

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: P130064

Luminaire Tested: **HL618TAT - HLM6930 - HL6NFL - 455SC**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130064
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33467)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6930 - HL6NFL - 455SC
Description: HALO ALLSLOPE 6" 30W, Specular Clear Reflector, White Metal Trim
Ring using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2129.5 lumens
Efficiency: N/A
Efficacy: 77.2 lumens/watt
Spacing Criteria (0/90/45): 1.94 / 0.73 / 1.15
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

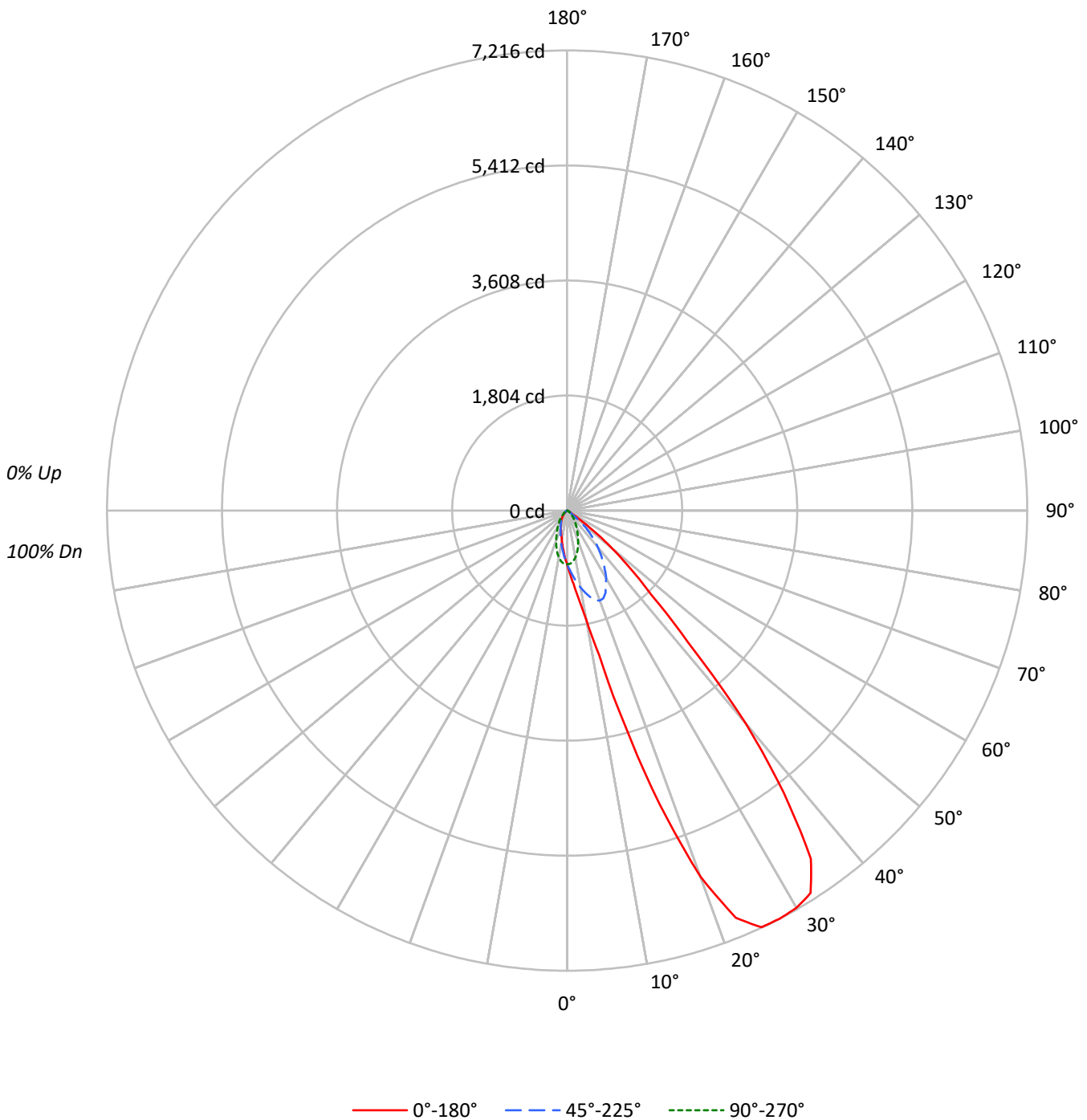
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102
1	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	93
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85
3	99	92	86	81	97	90	85	80	87	83	79	85	81	78	83	79	77
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69
5	87	77	70	65	85	76	70	65	74	68	64	72	67	63	71	66	63
6	81	71	64	59	80	70	63	58	68	62	58	67	62	58	65	61	57
7	76	65	58	53	75	65	58	53	63	57	53	62	56	52	61	56	52
8	71	60	53	48	70	60	53	48	58	52	48	57	52	48	56	51	48
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44
10	63	52	45	40	62	51	45	40	50	44	40	50	44	40	49	44	40

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	50158	50158	50158
5°	67780	48134	37395
10°	100744	43158	27357
15°	198952	36529	20849
20°	353572	29180	16559
25°	422456	22503	13402
30°	429828	17276	10828
35°	409508	13252	8417
40°	277808	10105	6257
45°	124964	7050	4388
50°	65274	4796	2588
55°	15541	3251	1222
60°	4676	2117	531
65°	3005	1161	198
70°	1634	434	111
75°	498	255	0
80°	0	302	0
85°	0	373	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.3	3.9
10°-20°	313.0	14.7
20°-30°	660.6	31.0
30°-40°	664.8	31.2
40°-50°	315.7	14.8
50°-60°	73.1	3.4
60°-70°	15.5	0.7
70°-80°	3.2	0.2
80°-90°	1.4	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°	1055.9	49.6
0°-40°	1720.7	80.8
0°-60°	2109.4	99.1
0°-90°	2129.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2129.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	840	840	840	840	840	
5°	1158	1026	822	675	639	128
15°	3449	1407	633	395	361	1096
25°	7209	1422	384	238	229	3250
35°	6665	977	216	149	137	3911
45°	1874	510	106	74	66	1644
55°	206	66	43	26	16	282
65°	33	25	13	5	2	34
75°	4	3	2	2	0	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°	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3
2.5°	984.9	956.8	968.7	943.9	970.8	949.3	949.3	940.6	935.3	927.7	906.1
