

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: P130063

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P130063  
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 - HLM6927 - HL6NFL - 455H  
Description: HALO ALLSLOPE 6" 30W, Semi-Specular Haze Reflector, White 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: 1974.0 lumens  
Efficiency: N/A  
Efficacy: 71.5 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

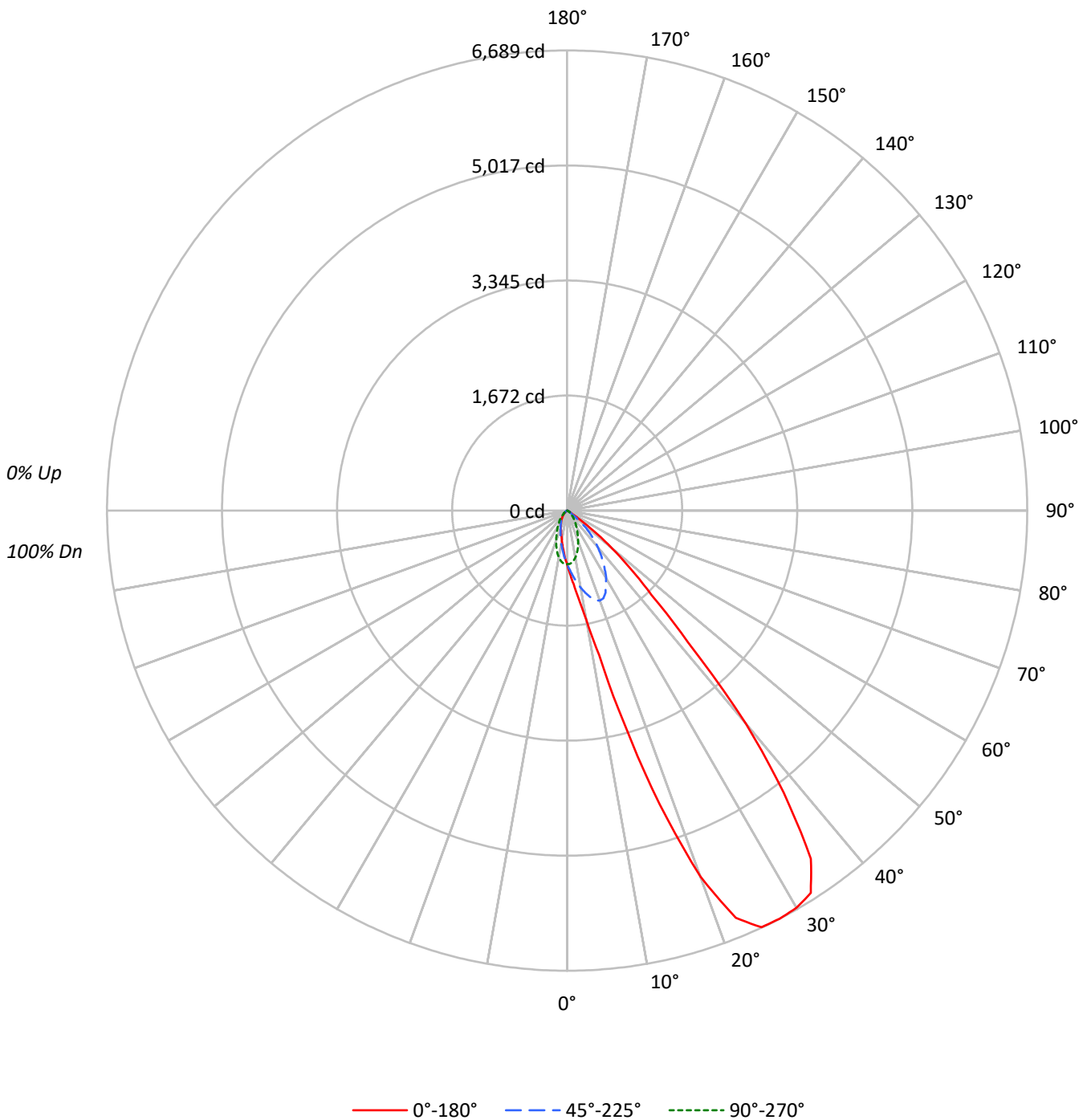
Input Watts (W): 27.6  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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					0
RW	70	50	30	10	70	50	30	10	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	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	93	92					92			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	87	85	83					83			
3	99	92	86	81	97	90	85	80	87	83	79	85	81	78	83	79	77	75					75			
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69	68					68			
5	87	77	70	65	85	76	70	65	74	68	64	72	67	63	71	66	63	61					61			
6	81	71	64	59	80	70	63	58	68	62	58	67	62	58	65	61	57	56					56			
7	76	65	58	53	75	65	58	53	63	57	53	62	56	52	61	56	52	50					50			
8	71	60	53	48	70	60	53	48	58	52	48	57	52	48	56	51	48	46					46			
9	67	56	49	44	66	55	49	44	54	48	44	53	48	44	52	47	44	42					42			
10	63	52	45	40	62	51	45	40	50	44	40	50	44	40	49	44	40	38					38			

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

	0°	90°	180°
0°	46499	46499	46499
5°	62832	44621	34666
10°	93385	40008	25360
15°	184426	33863	19326
20°	327757	27049	15349
25°	391615	20862	12423
30°	398450	16015	10039
35°	379612	12288	7803
40°	257528	9366	5798
45°	115840	6536	4068
50°	60513	4443	2398
55°	14409	3018	1132
60°	4333	1962	491
65°	2789	1080	180
70°	1513	404	101
75°	463	232	0
80°	0	274	0
85°	0	339	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	76.3	3.9
10°-20°	290.2	14.7
20°-30°	612.3	31.0
30°-40°	616.3	31.2
40°-50°	292.6	14.8
50°-60°	67.7	3.4
60°-70°	14.3	0.7
70°-80°	3.0	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°	978.8	49.6
0°-40°	1595.1	80.8
0°-60°	1955.5	99.1
0°-90°	1974.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1974.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	779	779	779	779	779	
5°	1073	951	762	626	592	119
15°	3197	1304	587	366	335	1016
25°	6683	1318	356	221	212	3013
35°	6179	906	200	138	127	3626
45°	1737	473	98	69	61	1524
55°	191	61	40	24	15	261
65°	31	23	12	5	2	31
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°	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0
