

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: P130076

Luminaire Tested: **HL618TAT - HLM6930 - HL6NFL - 456W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P130076  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33471)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL618TAT - HLM6930 - HL6NFL - 456W  
Description: HALO ALLSLOPE 6" 30W, White Coilex Baffle, 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: 2084.7 lumens  
Efficiency: N/A  
Efficacy: 75.5 lumens/watt  
Spacing Criteria (0/90/45): 1.91 / 0.72 / 1.18  
Luminous Opening: Vertical Cylinder (Dia: 0.48' x H: 0.1')  
CIE Type: Direct

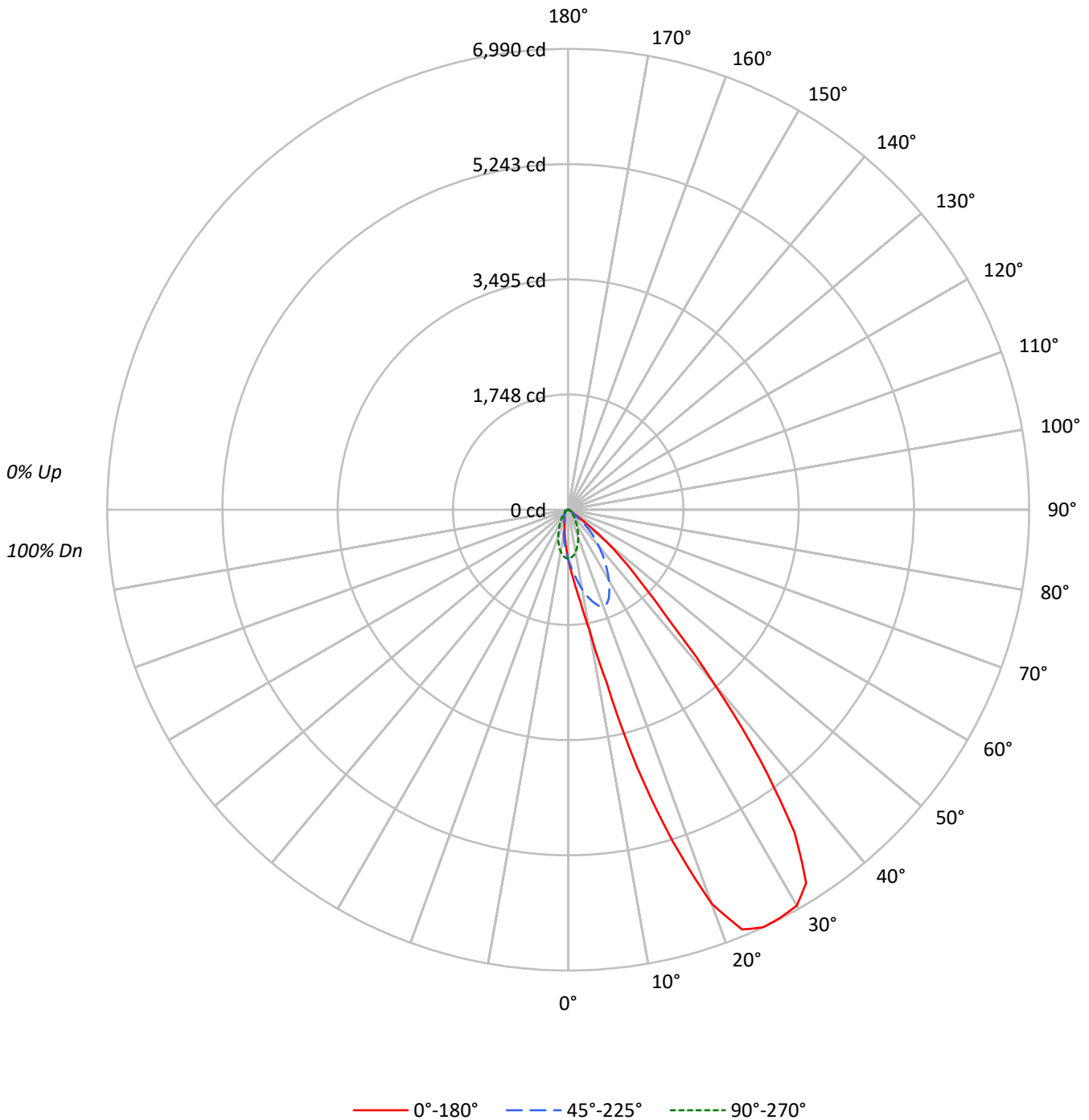
Input Watts (W): 27.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	112	109	106	103	110	107	104	101	103	100	98	99	97	95	95	94	93	91				91
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82				82
3	98	91	85	80	96	89	84	79	86	82	78	84	80	77	82	78	75	74				74
4	92	83	76	71	90	82	76	71	79	74	70	77	73	69	75	71	68	66				66
5	86	76	69	64	84	75	69	64	73	67	63	71	66	62	70	65	62	60				60
6	81	70	63	58	79	69	62	57	67	61	57	66	61	57	65	60	56	54				54
7	76	65	57	52	74	64	57	52	62	56	52	61	56	51	60	55	51	50				50
8	71	60	52	48	70	59	52	47	58	52	47	57	51	47	56	51	47	45				45
9	67	55	48	43	65	55	48	43	54	48	43	53	47	43	52	47	43	41				41
10	63	51	44	40	62	51	44	40	50	44	40	49	43	40	48	43	39	38				38

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	44314	44314	44314
5°	65455	41910	28541
10°	107269	37611	18221
15°	233825	31625	12184
20°	368202	25635	9082
25°	409593	19754	7436
30°	414303	15041	6627
35°	367497	11470	5966
40°	218490	8767	5231
45°	103502	6049	4622
50°	53263	4739	4288
55°	10780	4021	4187
60°	4881	3401	4447
65°	3455	2879	4508
70°	2048	2471	4307
75°	1112	2351	3949
80°	878	1906	3359
85°	543	1272	2171



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	74.3	3.6
10°-20°	312.7	15.0
20°-30°	649.5	31.2
30°-40°	617.5	29.6
40°-50°	285.0	13.7
50°-60°	77.0	3.7
60°-70°	37.8	1.8
70°-80°	22.5	1.1
80°-90°	8.3	0.4
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°	1036.5	49.7
0°-40°	1654.0	79.3
0°-60°	2016.1	96.7
