

Scaled data based on original data using
LM-31-95 IESNA Approved Method for Photometric Testing of Roadway Luminaires
Using Incandescent Filament and High Intensity Discharge Lamps

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: STREETWORKS

Report Number: P31630

Luminaire Tested: **OVW40SXX2D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-31-95
Report Number: P31630
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: OVW40SXX2D
Description: STREET WORKS LARGE COBRA HEAD HPS ROADWAY FIXTURE (TX DOT
FIXTURE B, BATCH T-170) WITH CLEAR FLAT GLASS LENS, SHIM
UNDERNEATH SOCKET BRACKET, HYDROFORMED SEMI SPECULAR
REFLECTOR, AND GASKET MATERIAL ON REFLECTOR. FIXTURE LEVELED
Light Source: (1) MOGUL BASE E17 CLEAR HIGH PRESSURE SODIUM LAMP
GE LU400 400 WATTS
Ballast/Driver: (1) COOPER LIGHTING MAGNETIC BALLAST
8449D40G37

Summary

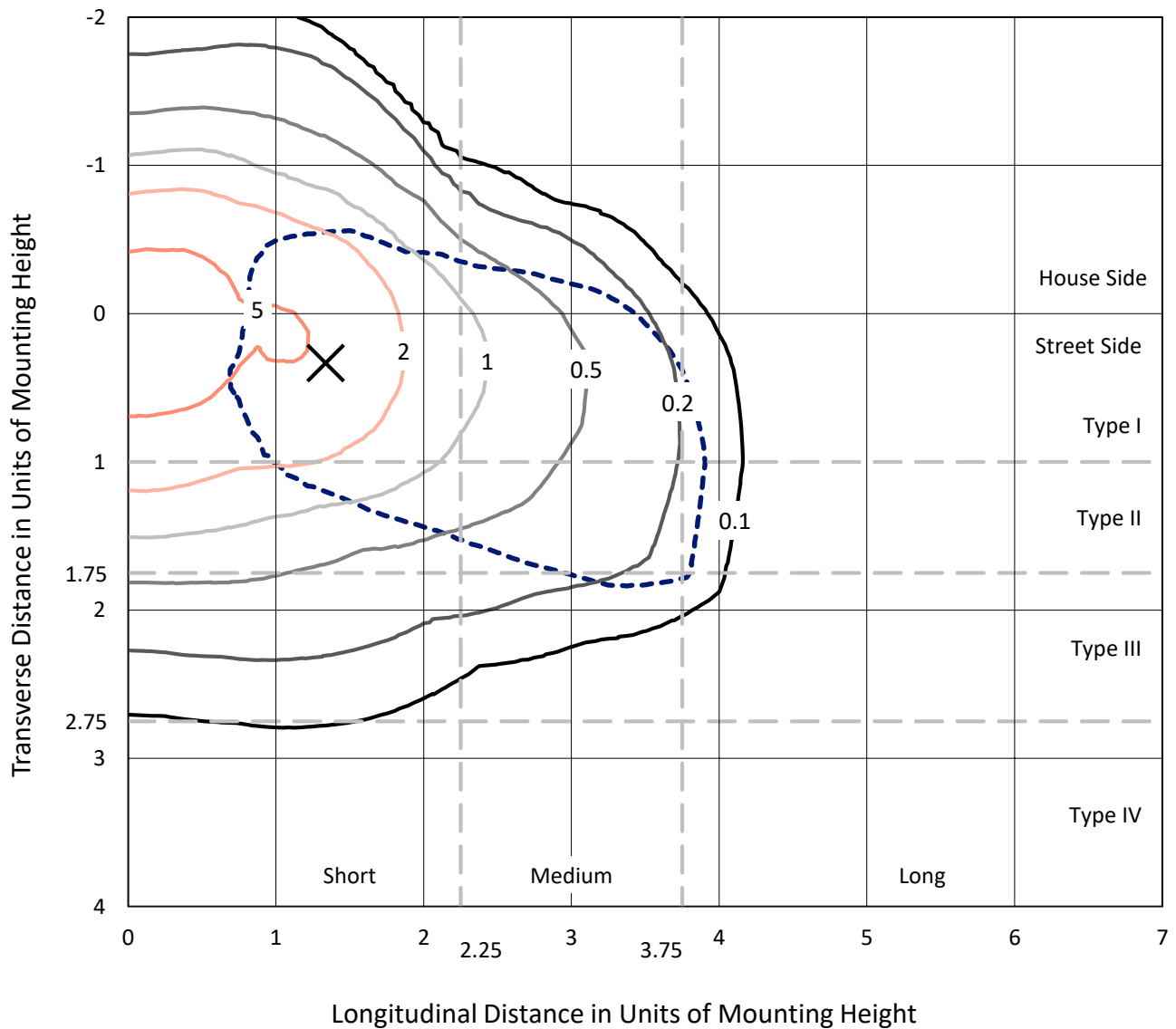
Lumens per Lamp: 50000 (1 lamp)
Luminaire Lumens: 36322.1 lumens
Efficiency: 72.6%
Efficacy: 90.7 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 1.17' x L: 1.33' x H: 0.25')
IES Classification: Type II - Short - Cutoff
BUG Rating: B4 - U1 - G3