5°	1157.5	1121.9	1131.6	1116.5	1124.0	1097.1	1085.2	1061.5	1065.8	1025.9	989.2
7.5°	1389.4	1338.7	1354.9	1310.6	1307.4	1272.9	1239.5	1196.3	1159.6	1126.2	1071.2
10°	1740.0	1673.1	1675.3	1600.8	1583.6	1504.8	1441.2	1356.0	1282.6	1227.6	1140.2
12.5°	2321.4	2198.4	2180.1	2042.0	1970.8	1809.0	1672.0	1537.2	1414.2	1319.3	1199.5
15°	3448.7	3272.8	3128.3	2792.8	2549.0	2240.5	1971.9	1748.6	1565.2	1406.7	1249.2
17.5°	4833.7	4594.3	4428.2	3976.2	3495.1	2816.5	2343.0	1960.0	1681.7	1472.5	1276.1
20°	6104.5	5796.0	5528.4	5002.0	4424.9	3651.5	2681.7	2145.6	1764.8	1501.6	1268.6
22.5°	6911.4	6675.1	6420.5	5797.0	5093.7	4153.1	3066.8	2265.3	1791.8	1486.5	1226.5
25°	7209.1	6996.6	6861.7	6236.1	5475.6	4478.9	3182.2	2270.7	1751.8	1421.8	1169.3
27.5°	7215.6	7025.7	6958.8	6352.6	5540.3	4355.9	3074.4	2154.2	1653.7	1306.3	1091.7
30°	7192.9	7002.0	6888.7	6192.9	5292.2	4057.1	2777.7	1949.2	1518.8	1224.3	1004.3
32.5°	7108.8	6872.5	6596.4	5750.7	4774.4	3471.3	2364.6	1721.6	1348.4	1102.5	920.1
35°	6665.4	6364.5	5904.9	5006.3	3969.7	2748.6	1941.7	1481.1	1183.4	977.3	802.6
37.5°	5580.2	5328.9	4892.0	4020.4	2954.6	2101.3	1613.8	1275.0	1030.2	861.9	702.2
40°	4360.2	4071.1	3560.9	2826.2	2156.4	1652.6	1317.1	1074.4	891.0	744.3	599.8
42.5°	2804.7	2678.5	2373.2	1955.7	1595.4	1305.3	1072.2	901.8	752.9	622.4	498.4
45°	1873.7	1784.2	1658.0	1433.6	1228.7	1051.8	885.6	743.2	622.4	510.2	407.8
47.5°	1346.2	1268.6	1217.9	1087.4	956.8	836.0	710.9	589.0	479.0	389.4	305.3
50°	925.5	866.2	844.6	764.8	662.3	572.8	473.6	390.5	308.5	244.9	186.6
52.5°	509.2	477.9	468.2	426.1	377.6	315.0	249.2	198.5	156.4	123.0	97.1
55°	206.0	199.6	189.9	174.8	152.1	121.9	104.6	86.3	73.4	65.8	60.4
57.5°	83.1	79.8	78.7	73.4	69.0	62.6	58.3	55.0	52.9	51.8	49.6
60°	57.2	55.0	53.9	51.8	50.7	48.5	46.4	45.3	43.1	42.1	39.9
62.5°	43.1	42.1	42.1	39.9	39.9	38.8	37.8	35.6	34.5	33.4	31.3
65°	33.4	32.4	31.3	31.3	30.2	30.2	29.1	28.0	25.9	24.8	22.7
67.5°	23.7	23.7	22.7	22.7	21.6	21.6	20.5	19.4	18.3	17.3	16.2
70°	16.2	15.1	15.1	15.1	15.1	14.0	14.0	12.9	11.9	11.9	10.8
72.5°	9.7	9.7	9.7	8.6	8.6	8.6	7.6	7.6	7.6	6.5	6.5
75°	4.3	4.3	4.3	4.3	4.3	3.2	3.2	3.2	3.2	3.2	3.2
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2
80°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
85°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2	2.2
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2
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°	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3
2.5°	897.5	895.3	873.8	864.1	861.9	853.3	850.0	839.2	800.4	802.6	806.9
5°	968.7	949.3	914.8	892.1	877.0	857.6	841.4	822.0	789.6	764.8	759.4