0°-90°	2084.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2084.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	742	742	742	742	742	
5°	1118	971	716	551	487	129
15°	4053	1446	548	264	211	1212
25°	6990	1463	337	150	127	3188
35°	5982	968	187	108	97	3514
45°	1552	491	91	70	69	1330
55°	143	67	53	52	56	219
65°	38	33	32	44	50	38
75°	10	13	20	30	34	12
85°	3	4	8	12	13	3
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°	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4
2.5°	913.0	882.1	891.7	892.8	876.8	884.2	872.5	866.1	848.0	850.1	833.0
5°	1117.8	1080.5	1091.2	1083.7	1058.1	1056.0	1028.2	1013.3	984.5	970.6	932.2
7.5°	1409.0	1358.9	1366.3	1349.3	1297.0	1272.5	1214.9	1186.1	1122.1	1094.4	1035.7
10°	1852.7	1775.9	1778.1	1727.9	1635.1	1565.8	1465.5	1391.9	1285.3	1224.5	1131.7
12.5°	2687.9	2507.6	2426.6	2298.6	2121.5	1948.7	1777.0	1630.9	1462.3	1346.1	1214.9
15°	4053.2	3728.9	3615.9	3293.7	2904.4	2504.4	2138.6	1873.0	1629.8	1446.3	1277.8
17.5°	5280.9	5003.5	4869.1	4499.0	3924.1	3291.6	2613.2	2143.9	1767.4	1526.3	1310.9
20°	6357.1	6142.7	5891.0	5417.4	4729.4	4023.3	3060.1	2356.2	1859.1	1559.4	1308.7
22.5°	6891.5	6770.9	6580.0	6088.3	5292.6	4454.2	3356.7	2455.4	1873.0	1538.1	1267.1
25°	6989.6	6935.2	6830.7	6380.5	5543.2	4589.7	3390.8	2463.9	1807.9	1463.4	1195.7
27.5°	6974.7	6933.1	6845.6	6373.1	5467.5	4432.9	3202.0	2245.2	1690.6	1352.5	1107.2
30°	6933.1	6885.1	6715.5	6111.8	5112.3	4031.8	2787.1	1999.9	1529.5	1227.7	1011.2
32.5°	6714.4	6645.1	6317.6	5527.2	4500.1	3382.3	2300.7	1723.7	1340.7	1102.9	910.9
35°	5981.6	6045.6	5414.2	4620.6	3629.7	2636.7	1867.7	1466.6	1157.3	968.5	806.4
37.5°	4782.7	4704.9	4310.2	3572.1	2663.4	2014.9	1548.7	1243.7	1009.0	846.9	699.7
40°	3429.2	3439.9	3039.9	2455.4	1925.3	1577.5	1262.9	1041.0	860.8	718.9	588.8
42.5°	2218.6	2194.0	1990.3	1723.7	1481.5	1240.5	1021.8	871.4	716.8	601.6	493.8
45°	1551.9	1531.7	1447.4	1284.2	1128.5	990.9	836.2	721.0	589.8	490.6	394.7
47.5°	1143.4	1139.2	1079.4	985.6	876.8	766.9	658.1	561.0	445.8	355.2	275.2
50°	755.2	752.0	716.8	648.5	573.8	498.1	416.0	333.9	259.2	203.7	153.6
52.5°	376.5	362.7	357.3	314.7	281.6	236.8	196.3	149.3	121.6	100.3	84.3
55°	142.9	148.3	139.7	124.8	113.1	99.2	89.6	78.9	71.5	67.2	64.0
57.5°	75.7	77.9	75.7	72.5	69.3	67.2	64.0	61.9	58.7	57.6	55.5
