

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: P130081

Luminaire Tested: **HL618TAT - HLM6935 - HL6NFL - 456P**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P130081
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33472)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL618TAT - HLM6935 - HL6NFL - 456P
Description: HALO ALLSLOPE 6" 30W, Black Coilex Baffle, White Metal Trim Ring
using 25 Degree Optic at a 6-12 Pitch
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2005.3 lumens
Efficiency: N/A
Efficacy: 72.7 lumens/watt
Spacing Criteria (0/90/45): 1.94 / 0.71 / 1.18
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')
CIE Type: Direct

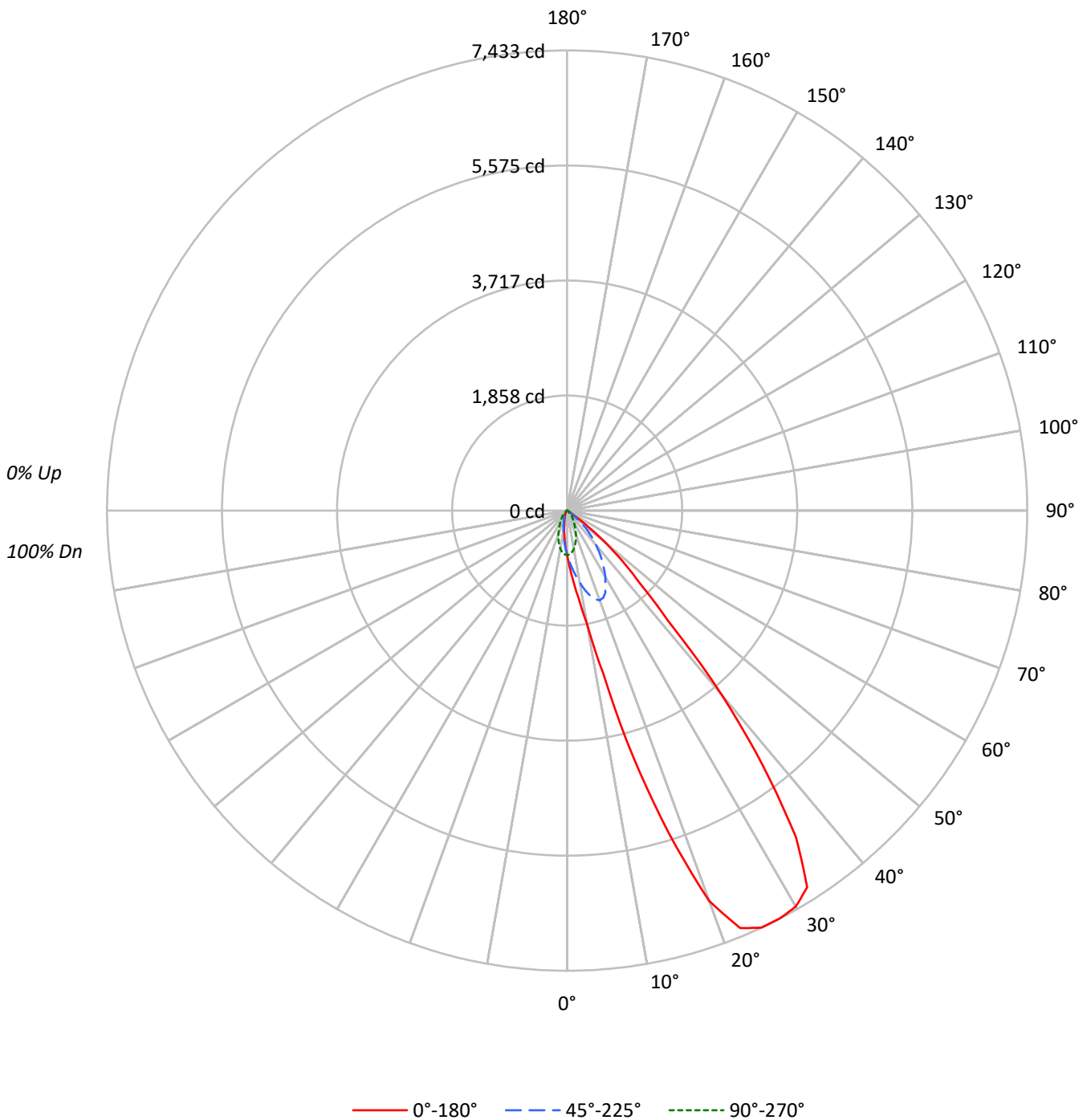
Input Watts (W): 27.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	81	78	83	80	77	75
4	93	84	78	73	91	83	77	73	81	76	72	79	74	71	77	73	70	68
5	87	77	71	66	85	76	70	65	75	69	65	73	68	64	71	67	64	62
6	82	71	64	59	80	70	64	59	69	63	59	67	62	58	66	61	58	56
7	77	66	59	54	75	65	58	54	64	58	53	62	57	53	61	56	53	51
8	72	61	54	49	71	60	54	49	59	53	49	58	52	48	57	52	48	47
9	68	56	49	45	66	56	49	45	55	49	45	54	48	44	53	48	44	43
10	64	52	46	41	62	52	45	41	51	45	41	50	45	41	49	44	41	39

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	42530	42530	42530
5°	66498	40680	26597
10°	108618	36164	15922
15°	237257	30252	9761
20°	388584	23927	6580
25°	435559	17943	4829
30°	441368	13171	3795
35°	395703	9646	2875
40°	247499	7021	2058
45°	110191	4382	1114
50°	57791	2751	473
55°	11256	1765	83
60°	4096	1096	90
65°	2402	504	198
70°	1231	222	222
75°	255	255	127
80°	0	302	0
85°	0	373	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.4	3.6
10°-20°	304.2	15.2
20°-30°	652.9	32.6
30°-40°	628.3	31.3
40°-50°	278.6	13.9
50°-60°	55.3	2.8
60°-70°	10.9	0.5
70°-80°	2.5	0.1
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°	1028.4	51.3
0°-40°	1656.7	82.6
0°-60°	1990.5	99.3
0°-90°	2005.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2005.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	712	712	712	712	712	
5°	1136	935	695	511	454	131
15°	4113	1420	524	224	169	1248
25°	7433	1460	306	108	82	3387
35°	6441	980	157	64	47	3801
45°	1652	493	66	26	17	1446
55°	149	53	23	7	1	233
65°	27	19	6	2	2	28
75°	2	2	2	2	1	4
85°	0	2	2	1	0	0
90°	0	0	0	0	0	



TEST NUMBER: P130081

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5
2.5°	910.7	871.8	847.3	864.0	850.6	852.8	835.0	838.4	837.2	816.1	808.3
