



8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Report No: L041706603



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Issue Date: 5/1/2017

Report Prepared For: Leotek Electronics USA, LLC
1955 Lundy Ave, San Jose, 95131

Model Number: ES2-130H-MV-NW-W-DB-450

Test: Electrical and Photometric tests

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 4/18/17

Date of Tests: 4/27/17 - 4/28/17

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/28/17
ITECH	IT6122	PS-DC03-S1	11/28/17
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/28/17
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Leotek Electronics USA, LLC	
Model Number:	ES2-130H-MV-NW-W-DB-450	
Driver Model Number:	INVENTRONICS EUD-200S490DT	
Total Lumens:	19562.10	
Input Voltage (VAC/60Hz):	120.00	
Input Current (Amp):	1.55	
Input Power (W):	185.30	
Input Power Factor:	1.00	
Current ATHD @ 120V(%):	5%	
Current ATHD @ 277V(%):	12% (0.69A, 180.62W, 0.94PF)	
Efficacy:	106	
Color Rendering Index (CRI):	73	
Correlated Color Temperature (K):	3958	
Chromaticity Coordinate x:	0.3855	
Chromaticity Coordinate y:	0.3893	
Ambient Temperature (°C):	25.0	
Stabilization Time (Hours):	0:45	
Total Operating Time (Hours):	3:40	

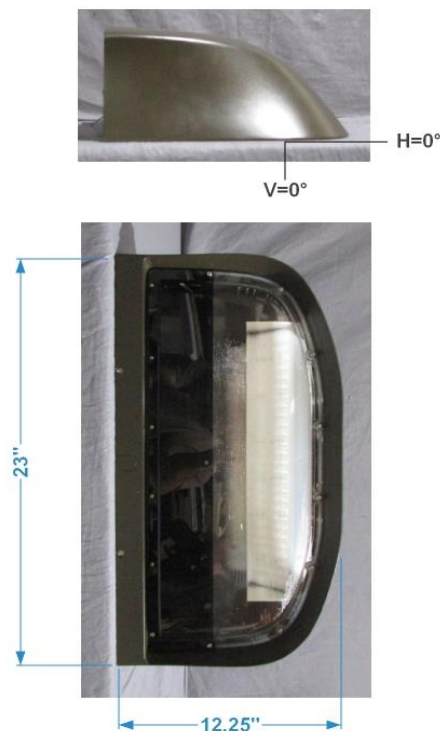
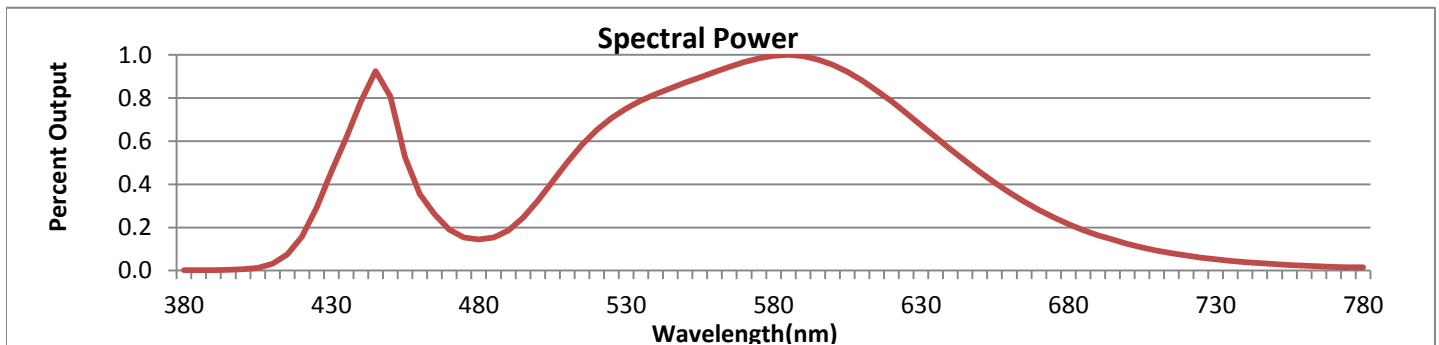


FIG. 1 LUMINAIRE



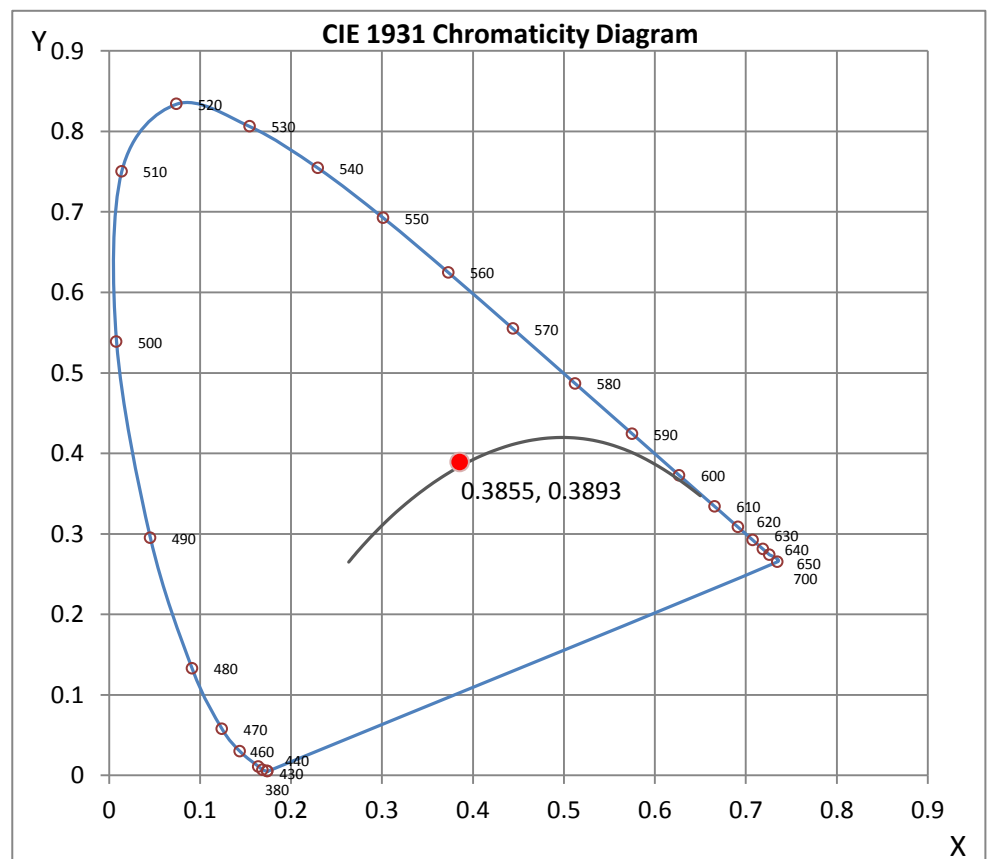
Wavelength	W/m ² nm	440	0.7839	510	0.5027	580	0.9957	650	0.4573	720	0.0697
380	0.0014	450	0.8075	520	0.6516	590	0.9950	660	0.3629	730	0.0521
390	0.0019	460	0.3559	530	0.7513	600	0.9547	670	0.2813	740	0.0393
400	0.0058	470	0.1900	540	0.8187	610	0.8820	680	0.2155	750	0.0298
410	0.0313	480	0.1442	550	0.8711	620	0.7850	690	0.1637	760	0.0228
420	0.1580	490	0.1862	560	0.9204	630	0.6741	700	0.1236	770	0.0173
430	0.4592	500	0.3239	570	0.9667	640	0.5630	710	0.0929	780	0.0152

CRI & CCT

x	0.3855
y	0.3893
u'	0.2235
v'	0.5077
CRI	73.00
CCT	3958
Duv	0.00432

R Values

R1	70.30
R2	77.97
R3	84.92
R4	73.86
R5	69.84
R6	69.53
R7	81.81
R8	55.80
R9	-21.90
R10	48.47
R11	70.62
R12	46.67
R13	70.99
R14	91.08



Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Jeff Ahn

Test Report Released by:



Jeff Ahn
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 24*



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Photometric Test Report

IES ROAD REPORT

PHOTOMETRIC FILENAME : L041706603.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L041706603
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 5/1/2017
[MANUFAC] Leotek Electronics USA, LLC
[LUMCAT] ES2-130H-MV-NW-W-DB-450
[LUMINAIRE] outdoor wall lighting product
[BALLASTCAT] INVENTRONICS EUD-200S490DT
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 185.3W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

IES Classification	Type III
Longitudinal Classification	Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	19562
Downward Total Efficiency	N.A. (absolute)
Total Luminaire Efficiency	N.A. (absolute)
Luminaire Efficacy Rating (LER)	106
Total Luminaire Watts	185.3
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Maximum Candela	9520
Maximum Candela Angle	55H 57V
Maximum Candela (<90 Degrees Vertical)	9520
Maximum Candela Angle (<90 Degrees Vertical)	55H 57V
Maximum Candela At 90 Degrees Vertical	0 (0.0% Luminaire Lumens)
Maximum Candela from 80 to <90 Degrees Vertical	1594 (8.1% Luminaire Lumens)
Cutoff Classification (deprecated)	N.A. (absolute)

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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	1834.5	N.A.	9.4
FM - Front-Medium (30-60)	8075.3	N.A.	41.3
FH - Front-High (60-80)	3638.9	N.A.	18.6
FVH - Front-Very High (80-90)	114.1	N.A.	0.6
BL - Back-Low (0-30)	1519.2	N.A.	7.8
BM - Back-Medium (30-60)	3357.9	N.A.	17.2
BH - Back-High (60-80)	991.5	N.A.	5.1
BVH - Back-Very High (80-90)	30.6	N.A.	0.2
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	19562.0	N.A.	100.0
BUG Rating	B3-U0-G2		