2.5°	913.0	887.0	898.0	875.0	900.0	880.0	880.0	872.0	867.0	860.0	840.0
5°	1073.0	1040.0	1049.0	1035.0	1042.0	1017.0	1006.0	984.0	988.0	951.0	917.0
7.5°	1288.0	1241.0	1256.0	1215.0	1212.0	1180.0	1149.0	1109.0	1075.0	1044.0	993.0
10°	1612.9	1550.9	1552.9	1483.9	1467.9	1395.0	1336.0	1257.0	1189.0	1138.0	1057.0
12.5°	2151.9	2037.9	2020.9	1892.9	1826.9	1676.9	1549.9	1424.9	1311.0	1223.0	1112.0
15°	3196.9	3033.9	2899.9	2588.9	2362.9	2076.9	1827.9	1620.9	1450.9	1304.0	1158.0
17.5°	4480.8	4258.8	4104.9	3685.9	3239.9	2610.9	2171.9	1816.9	1558.9	1365.0	1183.0
20°	5658.8	5372.8	5124.8	4636.8	4101.9	3384.9	2485.9	1988.9	1635.9	1392.0	1176.0
22.5°	6406.8	6187.8	5951.8	5373.8	4721.8	3849.9	2842.9	2099.9	1660.9	1378.0	1137.0
25°	6682.8	6485.8	6360.8	5780.8	5075.8	4151.9	2949.9	2104.9	1623.9	1318.0	1084.0
27.5°	6688.8	6512.8	6450.8	5888.8	5135.8	4037.9	2849.9	1996.9	1532.9	1211.0	1012.0
30°	6667.8	6490.8	6385.8	5740.8	4905.8	3760.9	2574.9	1806.9	1408.0	1135.0	931.0
32.5°	6589.8	6370.8	6114.8	5330.8	4425.8	3217.9	2191.9	1595.9	1250.0	1022.0	853.0
35°	6178.8	5899.8	5473.8	4640.8	3679.9	2547.9	1799.9	1373.0	1097.0	906.0	744.0
37.5°	5172.8	4939.8	4534.8	3726.9	2738.9	1947.9	1495.9	1182.0	955.0	799.0	651.0
40°	4041.9	3773.9	3300.9	2619.9	1998.9	1531.9	1221.0	996.0	826.0	690.0	556.0
42.5°	2599.9	2482.9	2199.9	1812.9	1478.9	1210.0	994.0	836.0	698.0	577.0	462.0
45°	1736.9	1653.9	1536.9	1329.0	1139.0	975.0	821.0	689.0	577.0	473.0	378.0
47.5°	1248.0	1176.0	1129.0	1008.0	887.0	775.0	659.0	546.0	444.0	361.0	283.0
50°	858.0	803.0	783.0	709.0	614.0	531.0	439.0	362.0	286.0	227.0	173.0
52.5°	472.0	443.0	434.0	395.0	350.0	292.0	231.0	184.0	145.0	114.0	90.0
55°	191.0	185.0	176.0	162.0	141.0	113.0	97.0	80.0	68.0	61.0	56.0
57.5°	77.0	74.0	73.0	68.0	64.0	58.0	54.0	51.0	49.0	48.0	46.0
60°	53.0	51.0	50.0	48.0	47.0	45.0	43.0	42.0	40.0	39.0	37.0
62.5°	40.0	39.0	39.0	37.0	37.0	36.0	35.0	33.0	32.0	31.0	29.0
65°	31.0	30.0	29.0	29.0	28.0	28.0	27.0	26.0	24.0	23.0	21.0
67.5°	22.0	22.0	21.0	21.0	20.0	20.0	19.0	18.0	17.0	16.0	15.0
70°	15.0	14.0	14.0	14.0	14.0	13.0	13.0	12.0	11.0	11.0	10.0
72.5°	9.0	9.0	9.0	8.0	8.0	8.0	7.0	7.0	7.0	6.0	6.0
75°	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	2.0
80°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0
82.5°	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	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°	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0
2.5°	832.0	830.0	810.0	801.0	799.0	791.0	788.0	778.0	742.0	744.0	748.0
5°	898.0	880.0	848.0	827.0	813.0	795.0	780.0	762.0	732.0	709.0	704.0
