

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: LUMARK

Report Number: P12436-400

Luminaire Tested: **HPWP-FC-400-XX**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P12436-400
Test Lab: COOPER LIGHTING INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: HPWP-FC-400-XX
Description: LUMARK WAL-PAK HID WALL FIXTURE WITH FULL-CUTOFF DOOR CLEAR FLAT GLASS LENS
Light Source: MOGUL BASE CLEAR ED18 400W HIGH PRESSURE SODIUM LAMP 400 WATTS
Ballast/Driver: -

Summary

Lumens per Lamp: 50000 (1 lamp)
Luminaire Lumens: 26142.5 lumens
Efficiency: 52.3%
Efficacy: 65.4 lumens/watt
Luminous Opening: Rectangular (W 1.15' x L: 0.73' x H: 0')
IES Classification: Type I - Short - Cutoff
BUG Rating: B4 - U1 - G2

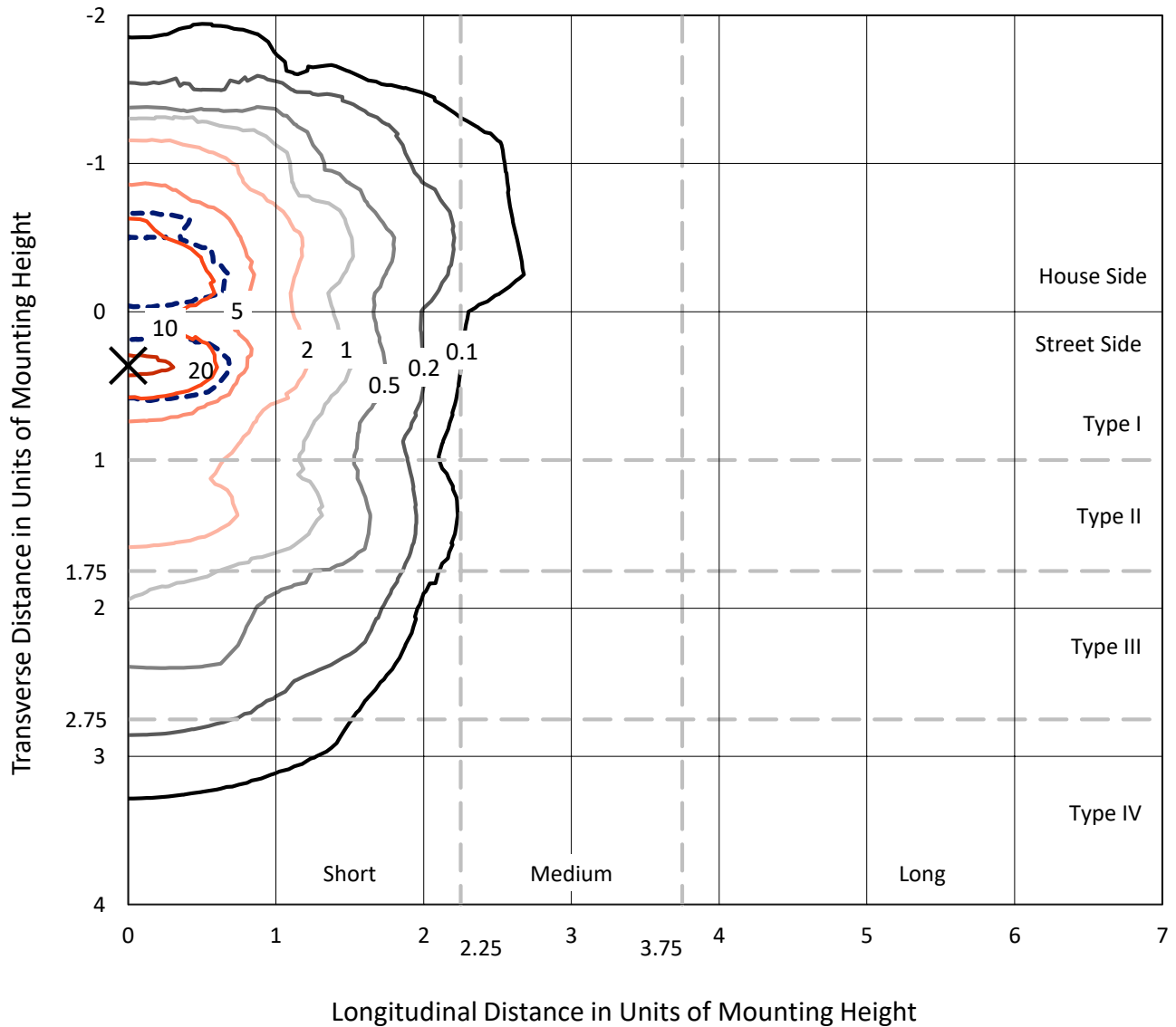
Input Watts (W): 400
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