ZONAL LUMEN SUMMARY

Zone	%
0-20	6.8
0-30	17.1
0-40	32.8
0-60	75.6
0-80	99.3
0-90	100
10-90	98.5
20-40	26
20-50	46.2
40-70	60
60-80	23.7
70-80	6.4
80-90	0.7
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

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CANDELA TABULATION

Vert. Angles	Horizontal Angles									
	0	5	10	15	20	25	30	35	40	45
0.0	2811	2811	2811	2811	2811	2811	2811	2811	2811	2811
0.5	2796	2791	2797	2799	2802	2806	2805	2807	2810	2812
1.0	2809	2804	2812	2817	2817	2822	2811	2812	2813	2817
1.5	2841	2839	2837	2834	2836	2834	2829	2826	2821	2821
2.0	2843	2838	2841	2836	2842	2851	2851	2850	2847	2841
2.5	2834	2827	2833	2834	2844	2853	2858	2858	2862	2859
3.0	2841	2832	2839	2838	2844	2845	2854	2862	2866	2861
3.5	2885	2867	2866	2866	2862	2859	2858	2854	2862	2864
4.0	2923	2912	2915	2915	2917	2897	2879	2869	2867	2860
4.5	2935	2918	2922	2933	2933	2930	2932	2910	2887	2875
5.0	2938	2928	2932	2938	2939	2945	2950	2947	2921	2891
5.5	2956	2944	2947	2954	2948	2954	2961	2959	2949	2931
6.0	2992	2974	2976	2976	2972	2974	2964	2969	2959	2955
6.5	3038	3021	3023	3020	3000	2995	2988	2981	2972	2968
7.0	3045	3027	3032	3035	3035	3029	3005	2997	2978	2978
7.5	3074	3065	3062	3049	3051	3056	3047	3016	2995	2973
8.0	3098	3092	3095	3100	3089	3069	3066	3052	3016	2989
8.5	3129	3128	3124	3125	3123	3120	3086	3071	3047	3017
9.0	3167	3172	3174	3164	3156	3136	3125	3079	3067	3040
9.5	3196	3204	3203	3197	3195	3177	3150	3122	3085	3061
10.0	3295	3305	3283	3256	3244	3213	3177	3144	3106	3071
10.5	3392	3394	3358	3342	3316	3263	3219	3175	3134	3095
11.0	3420	3421	3409	3407	3378	3325	3269	3218	3170	3144
11.5	3500	3489	3476	3457	3433	3391	3317	3257	3208	3157
12.0	3588	3580	3566	3537	3491	3456	3386	3312	3236	3178
12.5	3702	3701	3673	3628	3571	3508	3439	3362	3270	3207
13.0	3828	3825	3794	3740	3669	3584	3499	3423	3320	3239
13.5	3938	3934	3898	3854	3786	3691	3580	3487	3392	3282
14.0	4060	4055	4030	3967	3894	3782	3650	3538	3432	3318
14.5	4153	4137	4100	4063	4000	3900	3769	3630	3496	3385
15.0	4289	4255	4225	4160	4085	4007	3883	3737	3585	3450
15.5	4472	4448	4405	4313	4195	4082	3961	3804	3640	3496
16.0	4666	4634	4582	4482	4347	4193	4067	3883	3691	3534
16.5	4776	4745	4689	4632	4499	4315	4159	4004	3820	3625
17.0	4950	4918	4855	4769	4655	4471	4275	4103	3906	3707
17.5	5113	5070	5033	4954	4800	4632	4412	4181	3972	3756
18.0	5207	5174	5134	5086	4964	4751	4543	4296	4089	3851
18.5	5294	5261	5212	5174	5084	4930	4709	4456	4191	3960
19.0	5445	5425	5391	5316	5204	5070	4824	4559	4243	3996
19.5	5584	5561	5521	5468	5313	5187	4995	4703	4380	4075
20.0	5675	5646	5593	5552	5440	5297	5125	4884	4498	4160
20.5	5808	5787	5727	5638	5526	5391	5209	4999	4646	4278
21.0	5902	5895	5843	5767	5608	5485	5303	5115	4751	4390
21.5	5957	5960	5916	5880	5735	5586	5430	5194	4842	4482
22.0	6041	6044	5979	5949	5862	5687	5520	5293	4974	4616
22.5	6136	6138	6074	6017	5935	5795	5590	5389	5086	4724
23.0	6233	6243	6201	6133	6006	5906	5699	5449	5152	4798
23.5	6359	6371	6324	6245	6103	5966	5802	5541	5259	4955
24.0	6456	6448	6430	6352	6214	6043	5885	5649	5376	5086
24.5	6620	6596	6570	6480	6344	6156	5951	5711	5436	5141
25.0	6782	6750	6760	6667	6464	6252	6025	5808	5502	5227
25.5	6846	6847	6834	6786	6559	6340	6123	5889	5588	5332
26.0	6886	6887	6917	6850	6745	6490	6217	5939	5687	5425

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CANDELA TABULATION - (Cont.)

26.5	6890	6926	6967	6971	6843	6652	6328	6037	5800	5532
27.0	6879	6914	7010	7029	6937	6780	6463	6117	5854	5608
27.5	6917	6980	7052	7061	7029	6881	6635	6220	5926	5688
28.0	7067	7079	7176	7136	7093	6938	6739	6321	6012	5769
28.5	7033	7132	7232	7260	7143	7043	6850	6482	6086	5831
29.0	7039	7120	7253	7327	7256	7079	6953	6699	6182	5909
29.5	7100	7145	7277	7358	7331	7128	6977	6788	6376	6035
30.0	7117	7198	7333	7387	7374	7263	7041	6855	6456	6088
30.5	7208	7254	7346	7376	7354	7285	7102	6946	6656	6211
31.0	7349	7399	7440	7408	7361	7289	7174	7013	6800	6293
31.5	7414	7464	7607	7518	7430	7311	7197	7010	6904	6375
32.0	7292	7410	7637	7690	7487	7338	7240	7064	7002	6558
32.5	7301	7412	7598	7734	7659	7373	7280	7200	7078	6736
33.0	7319	7440	7618	7726	7750	7522	7304	7243	7110	6836
33.5	7271	7428	7640	7753	7738	7709	7381	7319	7207	6955
34.0	7252	7369	7591	7755	7749	7780	7495	7378	7324	7042
34.5	7284	7364	7565	7696	7788	7776	7585	7407	7395	7109
35.0	7298	7396	7600	7640	7779	7743	7776	7474	7454	7170
35.5	7271	7384	7620	7649	7710	7770	7740	7565	7502	7235
36.0	7220	7308	7583	7665	7722	7764	7718	7671	7550	7363
36.5	7261	7353	7571	7668	7770	7725	7748	7829	7590	7478
37.0	7343	7405	7564	7656	7742	7740	7758	7886	7653	7543
37.5	7330	7386	7559	7664	7738	7769	7725	7921	7798	7553
38.0	7326	7398	7534	7669	7738	7775	7738	7916	7989	7588
38.5	7334	7381	7548	7682	7792	7759	7790	7980	8109	7639
39.0	7414	7421	7596	7703	7824	7779	7779	7999	8114	7765
39.5	7452	7465	7591	7738	7821	7836	7747	7952	8120	7842
40.0	7469	7515	7658	7798	7848	7911	7793	7956	8146	7937
40.5	7522	7532	7701	7848	7927	7921	7838	7969	8139	8138
41.0	7562	7577	7704	7891	8019	7915	7903	8014	8177	8216
41.5	7581	7616	7768	7933	8091	7996	7930	8059	8209	8227
42.0	7597	7600	7807	7961	8128	8100	7966	8118	8255	8223
42.5	7580	7588	7810	7995	8165	8207	8053	8177	8277	8280
43.0	7543	7565	7788	8024	8248	8248	8160	8207	8304	8322
43.5	7519	7538	7751	7981	8300	8283	8237	8244	8332	8314
44.0	7494	7559	7739	7958	8295	8340	8320	8301	8386	8368
44.5	7496	7567	7732	7982	8271	8352	8377	8408	8461	8398
45.0	7496	7539	7692	7940	8262	8356	8436	8510	8500	8440
45.5	7458	7504	7663	7940	8241	8349	8514	8621	8520	8486
46.0	7345	7390	7590	7915	8215	8342	8525	8703	8588	8516
46.5	7176	7235	7435	7757	8158	8340	8492	8753	8698	8571
47.0	7140	7192	7366	7650	8045	8304	8454	8786	8811	8643
47.5	7100	7115	7307	7590	7963	8287	8475	8807	8919	8710
48.0	7060	7063	7267	7487	7855	8195	8448	8797	8991	8809
48.5	7041	7059	7244	7509	7744	8108	8432	8824	9021	8916
49.0	7054	7102	7261	7528	7712	8032	8396	8778	9032	9010
49.5	7214	7265	7312	7539	7676	7952	8317	8707	9000	9113
50.0	7435	7491	7485	7615	7708	7908	8308	8706	8984	9232
50.5	7448	7522	7642	7759	7778	7915	8215	8673	9000	9297
51.0	7334	7392	7604	7908	7884	7929	8198	8616	8914	9339
51.5	7044	7095	7456	7887	8064	7992	8179	8626	8838	9335
52.0	6719	6781	7094	7598	8182	8068	8173	8630	8851	9286
52.5	6439	6527	6832	7272	8063	8269	8167	8576	8835	9235
53.0	6347	6385	6623	7065	7739	8371	8240	8586	8816	9183
53.5	6265	6317	6536	6831	7387	8268	8408	8551	8835	9159
54.0	6197	6246	6439	6743	7062	8005	8574	8517	8858	9119

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CANDELA TABULATION - (Cont.)