60°	59.7	59.7	59.7	57.6	57.6	55.5	53.3	52.3	50.1	49.1	46.9
62.5°	46.9	46.9	48.0	46.9	45.9	45.9	43.7	43.7	41.6	40.5	39.5
65°	38.4	37.3	38.4	37.3	37.3	36.3	35.2	35.2	33.1	33.1	32.0
67.5°	28.8	27.7	28.8	28.8	27.7	28.8	26.7	26.7	25.6	26.7	25.6
70°	20.3	21.3	21.3	21.3	21.3	21.3	20.3	20.3	20.3	20.3	20.3
72.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
75°	9.6	9.6	9.6	10.7	10.7	10.7	10.7	11.7	11.7	12.8	12.8
77.5°	7.5	7.5	7.5	8.5	8.5	8.5	9.6	9.6	9.6	10.7	10.7
80°	6.4	6.4	6.4	6.4	6.4	7.5	7.5	7.5	8.5	8.5	9.6
82.5°	4.3	4.3	4.3	5.3	5.3	5.3	5.3	6.4	6.4	6.4	6.4
85°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	4.3	4.3	4.3	4.3
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	2.1	2.1	2.1	2.1	2.1
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°	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4
2.5°	812.8	808.5	798.9	793.6	774.4	771.2	747.7	734.9	722.1	710.4	699.7
5°	896.0	878.9	854.4	832.0	801.0	779.7	743.4	715.7	690.1	669.8	647.4
7.5°	979.2	924.8	897.0	858.6	810.6	775.4	726.4	689.0	651.7	621.8	589.8
10°	1043.2	983.4	903.4	868.2	806.4	758.4	697.6	649.6	602.6	567.4	530.1
12.5°	1096.5	1009.0	934.4	864.0	788.2	725.3	658.1	603.7	550.4	512.0	469.3
15°	1127.4	1016.5	923.7	841.6	755.2	685.8	608.0	548.2	496.0	452.2	411.7
17.5°	1131.7	1002.6	897.0	803.2	710.4	634.6	557.8	497.0	440.5	394.7	356.3
20°	1108.2	969.6	855.4	755.2	656.0	579.2	502.4	442.6	386.1	342.4	306.1
22.5°	1059.2	919.4	801.0	697.6	602.6	520.5	448.0	388.3	336.0	297.6	263.5
25°	996.2	855.4	738.1	634.6	541.8	464.0	392.5	337.1	290.1	257.1	228.3
27.5°	920.5	784.0	667.7	569.6	473.6	406.4	339.2	292.3	257.1	222.9	198.4
30°	839.4	706.1	596.2	500.2	414.9	352.0	293.3	251.7	218.7	193.1	177.1
32.5°	750.9	625.0	525.8	438.4	359.5	299.7	251.7	216.5	190.9	170.7	157.9
35°	664.5	542.9	452.2	373.3	306.1	254.9	215.5	186.7	165.3	150.4	138.7
37.5°	571.7	465.0	386.1	313.6	257.1	218.7	183.5	161.1	145.1	132.3	123.7
40°	480.0	389.3	317.9	260.3	216.5	183.5	157.9	137.6	124.8	115.2	106.7
42.5°	392.5	322.1	260.3	212.3	177.1	150.4	129.1	113.1	103.5	96.0	90.7
45°	314.7	249.6	198.4	161.1	135.5	115.2	100.3	90.7	85.3	82.1	80.0
47.5°	212.3	166.4	136.5	109.9	96.0	86.4	80.0	76.8	74.7	72.5	70.4