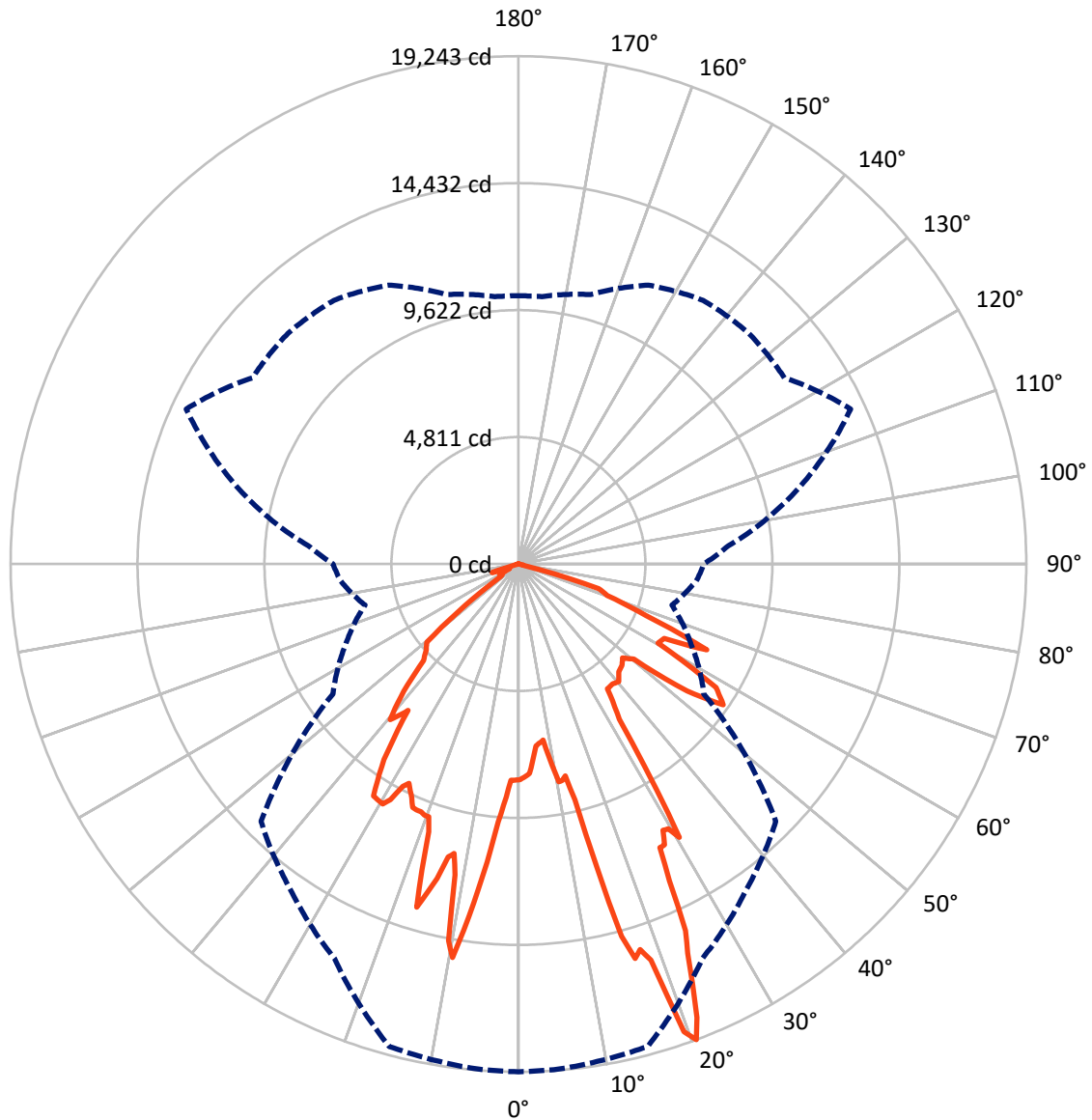
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 24.7 fc
 Type I - Short - Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 0-Deg Lateral - - - Horizontal Cone Through 20-Deg Vertical

