	53
77.5	56	45	39	35	33	35	36	37
80.0	42	35	30	27	25	25	27	28
82.5	31	25	22	21	20	20	21	22
85.0	20	18	17	17	15	14	16	18
87.5	13	13	13	13	12	10	10	10
90.0	0	0	0	0	0	0	0	0
95.0	0	0	0	0	0	0	0	0
105.0	0	0	0	0	0	0	0	0
115.0	0	0	0	0	0	0	0	0
125.0	0	0	0	0	0	0	0	0
135.0	0	0	0	0	0	0	0	0
145.0	0	0	0	0	0	0	0	0
155.0	0	0	0	0	0	0	0	0
165.0	0	0	0	0	0	0	0	0
175.0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0

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