50°	121.6	99.2	87.5	78.9	74.7	72.5	69.3	67.2	66.1	64.0	62.9
52.5°	74.7	71.5	69.3	67.2	65.1	62.9	60.8	58.7	57.6	56.5	56.5
55°	62.9	60.8	59.7	57.6	56.5	54.4	53.3	53.3	52.3	51.2	51.2
57.5°	53.3	52.3	51.2	50.1	49.1	48.0	46.9	46.9	45.9	45.9	45.9
60°	45.9	44.8	43.7	42.7	42.7	42.7	41.6	41.6	41.6	41.6	41.6
62.5°	38.4	37.3	37.3	36.3	36.3	36.3	36.3	36.3	37.3	37.3	37.3
65°	32.0	30.9	30.9	30.9	30.9	32.0	32.0	32.0	32.0	33.1	34.1
67.5°	25.6	25.6	25.6	25.6	25.6	26.7	26.7	27.7	28.8	29.9	32.0
70°	20.3	20.3	21.3	21.3	22.4	23.5	23.5	24.5	26.7	27.7	28.8
72.5°	16.0	16.0	18.1	18.1	19.2	20.3	21.3	22.4	23.5	24.5	26.7
75°	13.9	13.9	14.9	16.0	17.1	18.1	19.2	20.3	21.3	22.4	23.5
77.5°	11.7	12.8	12.8	13.9	14.9	14.9	16.0	17.1	18.1	19.2	19.2
80°	9.6	9.6	10.7	11.7	11.7	12.8	12.8	13.9	14.9	14.9	16.0
82.5°	7.5	7.5	8.5	8.5	8.5	9.6	9.6	10.7	10.7	11.7	12.8
85°	5.3	5.3	5.3	6.4	6.4	6.4	6.4	7.5	7.5	8.5	8.5
87.5°	2.1	3.2	3.2	3.2	3.2	4.3	4.3	4.3	4.3	4.3	5.3
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°	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4	742.4
2.5°	693.3	672.0	679.4	657.0	660.2	650.6	643.2	638.9	630.4	615.4	617.6
5°	628.2	600.5	602.6	569.6	562.1	551.4	534.4	528.0	520.5	507.7	499.2
7.5°	568.5	530.1	524.8	493.8	477.8	466.1	443.7	434.1	418.1	410.7	401.1
10°	500.2	461.8	451.2	414.9	400.0	385.1	362.7	352.0	340.3	329.6	322.1
12.5°	438.4	398.9	381.9	349.9	334.9	318.9	296.5	290.1	278.4	269.9	262.4
15°	379.7	341.3	322.1	294.4	281.6	264.5	251.7	242.1	231.5	222.9	217.6
17.5°	326.4	291.2	277.3	250.7	237.9	222.9	212.3	202.7	195.2	188.8	183.5
20°	279.5	248.5	235.7	213.3	202.7	193.1	181.3	176.0	173.9	164.3	160.0
22.5°	240.0	214.4	203.7	185.6	177.1	169.6	160.0	154.7	150.4	145.1	141.9
25°	208.0	186.7	179.2	163.2	157.9	150.4	144.0	139.7	135.5	132.3	129.1
27.5°	183.5	165.3	158.9	146.1	141.9	136.5	131.2	128.0	124.8	121.6	119.5
30°	163.2	148.3	144.0	133.3	130.1	125.9	121.6	119.5	117.3	114.1	112.0
32.5°	146.1	133.3	130.1	122.7	120.5	117.3	114.1	112.0	108.8	106.7	104.5
35°	130.1	121.6	119.5	112.0	110.9	107.7	104.5	102.4	100.3	98.1	97.1
37.5°	116.3	108.8	107.7	101.3	99.2	97.1	93.9	92.8	91.7	90.7	89.6
40°	101.3	94.9	93.9	88.5	88.5	87.5	85.3	84.3	83.2	83.2	81.1