Input Watts (W): 400.5
Input Voltage (V): 115.19
Input Current (Ain): 4.161
Voltage Rise (V): 11.4
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: 5 HR
Ambient Temperature (°C): 25.2
Test Distance: 28.75 FT

REPORT NUMBER: P31630
 CATALOG NUMBER: OVW40SXX2D

Iso-Footcandle Lines of Horizontal Illumination

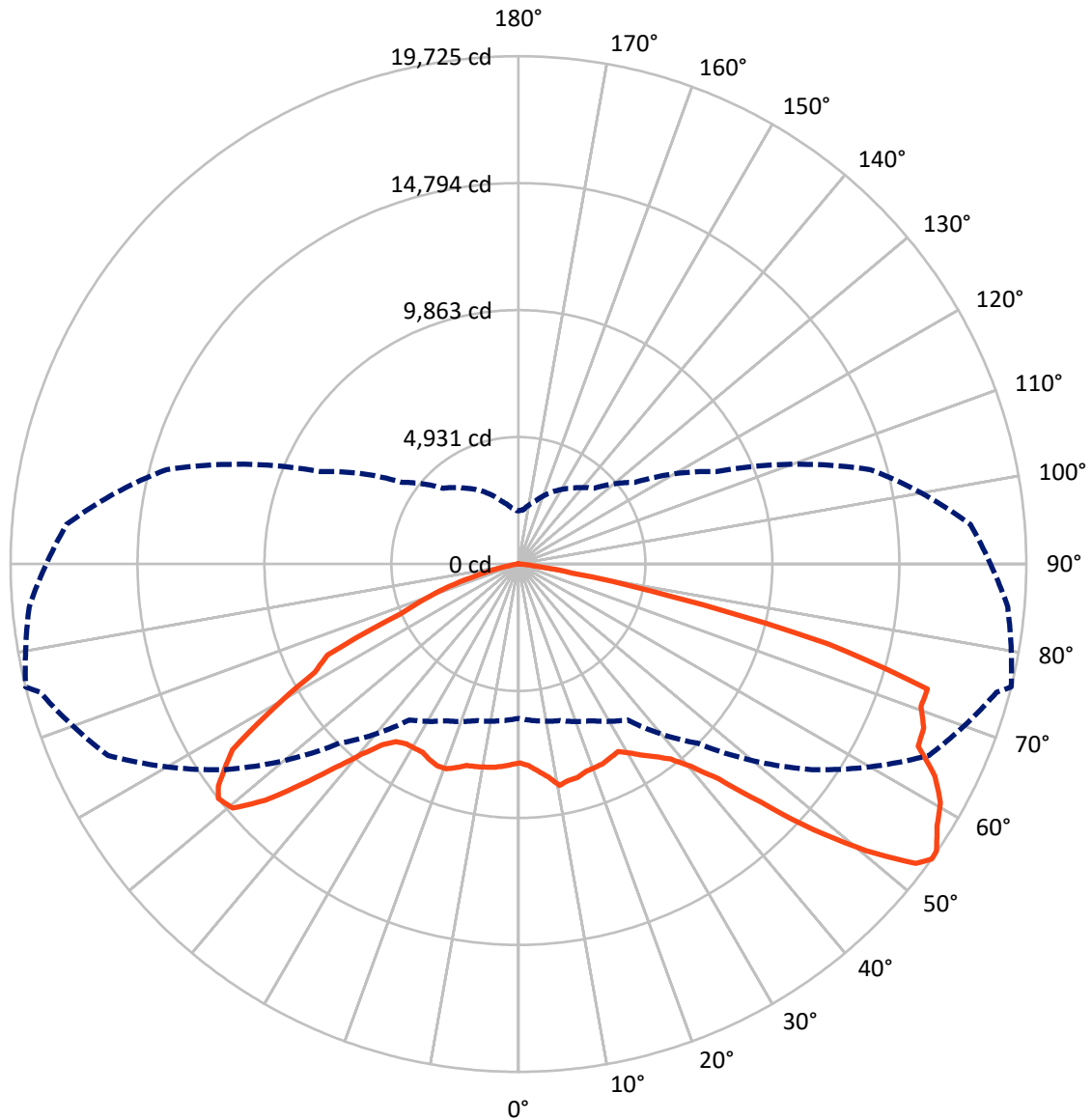
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 9.4 fc
 Type II - Short - Cutoff

