

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P130067

Luminaire Tested: **HL618TAT - HLM6927 - HL6NFL - 455SN**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130067
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33469)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6927 - HL6NFL - 455SN
Description: HALO ALLSLOPE 6" 30W, Satin Nickel Reflector, Satin Nickel Metal Trim Ring using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1889.0 lumens
Efficiency: N/A
Efficacy: 68.4 lumens/watt
Spacing Criteria (0/90/45): 1.85 / 0.72 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

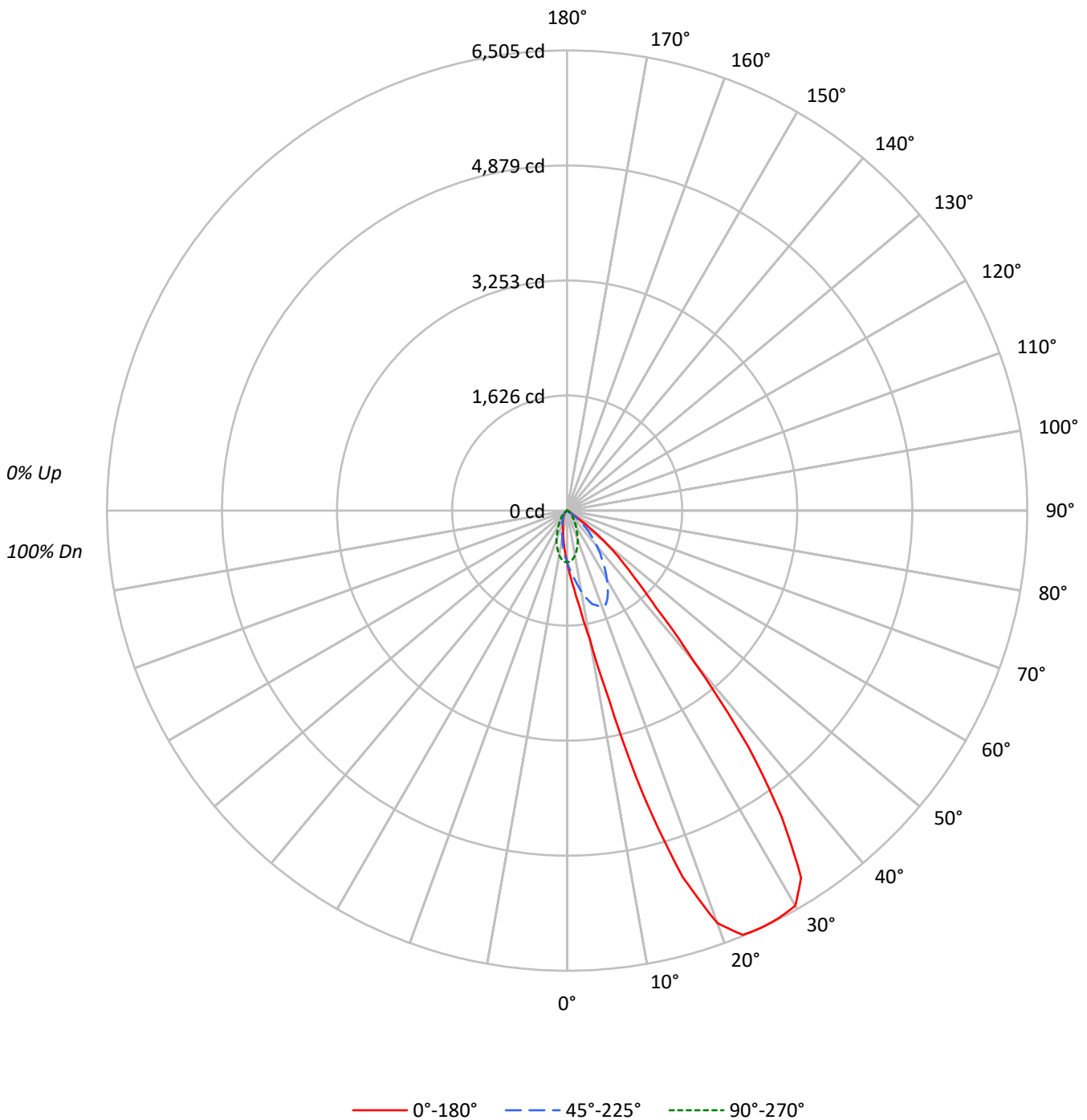
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				
1	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	94	92				
2	106	100	96	92	104	99	94	91	95	92	89	92	89	87	89	87	85	83				
3	99	92	86	82	97	91	85	81	88	83	80	85	82	78	83	80	77	75				
4	93	84	78	73	91	83	77	73	81	76	72	79	75	71	77	73	70	68				
5	87	78	71	66	86	77	70	66	75	69	65	73	68	64	71	67	64	62				
6	82	72	65	60	80	71	64	59	69	63	59	68	62	59	66	62	58	56				
7	77	66	59	54	75	65	59	54	64	58	54	63	57	53	62	57	53	52				
8	72	61	54	50	71	61	54	49	59	53	49	58	53	49	57	52	49	47				
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43				
10	64	53	46	42	63	52	46	42	51	46	41	51	45	41	50	45	41	40				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43568	43568	43568
5°	64519	41453	28921
10°	106980	37107	19049
15°	240586	31319	13442
20°	359283	25247	9962
25°	381196	19104	7794
30°	385435	14342	6275
35°	325018	10813	4915
40°	178758	8028	3823
45°	90156	5602	2668
50°	51831	3738	1693
55°	12447	2565	905
60°	4006	1799	654
65°	2609	1080	450
70°	1412	504	303
75°	463	347	232
80°	137	274	137
85°	0	339	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.1	3.9
10°-20°	310.5	16.4
20°-30°	616.3	32.6
30°-40°	554.7	29.4
40°-50°	251.6	13.3
50°-60°	62.7	3.3
60°-70°	15.0	0.8
70°-80°	3.7	0.2
80°-90°	1.3	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	999.9	52.9
0°-40°	1554.6	82.3
0°-60°	1868.9	98.9
0°-90°	1889.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1889.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	730	730	730	730	730	
5°	1102	932	708	561	494	127
15°	4170	1370	543	286	233	1228
25°	6505	1354	326	158	133	2989
35°	5290	878	176	98	80	3138
45°	1352	444	84	51	40	1142
55°	165	61	34	20	12	227
65°	29	23	12	7	5	29
75°	4	3	3	3	2	6
85°	0	2	2	1	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9
2.5°	901.9	856.9	876.9	857.9	859.9	857.9	843.9	853.9	832.9	823.9	811.9