54.5	6225	6273	6432	6686	6959	7657	8637	8531	8851	9097
55.0	6155	6258	6460	6653	6923	7409	8419	8635	8864	9050
55.5	5827	5929	6298	6687	6862	7189	8098	8779	8841	9034
56.0	5608	5664	6029	6528	6924	7074	7761	8763	8834	9033
56.5	5254	5333	5608	6219	6829	7044	7545	8632	8906	9036
57.0	4900	5002	5319	5836	6619	7072	7431	8188	8997	9068
57.5	4740	4805	5020	5428	6248	7053	7321	7974	9035	9063
58.0	4593	4643	4874	5149	5798	6768	7259	7739	8804	9074
58.5	4506	4563	4775	5005	5460	6326	7261	7689	8559	9114
59.0	4491	4581	4734	4898	5237	5896	7041	7576	8297	9151
59.5	4213	4332	4613	4906	5097	5609	6706	7519	8008	9151
60.0	3849	3941	4330	4831	5074	5408	6205	7400	7819	8895
60.5	3693	3745	3923	4434	5094	5304	5900	7173	7764	8533
61.0	3557	3609	3756	4055	4788	5250	5659	6719	7687	8248
61.5	3462	3509	3660	3869	4352	5138	5508	6417	7634	8050
62.0	3354	3411	3583	3759	4058	4872	5436	6086	7488	7963
62.5	3222	3285	3470	3666	3923	4419	5329	5858	7002	7833
63.0	3049	3098	3295	3550	3806	4179	5050	5709	6450	7784
63.5	2916	2937	3105	3365	3701	4085	4678	5636	6205	7625
64.0	2744	2769	2928	3175	3521	3924	4414	5491	5989	7348
64.5	2573	2628	2786	2997	3311	3732	4257	5101	5901	6985
65.0	2468	2520	2641	2809	3097	3559	4041	4793	5810	6552
65.5	2335	2379	2510	2686	2932	3369	3885	4484	5508	6206
66.0	2209	2243	2357	2526	2803	3193	3730	4363	5212	6046
66.5	2085	2116	2241	2399	2634	2964	3483	4094	4766	5914
67.0	1942	1980	2101	2244	2468	2766	3258	3934	4616	5721
67.5	1819	1858	1963	2111	2338	2637	3058	3717	4496	5472
68.0	1718	1746	1830	1972	2181	2503	2908	3468	4205	4978
68.5	1617	1643	1721	1848	2040	2329	2691	3201	3932	4723
69.0	1504	1534	1601	1721	1922	2204	2549	3045	3733	4509
69.5	1419	1439	1509	1623	1774	2025	2373	2771	3374	4243
70.0	1305	1324	1403	1502	1652	1871	2220	2629	3208	4000
70.5	1190	1210	1283	1401	1550	1764	2056	2458	3064	3804
71.0	1089	1106	1167	1287	1439	1660	1932	2289	2797	3438
71.5	1006	1025	1081	1180	1323	1526	1766	2090	2523	3206
72.0	925	958	991	1079	1224	1431	1671	1989	2389	3014
72.5	849	865	945	999	1125	1298	1544	1837	2175	2711
73.0	767	781	824	956	1031	1197	1418	1707	2032	2540
73.5	665	679	725	801	979	1114	1324	1604	1884	2314
74.0	607	619	654	718	914	1003	1198	1439	1750	2134
74.5	541	553	586	644	747	953	1112	1314	1615	1992
75.0	469	484	521	579	667	895	989	1230	1518	1838
75.5	408	420	450	503	587	702	945	1125	1367	1695
76.0	354	365	397	446	522	634	805	1013	1252	1570
76.5	302	313	341	391	463	572	716	920	1137	1407
77.0	261	270	295	337	405	504	616	827	1029	1287
77.5	224	231	256	294	357	447	557	736	940	1190
78.0	190	197	218	255	314	402	508	658	847	1059
78.5	165	170	188	217	267	347	439	586	757	959
79.0	143	147	163	191	236	301	390	517	697	861
79.5	121	125	137	164	207	270	350	464	611	780
80.0	105	108	118	138	176	232	301	406	546	699
80.5	92	95	102	120	155	203	264	356	488	626
81.0	81	83	89	102	133	180	237	313	420	556
81.5	72	73	77	87	111	152	201	275	365	489
82.0	64	65	68	76	96	131	182	241	325	425

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CANDELA TABULATION - (Cont.)

82.5	55	56	59	65	81	114	155	207	274	371
83.0	49	50	52	55	68	92	126	177	234	323
83.5	42	43	44	48	58	80	111	152	197	267
84.0	37	37	38	40	47	62	89	126	166	223
84.5	31	31	32	34	40	52	74	103	133	183
85.0	26	26	27	28	32	42	59	83	109	145
85.5	21	21	22	22	25	32	45	63	84	110
86.0	16	16	17	17	20	24	33	45	62	82
86.5	12	12	13	13	14	17	23	32	44	57
87.0	8	9	9	9	10	11	14	20	27	36
87.5	5	5	6	6	6	7	8	10	14	19
88.0	3	3	3	3	3	4	4	5	6	8
88.5	1	1	2	2	2	2	2	2	3	3
89.0	1	1	1	1	1	1	2	2	2	3
89.5	1	1	1	1	1	1	1	2	2	3
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles									
	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0.0	2811	2811	2811	2811	2811	2811	2811	2811	2811	2811
0.5	2821	2823	2823	2820	2820	2819	2820	2829	2833	2827
1.0	2818	2825	2827	2828	2823	2818	2816	2821	2826	2825
1.5	2818	2819	2819	2824	2823	2819	2819	2823	2827	2827
2.0	2827	2821	2816	2818	2826	2823	2826	2830	2834	2827
2.5	2848	2828	2820	2820	2833	2833	2830	2825	2828	2823
3.0	2859	2856	2839	2826	2825	2834	2826	2825	2830	2822
3.5	2873	2867	2846	2826	2829	2839	2833	2832	2838	2828
4.0	2868	2871	2866	2839	2830	2838	2839	2840	2839	2827
4.5	2869	2869	2873	2852	2830	2839	2841	2833	2843	2832
5.0	2875	2872	2882	2860	2839	2832	2841	2828	2844	2833
5.5	2893	2871	2876	2875	2855	2838	2847	2835	2843	2833
6.0	2917	2876	2871	2883	2867	2845	2847	2846	2844	2839
6.5	2938	2896	2872	2886	2878	2849	2844	2849	2851	2842
7.0	2958	2933	2887	2875	2883	2859	2851	2851	2852	2842
7.5	2966	2953	2904	2876	2885	2872	2859	2859	2860	2847
8.0	2975	2964	2929	2889	2888	2883	2861	2864	2865	2850
8.5	2984	2972	2949	2897	2887	2884	2859	2866	2867	2860
9.0	3006	2983	2969	2918	2890	2895	2859	2875	2879	2868
9.5	3026	2993	2978	2925	2894	2906	2875	2884	2881	2881
10.0	3050	3003	2974	2951	2897	2916	2887	2886	2893	2877
10.5	3059	3009	2985	2961	2906	2917	2898	2900	2909	2888
11.0	3083	3039	2994	2973	2919	2919	2907	2904	2916	2918
11.5	3112	3077	3026	2991	2944	2921	2923	2918	2920	2934
12.0	3127	3089	3034	3002	2973	2931	2938	2931	2928	2949
12.5	3158	3100	3049	3010	2980	2934	2951	2934	2941	2958
13.0	3187	3125	3083	3027	2994	2947	2953	2938	2940	2969
13.5	3209	3157	3094	3037	3009	2950	2958	2943	2958	2994
14.0	3242	3188	3104	3050	3018	2960	2976	2950	2964	2998
14.5	3290	3217	3137	3065	3028	2978	2975	2957	2968	3008
15.0	3328	3229	3154	3080	3036	2998	2983	2967	2975	3024
15.5	3375	3256	3169	3100	3048	3006	2986	2979	2990	3029
16.0	3406	3283	3194	3126	3062	3034	2996	2996	3001	3039
16.5	3456	3325	3217	3141	3073	3041	3005	3008	3007	3066
17.0	3522	3371	3243	3156	3078	3053	3015	3011	3024	3078
17.5	3551	3413	3267	3180	3095	3060	3028	3028	3034	3079