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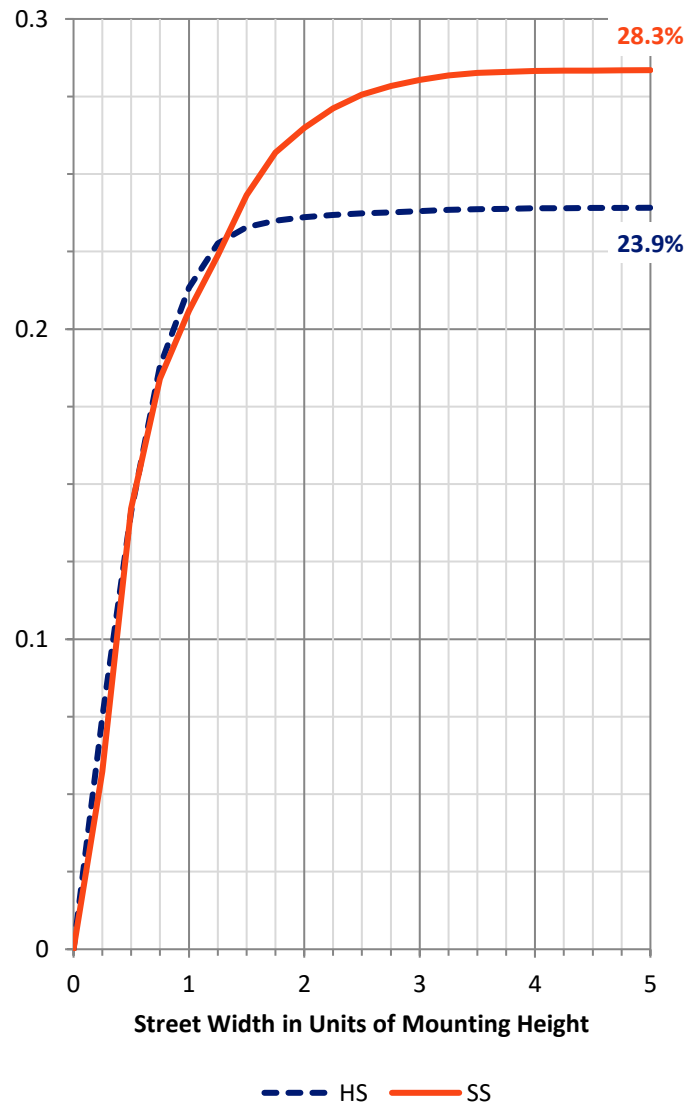
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	12030.4	0.1	12030.5
	% Lamp	24.1	0.0	24.1
Street Side	Lumens	14111.9	0.1	14112.0
	% Lamp	28.2	0.0	28.2
Total	Lumens	26142.3	0.2	26142.5
	% Lamp	52.3	0.0	52.3

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	840.9	3.2	1.7
10°-20°	3077.1	11.8	6.2
20°-30°	5180.8	19.8	10.4
30°-40°	5455.1	20.9	10.9
40°-50°	4490.6	17.2	9.0
50°-60°	3840.3	14.7	7.7
60°-70°	2393.3	9.2	4.8
70°-80°	816.3	3.1	1.6
80°-90°	48.0	0.2	0.1
90°-100°	0.2	0.0	0.0
100°-110°	0.0	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°	26142.3	100.0	52.3
0°-180°	26142.5	100.0	52.3



