

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 COMMERCIAL

Report Number: P584709

Luminaire Tested: **HC845D010-HM82555840-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584709  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC845D010-HM82555840-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5021.2 lumens  
Efficiency: N/A  
Efficacy: 114.1 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.04 / 1.13  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

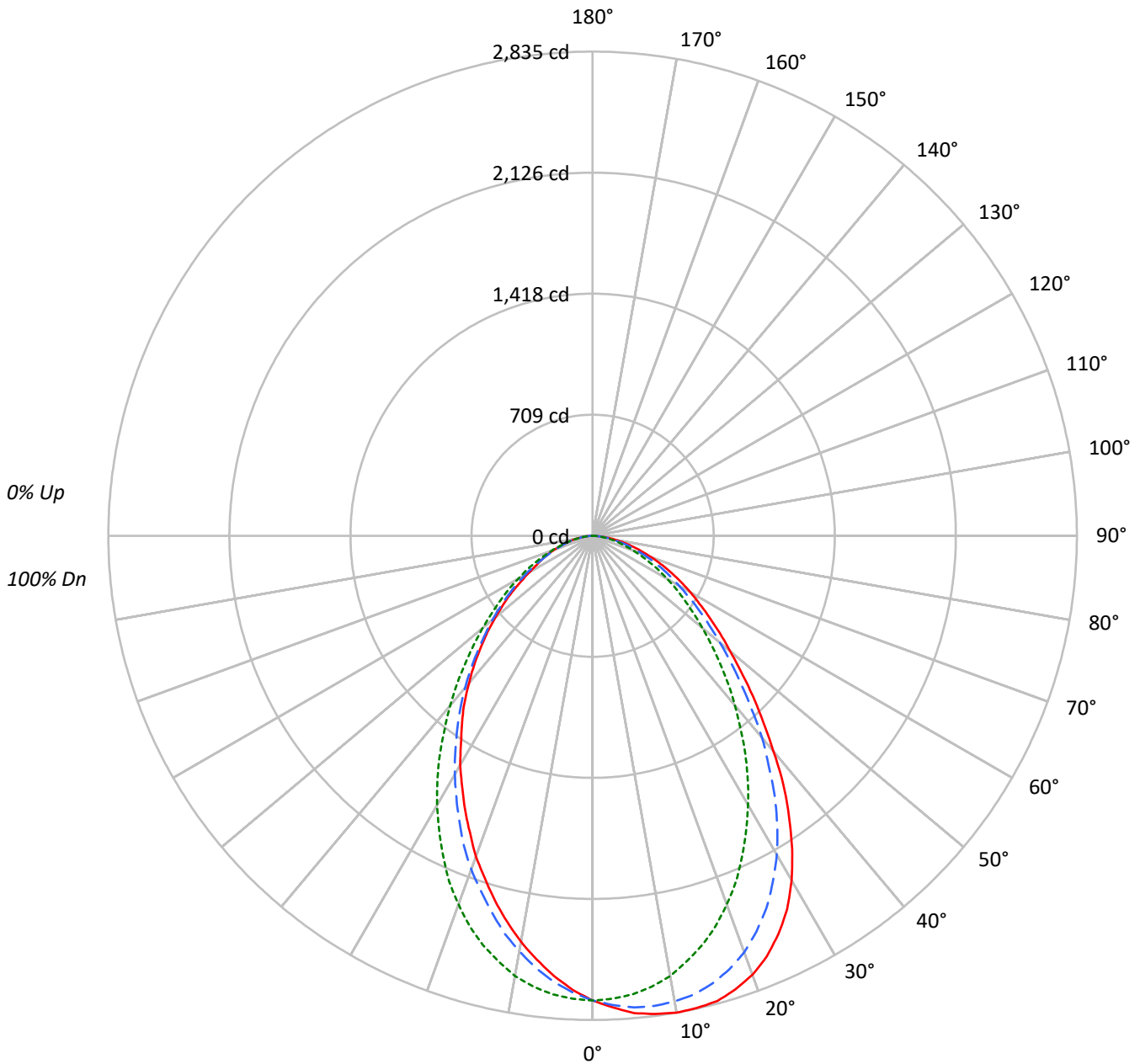
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32																			

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

	0°	90°	180°
0°	83896	83896	83896
5°	86845	83418	80103
10°	88773	81953	75597
15°	90039	79197	70591
20°	89763	75347	65535
25°	87544	70461	60165
30°	82939	64801	55208
35°	75458	58646	50165
40°	66274	52157	45326
45°	57795	45881	40408
50°	50295	40201	35596
55°	44859	35327	30961
60°	40753	30960	26414
65°	36628	26931	23976
70°	32620	22973	21638
75°	28594	19361	18479
80°	24240	15734	16391
85°	18292	11746	13055