5°	1135.6	1045.4	1052.1	1064.4	1033.2	1031.0	1003.1	988.7	973.1	935.2	914.1
7.5°	1438.4	1360.5	1323.8	1312.6	1262.5	1240.3	1199.1	1155.7	1112.2	1057.7	1015.4
10°	1876.0	1789.2	1717.9	1683.4	1586.5	1530.9	1444.0	1358.3	1274.8	1182.4	1110.0
12.5°	2695.4	2473.9	2336.9	2231.2	2040.8	1899.4	1737.9	1584.3	1458.5	1310.4	1194.6
15°	4112.7	3798.7	3482.6	3210.9	2775.6	2414.9	2105.3	1828.1	1627.7	1419.5	1259.2
17.5°	5469.9	5169.3	4849.7	4506.8	3875.6	3169.7	2529.5	2094.2	1773.6	1501.9	1297.1
20°	6709.0	6320.5	5936.4	5533.3	4778.5	3983.6	3019.4	2314.7	1874.9	1542.0	1299.3
22.5°	7299.1	7035.3	6701.2	6286.0	5403.1	4466.8	3346.7	2436.0	1906.1	1525.3	1262.5
25°	7432.7	7247.9	6995.2	6648.9	5705.9	4664.9	3422.4	2403.7	1852.6	1459.6	1192.4
27.5°	7429.4	7250.1	7030.8	6687.9	5683.6	4563.6	3218.7	2240.1	1724.6	1331.6	1105.6
30°	7386.0	7211.2	6920.6	6460.8	5365.2	4171.7	2830.1	2010.7	1559.8	1234.7	1012.0
32.5°	7215.6	7000.7	6545.4	5894.1	4749.5	3509.3	2375.9	1753.5	1388.3	1102.2	912.9
35°	6440.7	6327.2	5684.8	4993.4	3827.7	2696.5	1940.6	1495.2	1205.8	979.7	806.1
37.5°	5198.2	5120.3	4556.9	3847.7	2796.7	2095.3	1586.5	1285.9	1045.4	856.2	698.1
40°	3884.5	3756.4	3229.8	2655.3	2030.7	1631.1	1298.2	1074.4	895.1	724.8	592.3
42.5°	2399.3	2407.1	2090.9	1868.2	1526.4	1278.1	1057.7	889.6	748.2	603.4	486.5
45°	1652.2	1644.4	1517.5	1383.9	1177.9	1043.2	861.7	731.5	619.0	493.2	394.1
47.5°	1216.9	1212.4	1145.6	1052.1	925.2	811.6	685.8	576.7	469.8	369.6	285.0
50°	819.4	816.1	771.6	724.8	631.3	552.2	455.4	360.7	288.4	218.2	163.7
52.5°	414.2	413.1	387.4	374.1	327.3	279.5	220.4	172.6	140.3	103.5	75.7
55°	149.2	153.6	149.2	141.4	123.6	105.8	84.6	72.4	62.3	53.4	47.9
57.5°	70.1	67.9	65.7	63.5	59.0	54.6	50.1	47.9	45.6	42.3	40.1
60°	50.1	49.0	47.9	47.9	44.5	43.4	40.1	39.0	36.7	33.4	31.2
62.5°	37.9	36.7	36.7	35.6	34.5	33.4	31.2	30.1	28.9	26.7	24.5
65°	26.7	26.7	26.7	27.8	25.6	24.5	23.4	22.3	21.2	18.9	17.8
67.5°	18.9	17.8	17.8	18.9	17.8	17.8	15.6	15.6	14.5	13.4	12.2
70°	12.2	12.2	11.1	11.1	11.1	10.0	10.0	8.9	8.9	7.8	6.7
72.5°	6.7	6.7	5.6	5.6	5.6	5.6	4.5	4.5	4.5	4.5	3.3
75°	2.2	1.1	1.1	1.1	1.1	2.2	1.1	2.2	2.2	2.2	2.2
77.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2
80°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2
82.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	2.2	2.2
85°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	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°	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5