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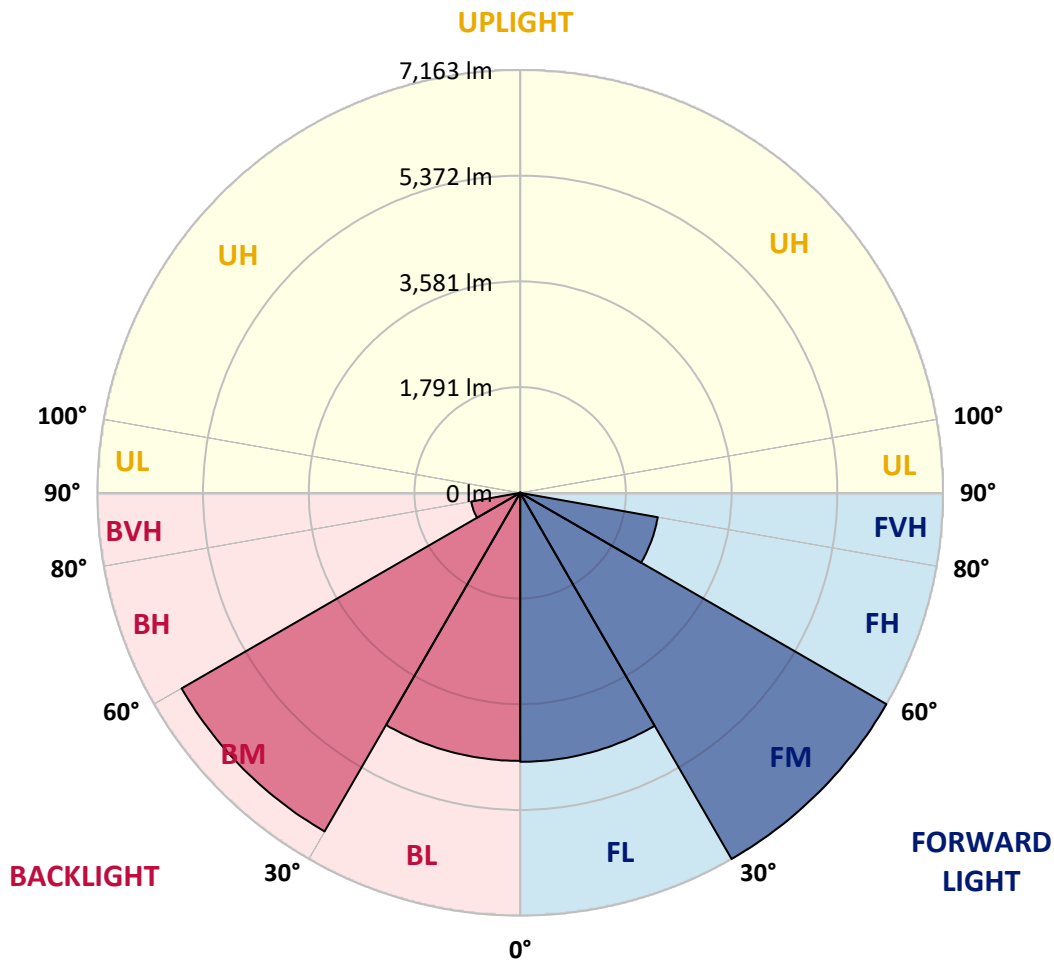
CATALOG NUMBER: HPWP-FC-400-XX

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Lamp	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	4556.9	9.1			
FM (30°-60°)	7162.8	14.3			
FH (60°-80°)	2367.3	4.7			G2/5000
FVH (80°-90°)	24.9	0.0			G1/100
BL (0°-30°)	4541.9	9.1	B4/5000		
BM (30°-60°)	6623.2	13.2	B4/8500		
BH (60°-80°)	842.3	1.7	B2/1000		G2/1000
BVH (80°-90°)	23.1	0.0			G1/100
UL (90°-100°)	0.2	0.0		U1/10	
UH (100°-180°)	0.1	0.0		U1/10	
Trapped Light	23857.5	47.7			