REPORT NUMBER: P31630
CATALOG NUMBER: OVW40SXX2D

Luminous Intensity Polar Plot



— Vertical Plane Through 76-Deg Lateral - - - Horizontal Cone Through 54-Deg Vertical



REPORT NUMBER: P31630
 CATALOG NUMBER: OVW40SXX2D

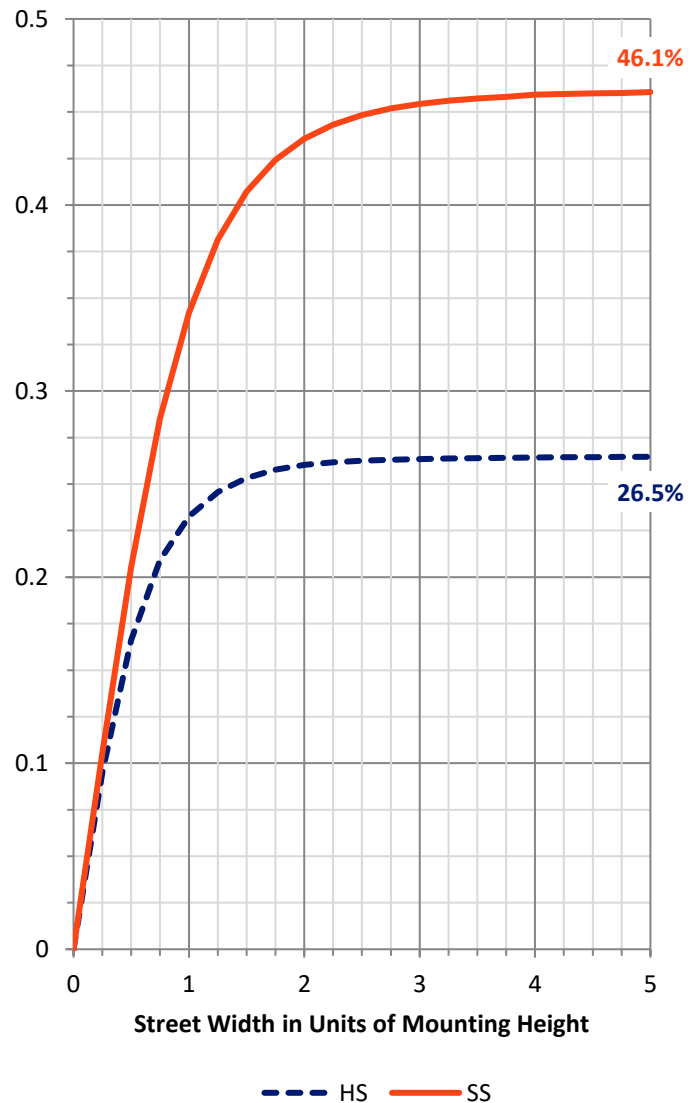
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	13311.1	2.9	13314.0
	% Lamp	26.6	0.0	26.6
Street Side	Lumens	23007.2	0.9	23008.2
	% Lamp	46.0	0.0	46.0
Total	Lumens	36318.3	3.8	36322.1
	% Lamp	72.6	0.0	72.6