7.5°	955.0	922.0	876.0	843.0	815.0	786.0	759.0	731.0	696.0	667.0	653.0
10°	1002.0	953.0	889.0	843.0	804.0	764.0	728.0	691.0	648.0	614.0	597.0
12.5°	1032.0	966.0	887.0	828.0	778.0	726.0	686.0	644.0	596.0	557.0	537.0
15°	1050.0	961.0	871.0	798.0	739.0	680.0	634.0	587.0	537.0	497.0	475.0
17.5°	1049.0	959.0	841.0	759.0	691.0	626.0	576.0	527.0	479.0	438.0	414.0
20°	1024.0	910.0	796.0	710.0	640.0	569.0	515.0	467.0	419.0	382.0	359.0
22.5°	978.0	859.0	744.0	652.0	580.0	513.0	456.0	408.0	365.0	332.0	315.0
25°	924.0	800.0	688.0	588.0	519.0	452.0	400.0	356.0	318.0	288.0	274.0
27.5°	858.0	736.0	624.0	529.0	457.0	396.0	347.0	310.0	275.0	252.0	238.0
30°	778.0	666.0	552.0	468.0	399.0	344.0	299.0	268.0	239.0	218.0	210.0
32.5°	700.0	589.0	483.0	405.0	345.0	295.0	257.0	231.0	209.0	191.0	183.0
35°	620.0	510.0	419.0	345.0	295.0	251.0	222.0	200.0	181.0	167.0	161.0
37.5°	536.0	437.0	356.0	292.0	248.0	212.0	186.0	176.0	156.0	144.0	140.0
40°	449.0	365.0	298.0	246.0	208.0	179.0	160.0	147.0	133.0	126.0	122.0
42.5°	373.0	299.0	245.0	202.0	173.0	149.0	134.0	123.0	110.0	105.0	102.0
45°	300.0	239.0	193.0	160.0	136.0	118.0	106.0	98.0	90.0	85.0	83.0
47.5°	220.0	172.0	138.0	115.0	98.0	88.0	80.0	77.0	72.0	70.0	68.0
50°	134.0	107.0	89.0	77.0	70.0	67.0	64.0	63.0	59.0	57.0	54.0
52.5°	76.0	68.0	61.0	58.0	57.0	55.0	52.0	50.0	46.0	44.0	43.0
55°	53.0	52.0	50.0	48.0	46.0	43.0	41.0	40.0	37.0	36.0	34.0
57.5°	45.0	42.0	40.0	37.0	36.0	34.0	33.0	32.0	30.0	28.0	27.0
60°	35.0	33.0	31.0	30.0	29.0	27.0	25.0	24.0	22.0	21.0	20.0
62.5°	27.0	26.0	24.0	23.0	22.0	21.0	19.0	18.0	17.0	15.0	13.0
65°	20.0	19.0	18.0	17.0	16.0	15.0	13.0	12.0	11.0	10.0	9.0
67.5°	14.0	14.0	12.0	11.0	11.0	9.0	8.0	7.0	6.0	6.0	5.0
70°	9.0	9.0	8.0	7.0	6.0	5.0	5.0	4.0	4.0	4.0	3.0
72.5°	5.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
75°	3.0	2.0	2.0	3.0	3.0	3.0	3.0	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	2.0
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°	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0	779.0
2.5°	743.0	728.0	720.0	712.0	712.0	706.0	709.0	695.0	698.0	690.0	689.0
5°	691.0	687.0	654.0	644.0	628.0	626.0	629.0	611.0	609.0	601.0	594.0
7.5°	636.0	611.0	591.0	575.0	565.0	554.0	538.0	534.0	529.0	523.0	516.0
10°	576.0	548.0	525.0	506.0	500.0	485.0	477.0	465.0	457.0	450.0	445.0
12.5°	513.0	484.0	463.0	443.0	435.0	421.0	415.0	403.0	396.0	389.0	387.0
15°	449.0	423.0	400.0	385.0	376.0	366.0	361.0	348.0	346.0	340.0	336.0
17.5°	392.0	368.0	348.0	336.0	328.0	318.0	316.0	306.0	304.0	301.0	297.0