7.5°	1030.2	994.6	945.0	909.4	879.2	847.9	818.7	788.5	750.8	719.5	704.4
10°	1080.9	1028.0	959.0	909.4	867.3	824.1	785.3	745.4	699.0	662.3	644.0
12.5°	1113.2	1042.0	956.8	893.2	839.2	783.2	740.0	694.7	642.9	600.8	579.3
15°	1132.7	1036.7	939.6	860.8	797.2	733.5	683.9	633.2	579.3	536.1	512.4
17.5°	1131.6	1034.5	907.2	818.7	745.4	675.3	621.3	568.5	516.7	472.5	446.6
20°	1104.6	981.6	858.7	765.9	690.4	613.8	555.5	503.8	452.0	412.1	387.3
22.5°	1055.0	926.6	802.6	703.3	625.7	553.4	491.9	440.1	393.7	358.1	339.8
25°	996.7	863.0	742.2	634.3	559.9	487.6	431.5	384.0	343.0	310.7	295.6
27.5°	925.5	793.9	673.1	570.6	493.0	427.2	374.3	334.4	296.6	271.8	256.7
30°	839.2	718.4	595.5	504.8	430.4	371.1	322.5	289.1	257.8	235.2	226.5
32.5°	755.1	635.4	521.0	436.9	372.2	318.2	277.2	249.2	225.5	206.0	197.4
35°	668.8	550.1	452.0	372.2	318.2	270.8	239.5	215.7	195.2	180.1	173.7
37.5°	578.2	471.4	384.0	315.0	267.5	228.7	200.6	189.9	168.3	155.3	151.0
40°	484.3	393.7	321.5	265.4	224.4	193.1	172.6	158.6	143.5	135.9	131.6
42.5°	402.4	322.5	264.3	217.9	186.6	160.7	144.5	132.7	118.7	113.3	110.0
45°	323.6	257.8	208.2	172.6	146.7	127.3	114.3	105.7	97.1	91.7	89.5
47.5°	237.3	185.5	148.9	124.1	105.7	94.9	86.3	83.1	77.7	75.5	73.4
50°	144.5	115.4	96.0	83.1	75.5	72.3	69.0	68.0	63.6	61.5	58.3
52.5°	82.0	73.4	65.8	62.6	61.5	59.3	56.1	53.9	49.6	47.5	46.4
55°	57.2	56.1	53.9	51.8	49.6	46.4	44.2	43.1	39.9	38.8	36.7
57.5°	48.5	45.3	43.1	39.9	38.8	36.7	35.6	34.5	32.4	30.2	29.1
60°	37.8	35.6	33.4	32.4	31.3	29.1	27.0	25.9	23.7	22.7	21.6
62.5°	29.1	28.0	25.9	24.8	23.7	22.7	20.5	19.4	18.3	16.2	14.0
65°	21.6	20.5	19.4	18.3	17.3	16.2	14.0	12.9	11.9	10.8	9.7
67.5°	15.1	15.1	12.9	11.9	11.9	9.7	8.6	7.6	6.5	6.5	5.4
70°	9.7	9.7	8.6	7.6	6.5	5.4	5.4	4.3	4.3	4.3	3.2
72.5°	5.4	4.3	4.3	4.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2
75°	3.2	2.2	2.2	3.2	3.2	3.2	3.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
85°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3	840.3
2.5°	801.5	785.3	776.7	768.0	768.0	761.6	764.8	749.7	752.9	744.3	743.2
5°	745.4	741.1	705.5	694.7	677.4	675.3	678.5	659.1	656.9	648.3	640.8
7.5°	686.1	659.1	637.5	620.3	609.5	597.6	580.4	576.0	570.6	564.2	556.6
10°	621.3	591.1	566.3	545.8	539.4	523.2	514.6	501.6	493.0	485.4	480.0
12.5°	553.4	522.1	499.4	477.9	469.2	454.1	447.7	434.7	427.2	419.6	417.5
15°	484.3	456.3	431.5	415.3	405.6	394.8	389.4	375.4	373.2	366.8	362.5
17.5°	422.9	397.0	375.4	362.5	353.8	343.0	340.9	330.1	327.9	324.7	320.4
20°	365.7	345.2	326.9	316.1	310.7	304.2	301.0	293.4	291.3	289.1	286.9