5°	1101.8	1044.8	1067.8	1035.8	1023.8	1020.8	988.9	981.9	951.9	931.9	902.9
7.5°	1385.8	1329.8	1337.8	1298.8	1256.8	1236.8	1181.8	1148.8	1088.8	1038.8	991.9
10°	1847.7	1749.7	1778.7	1669.8	1584.8	1511.8	1418.8	1344.8	1243.8	1160.8	1080.8
12.5°	2730.6	2506.6	2466.6	2269.7	2092.7	1897.7	1704.7	1576.8	1406.8	1273.8	1156.8
15°	4170.4	3842.4	3762.4	3356.5	2925.6	2473.6	2074.7	1824.7	1556.8	1369.8	1211.8
17.5°	5429.2	5091.2	4988.3	4446.3	3989.4	3298.5	2559.6	2083.7	1692.7	1404.8	1237.8
20°	6203.1	6027.1	6014.1	5319.2	4667.3	3945.4	2989.6	2285.7	1732.7	1456.8	1225.8
22.5°	6493.0	6392.1	6341.1	5833.1	5162.2	4289.4	3219.5	2369.6	1778.7	1431.8	1179.8
25°	6505.0	6455.0	6477.0	5996.1	5304.2	4362.4	3206.5	2295.7	1697.7	1353.8	1103.8
27.5°	6491.0	6440.0	6451.0	5932.1	5181.2	4158.4	2973.6	2101.7	1566.8	1244.8	1015.8
30°	6450.0	6378.1	6269.1	5623.2	4790.3	3677.5	2526.6	1841.7	1403.8	1124.8	927.9
32.5°	6155.1	6073.1	5811.1	5009.3	4097.4	2983.6	2057.7	1575.8	1227.8	1000.9	830.9
35°	5290.2	5245.2	4892.3	4066.4	3193.5	2276.7	1691.7	1345.8	1066.8	877.9	731.9
37.5°	4201.4	4156.4	3759.4	3051.5	2290.7	1766.7	1391.8	1139.8	917.9	766.9	638.9
40°	2805.6	2859.6	2607.6	2102.7	1705.7	1377.8	1136.8	963.9	782.9	650.9	539.9
42.5°	1859.7	1866.7	1770.7	1516.8	1295.8	1095.8	924.9	797.9	651.9	543.9	444.9
45°	1351.8	1349.8	1295.8	1133.8	1009.8	876.9	756.9	654.9	538.9	443.9	358.9
47.5°	1020.8	1022.8	990.9	887.9	815.9	707.9	610.9	522.9	425.9	344.9	273.0
50°	734.9	740.9	716.9	643.9	583.9	502.9	421.9	354.9	283.0	225.0	171.0
52.5°	409.9	424.9	404.9	363.9	321.0	270.0	222.0	187.0	144.0	114.0	90.0
55°	165.0	176.0	170.0	150.0	133.0	112.0	99.0	84.0	69.0	61.0	56.0
57.5°	71.0	70.0	70.0	64.0	61.0	57.0	53.0	52.0	48.0	47.0	45.0
60°	49.0	49.0	49.0	47.0	46.0	45.0	43.0	42.0	40.0	38.0	36.0
62.5°	38.0	38.0	38.0	37.0	36.0	36.0	34.0	34.0	32.0	30.0	28.0
65°	29.0	29.0	30.0	29.0	28.0	28.0	27.0	26.0	24.0	23.0	21.0
67.5°	21.0	21.0	21.0	21.0	21.0	20.0	19.0	18.0	17.0	16.0	16.0
70°	14.0	14.0	14.0	14.0	14.0	13.0	13.0	12.0	12.0	11.0	10.0
72.5°	9.0	9.0	9.0	8.0	8.0	8.0	8.0	7.0	7.0	6.0	6.0
75°	4.0	4.0	4.0	4.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0
77.5°	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
82.5°	1.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
85°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9
2.5°	808.9	790.9	786.9	765.9	752.9	743.9	737.9	725.9	701.9	697.9	690.9
5°	887.9	850.9	833.9	798.9	771.9	750.9	731.9	707.9	670.9	654.9	641.9