BUG Rating: B4-U1-G2

Type I Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	8173	8173	8173	8173	8173	8173	8173	8173	8173	8173	8173
2.5°	7951	7931	7938	7938	7945	7983	8050	8127	8227	8291	8305
5°	6926	6886	6966	7147	7466	7768	7997	8009	8122	8443	8469
7.5°	6732	6751	6615	6405	6425	6666	6978	7726	7912	8179	8324
10°	8394	8397	8438	8516	8072	6801	6522	6914	7794	7938	8158
11°	8365	8375	8368	8381	8521	7640	6497	6657	7699	7874	8087
12°	8225	8208	8224	8346	8355	8274	6767	6471	7567	7802	7997
13°	9189	9081	8560	8210	8328	8330	7325	6363	7400	7687	7906
14°	11900	11626	10539	9000	8211	8161	7880	6337	7198	7597	7792
15°	14635	14530	13570	11207	8764	8156	8031	6479	6989	7472	7663
16°	15592	15528	15241	13825	10310	8220	7878	6680	6753	7344	7505
17°	15320	15357	15483	15209	12820	8746	7728	6929	6493	7185	7353
18°	15821	15715	15296	15370	14634	10051	7819	7192	6273	7059	7260
19°	18800	18627	16886	15235	15203	11867	8069	7284	6091	6922	7149
20°	19243	19193	18925	16493	15060	13791	8579	7223	6019	6796	7021
21°	18462	18459	18715	18117	15289	14649	9429	7129	6010	6718	6904
22°	17236	17343	18009	18511	16176	14749	10567	7050	6027	6648	6798
23°	16088	16159	16886	18025	17254	14570	11946	7096	6068	6578	6696
24°	15270	15396	15834	17103	17856	15000	13059	7278	6131	6480	6572
25°	13299	13614	14982	16097	17599	15249	13668	7560	6210	6385	6467
26°	12011	12069	13110	15233	17151	15883	13725	8038	6313	6319	6342
27°	11996	12011	12090	14022	16288	16436	13702	8731	6352	6258	6233
28°	11482	11532	11758	12660	15288	16491	14033	9516	6380	6183	6198
29°	11528	11504	11370	11804	14383	16367	14019	10407	6373	6087	6030
30°	12016	12022	11702	11311	13240	16061	13958	11092	6334	5968	5915
32.5°	7020	7215	9616	11206	10916	14034	14001	10981	5975	5601	5706
35°	5812	5754	5697	6900	10204	11276	12831	9964	6197	5408	5679
37.5°	5771	5746	5664	5414	7145	9299	10604	8752	6860	5296	5638
40°	5857	5814	5592	5318	5046	7504	7512	7908	7080	5204	5424
42.5°	5577	5563	5522	5247	4902	5049	6226	6875	7228	5286	5255
45°	5496	5486	5329	5081	4841	4641	5064	6553	7284	5091	4749
47.5°	5314	5286	5272	4935	4724	4449	4225	6366	6503	4618	4232
50°	5666	5598	5363	4990	4570	4381	3946	5368	5731	4228	3797
52.5°	7997	7888	7102	5484	4562	4152	3736	4667	5078	3757	3367
55°	9415	9248	8906	7823	5111	4001	3526	3658	4564	3277	3016
57.5°	8828	8814	8717	8473	7061	4090	3337	2961	3991	2821	2569
60°	6077	6060	6973	8168	7255	5442	3145	2490	3253	2171	2014
62.5°	6202	6039	5247	4610	6988	6172	2784	1848	2132	1475	1461
65°	7851	7397	5869	4080	4032	5671	2565	1238	1220	1057	1105
67.5°	5215	5549	6203	3537	4175	3549	2041	843	802	851	905
70°	3564	3584	3539	3018	3254	1635	1327	1002	861	863	881
72.5°	3186	3161	2983	2646	1402	836	1299	1607	1112	1001	989
75°	213	226	650	1547	487	804	1375	1272	1123	837	745
77.5°	167	158	133	134	90	922	1514	672	879	627	544
80°	36	39	39	68	80	52	443	326	337	473	390