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18.0	3622	3451	3296	3207	3115	3075	3037	3042	3041	3100
18.5	3690	3500	3345	3238	3136	3091	3055	3061	3057	3115
19.0	3747	3545	3385	3257	3167	3102	3058	3071	3063	3125
19.5	3817	3569	3394	3270	3180	3118	3070	3084	3085	3145
20.0	3898	3639	3451	3305	3210	3140	3090	3092	3099	3157
20.5	3996	3716	3512	3352	3231	3153	3099	3104	3107	3175
21.0	4075	3795	3551	3389	3263	3165	3120	3118	3120	3211
21.5	4131	3835	3596	3432	3284	3183	3136	3132	3139	3212
22.0	4228	3914	3648	3470	3319	3197	3148	3148	3162	3235
22.5	4330	3988	3703	3501	3340	3212	3167	3157	3187	3265
23.0	4402	4070	3775	3536	3353	3239	3187	3175	3194	3283
23.5	4554	4152	3828	3575	3386	3245	3199	3195	3215	3325
24.0	4693	4247	3896	3610	3405	3266	3210	3210	3238	3351
24.5	4762	4326	3952	3647	3433	3302	3231	3230	3256	3379
25.0	4882	4408	4012	3691	3476	3329	3236	3239	3267	3406
25.5	5010	4511	4085	3748	3513	3349	3254	3254	3304	3441
26.0	5105	4615	4153	3802	3542	3371	3278	3268	3325	3476
26.5	5226	4752	4220	3848	3571	3387	3295	3286	3344	3507
27.0	5311	4815	4306	3897	3612	3416	3319	3302	3365	3519
27.5	5384	4934	4402	3968	3655	3438	3332	3319	3386	3561
28.0	5482	5023	4454	4006	3694	3467	3353	3342	3419	3616
28.5	5502	5089	4551	4067	3747	3499	3380	3364	3438	3624
29.0	5564	5172	4640	4130	3776	3513	3391	3377	3463	3653
29.5	5682	5309	4707	4181	3794	3543	3416	3398	3502	3711
30.0	5706	5387	4863	4308	3876	3576	3432	3426	3520	3743
30.5	5811	5441	4905	4339	3906	3600	3450	3448	3537	3774
31.0	5896	5463	5012	4403	3950	3630	3482	3476	3584	3817
31.5	5956	5528	5084	4468	3959	3679	3511	3498	3606	3840
32.0	6056	5605	5146	4547	4003	3696	3538	3529	3629	3878
32.5	6114	5639	5209	4629	4086	3748	3568	3554	3675	3900
33.0	6197	5713	5262	4695	4090	3778	3596	3572	3711	3929
33.5	6349	5815	5351	4769	4149	3795	3617	3609	3735	3990
34.0	6382	5834	5369	4842	4263	3869	3653	3640	3781	4047
34.5	6524	5904	5429	4932	4296	3891	3674	3655	3805	4054
35.0	6725	6022	5522	5001	4345	3922	3690	3675	3835	4107
35.5	6866	6048	5544	5076	4439	3981	3719	3698	3868	4165
36.0	6946	6152	5583	5152	4518	4014	3748	3714	3885	4200
36.5	7020	6284	5679	5227	4584	4034	3758	3755	3949	4266
37.0	7133	6385	5734	5254	4604	4110	3796	3775	3966	4320
37.5	7192	6512	5838	5321	4706	4170	3839	3805	4022	4347
38.0	7221	6643	5903	5352	4729	4190	3866	3847	4060	4392
38.5	7344	6847	6009	5371	4806	4240	3906	3878	4086	4424
39.0	7412	6935	6087	5488	4954	4330	3952	3923	4162	4496
39.5	7539	7051	6208	5517	4930	4340	3968	3949	4196	4545
40.0	7590	7116	6253	5588	5052	4411	3992	3959	4230	4570
40.5	7650	7161	6387	5671	5116	4472	4029	4025	4310	4658
41.0	7707	7283	6524	5727	5144	4480	4078	4054	4331	4712
41.5	7797	7338	6720	5830	5256	4528	4118	4098	4391	4755
42.0	7918	7440	6832	5923	5288	4633	4160	4167	4488	4813
42.5	8081	7600	6985	5985	5297	4627	4213	4193	4499	4920
43.0	8199	7671	7088	6081	5398	4714	4260	4222	4551	4952
43.5	8271	7735	7129	6205	5446	4839	4312	4264	4645	5013
44.0	8306	7822	7221	6297	5453	4842	4353	4311	4672	5134
44.5	8291	7881	7306	6416	5528	4878	4395	4367	4764	5190
45.0	8367	8008	7431	6561	5561	4972	4461	4405	4819	5257
45.5	8414	8121	7559	6701	5633	4977	4478	4484	4893	5340

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46.0	8460	8239	7671	6867	5766	5090	4571	4507	4966	5427
46.5	8519	8278	7714	6892	5771	5145	4623	4563	4979	5492
47.0	8574	8375	7841	7043	5832	5150	4658	4641	5106	5574
47.5	8636	8449	7954	7095	5958	5235	4743	4679	5158	5635
48.0	8654	8486	8093	7192	6095	5253	4773	4776	5292	5749
48.5	8666	8522	8131	7299	6206	5365	4871	4844	5416	5841
49.0	8716	8598	8221	7398	6328	5445	4916	4942	5423	5922
49.5	8844	8670	8307	7557	6432	5451	4978	4993	5568	6023
50.0	8904	8731	8395	7617	6464	5511	5047	5066	5592	6085
50.5	8954	8752	8450	7820	6605	5588	5129	5104	5701	6221
51.0	9076	8817	8556	7871	6698	5647	5192	5214	5790	6332
51.5	9147	8855	8605	7961	6907	5779	5255	5328	5950	6435
52.0	9265	8928	8689	8048	7001	5889	5337	5366	5980	6514
52.5	9322	9015	8740	8208	7153	5946	5422	5452	6141	6632
53.0	9417	9125	8777	8217	7154	6004	5466	5525	6154	6715
53.5	9452	9134	8804	8388	7270	6115	5552	5568	6271	6805
54.0	9479	9214	8823	8455	7427	6242	5583	5687	6353	6896
54.5	9460	9261	8884	8577	7640	6419	5690	5770	6412	6962
55.0	9373	9299	8907	8623	7670	6453	5777	5788	6474	7045
55.5	9367	9360	8993	8613	7803	6568	5823	5871	6528	7112
56.0	9318	9427	9052	8689	7845	6663	5922	5874	6501	7177
56.5	9296	9457	9098	8717	7885	6691	5984	5905	6539	7206
57.0	9282	9520	9085	8722	8072	6899	6013	5966	6629	7247
57.5	9191	9477	9062	8750	8209	6998	6128	5996	6629	7244
58.0	9142	9457	9101	8756	8322	7161	6184	6002	6635	7246
58.5	9120	9410	9168	8731	8314	7162	6237	5992	6534	7191
59.0	9128	9364	9171	8744	8422	7323	6340	5957	6429	7172
59.5	9124	9274	9201	8784	8423	7323	6332	5946	6417	7094
60.0	9070	9208	9199	8774	8476	7462	6349	5919	6386	7054
60.5	9094	9145	9153	8726	8506	7410	6365	5855	6235	6932
61.0	9128	9038	9154	8728	8481	7522	6371	5806	6157	6825
61.5	9135	8964	9098	8705	8417	7436	6365	5710	5977	6654
62.0	9030	8892	9010	8683	8417	7514	6404	5629	5781	6520
62.5	8655	8853	8928	8647	8316	7385	6263	5503	5663	6345
63.0	8414	8824	8829	8608	8280	7508	6230	5374	5509	6131
63.5	8001	8801	8717	8537	8188	7337	6114	5262	5297	5951
64.0	7806	8740	8576	8460	8059	7252	5923	5080	5130	5724
64.5	7713	8650	8479	8405	7938	7143	5897	4954	4899	5521
65.0	7650	8351	8359	8283	7801	7022	5746	4782	4711	5276
65.5	7543	7969	8249	8130	7660	6872	5492	4565	4485	5079
66.0	7190	7698	8192	7997	7467	6726	5436	4408	4296	4808
66.5	6810	7486	8184	7860	7334	6545	5275	4285	4065	4583
67.0	6403	7361	7992	7681	7110	6309	5048	4081	3864	4334
67.5	6186	7228	7763	7530	7010	6225	4942	3965	3675	4130
68.0	5986	6927	7519	7382	6774	5938	4679	3736	3461	3891
68.5	5861	6698	7203	7227	6636	5817	4476	3511	3271	3675
69.0	5511	6404	6894	7097	6439	5534	3926	3401	3084	3421
69.5	5163	5979	6749	6956	6247	5408	3813	3237	2900	3241
70.0	4780	5742	6462	6726	5988	5120	3691	3058	2728	2997
70.5	4588	5539	6216	6472	5826	4596	3665	2937	2564	2799
71.0	4265	5197	5887	6166	5553	4413	3485	2723	2392	2632
71.5	4063	4957	5560	5913	5393	3983	3465	2517	2234	2432
72.0	3739	4174	5228	5613	5218	3899	3245	2388	2082	2253
72.5	3465	4068	4998	5365	4958	3788	3064	2281	1937	2104
73.0	3197	3880	4696	5094	4735	3668	2880	2094	1806	1924
73.5	2981	3702	4068	4760	4538	3614	2715	1996	1671	1771

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74.0	2753	3481	3959	4471	3850	3464	2543	1828	1550	1642
74.5	2514	3147	3817	4019	3726	3248	2320	1693	1428	1492
75.0	2289	2891	3469	3862	3620	3026	2205	1597	1320	1363
75.5	2101	2639	3193	3654	3448	2822	2000	1448	1207	1234
76.0	1962	2454	2975	3334	3240	2661	1871	1324	1111	1126
76.5	1814	2254	2730	3047	3002	2462	1734	1220	1010	1023
77.0	1621	2023	2516	2809	2757	2241	1607	1143	926	933
77.5	1470	1883	2288	2572	2555	2106	1469	1045	843	845
78.0	1364	1722	2092	2337	2343	1940	1352	935	761	759
78.5	1213	1527	1913	2139	2140	1751	1241	868	692	686
79.0	1101	1411	1740	1944	1966	1599	1123	783	618	618
79.5	1011	1268	1570	1761	1777	1486	1022	693	560	548
80.0	888	1117	1406	1584	1594	1318	926	634	501	488
80.5	798	1017	1259	1422	1440	1182	823	562	442	434
81.0	718	899	1114	1261	1275	1060	742	493	392	378
81.5	636	795	983	1113	1122	936	630	428	338	331
82.0	546	696	857	975	987	834	566	380	293	286
82.5	483	604	756	848	849	705	489	327	253	243
83.0	420	525	645	726	725	605	402	270	212	207
83.5	353	444	546	615	618	520	349	227	178	174
84.0	291	367	453	511	506	419	289	191	149	143
84.5	241	302	370	413	408	336	223	150	119	117
85.0	191	237	291	323	315	263	183	119	95	93
85.5	144	177	216	241	231	188	130	89	73	73
86.0	107	130	156	170	160	129	86	62	54	55
86.5	73	87	102	109	100	78	54	41	38	40
87.0	46	53	61	62	54	38	27	25	26	28
87.5	24	30	33	33	27	17	13	16	18	19
88.0	9	11	13	15	13	10	9	10	12	13
88.5	4	5	6	7	7	8	8	8	9	10
89.0	3	4	5	5	5	6	7	8	8	10
89.5	3	4	5	5	5	6	7	8	8	9
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles	Horizontal Angles									
	100	105	110	115	120	125	130	135	140	145
0.0	2811	2811	2811	2811	2811	2811	2811	2811	2811	2811
0.5	2819	2810	2804	2799	2799	2802	2811	2820	2826	2831
1.0	2815	2805	2802	2807	2817	2829	2839	2847	2855	2855
1.5	2816	2803	2808	2825	2846	2856	2858	2863	2868	2877
2.0	2812	2804	2819	2842	2855	2857	2865	2882	2900	2920
2.5	2816	2822	2842	2858	2872	2882	2898	2927	2942	2950
3.0	2823	2836	2855	2864	2877	2899	2938	2959	2969	2981
3.5	2819	2844	2869	2879	2905	2937	2968	2987	3011	3043
4.0	2825	2849	2871	2889	2930	2961	2991	3034	3074	3098
4.5	2830	2860	2879	2919	2951	2976	3019	3078	3113	3138
5.0	2838	2875	2897	2932	2971	3015	3071	3131	3170	3204
5.5	2850	2891	2916	2952	2982	3041	3101	3147	3207	3264
6.0	2851	2894	2936	2973	3016	3103	3162	3223	3279	3322
6.5	2852	2896	2945	2996	3076	3152	3202	3295	3329	3384
7.0	2874	2918	2963	3024	3114	3183	3275	3326	3384	3430
7.5	2890	2930	2993	3052	3144	3245	3305	3364	3418	3465
8.0	2899	2952	3008	3082	3183	3271	3347	3412	3469	3522
8.5	2910	2957	3030	3119	3216	3301	3377	3451	3521	3553
9.0	2923	2973	3049	3153	3261	3359	3436	3500	3550	3550