2.5°	788.3	776.0	761.5	756.0	739.3	729.2	717.0	712.5	701.4	680.3	672.5
5°	882.9	846.1	817.2	803.8	763.8	739.3	713.7	694.7	670.2	637.9	617.9
7.5°	959.7	906.3	859.5	831.7	774.9	734.8	695.8	664.7	630.2	587.8	560.0
10°	1032.1	951.9	887.3	845.0	770.4	710.3	665.8	624.6	583.4	531.1	498.8
12.5°	1085.5	980.9	899.6	839.5	751.5	688.0	627.9	576.7	531.1	475.4	439.8
15°	1116.7	992.0	891.8	817.2	720.3	648.0	580.1	524.4	472.1	417.5	379.7
17.5°	1122.3	978.6	865.1	780.5	678.0	597.9	515.5	469.8	415.3	363.0	324.0
20°	1103.3	949.7	826.1	734.8	625.7	542.2	473.2	413.1	359.6	308.4	273.9
22.5°	1061.0	901.8	773.8	678.0	566.7	485.4	415.3	356.3	306.2	260.5	229.3
25°	1000.9	840.6	712.5	614.6	506.6	426.4	359.6	306.2	261.6	220.4	193.7
27.5°	920.7	769.3	640.2	548.9	445.3	371.9	307.3	259.4	221.6	185.9	163.7
30°	843.9	693.6	570.0	479.9	386.3	319.5	262.8	220.4	187.0	159.2	140.3
32.5°	753.7	616.8	498.8	417.5	330.7	270.5	221.6	187.0	159.2	135.8	120.2
35°	658.0	533.3	426.4	354.0	279.5	226.0	185.9	157.0	134.7	115.8	103.5
37.5°	565.6	453.1	359.6	295.0	230.5	189.3	154.8	133.6	113.6	99.1	88.0
40°	472.1	375.2	293.9	240.5	189.3	155.9	128.0	110.2	94.6	82.4	73.5
42.5°	387.4	303.9	239.4	193.7	151.4	124.7	102.4	88.0	74.6	64.6	57.9
45°	307.3	239.4	183.7	145.8	111.3	91.3	75.7	65.7	56.8	50.1	45.6
47.5°	219.3	163.7	121.4	94.6	75.7	61.2	52.3	49.0	44.5	40.1	36.7
50°	120.2	91.3	71.3	60.1	51.2	46.8	42.3	39.0	35.6	31.2	26.7
52.5°	64.6	54.6	47.9	45.6	41.2	37.9	33.4	30.1	26.7	23.4	21.2
55°	45.6	42.3	39.0	36.7	32.3	28.9	25.6	23.4	21.2	18.9	16.7
57.5°	36.7	33.4	31.2	28.9	25.6	22.3	20.0	17.8	16.7	14.5	12.2
60°	28.9	26.7	24.5	22.3	20.0	17.8	15.6	13.4	12.2	10.0	8.9
62.5°	22.3	20.0	17.8	16.7	14.5	13.4	11.1	10.0	7.8	6.7	5.6
65°	15.6	14.5	13.4	11.1	10.0	8.9	6.7	5.6	5.6	4.5	3.3
67.5°	11.1	8.9	8.9	7.8	6.7	5.6	4.5	3.3	3.3	3.3	2.2
70°	6.7	5.6	4.5	4.5	3.3	3.3	2.2	2.2	2.2	2.2	2.2
72.5°	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	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°	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5	712.5
2.5°	659.1	644.6	632.4	636.8	627.9	611.2	613.5	592.3	595.6	593.4	585.6
5°	594.5	573.4	552.2	546.7	521.0	511.0	506.6	477.6	482.1	466.5	464.3
7.5°	528.8	499.9	476.5	462.0	447.6	422.0	413.1	390.8	385.2	377.4	364.1
10°	463.2	429.8	413.1	384.1	364.1	341.8	326.2	309.5	302.8	293.9	282.8
12.5°	399.7	366.3	338.5	317.3	299.5	276.1	263.9	248.3	241.6	232.7	223.8
15°	339.6	307.3	281.7	260.5	242.7	223.8	210.4	195.9	190.4	183.7	177.0