42.5°	85.3	83.2	83.2	80.0	80.0	78.9	76.8	76.8	74.7	74.7	73.6
45°	77.9	74.7	74.7	71.5	71.5	70.4	69.3	69.3	69.3	69.3	68.3
47.5°	69.3	66.1	67.2	65.1	65.1	65.1	65.1	65.1	64.0	64.0	64.0
50°	61.9	59.7	61.9	59.7	60.8	60.8	59.7	60.8	60.8	59.7	59.7
52.5°	56.5	55.5	56.5	55.5	56.5	56.5	55.5	56.5	56.5	56.5	56.5
55°	51.2	50.1	52.3	51.2	52.3	52.3	52.3	53.3	53.3	54.4	53.3
57.5°	46.9	45.9	48.0	46.9	48.0	49.1	49.1	50.1	51.2	52.3	52.3
60°	42.7	42.7	43.7	43.7	45.9	46.9	48.0	49.1	50.1	52.3	52.3
62.5°	38.4	39.5	41.6	40.5	43.7	45.9	46.9	48.0	49.1	50.1	50.1
65°	36.3	36.3	39.5	40.5	42.7	43.7	44.8	45.9	46.9	48.0	48.0
67.5°	34.1	34.1	37.3	37.3	40.5	40.5	41.6	43.7	43.7	44.8	44.8
70°	30.9	32.0	34.1	35.2	36.3	37.3	38.4	39.5	40.5	41.6	41.6
72.5°	27.7	28.8	30.9	30.9	33.1	34.1	35.2	36.3	36.3	37.3	37.3
75°	24.5	24.5	26.7	27.7	28.8	29.9	30.9	32.0	32.0	33.1	33.1
77.5°	20.3	21.3	22.4	23.5	24.5	25.6	26.7	27.7	27.7	28.8	28.8
80°	17.1	17.1	18.1	19.2	20.3	21.3	21.3	22.4	22.4	23.5	23.5
82.5°	12.8	13.9	13.9	14.9	16.0	16.0	17.1	17.1	18.1	18.1	18.1
85°	9.6	9.6	9.6	10.7	10.7	11.7	11.7	11.7	12.8	12.8	12.8
87.5°	5.3	5.3	5.3	6.4	6.4	6.4	6.4	6.4	7.5	7.5	7.5
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°	742.4	742.4	742.4	742.4
2.5°	618.6	611.2	619.7	611.2
5°	499.2	487.4	496.0	487.4
7.5°	402.1	393.6	392.5	389.3
10°	320.0	311.5	310.4	314.7
12.5°	261.3	253.9	253.9	254.9
15°	215.5	209.1	211.2	211.2
17.5°	182.4	181.3	179.2	179.2
20°	161.1	155.7	155.7	156.8
22.5°	142.9	138.7	138.7	139.7
25°	131.2	125.9	126.9	126.9
27.5°	119.5	117.3	118.4	118.4
30°	112.0	109.9	110.9	110.9
32.5°	105.6	102.4	103.5	104.5
35°	98.1	96.0	97.1	97.1
37.5°	90.7	88.5	89.6	90.7
40°	82.1	81.1	81.1	82.1
42.5°	73.6	72.5	73.6	74.7
45°	69.3	68.3	68.3	69.3
47.5°	65.1	64.0	64.0	65.1
50°	60.8	59.7	60.8	60.8
52.5°	56.5	56.5	56.5	57.6
55°	54.4	54.4	55.5	55.5
57.5°	54.4	54.4	54.4	55.5
60°	53.3	53.3	54.4	54.4
62.5°	51.2	52.3	52.3	52.3
65°	49.1	48.0	50.1	50.1
67.5°	45.9	45.9	45.9	46.9
70°	42.7	42.7	42.7	42.7
72.5°	38.4	38.4	38.4	38.4
75°	34.1	34.1	34.1	34.1
77.5°	28.8	28.8	28.8	29.9
80°	23.5	23.5	23.5	24.5
82.5°	18.1	18.1	18.1	18.1
85°	12.8	12.8	12.8	12.8
87.5°	7.5	7.5	7.5	7.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)