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	254.8	5.1
10°-20°	702.2	14.0
20°-30°	974.6	19.4
30°-40°	1007.7	20.1
40°-50°	843.7	16.8
50°-60°	612.5	12.2
60°-70°	386.5	7.7
70°-80°	191.5	3.8
80°-90°	47.6	0.9
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°	1931.6	38.5
0°-40°	2939.3	58.5
0°-60°	4395.5	87.5
0°-90°	5021.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5021.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2721	2721	2721	2721	2721	
5°	2806	2772	2695	2621	2588	268
15°	2820	2713	2481	2281	2211	794
25°	2573	2407	2071	1846	1768	1179
35°	2004	1857	1558	1381	1333	1248
45°	1325	1229	1052	949	927	1025
55°	834	760	657	602	576	753
65°	502	439	369	325	329	501
75°	240	199	162	155	155	257
85°	52	41	33	37	37	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7
2.5°	2765.0	2765.0	2768.6	2765.0	2765.0	2765.0	2761.2	2761.2	2757.6	2757.6	2750.2
5°	2805.6	2798.2	2805.6	2798.2	2798.2	2798.2	2794.6	2787.2	2783.4	2776.0	2772.4
7.5°	2824.1	2820.4	2820.4	2816.7	2816.7	2813.0	2809.3	2805.6	2790.8	2787.2	2776.0
10°	2835.1	2831.4	2831.4	2827.8	2820.4	2820.4	2813.0	2809.3	2790.8	2783.4	2768.6
12.5°	2831.4	2831.4	2831.4	2827.8	2816.7	2813.0	2805.6	2794.6	2779.8	2765.0	2750.2
15°	2820.4	2820.4	2813.0	2809.3	2798.2	2790.8	2787.2	2768.6	2754.0	2735.4	2713.3
17.5°	2783.4	2783.4	2779.8	2772.4	2761.2	2754.0	2746.6	2728.0	2713.3	2683.8	2661.7
20°	2735.4	2731.8	2728.0	2717.0	2705.9	2702.2	2691.2	2665.3	2646.9	2624.7	2595.1
22.5°	2665.3	2661.7	2657.9	2650.5	2632.1	2624.7	2617.3	2598.9	2565.7	2543.5	2506.6
25°	2573.0	2573.0	2565.7	2554.6	2536.1	2528.8	2517.6	2499.2	2469.6	2436.4	2406.9
27.5°	2466.0	2462.2	2451.2	2443.8	2429.0	2418.0	2399.5	2377.3	2347.9	2322.0	2285.1
30°	2329.3	2329.3	2322.0	2310.9	2292.5	2285.1	2270.3	2244.5	2215.0	2181.8	2155.9
32.5°	2174.4	2174.4	2163.2	2155.9	2144.8	2126.3	2122.7	2093.1	2067.3	2041.5	2011.9
35°	2004.5	2008.2	2000.8	1986.1	1967.6	1967.6	1960.2	1934.4	1904.8	1879.0	1856.9
37.5°	1834.7	1823.7	1819.9	1812.5	1801.5	1786.7	1779.3	1768.3	1742.4	1724.0	1690.8
40°	1646.4	1650.2	1642.8	1635.4	1631.6	1620.6	1616.9	1598.4	1580.0	1557.9	1543.1
42.5°	1476.6	1476.6	1476.6	1469.3	1461.9	1450.8	1447.1	1436.0	1413.8	1399.2	1377.0
45°	1325.3	1314.2	1314.2	1310.5	1306.8	1299.4	1288.3	1281.0	1266.3	1255.1	1229.3
47.5°	1177.6	1181.3	1177.6	1173.9	1162.8	1159.2	1155.5	1140.7	1126.0	1114.8	1096.4
50°	1048.4	1055.8	1048.4	1048.4	1041.0	1037.3	1029.9	1018.9	1007.8	989.3	970.9
52.5°	941.3	941.3	937.7	933.9	922.9	915.5	911.8	908.1	889.7	874.9	860.2
55°	834.4	838.0	838.0	827.0	823.2	815.8	812.2	801.0	793.7	771.5	760.5
57.5°	742.0	738.3	742.0	734.6	727.3	719.9	716.1	708.7	697.7	682.9	668.1
60°	660.8	653.4	653.4	649.7	642.3	638.7	631.3	620.2	609.1	594.4	583.2
62.5°	579.6	575.9	572.2	568.6	561.2	557.4	553.8	542.6	531.6	520.5	509.4
65°	502.0	502.0	498.4	491.0	487.3	483.6	479.9	472.5	457.7	450.3	439.3