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	755.6	2.1	1.5
10°-20°	2296.1	6.3	4.6
20°-30°	3680.0	10.1	7.4
30°-40°	4903.6	13.5	9.8
40°-50°	6567.0	18.1	13.1
50°-60°	8077.3	22.2	16.2
60°-70°	6542.3	18.0	13.1
70°-80°	3310.6	9.1	6.6
80°-90°	185.7	0.5	0.4
90°-100°	2.2	0.0	0.0
100°-110°	1.6	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-90°	36318.3	100.0	72.6
0°-180°	36322.1	100.0	72.6

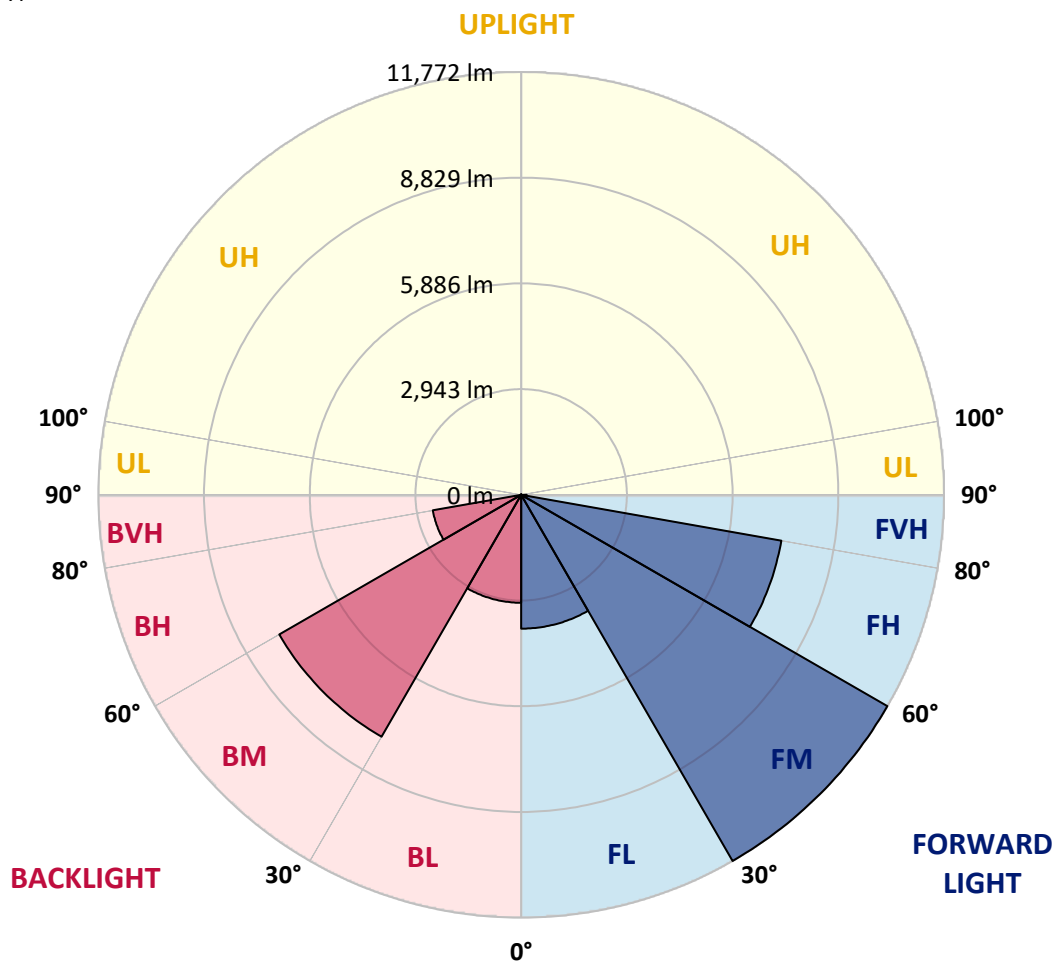


REPORT NUMBER: P31630
 CATALOG NUMBER: OVW40SXX2D

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Lamp	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	3726.6	7.5			
FM (30°-60°)	11771.8	23.5			
FH (60°-80°)	7355.6	14.7			G3/7500
FVH (80°-90°)	153.2	0.3			G2/225
BL (0°-30°)	3005.0	6.0	B4/5000		
BM (30°-60°)	7776.1	15.6	B4/8500		
BH (60°-80°)	2497.4	5.0	B3/2500		G3/2500
BVH (80°-90°)	32.5	0.1			G1/100
UL (90°-100°)	2.2	0.0		U1/10	
UH (100°-180°)	2.9	0.0		U1/10	
Trapped Light	13677.9	27.4			