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CANDELA TABULATION - (Cont.)

9.5	2932	3002	3083	3196	3304	3397	3476	3539	3559	3542
10.0	2938	3024	3122	3236	3344	3432	3516	3567	3551	3524
10.5	2947	3028	3142	3276	3378	3499	3559	3569	3543	3552
11.0	2968	3052	3177	3300	3416	3529	3576	3571	3547	3602
11.5	3001	3100	3212	3337	3443	3547	3603	3567	3576	3673
12.0	3013	3129	3254	3392	3496	3580	3595	3565	3634	3713
12.5	3023	3143	3283	3420	3552	3616	3592	3602	3692	3697
13.0	3039	3176	3319	3463	3593	3632	3594	3660	3719	3672
13.5	3066	3197	3339	3511	3625	3628	3609	3704	3719	3660
14.0	3073	3221	3393	3549	3658	3633	3646	3753	3709	3725
14.5	3098	3252	3434	3587	3673	3653	3679	3761	3714	3770
15.0	3111	3265	3466	3615	3700	3661	3729	3754	3749	3804
15.5	3121	3284	3495	3644	3726	3690	3783	3742	3812	3787
16.0	3142	3331	3536	3688	3723	3745	3792	3781	3858	3758
16.5	3169	3381	3577	3739	3715	3793	3806	3816	3850	3787
17.0	3182	3403	3604	3749	3733	3816	3802	3865	3815	3841
17.5	3215	3424	3624	3771	3745	3858	3820	3879	3810	3886
18.0	3240	3455	3654	3782	3772	3872	3844	3880	3839	3915
18.5	3270	3506	3695	3799	3798	3886	3901	3862	3892	3905
19.0	3297	3529	3728	3802	3855	3875	3935	3872	3937	3881
19.5	3317	3547	3728	3811	3897	3877	3951	3896	3953	3821
20.0	3328	3588	3773	3823	3935	3895	3934	3951	3937	3799
20.5	3377	3648	3813	3831	3959	3943	3932	4001	3903	3791
21.0	3419	3688	3836	3841	3967	3975	3943	4026	3872	3788
21.5	3413	3700	3875	3879	3972	3992	3984	3982	3842	3776
22.0	3444	3734	3900	3937	3955	4034	4031	3948	3855	3765
22.5	3478	3772	3920	3977	3993	4021	4064	3944	3869	3763
23.0	3505	3795	3933	4028	4011	4014	4080	3915	3849	3750
23.5	3546	3831	3939	4076	4055	4029	4078	3936	3839	3741
24.0	3601	3879	3953	4086	4078	4063	4051	3938	3822	3729
24.5	3621	3889	3974	4102	4100	4086	4006	3914	3815	3731
25.0	3658	3930	4004	4106	4147	4152	3997	3906	3815	3722
25.5	3738	4006	4049	4136	4144	4153	3999	3887	3812	3695
26.0	3785	4049	4076	4162	4153	4175	4014	3872	3807	3674
26.5	3844	4097	4127	4188	4185	4150	4014	3875	3802	3666
27.0	3849	4118	4182	4214	4229	4124	3991	3873	3759	3643
27.5	3897	4150	4247	4242	4221	4135	3965	3875	3738	3623
28.0	3970	4188	4274	4255	4271	4137	3965	3875	3731	3596
28.5	3965	4214	4291	4259	4279	4112	3948	3837	3713	3537
29.0	4006	4243	4345	4352	4325	4112	3958	3809	3687	3519
29.5	4074	4253	4366	4352	4315	4109	3984	3804	3676	3518
30.0	4097	4267	4393	4371	4302	4094	3977	3781	3624	3497
30.5	4133	4290	4413	4386	4323	4096	3947	3749	3585	3479
31.0	4194	4331	4442	4411	4308	4097	3940	3746	3586	3470
31.5	4222	4377	4469	4462	4316	4088	3900	3711	3570	3414
32.0	4254	4455	4483	4455	4300	4096	3891	3673	3543	3353
32.5	4320	4476	4524	4480	4300	4085	3885	3668	3534	3328
33.0	4362	4525	4567	4511	4321	4078	3883	3657	3490	3267
33.5	4405	4598	4603	4544	4294	4054	3856	3647	3449	3177
34.0	4460	4628	4626	4546	4280	4044	3828	3617	3395	3131
34.5	4482	4665	4641	4534	4269	4027	3824	3604	3338	3091
35.0	4551	4691	4687	4577	4291	4045	3812	3568	3288	3062
35.5	4582	4724	4691	4551	4285	3997	3785	3527	3233	3030
36.0	4630	4762	4718	4548	4268	3997	3759	3490	3174	2978
36.5	4671	4795	4733	4549	4274	3987	3736	3445	3141	2950
37.0	4703	4822	4773	4561	4261	3954	3707	3411	3109	2903

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CANDELA TABULATION - (Cont.)

37.5	4758	4870	4804	4576	4251	3928	3675	3337	3058	2879
38.0	4781	4905	4813	4555	4221	3943	3675	3285	3013	2829
38.5	4808	4941	4851	4553	4213	3930	3641	3252	2963	2786
39.0	4870	4974	4889	4565	4165	3898	3578	3213	2951	2732
39.5	4934	5008	4882	4535	4175	3904	3543	3185	2906	2666
40.0	4965	5044	4882	4528	4164	3876	3491	3124	2845	2605
40.5	5001	5085	4898	4520	4157	3820	3398	3089	2825	2557
41.0	5076	5110	4900	4492	4143	3803	3356	3055	2758	2487
41.5	5130	5148	4957	4514	4164	3755	3306	3006	2706	2444
42.0	5165	5178	4964	4489	4147	3732	3276	2991	2666	2386
42.5	5235	5187	4954	4492	4139	3689	3206	2948	2607	2341
43.0	5286	5237	4976	4502	4136	3635	3195	2852	2519	2252
43.5	5335	5295	4979	4434	4071	3567	3148	2846	2506	2201
44.0	5428	5309	4985	4460	4047	3548	3111	2749	2421	2129
44.5	5468	5358	5017	4442	4022	3458	3076	2695	2366	2064
45.0	5556	5409	4976	4441	3980	3448	3042	2658	2323	2002
45.5	5627	5444	4978	4441	3941	3412	2986	2560	2237	1942
46.0	5684	5481	4948	4442	3908	3347	2933	2504	2179	1868
46.5	5752	5522	4942	4429	3852	3331	2846	2427	2130	1826
47.0	5796	5575	4962	4418	3682	3274	2797	2376	2047	1764
47.5	5832	5577	4943	4404	3688	3269	2788	2328	1977	1680
48.0	5903	5637	4917	4221	3670	3190	2698	2276	1944	1640
48.5	5963	5624	4910	4167	3621	3133	2634	2233	1897	1549
49.0	6028	5700	4958	3898	3581	3068	2555	2138	1805	1476
49.5	6085	5711	4874	3898	3578	3048	2488	2082	1742	1416
50.0	6146	5704	4919	3872	3556	2956	2432	2014	1652	1342
50.5	6221	5742	4895	3859	3495	2871	2368	1950	1582	1293
51.0	6288	5695	4846	3797	3423	2814	2316	1918	1545	1256
51.5	6386	5767	4900	3800	3381	2756	2260	1848	1440	1175
52.0	6465	5840	4875	3746	3300	2666	2180	1764	1398	1124
52.5	6502	5756	4831	3693	3219	2553	2136	1679	1333	1090
53.0	6522	5760	4774	3702	3186	2556	2070	1574	1253	1025
53.5	6645	5739	4748	3700	3114	2448	1972	1535	1218	990
54.0	6661	5740	4699	3634	3035	2427	1934	1499	1161	985
54.5	6759	5826	4735	3636	2909	2314	1822	1404	1110	968
55.0	6804	5804	4354	3578	2888	2245	1754	1346	1065	945
55.5	6813	5809	4342	3514	2811	2211	1706	1287	1030	864
56.0	6933	5718	3948	3506	2737	2149	1622	1219	1000	782
56.5	6959	5677	3942	3436	2657	2077	1522	1171	976	740
57.0	6885	5648	3848	3352	2581	2007	1493	1145	965	717
57.5	6957	5712	3862	3276	2459	1895	1397	1069	937	672
58.0	6951	5668	3797	3200	2439	1811	1325	1012	902	628
58.5	6897	5449	3755	3113	2357	1776	1295	1014	768	592
59.0	6836	5502	3758	3070	2317	1720	1226	968	706	544
59.5	6752	5307	3681	2905	2181	1593	1160	965	688	519
60.0	6715	5357	3675	2895	2114	1522	1116	956	636	490
60.5	6696	5405	3586	2764	2041	1460	1062	918	610	467
61.0	6519	5209	3573	2741	1996	1377	1009	745	559	425
61.5	6425	4633	3493	2642	1905	1317	1023	718	527	399
62.0	6265	4632	3457	2540	1808	1278	972	676	506	373
62.5	6085	4459	3366	2451	1731	1220	966	649	475	359
63.0	5973	4095	3459	2365	1611	1131	941	597	446	342
63.5	5841	4086	3275	2281	1579	1065	896	562	417	323
64.0	5600	3951	3156	2178	1543	1063	804	532	394	311
64.5	5466	3805	3063	2094	1425	1064	709	502	365	293
65.0	5249	3776	2964	1999	1358	1006	650	472	349	277

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CANDELA TABULATION - (Cont.)