22.5°	319.3	302.0	291.3	279.4	275.1	269.7	267.5	260.0	258.9	258.9	255.7
25°	278.3	265.4	255.7	245.9	243.8	238.4	238.4	231.9	233.0	230.8	229.8
27.5°	245.9	234.1	225.5	217.9	216.8	213.6	212.5	208.2	208.2	207.1	205.0
30°	215.7	207.1	199.6	194.2	194.2	190.9	190.9	186.6	185.5	184.5	184.5
32.5°	189.9	184.5	179.1	172.6	173.7	169.4	169.4	165.0	162.9	161.8	159.7
35°	166.1	162.9	157.5	153.2	153.2	148.9	146.7	142.4	141.3	140.2	139.2
37.5°	145.6	142.4	138.1	132.7	132.7	128.4	127.3	124.1	121.9	120.8	119.7
40°	126.2	123.0	118.7	113.3	113.3	109.0	107.9	105.7	104.6	102.5	101.4
42.5°	104.6	101.4	98.2	96.0	94.9	91.7	90.6	85.2	87.4	86.3	83.1
45°	86.3	85.2	82.0	78.7	77.7	74.4	72.3	69.0	68.0	68.0	65.8
47.5°	71.2	68.0	65.8	62.6	61.5	59.3	57.2	55.0	55.0	53.9	51.8
50°	56.1	53.9	52.9	49.6	48.5	46.4	45.3	43.1	42.1	39.9	38.8
52.5°	45.3	43.1	41.0	39.9	37.8	36.7	34.5	31.3	31.3	29.1	27.0
55°	35.6	33.4	31.3	30.2	28.0	25.9	24.8	22.7	20.5	19.4	18.3
57.5°	27.0	24.8	23.7	21.6	19.4	18.3	16.2	14.0	12.9	11.9	10.8
60°	19.4	18.3	16.2	14.0	12.9	11.9	10.8	8.6	8.6	7.6	7.6
62.5°	14.0	11.9	10.8	8.6	8.6	7.6	6.5	6.5	5.4	5.4	4.3
65°	8.6	7.6	6.5	6.5	5.4	5.4	4.3	4.3	3.2	3.2	3.2
67.5°	5.4	4.3	4.3	4.3	3.2	3.2	3.2	2.2	2.2	2.2	1.1
70°	3.2	3.2	3.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1
72.5°	3.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
80°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.0
82.5°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.0
85°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	0.0
87.5°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	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°	840.3	840.3	840.3	840.3
2.5°	741.1	733.5	731.4	744.3
5°	642.9	634.3	632.1	638.6
7.5°	555.5	544.8	548.0	549.1
10°	477.9	470.3	469.2	472.5
12.5°	411.0	405.6	405.6	411.0
15°	360.3	357.1	356.0	361.4
17.5°	317.1	316.1	316.1	320.4
20°	283.7	282.6	282.6	285.9
22.5°	253.5	253.5	253.5	254.6
25°	227.6	228.7	227.6	228.7
27.5°	203.9	205.0	205.0	205.0
30°	185.5	181.2	182.3	181.2
32.5°	158.6	157.5	158.6	158.6
35°	137.0	137.0	137.0	137.0
37.5°	117.6	117.6	117.6	117.6
40°	99.2	99.2	99.2	98.2
42.5°	82.0	82.0	82.0	80.9
45°	64.7	64.7	64.7	65.8
47.5°	50.7	50.7	49.6	50.7
50°	37.8	36.7	36.7	36.7
52.5°	27.0	25.9	24.8	24.8
55°	17.3	16.2	16.2	16.2
57.5°	10.8	10.8	9.7	9.7
60°	6.5	6.5	6.5	6.5
62.5°	4.3	4.3	4.3	3.2
65°	2.2	2.2	2.2	2.2
67.5°	1.1	1.1	1.1	1.1
70°	1.1	1.1	1.1	1.1
72.5°	1.1	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0
82.5°	0.0	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)