BUG Rating: B4-U1-G3
 Type II Short





REPORT NUMBER: P31630
 CATALOG NUMBER: OVW40SXX2D

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
0°	7720	7720	7720	7720	7720	7720	7720	7720	7720	7720	7720
2.5°	7893	8013	8035	7991	7951	7886	8140	7931	7793	7848	7729
5°	8239	8346	8359	8308	8239	8168	8219	8215	8020	8084	7908
7.5°	8512	8619	8646	8590	8604	8519	8584	8519	8271	8350	8100
10°	8766	8877	8906	8941	8957	8848	8830	8723	8435	8743	8235
12.5°	8985	9083	9141	9210	9194	9025	8961	8839	8539	8630	8321
15°	9130	9227	9336	9410	9301	9107	9019	8872	8501	8604	8304
17.5°	9163	9239	9431	9467	9343	9134	9019	8781	8373	8470	8230
20°	9123	9205	9451	9434	9318	9114	8992	8699	8321	8444	8182
22.5°	9014	9083	9390	9300	9214	9107	9005	8839	8306	8419	8102
25°	8868	8959	9218	9147	9189	9167	9176	8870	8281	8321	7933
27.5°	8686	8774	9027	9047	9181	9270	9385	8885	8142	8250	7886
30°	8439	8526	8710	8901	9168	9390	9370	8897	8377	8515	8111
32.5°	8206	8295	8588	8750	9190	9219	9483	9156	8705	8857	8412
35°	8013	8093	8321	8546	9179	9420	9421	9409	9023	9190	8785
37.5°	7824	7904	7831	8306	9085	9323	9541	9629	9441	9612	9347
40°	7646	7766	7780	8039	8896	9305	9671	9978	10111	10335	10287
42.5°	7438	7575	7615	7804	8554	9190	9853	10579	11179	11394	11532
45°	7278	7413	7473	7647	8266	8996	10257	11663	12782	13186	13332
47.5°	7085	7227	7311	7569	8090	9048	11032	13295	14962	15413	15288
50°	6790	6929	7043	7347	7829	9259	12114	15204	16963	17498	17529
52.5°	6295	6445	6627	6989	7495	9682	13393	16816	18796	19321	18876
54°	5993	6099	6297	6718	7393	9842	13919	17589	19230	19725	19074
55°	5731	5844	6044	6507	7278	9851	14112	17851	19230	19696	19001
57.5°	5000	5138	5380	6013	6961	9567	14050	17467	18706	19174	18301
60°	4287	4347	4780	5553	6494	8737	13231	16749	18355	18832	18039
62.5°	3555	3612	4147	5076	5882	7576	12316	16396	17711	18157	16707
65°	2980	3035	3575	4556	5553	6991	11328	15459	16650	17060	15921
67.5°	2507	2567	3090	4043	5009	6245	10127	14631	16527	16978	16681
70°	2103	2167	2627	3515	4547	5702	9170	14409	16143	16583	16161
72.5°	1452	1663	2172	2875	3723	4565	7993	13817	16135	16616	15626
75°	750	1081	1578	1976	2260	2742	5881	12804	12442	12424	9818
77.5°	280	580	917	1072	1057	1115	3916	7946	6152	6057	4107
80°	160	253	326	351	384	579	1785	3068	2167	2131	1452
82.5°	106	118	124	164	207	307	586	832	650	666	451
85°	69	78	80	82	100	151	187	213	167	164	120
87.5°	44	47	40	45	44	58	53	38	31	40	36
90°	11	13	5	13	5	13	9	5	0	0	5
92.5°	0	7	0	0	0	2	0	4	0	0	0
95°	0	0	0	0	0	0	0	0	0	0	0
97.5°	0	0	0	0	0	0	0	0	0	0	0
100°	4	4	2	7	0	0	0	0	0	0	0
102.5°	0	0	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0	0	2
107.5°	0	0	0	0	0	0	0	0	0	0	0