65.5	4989	3644	2939	1922	1290	999	628	454	329	269
66.0	4801	3660	2814	1822	1192	952	580	421	315	259
66.5	4609	3595	2625	1748	1160	923	543	392	298	247
67.0	3975	3505	2508	1664	1101	903	524	369	283	236
67.5	3882	3376	2422	1586	1070	771	494	344	266	224
68.0	3755	3280	2301	1482	1028	662	460	324	256	212
68.5	3678	3049	2185	1444	994	624	434	310	243	205
69.0	3555	2936	2070	1319	972	588	409	291	235	199
69.5	3327	2731	1965	1297	981	556	384	268	219	186
70.0	3131	2526	1799	1176	921	521	360	258	209	177
70.5	2921	2412	1739	1140	923	502	335	243	201	168
71.0	2711	2301	1659	1088	724	466	322	233	191	162
71.5	2541	2135	1558	1053	625	425	293	217	181	154
72.0	2366	1996	1460	1018	583	398	272	204	172	146
72.5	2197	1863	1331	979	563	373	262	196	165	138
73.0	2016	1726	1273	971	512	351	240	183	154	131
73.5	1863	1601	1186	930	491	329	224	172	146	124
74.0	1721	1487	1108	767	457	315	215	164	139	118
74.5	1569	1370	1078	660	415	286	196	152	129	110
75.0	1437	1257	919	593	397	275	183	143	122	103
75.5	1307	1139	847	547	369	255	175	135	115	98
76.0	1200	1045	784	510	343	237	164	126	107	92
76.5	1092	965	733	469	317	213	149	117	100	86
77.0	990	872	654	431	289	201	136	110	93	80
77.5	893	806	615	406	273	185	131	101	87	74
78.0	811	745	560	361	243	169	120	95	82	69
78.5	731	656	498	332	224	156	108	86	75	65
79.0	655	603	465	311	209	143	102	79	68	58
79.5	589	550	419	270	183	128	91	73	64	54
80.0	525	478	369	248	168	118	85	66	58	50
80.5	463	434	340	220	150	103	76	60	52	45
81.0	411	386	293	196	134	95	68	54	48	41
81.5	358	333	259	174	119	85	63	49	43	37
82.0	308	294	232	151	104	73	55	44	38	33
82.5	266	250	195	131	91	66	49	39	34	30
83.0	225	213	167	113	79	57	44	35	30	26
83.5	188	182	146	96	66	49	38	31	27	23
84.0	157	150	118	81	58	43	34	27	23	20
84.5	128	123	98	67	49	37	29	24	21	18
85.0	102	100	81	57	40	31	25	21	18	15
85.5	81	78	63	45	34	27	22	18	15	13
86.0	61	60	50	36	28	22	19	16	13	11
86.5	44	44	38	29	23	19	16	13	11	10
87.0	30	30	27	22	18	16	13	11	10	8
87.5	20	21	19	17	15	13	12	10	9	7
88.0	14	15	15	14	13	12	11	10	8	7
88.5	12	12	12	12	12	12	11	9	8	7
89.0	11	11	12	12	12	12	11	9	8	7
89.5	10	11	12	12	12	12	11	9	8	7
90.0	0	0	0	0	0	0	0	0	0	0

**Vert.
Angles**

Horizontal Angles

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0.0	2811	2811	2811	2811	2811	2811	2811
0.5	2836	2837	2837	2829	2826	2820	2817

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1.0	2854	2854	2852	2848	2845	2843	2845
1.5	2891	2904	2907	2907	2905	2908	2916
2.0	2940	2951	2947	2933	2926	2927	2933
2.5	2958	2964	2970	2974	2980	2984	2992
3.0	2995	3020	3034	3045	3052	3057	3064
3.5	3071	3078	3086	3088	3089	3095	3106
4.0	3119	3132	3149	3172	3180	3186	3194
4.5	3181	3213	3227	3238	3244	3246	3253
5.0	3246	3265	3275	3282	3295	3293	3304
5.5	3293	3325	3335	3355	3369	3372	3396
6.0	3341	3372	3396	3404	3428	3451	3468
6.5	3410	3441	3470	3474	3481	3475	3506
7.0	3455	3495	3499	3496	3500	3488	3508
7.5	3515	3531	3507	3492	3480	3467	3479
8.0	3534	3523	3496	3477	3461	3446	3458
8.5	3528	3508	3476	3473	3478	3476	3489
9.0	3518	3500	3496	3518	3539	3545	3557
9.5	3520	3529	3567	3600	3614	3615	3632
10.0	3544	3591	3637	3650	3631	3615	3618
10.5	3614	3653	3660	3631	3597	3583	3590
11.0	3659	3667	3633	3596	3586	3597	3615
11.5	3680	3634	3622	3626	3649	3681	3700
12.0	3650	3623	3660	3696	3709	3729	3754
12.5	3640	3671	3725	3740	3725	3719	3744
13.0	3679	3739	3748	3721	3679	3662	3683
13.5	3737	3770	3723	3677	3681	3678	3702
14.0	3763	3744	3705	3715	3735	3733	3754
14.5	3770	3731	3737	3785	3813	3818	3818
15.0	3744	3749	3795	3834	3825	3805	3786
15.5	3754	3822	3844	3847	3801	3773	3755
16.0	3793	3851	3849	3810	3743	3715	3708
16.5	3850	3866	3805	3749	3703	3688	3679
17.0	3882	3831	3745	3709	3692	3675	3672
17.5	3886	3784	3722	3704	3694	3671	3666
18.0	3834	3741	3720	3699	3675	3659	3655
18.5	3795	3728	3715	3674	3661	3643	3643
19.0	3769	3718	3694	3662	3642	3624	3622
19.5	3759	3705	3674	3646	3632	3609	3618
20.0	3754	3694	3661	3634	3614	3596	3597
20.5	3753	3684	3656	3625	3586	3563	3580
21.0	3731	3672	3636	3603	3568	3552	3578
21.5	3709	3669	3614	3584	3553	3538	3557
22.0	3699	3667	3593	3565	3536	3523	3544
22.5	3691	3641	3572	3548	3531	3509	3531
23.0	3689	3618	3551	3535	3508	3474	3489
23.5	3680	3600	3539	3492	3430	3396	3405
24.0	3651	3574	3508	3434	3380	3351	3371
24.5	3620	3573	3463	3379	3363	3349	3378
25.0	3607	3545	3422	3366	3367	3358	3386
25.5	3596	3491	3398	3362	3367	3345	3371
26.0	3580	3451	3385	3359	3329	3297	3308
26.5	3530	3421	3388	3328	3284	3244	3258
27.0	3488	3414	3366	3285	3243	3197	3203
27.5	3464	3407	3337	3243	3185	3132	3129
28.0	3461	3382	3287	3198	3127	3063	3066
28.5	3457	3341	3244	3131	3062	3007	3022

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29.0	3437	3297	3186	3060	3008	2970	3001
29.5	3405	3245	3118	3006	2977	2941	2969
30.0	3364	3185	3054	2972	2943	2899	2918
30.5	3320	3122	3017	2948	2906	2859	2870
31.0	3262	3074	2980	2907	2849	2812	2819
31.5	3207	3050	2943	2858	2805	2782	2784
32.0	3149	3007	2900	2829	2783	2760	2761
32.5	3118	2964	2859	2789	2729	2696	2681
33.0	3083	2926	2813	2737	2652	2600	2596
33.5	3032	2863	2780	2671	2600	2558	2558
34.0	3007	2840	2740	2617	2546	2517	2514
34.5	2953	2809	2677	2560	2503	2484	2480
35.0	2919	2774	2613	2518	2465	2438	2438
35.5	2869	2702	2560	2477	2420	2381	2384
36.0	2823	2645	2515	2423	2370	2332	2331
36.5	2784	2602	2476	2371	2317	2275	2266
37.0	2713	2541	2420	2327	2261	2214	2194
37.5	2655	2499	2363	2267	2202	2152	2133
38.0	2613	2458	2320	2211	2136	2082	2066
38.5	2572	2400	2261	2139	2058	1996	1986
39.0	2524	2341	2175	2048	1973	1928	1923
39.5	2464	2296	2118	1996	1924	1878	1872
40.0	2404	2242	2045	1937	1861	1818	1813
40.5	2335	2160	1968	1869	1788	1745	1741
41.0	2275	2086	1921	1820	1739	1688	1687
41.5	2235	2041	1857	1743	1643	1588	1583
42.0	2128	1942	1785	1663	1574	1508	1499
42.5	2069	1889	1712	1590	1511	1463	1464
43.0	2007	1831	1652	1527	1440	1397	1398
43.5	1949	1765	1597	1474	1380	1335	1331
44.0	1899	1711	1538	1400	1311	1276	1284
44.5	1821	1624	1447	1335	1255	1226	1228
45.0	1762	1550	1389	1281	1209	1183	1183
45.5	1715	1489	1334	1224	1165	1139	1139
46.0	1633	1407	1259	1174	1117	1086	1076
46.5	1562	1345	1218	1136	1075	1036	1023
47.0	1503	1301	1179	1085	1025	988	980
47.5	1426	1242	1127	1032	984	926	912
48.0	1383	1208	1079	988	922	872	863
48.5	1301	1144	1027	953	868	835	835
49.0	1246	1082	980	877	829	801	803
49.5	1194	1043	961	840	794	763	763
50.0	1148	1001	931	806	760	731	733
50.5	1106	989	843	768	711	677	672
51.0	1055	965	810	726	671	626	616
51.5	1008	855	757	682	630	594	589
52.0	988	828	727	647	587	550	544
52.5	965	798	687	605	542	510	504
53.0	940	751	644	565	503	474	468
53.5	873	718	609	520	468	441	434
54.0	801	668	560	489	438	410	404
54.5	752	618	517	451	409	385	377
55.0	711	585	488	423	381	360	353
55.5	679	556	456	396	356	339	333
56.0	624	512	426	372	339	325	321
56.5	588	486	403	349	322	310	305