67.5°	431.9	428.3	428.3	420.9	413.5	409.7	409.7	402.3	391.3	380.3	372.9
70°	361.8	365.5	361.8	358.1	350.7	350.7	343.3	339.6	324.8	321.2	310.1
72.5°	299.0	299.0	295.4	295.4	288.0	284.2	284.2	276.8	269.4	262.0	254.8
75°	240.0	240.0	240.0	236.2	232.6	225.2	225.2	221.5	214.1	206.7	199.3
77.5°	188.3	184.6	184.6	180.9	177.2	173.5	173.5	169.9	162.5	158.7	151.3
80°	136.5	132.9	132.9	132.9	125.5	129.1	125.5	121.9	118.1	114.5	110.7
82.5°	88.6	92.3	92.3	88.6	84.9	84.9	84.9	81.2	81.2	77.5	73.8
85°	51.7	51.7	51.7	51.7	48.0	48.0	48.0	44.3	44.3	44.3	40.6
87.5°	22.2	22.2	22.2	22.2	22.2	22.2	18.4	18.4	18.4	18.4	18.4
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7
2.5°	2750.2	2742.8	2739.2	2735.4	2735.4	2731.8	2728.0	2720.7	2720.7	2713.3	2709.6
5°	2765.0	2754.0	2746.6	2739.2	2735.4	2728.0	2720.7	2709.6	2705.9	2694.9	2683.8
7.5°	2768.6	2750.2	2742.8	2728.0	2720.7	2713.3	2698.5	2687.5	2672.7	2661.7	2646.9
10°	2754.0	2739.2	2720.7	2702.2	2698.5	2687.5	2665.3	2650.5	2632.1	2617.3	2595.1
12.5°	2731.8	2709.6	2691.2	2669.0	2657.9	2646.9	2624.7	2602.5	2576.7	2550.9	2528.8
15°	2694.9	2669.0	2643.1	2617.3	2602.5	2591.5	2565.7	2539.8	2514.0	2480.8	2458.6
17.5°	2639.5	2609.9	2584.1	2550.9	2536.1	2525.0	2491.8	2462.2	2429.0	2395.9	2373.7
20°	2569.3	2532.4	2502.9	2466.0	2454.9	2436.4	2403.2	2370.0	2333.1	2296.1	2270.3
22.5°	2477.0	2440.1	2406.9	2370.0	2351.5	2333.1	2299.9	2259.2	2222.4	2192.8	2167.0
25°	2370.0	2336.7	2296.1	2263.0	2240.8	2218.6	2181.8	2148.5	2115.3	2070.9	2045.1
27.5°	2251.8	2211.2	2181.8	2137.4	2115.3	2100.5	2059.9	2015.6	1986.1	1945.4	1916.0
30°	2118.9	2082.1	2048.9	2004.5	1982.4	1967.6	1930.6	1890.1	1860.6	1819.9	1790.5
32.5°	1978.7	1938.0	1897.4	1867.9	1842.1	1827.3	1786.7	1760.9	1724.0	1690.8	1657.6
35°	1827.3	1786.7	1757.2	1716.6	1701.8	1687.0	1653.8	1620.6	1587.4	1557.9	1532.1
37.5°	1665.0	1635.4	1602.2	1572.6	1561.5	1546.7	1506.1	1476.6	1450.8	1421.2	1399.2
40°	1506.1	1480.3	1458.2	1428.6	1410.2	1399.2	1369.6	1343.8	1314.2	1295.7	1273.6
42.5°	1362.2	1332.6	1310.5	1288.3	1269.9	1258.9	1232.9	1214.5	1192.4	1173.9	1148.1
45°	1210.9	1196.1	1170.2	1151.8	1140.7	1126.0	1107.4	1085.4	1066.8	1052.1	1033.6
47.5°	1078.0	1063.2	1044.7	1022.6	1015.2	1004.1	985.7	970.9	956.1	941.3	922.9
50°	956.1	937.7	922.9	908.1	900.7	889.7	871.2	863.8	852.8	838.0	827.0
52.5°	845.4	830.6	815.8	797.4	793.7	786.3	775.2	760.5	749.4	742.0	734.6
55°	745.7	730.9	719.9	705.1	701.5	694.1	679.3	671.9	664.5	657.1	649.7
57.5°	657.1	642.3	627.6	620.2	612.8	605.4	601.7	590.6	583.2	579.6	572.2
60°	575.9	561.2	550.0	539.0	535.2	531.6	524.2	516.8	509.4	502.0	498.4
62.5°	498.4	483.6	476.2	468.8	461.5	461.5	454.1	446.7	439.3	435.7	428.3
65°	428.3	420.9	409.7	398.7	394.9	394.9	383.9	380.3	376.5	369.1	361.8
67.5°	361.8	354.4	343.3	339.6	335.9	332.2	328.6	321.2	313.8	310.1	302.8
70°	302.8	295.4	288.0	284.2	280.6	276.8	269.4	265.8	258.4	254.8	251.0