17.5°	287.2	257.2	231.6	214.9	198.2	183.7	173.7	160.3	153.6	149.2	143.6
20°	240.5	212.6	191.5	178.1	164.8	151.4	143.6	132.5	128.0	123.6	118.0
22.5°	200.4	178.1	160.3	151.4	138.1	126.9	120.2	112.4	106.9	103.5	99.1
25°	169.2	151.4	136.9	128.0	116.9	108.0	101.3	94.6	91.3	88.0	85.7
27.5°	143.6	129.1	116.9	109.1	100.2	93.5	88.0	82.4	80.2	76.8	74.6
30°	124.7	111.3	101.3	94.6	88.0	82.4	77.9	73.5	71.3	67.9	65.7
32.5°	108.0	96.9	89.1	84.6	77.9	73.5	69.0	64.6	62.3	59.0	56.8
35°	92.4	83.5	77.9	74.6	67.9	63.5	60.1	55.7	53.4	50.1	49.0
37.5°	80.2	72.4	66.8	62.3	56.8	53.4	49.0	45.6	44.5	42.3	41.2
40°	66.8	59.0	54.6	50.1	45.6	43.4	41.2	37.9	36.7	35.6	33.4
42.5°	51.2	46.8	43.4	41.2	37.9	34.5	32.3	28.9	27.8	26.7	24.5
45°	41.2	39.0	34.5	31.2	27.8	25.6	23.4	21.2	20.0	18.9	17.8
47.5°	32.3	28.9	25.6	23.4	21.2	20.0	17.8	16.7	15.6	14.5	13.4
50°	24.5	22.3	20.0	18.9	16.7	14.5	13.4	11.1	10.0	10.0	8.9
52.5°	18.9	17.8	15.6	13.4	12.2	11.1	8.9	7.8	6.7	5.6	4.5
55°	14.5	13.4	11.1	10.0	7.8	6.7	5.6	4.5	3.3	2.2	1.1
57.5°	11.1	8.9	7.8	6.7	5.6	3.3	3.3	2.2	1.1	1.1	1.1
60°	6.7	5.6	4.5	3.3	3.3	2.2	2.2	2.2	2.2	1.1	1.1
62.5°	4.5	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
65°	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
67.5°	2.2	2.2	2.2	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
70°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
72.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1
80°	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1
82.5°	2.2	2.2	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1
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°	712.5	712.5	712.5	712.5
2.5°	583.4	584.5	578.9	587.8
5°	463.2	459.8	459.8	454.2
7.5°	361.8	357.4	354.0	354.0
10°	280.6	279.5	272.8	275.0
12.5°	219.3	218.2	212.6	214.9
15°	173.7	172.6	168.1	169.2
17.5°	140.3	138.1	136.9	136.9
20°	115.8	113.6	112.4	113.6
22.5°	98.0	96.9	95.7	95.7
25°	83.5	83.5	82.4	82.4
27.5°	73.5	72.4	71.3	71.3
30°	64.6	63.5	63.5	63.5
32.5°	55.7	54.6	54.6	54.6
35°	46.8	46.8	46.8	46.8
37.5°	40.1	40.1	40.1	40.1
40°	33.4	32.3	32.3	32.3
42.5°	23.4	23.4	22.3	22.3
45°	17.8	16.7	16.7	16.7
47.5°	12.2	11.1	11.1	11.1
50°	7.8	6.7	6.7	6.7
52.5°	3.3	3.3	3.3	3.3
55°	1.1	1.1	1.1	1.1
57.5°	1.1	1.1	1.1	1.1
60°	1.1	1.1	1.1	1.1
62.5°	2.2	2.2	2.2	2.2
65°	2.2	2.2	2.2	2.2
67.5°	2.2	2.2	2.2	2.2
70°	2.2	2.2	2.2	2.2
72.5°	1.1	1.1	1.1	1.1
75°	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1
80°	1.1	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)