IES ROAD REPORT
PHOTOMETRIC FILENAME : L041706603.IES

CANDELA TABULATION - (Cont.)

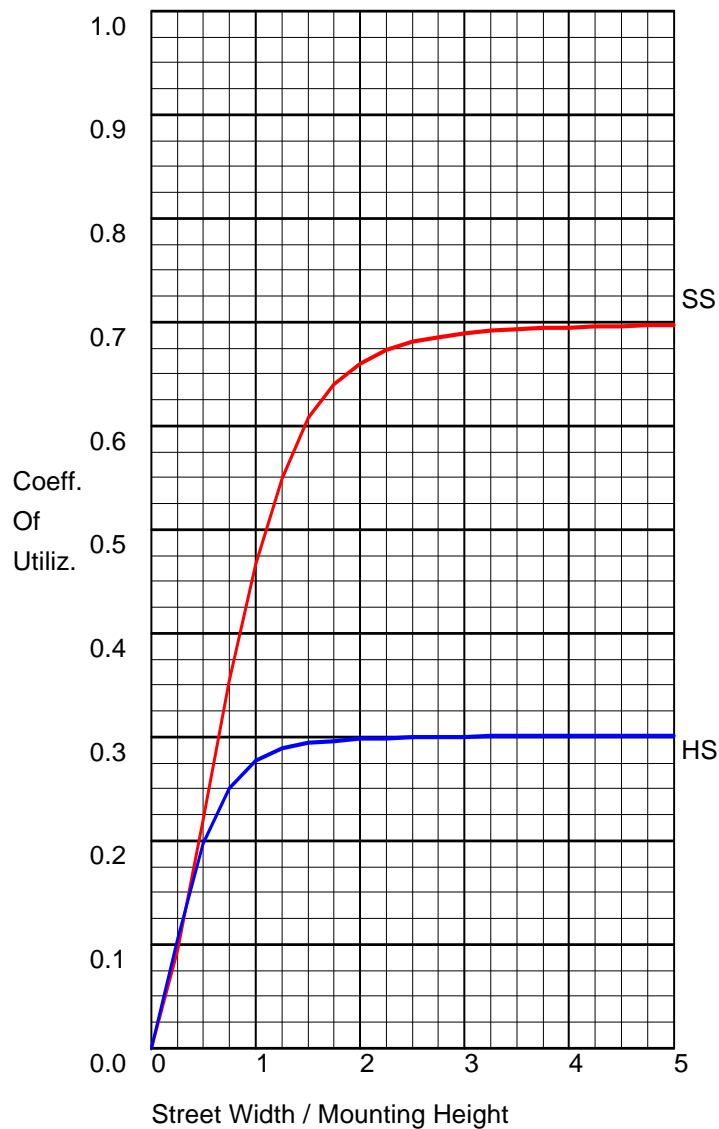
57.0	565	450	375	332	308	295	291
57.5	518	423	350	317	297	286	281
58.0	488	397	336	304	286	276	272
58.5	466	374	322	293	275	264	261
59.0	428	355	308	282	265	256	253
59.5	407	342	299	270	255	246	244
60.0	384	326	287	262	245	234	232
60.5	353	306	272	249	236	228	226
61.0	345	298	264	241	227	219	217
61.5	326	287	255	232	217	211	209
62.0	311	276	248	222	210	203	202
62.5	301	266	237	215	202	195	195
63.0	286	256	227	207	195	189	188
63.5	275	246	217	199	187	182	181
64.0	266	239	210	191	179	174	174
64.5	253	229	202	184	172	167	167
65.0	242	217	194	176	166	162	162
65.5	234	209	187	170	161	156	156
66.0	223	201	179	163	154	149	149
66.5	213	192	171	156	148	144	144
67.0	205	185	166	151	142	139	139
67.5	197	178	159	145	136	133	133
68.0	186	169	153	139	131	128	129
68.5	179	162	147	133	126	123	123
69.0	170	155	140	128	121	117	118
69.5	162	148	133	122	116	113	114
70.0	155	142	129	117	111	108	109
70.5	147	135	123	112	106	104	104
71.0	141	129	118	107	102	99	99
71.5	133	123	112	102	97	95	95
72.0	127	116	106	97	92	91	91
72.5	120	111	102	93	88	86	86
73.0	115	106	97	88	84	82	82
73.5	108	100	91	83	79	78	78
74.0	102	95	87	80	76	74	74
74.5	97	90	82	75	72	70	70
75.0	91	85	78	71	67	66	66
75.5	86	80	73	67	63	62	62
76.0	80	75	69	63	60	58	58
76.5	75	70	64	59	56	55	55
77.0	70	65	60	55	52	51	51
77.5	66	61	56	51	48	48	47
78.0	60	57	52	47	45	44	44
78.5	56	52	48	44	42	41	41
79.0	51	48	44	40	38	38	38
79.5	47	44	41	37	35	34	34
80.0	44	41	37	34	32	31	31
80.5	39	37	33	31	29	28	28
81.0	36	33	30	28	26	26	26
81.5	32	30	27	25	24	23	23
82.0	29	27	24	22	21	21	20
82.5	26	24	22	20	19	18	18
83.0	23	21	19	18	17	16	16
83.5	20	19	17	16	15	14	14
84.0	18	16	15	14	13	12	12
84.5	15	14	13	12	11	11	11

IES ROAD REPORT
PHOTOMETRIC FILENAME : L041706603.IES

CANDELA TABULATION - (Cont.)

85.0	13	12	11	10	10	9	9
85.5	12	11	10	9	8	8	8
86.0	10	9	8	8	7	7	7
86.5	8	8	7	6	6	6	6
87.0	7	6	6	5	5	5	5
87.5	6	6	5	5	4	4	4
88.0	6	5	4	4	4	4	3
88.5	6	5	4	4	3	3	3
89.0	6	5	4	3	3	3	3
89.5	6	5	4	4	3	3	3
90.0	0	0	0	0	0	0	0

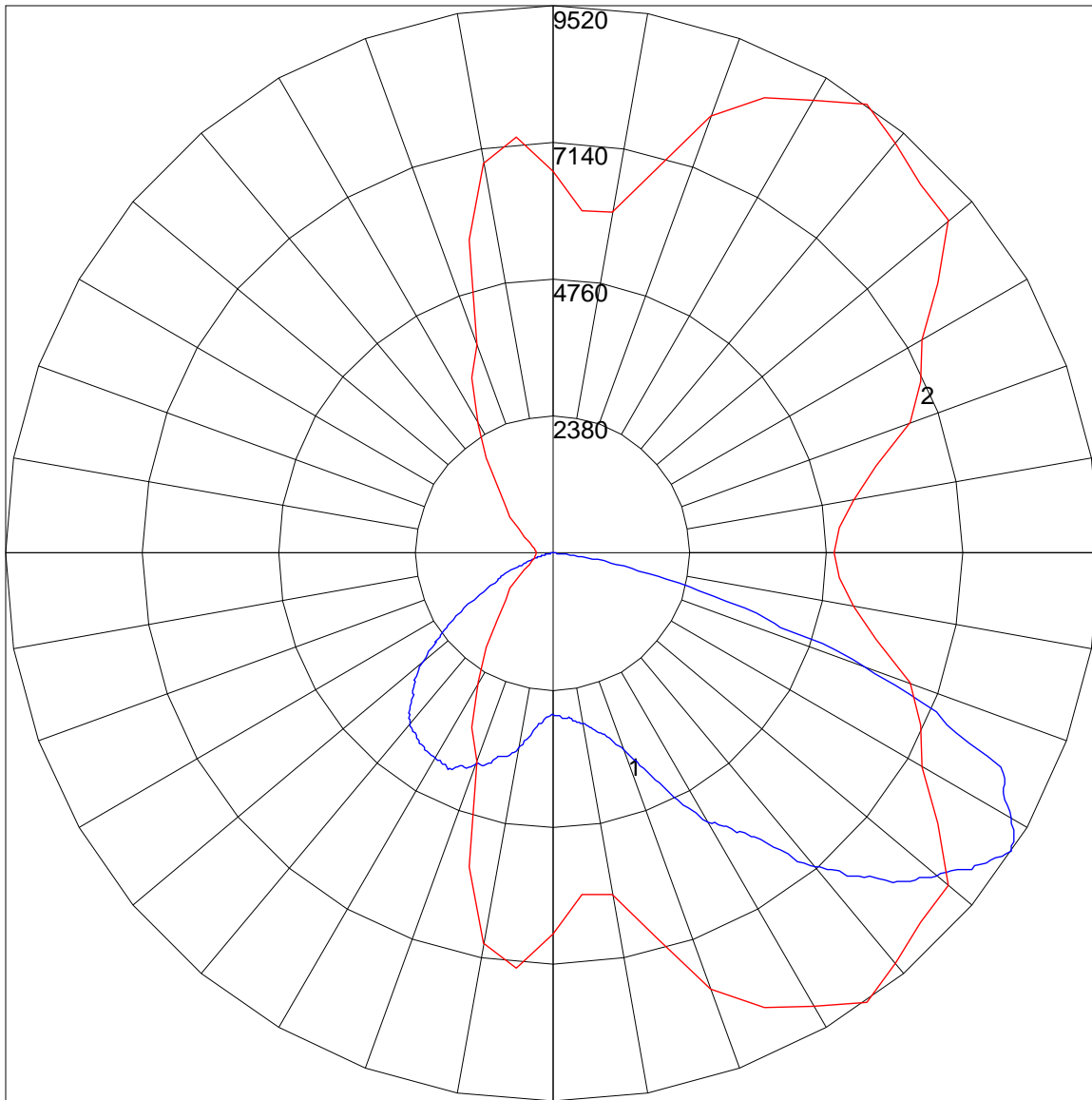
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