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
82.5°	30	37	34	24	53	26	83	51	69	55	69
85°	46	27	36	23	14	17	22	16	23	20	52
87.5°	9	6	8	6	7	8	7	10	9	23	26
90°	0	0	0	0	0	2	0	1	2	1	3
92.5°	0	0	0	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	1	0	1	0	0
97.5°	0	0	0	0	0	0	0	0	0	0	0
100°	0	0	0	0	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	0
107.5°	0	0	0	0	0	0	0	0	0	0	0
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	8173	8173	8173	8173	8173	8173	8173	8173	8173	8173
2.5°	8293	8267	8251	8215	8181	8183	8181	8211	8208	8202
5°	8342	8131	8207	8576	8870	9183	9473	9705	9873	9796
7.5°	8196	8105	8974	9814	10892	11537	11835	12075	12331	12397
10°	8080	8557	10104	11504	12574	14170	15015	15153	15130	15124
11°	8041	8901	10699	11898	13702	14896	14958	14816	14518	14516
12°	7994	9258	11179	12495	14549	14906	14286	12873	12045	12028
13°	7967	9615	11446	13292	14820	14352	12204	11328	11222	11235
14°	7969	9940	11691	14062	14710	12637	11360	11269	11378	11411
15°	7942	10291	11965	14439	13940	11595	11459	11911	12228	12301
16°	7918	10618	12308	14590	12672	11430	12049	12720	12888	12925
17°	7907	10824	12699	14526	11827	11880	12799	13100	13514	13567
18°	7982	10958	13172	13874	11491	12513	12908	12930	12224	12144
19°	8006	10973	13581	13038	11895	12816	12330	11493	10777	10694
20°	7990	10957	13891	12302	12355	12197	11657	10570	10168	10160
21°	7950	10912	14061	11665	12526	11472	10930	10207	10144	10162
22°	7884	10857	14031	11561	12015	11377	10410	10119	10074	10082
23°	7808	10788	13361	12003	11007	11096	10178	10024	10132	10089
24°	7775	10771	12424	11939	10473	10645	10054	10055	10061	10059
25°	7733	10766	11836	11733	10787	10279	10034	9966	9772	9741
26°	7698	10763	11312	11284	11045	10075	9969	9684	9535	9513
27°	7648	10787	10713	10526	10851	9883	9716	9429	9288	9280
28°	7598	10808	10202	9979	10507	9746	9433	9307	9459	9497
29°	7525	10824	10062	9985	10214	9545	9353	9614	10095	10157
30°	7434	10937	10218	10248	10065	9376	9464	10139	10401	10452
32.5°	7049	10949	10414	10102	9112	9170	10225	10353	10349	10363
35°	6569	10313	8920	9343	8732	9725	10078	9808	9112	8993
37.5°	6019	9650	8267	9061	8732	9583	8881	6981	6907	6949
40°	5504	8363	7653	8325	8714	8633	7029	7745	7614	7650
42.5°	5053	7027	7243	7743	8330	6675	7429	7428	6932	6492
45°	4550	5569	6784	7273	6526	6209	7251	5005	5085	5129
47.5°	4055	4826	6234	6797	4097	6067	5027	5401	4838	4780
50°	3486	4728	5649	5903	4081	5020	4954	4497	4482	4563
52.5°	3045	4820	5346	3489	4277	4961	4260	4378	2834	2551
55°	2782	4645	5165	2579	4394	4047	2652	1032	862	849
57.5°	2525	4197	4475	2177	3330	3067	859	761	713	726
60°	2201	3572	2847	2086	2079	2162	775	987	836	822
62.5°	1988	2799	1693	2091	1849	565	915	825	456	439
65°	1650	2159	1624	1752	1161	572	682	528	386	386
67.5°	1532	1734	1816	1515	413	648	513	370	358	359
70°	1464	1374	1636	702	438	342	328	343	447	454
72.5°	1242	1177	1190	262	198	250	383	773	1025	1053
75°	721	659	386	286	199	253	448	110	84	85
77.5°	490	448	513	165	186	185	140	59	60	57
80°	366	223	382	44	168	64	36	52	62	46



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CANDELA DISTRIBUTION (continued):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
82.5°	135	80	125	51	20	20	27	29	31	30
85°	106	38	44	27	8	10	16	13	20	21
87.5°	6	10	33	2	0	0	0	0	0	0
90°	3	3	1	0	0	0	0	0	0	0
92.5°	0	0	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	3	0	0
97.5°	0	0	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0	0	0
102.5°	0	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0	0
107.5°	0	0	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0	0	0
112.5°	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0
117.5°	0	0	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0	0	0
122.5°	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0
127.5°	0	0	0	0	0	0	0	0	0	0
130°	0	0	0	0	0	0	0	0	0	0
132.5°	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)