20°	339.0	320.0	303.0	293.0	288.0	282.0	279.0	272.0	270.0	268.0	266.0
22.5°	296.0	280.0	270.0	259.0	255.0	250.0	248.0	241.0	240.0	240.0	237.0
25°	258.0	246.0	237.0	228.0	226.0	221.0	221.0	215.0	216.0	214.0	213.0
27.5°	228.0	217.0	209.0	202.0	201.0	198.0	197.0	193.0	193.0	192.0	190.0
30°	200.0	192.0	185.0	180.0	180.0	177.0	177.0	173.0	172.0	171.0	171.0
32.5°	176.0	171.0	166.0	160.0	161.0	157.0	157.0	153.0	151.0	150.0	148.0
35°	154.0	151.0	146.0	142.0	142.0	138.0	136.0	132.0	131.0	130.0	129.0
37.5°	135.0	132.0	128.0	123.0	123.0	119.0	118.0	115.0	113.0	112.0	111.0
40°	117.0	114.0	110.0	105.0	105.0	101.0	100.0	98.0	97.0	95.0	94.0
42.5°	97.0	94.0	91.0	89.0	88.0	85.0	84.0	79.0	81.0	80.0	77.0
45°	80.0	79.0	76.0	73.0	72.0	69.0	67.0	64.0	63.0	63.0	61.0
47.5°	66.0	63.0	61.0	58.0	57.0	55.0	53.0	51.0	51.0	50.0	48.0
50°	52.0	50.0	49.0	46.0	45.0	43.0	42.0	40.0	39.0	37.0	36.0
52.5°	42.0	40.0	38.0	37.0	35.0	34.0	32.0	29.0	29.0	27.0	25.0
55°	33.0	31.0	29.0	28.0	26.0	24.0	23.0	21.0	19.0	18.0	17.0
57.5°	25.0	23.0	22.0	20.0	18.0	17.0	15.0	13.0	12.0	11.0	10.0
60°	18.0	17.0	15.0	13.0	12.0	11.0	10.0	8.0	8.0	7.0	7.0
62.5°	13.0	11.0	10.0	8.0	8.0	7.0	6.0	6.0	5.0	5.0	4.0
65°	8.0	7.0	6.0	6.0	5.0	5.0	4.0	4.0	3.0	3.0	3.0
67.5°	5.0	4.0	4.0	4.0	3.0	3.0	3.0	2.0	2.0	2.0	1.0
70°	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0
72.5°	3.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
75°	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0
77.5°	2.0	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
80°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
82.5°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
85°	2.0	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0	0.0
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°	779.0	779.0	779.0	779.0
2.5°	687.0	680.0	678.0	690.0
5°	596.0	588.0	586.0	592.0
7.5°	515.0	505.0	508.0	509.0
10°	443.0	436.0	435.0	438.0
12.5°	381.0	376.0	376.0	381.0
15°	334.0	331.0	330.0	335.0
17.5°	294.0	293.0	293.0	297.0
20°	263.0	262.0	262.0	265.0
22.5°	235.0	235.0	235.0	236.0
25°	211.0	212.0	211.0	212.0
27.5°	189.0	190.0	190.0	190.0
30°	172.0	168.0	169.0	168.0
32.5°	147.0	146.0	147.0	147.0
35°	127.0	127.0	127.0	127.0
37.5°	109.0	109.0	109.0	109.0
40°	92.0	92.0	92.0	91.0
42.5°	76.0	76.0	76.0	75.0
45°	60.0	60.0	60.0	61.0
47.5°	47.0	47.0	46.0	47.0
50°	35.0	34.0	34.0	34.0
52.5°	25.0	24.0	23.0	23.0
55°	16.0	15.0	15.0	15.0
57.5°	10.0	10.0	9.0	9.0
60°	6.0	6.0	6.0	6.0
62.5°	4.0	4.0	4.0	3.0
65°	2.0	2.0	2.0	2.0
67.5°	1.0	1.0	1.0	1.0
70°	1.0	1.0	1.0	1.0
72.5°	1.0	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)