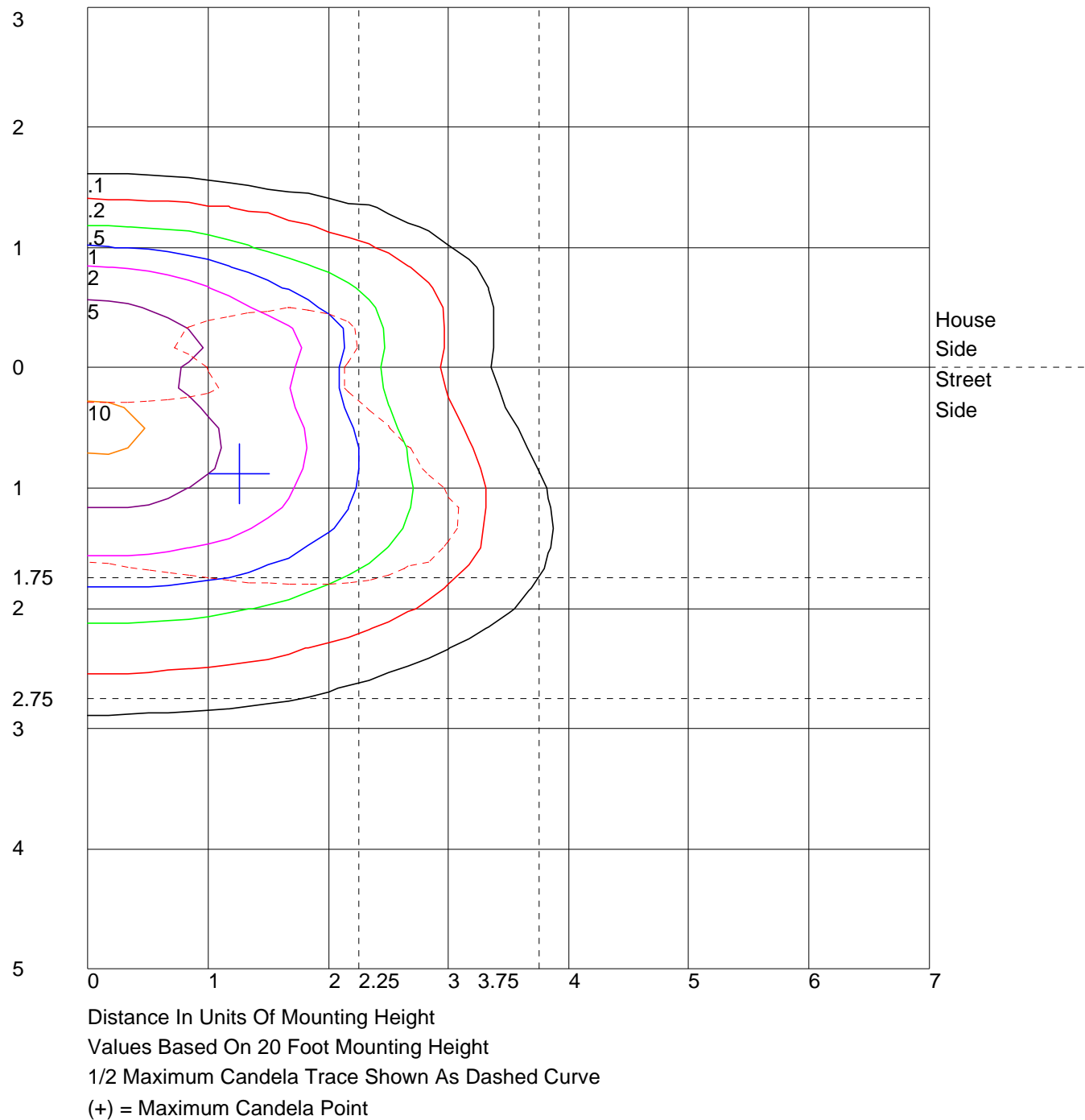
	Lumens	Percent Of Luminaire
Downward Street Side	13662.8	69.8
Downward House Side	5899.3	30.2
Downward Total	19562.1	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	19562.1	100.0

POLAR GRAPH

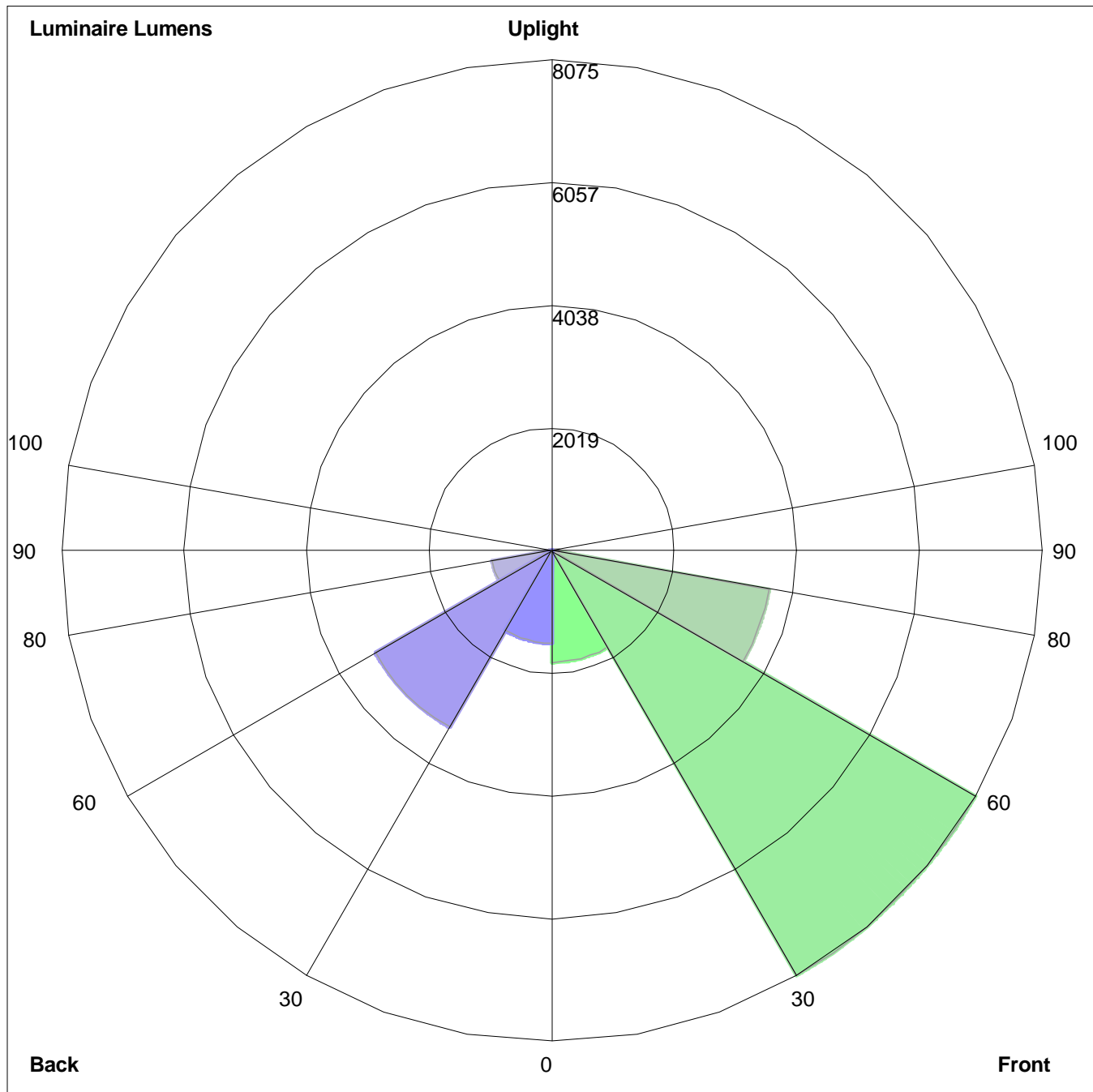


Maximum Candela = 9520 Located At Horizontal Angle = 55, Vertical Angle = 57
1 - Vertical Plane Through Horizontal Angles (55 - 235) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (57) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=1834.5, Medium=8075.3, High=3638.9, Very High=114.1
Back: Low=1519.2, Medium=3357.9, High=991.5, Very High=30.6
Uplight: Low=0.0, High=0.0

BUG Rating : B3-U0-G2