REPORT NUMBER: P31630
 CATALOG NUMBER: OVW40SXX2D

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	76°	85°
110°	0	0	0	0	0	0	0	0	0	0	0
112.5°	0	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0	0
117.5°	0	0	0	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0	0	0	0
122.5°	0	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0	0
127.5°	0	0	0	0	0	0	0	0	0	0	0
130°	0	0	0	0	0	0	0	0	0	0	0
132.5°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	7720	7720	7720	7720	7720	7720	7720	7720	7720	7720	7720
2.5°	7649	7780	7797	7724	7542	7495	7502	7414	7485	7391	7438
5°	7820	7915	7877	7722	7467	7334	7304	7214	7234	7111	7154
7.5°	7959	8037	7944	7751	7473	7320	7227	7045	7065	6925	6969
10°	8082	8119	7982	7726	7414	7245	7182	6981	6918	6745	6798
12.5°	8159	8193	8024	7711	7336	7129	7049	6874	6743	6561	6616
15°	8255	8211	8064	7717	7300	7032	6896	6710	6598	6357	6405
17.5°	8131	8277	8271	7893	7371	6969	6765	6579	6623	6194	6197
20°	8130	8346	8443	8080	7498	7018	6678	6432	6277	5957	5972
22.5°	8040	8261	8464	8171	7606	7054	6594	6248	6079	5719	5728
25°	7862	8062	8372	8151	7669	7122	6550	6079	5864	5489	5466
27.5°	7809	7971	8228	8079	7647	7151	6517	5890	5633	5251	5229
30°	7946	8055	8230	8090	7769	7080	6430	5691	5353	4971	4956
32.5°	8195	8213	8230	8086	7566	6961	6377	5482	5073	4682	4651
35°	8557	8503	8357	8184	7462	6763	6205	5278	4758	4481	4323
37.5°	9119	9050	8754	8202	7307	6536	5992	5055	4443	4165	3981
40°	9987	9964	9523	8528	7347	6316	5713	4827	4121	3730	3512
42.5°	11332	11134	10579	9187	7449	6063	5306	4558	3828	3404	3333
45°	12924	12633	11894	9762	7482	5777	4900	4274	3488	3073	2995
47.5°	14662	14234	13364	10127	7314	5378	4491	3967	3204	2800	2718
50°	16729	16177	14425	9931	6719	4847	4118	3608	2920	2545	2460
52.5°	18080	17373	14500	9088	5864	4350	3765	3244	2667	2283	2209
54°	18337	17620	14154	8499	5526	4161	3597	3086	2531	2114	2063
55°	18379	17649	13737	8264	5428	4085	3470	2959	2405	1992	1965
57.5°	17955	17125	12802	7751	5180	3901	3188	2580	2078	1756	1736
60°	17211	15821	10482	6401	4625	3632	2977	2347	1838	1516	1507
62.5°	15413	13477	8446	5529	4249	3395	2800	2182	1523	1212	1205
65°	14729	12758	7711	4700	3424	2811	2305	1683	1106	893	866
67.5°	14718	11523	4256	1727	1066	950	1126	1083	730	537	520
70°	14385	10215	3166	1339	830	628	690	717	522	382	364
72.5°	12320	7857	2282	1013	668	515	555	522	397	302	291
75°	7087	4345	1406	735	515	386	384	324	266	204	204
77.5°	2957	1878	753	453	337	260	224	187	160	126	138
80°	1053	759	377	262	189	142	106	86	82	56	55
82.5°	346	273	173	106	69	55	33	33	24	9	11
85°	89	75	53	25	7	4	13	2	2	0	0
87.5°	29	20	31	11	9	11	11	2	4	0	0
90°	2	0	5	5	2	5	2	2	2	0	0
92.5°	4	0	13	5	0	0	0	2	0	0	0
95°	0	2	2	4	0	0	0	0	0	0	0
97.5°	0	0	7	0	5	0	0	0	0	0	0
100°	5	13	25	7	11	13	5	4	4	5	0
102.5°	0	0	11	0	2	9	4	0	0	0	0
105°	0	4	9	9	7	4	0	0	0	0	0
107.5°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
110°	0	0	0	0	0	0	0	0	0	0	0
112.5°	0	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0	0
117.5°	0	0	0	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0	0	0	0
122.5°	0	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0	0
127.5°	0	0	0	0	0	0	0	0	0	0	0
130°	0	0	0	0	0	0	0	0	0	0	0
132.5°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)