7.5°	959.9	882.9	869.9	819.9	779.9	743.9	712.9	678.9	632.9	611.9	588.9
10°	1019.8	940.9	891.9	826.9	773.9	726.9	684.9	640.9	589.9	559.9	531.9
12.5°	1065.8	963.9	894.9	815.9	750.9	692.9	645.9	591.9	539.9	504.9	474.9
15°	1089.8	965.9	881.9	808.9	716.9	651.9	597.9	542.9	485.9	451.9	414.9
17.5°	1086.8	945.9	851.9	752.9	670.9	601.9	544.9	492.9	433.9	391.9	357.9
20°	1058.8	911.9	810.9	705.9	619.9	545.9	491.9	435.9	376.9	338.9	307.0
22.5°	1008.9	861.9	756.9	648.9	565.9	492.9	433.9	379.9	325.0	294.0	263.0
25°	946.9	800.9	692.9	586.9	503.9	433.9	377.9	326.0	279.0	251.0	226.0
27.5°	872.9	730.9	623.9	527.9	445.9	377.9	324.0	281.0	239.0	217.0	195.0
30°	791.9	654.9	554.9	459.9	383.9	324.0	277.0	240.0	206.0	182.0	170.0
32.5°	704.9	576.9	486.9	397.9	328.0	276.0	236.0	205.0	177.0	161.0	148.0
35°	616.9	499.9	415.9	336.9	279.0	232.0	201.0	176.0	152.0	140.0	128.0
37.5°	529.9	423.9	349.9	283.0	233.0	197.0	171.0	149.0	130.0	121.0	112.0
40°	442.9	351.9	288.0	233.0	192.0	164.0	143.0	126.0	111.0	104.0	97.0
42.5°	360.9	287.0	234.0	196.0	160.0	137.0	120.0	106.0	93.0	87.0	81.0
45°	290.0	229.0	188.0	153.0	128.0	108.0	95.0	84.0	75.0	70.0	67.0
47.5°	215.0	168.0	135.0	110.0	92.0	79.0	72.0	65.0	60.0	58.0	55.0
50°	133.0	104.0	88.0	73.0	65.0	60.0	57.0	53.0	49.0	47.0	44.0
52.5°	76.0	64.0	59.0	55.0	52.0	50.0	47.0	44.0	39.0	37.0	35.0
55°	52.0	49.0	48.0	45.0	42.0	39.0	37.0	34.0	31.0	31.0	29.0
57.5°	43.0	40.0	39.0	35.0	33.0	31.0	30.0	28.0	26.0	24.0	23.0
60°	35.0	32.0	31.0	29.0	27.0	25.0	24.0	22.0	20.0	19.0	18.0
62.5°	27.0	25.0	24.0	23.0	21.0	19.0	18.0	17.0	15.0	14.0	13.0
65°	21.0	19.0	18.0	17.0	15.0	14.0	13.0	12.0	11.0	10.0	9.0
67.5°	15.0	13.0	13.0	12.0	11.0	10.0	9.0	8.0	7.0	7.0	6.0
70°	10.0	9.0	8.0	7.0	7.0	6.0	5.0	5.0	5.0	5.0	5.0
72.5°	6.0	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
75°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
85°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9	729.9
2.5°	678.9	675.9	661.9	658.9	645.9	654.9	642.9	623.9	620.9	625.9	614.9
5°	617.9	605.9	588.9	578.9	562.9	560.9	550.9	524.9	521.9	516.9	506.9
7.5°	557.9	543.9	518.9	499.9	486.9	478.9	466.9	442.9	433.9	428.9	415.9
10°	499.9	479.9	449.9	433.9	411.9	400.9	387.9	365.9	356.9	353.9	338.9
12.5°	440.9	414.9	384.9	368.9	345.9	336.0	324.0	306.0	298.0	291.0	284.0
15°	379.9	355.9	328.0	313.0	295.0	286.0	276.0	258.0	251.0	247.0	245.0
17.5°	327.0	304.0	278.0	267.0	250.0	241.0	234.0	220.0	214.0	210.0	206.0
20°	281.0	261.0	239.0	229.0	215.0	209.0	201.0	190.0	186.0	183.0	179.0
22.5°	240.0	223.0	206.0	198.0	187.0	182.0	175.0	167.0	163.0	160.0	157.0
25°	206.0	193.0	180.0	173.0	163.0	158.0	153.0	146.0	142.0	141.0	138.0
27.5°	179.0	169.0	158.0	151.0	143.0	139.0	135.0	129.0	127.0	125.0	122.0
30°	157.0	148.0	138.0	133.0	127.0	124.0	120.0	116.0	113.0	114.0	110.0
32.5°	137.0	130.0	122.0	119.0	113.0	111.0	108.0	103.0	100.0	99.0	97.0
35°	120.0	114.0	108.0	106.0	101.0	98.0	95.0	91.0	90.0	87.0	85.0
37.5°	105.0	100.0	95.0	93.0	89.0	85.0	83.0	78.0	76.0	75.0	74.0
40°	91.0	87.0	81.0	79.0	75.0	73.0	70.0	67.0	65.0	65.0	63.0
42.5°	76.0	73.0	68.0	67.0	63.0	62.0	59.0	57.0	55.0	54.0	53.0
45°	63.0	61.0	57.0	56.0	53.0	51.0	50.0	46.0	44.0	43.0	42.0
47.5°	52.0	50.0	45.0	44.0	43.0	40.0	38.0	37.0	35.0	34.0	34.0
50°	41.0	39.0	36.0	36.0	34.0	32.0	31.0	29.0	28.0	27.0	26.0
52.5°	33.0	32.0	29.0	29.0	27.0	26.0	24.0	23.0	21.0	21.0	20.0
55°	27.0	25.0	23.0	22.0	21.0	20.0	18.0	17.0	16.0	15.0	14.0
57.5°	21.0	20.0	18.0	17.0	16.0	15.0	13.0	12.0	11.0	11.0	10.0
60°	16.0	15.0	13.0	13.0	11.0	10.0	10.0	9.0	9.0	9.0	8.0
62.5°	12.0	11.0	10.0	9.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0
65°	8.0	8.0	7.0	7.0	7.0	7.0	7.0	6.0	6.0	6.0	6.0
67.5°	6.0	6.0	6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
70°	5.0	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0
72.5°	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
75°	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0
80°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
82.5°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
85°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0
87.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	729.9	729.9	729.9	729.9
2.5°	611.9	619.9	609.9	601.9
5°	507.9	511.9	501.9	493.9
7.5°	414.9	415.9	406.9	399.9
10°	341.9	340.9	334.0	329.0
12.5°	284.0	283.0	277.0	273.0
15°	238.0	239.0	235.0	233.0
17.5°	205.0	205.0	201.0	200.0
20°	177.0	178.0	175.0	172.0
22.5°	156.0	156.0	154.0	151.0
25°	137.0	137.0	135.0	133.0
27.5°	122.0	123.0	121.0	118.0
30°	109.0	109.0	107.0	105.0
32.5°	96.0	96.0	95.0	93.0
35°	83.0	84.0	82.0	80.0
37.5°	73.0	73.0	72.0	70.0
40°	62.0	63.0	62.0	60.0
42.5°	52.0	52.0	52.0	51.0
45°	41.0	42.0	41.0	40.0
47.5°	33.0	33.0	33.0	32.0
50°	25.0	26.0	25.0	24.0
52.5°	19.0	19.0	18.0	18.0
55°	14.0	13.0	13.0	12.0
57.5°	10.0	10.0	10.0	9.0
60°	8.0	8.0	8.0	8.0
62.5°	7.0	7.0	7.0	7.0
65°	6.0	6.0	6.0	5.0
67.5°	4.0	4.0	4.0	4.0
70°	3.0	3.0	3.0	3.0
72.5°	3.0	3.0	2.0	2.0
75°	2.0	2.0	2.0	2.0
77.5°	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0
82.5°	1.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)