72.5°	243.6	240.0	232.6	228.9	225.2	221.5	217.8	214.1	206.7	203.0	199.3
75°	195.7	192.0	184.6	180.9	177.2	177.2	173.5	166.1	162.5	162.5	158.7
77.5°	147.7	143.9	140.3	136.5	132.9	132.9	129.1	125.5	121.9	121.9	118.1
80°	107.1	103.3	99.7	99.7	99.7	96.0	92.3	92.3	88.6	88.6	84.9
82.5°	70.1	70.1	66.4	66.4	66.4	62.8	62.8	59.1	59.1	59.1	59.1
85°	40.6	40.6	40.6	36.9	36.9	36.9	36.9	36.9	36.9	33.2	36.9
87.5°	18.4	18.4	18.4	18.4	18.4	18.4	18.4	18.4	14.8	14.8	14.8
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7
2.5°	2705.9	2702.2	2694.9	2694.9	2687.5	2687.5	2683.8	2680.1	2676.4	2672.7	2669.0
5°	2680.1	2665.3	2657.9	2654.3	2646.9	2643.1	2632.1	2624.7	2621.1	2613.7	2606.3
7.5°	2632.1	2617.3	2602.5	2598.9	2595.1	2580.4	2569.3	2558.3	2550.9	2543.5	2536.1
10°	2576.7	2561.9	2543.5	2536.1	2528.8	2510.2	2495.6	2484.4	2469.6	2454.9	2451.2
12.5°	2510.2	2488.2	2466.0	2458.6	2447.5	2429.0	2414.3	2395.9	2384.7	2366.3	2362.7
15°	2432.8	2406.9	2388.5	2370.0	2362.7	2344.1	2318.3	2303.5	2281.4	2274.0	2255.6
17.5°	2340.5	2314.6	2288.8	2281.4	2270.3	2244.5	2218.6	2200.2	2178.0	2167.0	2155.9
20°	2244.5	2211.2	2185.4	2178.0	2163.2	2141.1	2115.3	2096.9	2078.3	2056.2	2045.1
22.5°	2133.7	2096.9	2074.7	2056.2	2052.5	2026.7	1997.1	1982.4	1967.6	1949.2	1934.4
25°	2011.9	1978.7	1952.8	1938.0	1930.6	1908.6	1886.4	1867.9	1845.8	1834.7	1816.3
27.5°	1886.4	1864.2	1831.1	1816.3	1805.1	1786.7	1760.9	1749.8	1727.7	1712.9	1701.8
30°	1764.5	1731.3	1712.9	1694.4	1683.4	1665.0	1642.8	1631.6	1613.2	1598.4	1587.4
32.5°	1631.6	1609.5	1583.7	1576.3	1561.5	1543.1	1528.3	1509.9	1495.1	1480.3	1476.6
35°	1509.9	1480.3	1454.5	1447.1	1436.0	1417.6	1410.2	1399.2	1380.6	1377.0	1362.2
37.5°	1377.0	1362.2	1332.6	1321.6	1317.9	1303.1	1288.3	1281.0	1269.9	1258.9	1255.1
40°	1251.5	1232.9	1218.3	1207.1	1199.7	1188.7	1173.9	1170.2	1162.8	1148.1	1144.4
42.5°	1133.4	1114.8	1100.0	1096.4	1085.4	1074.2	1066.8	1055.8	1052.1	1048.4	1041.0
45°	1018.9	1007.8	993.1	989.3	985.7	970.9	963.5	956.1	948.7	945.1	937.7
47.5°	915.5	904.4	893.4	889.7	882.3	878.6	867.6	863.8	852.8	849.0	845.4
50°	815.8	808.4	801.0	797.4	790.0	786.3	778.9	771.5	764.2	760.5	756.8
52.5°	727.3	719.9	712.5	708.7	705.1	697.7	690.3	682.9	679.3	675.5	671.9
55°	642.3	634.9	631.3	627.6	623.9	620.2	609.1	605.4	601.7	598.0	590.6
57.5°	564.8	557.4	550.0	550.0	546.4	542.6	535.2	527.8	527.8	520.5	513.2
60°	494.7	487.3	479.9	476.2	472.5	465.1	461.5	457.7	454.1	450.3	443.0
62.5°	420.9	417.1	409.7	409.7	402.3	398.7	394.9	391.3	387.6	380.3	376.5
65°	358.1	354.4	347.0	343.3	343.3	339.6	332.2	328.6	324.8	324.8	321.2
67.5°	299.0	295.4	288.0	284.2	284.2	280.6	276.8	276.8	273.2	269.4	273.2
70°	247.4	240.0	240.0	236.2	236.2	232.6	228.9	228.9	228.9	232.6	232.6
72.5°	195.7	192.0	188.3	188.3	188.3	188.3	184.6	184.6	188.3	192.0	192.0
75°	155.1	151.3	151.3	151.3	147.7	147.7	151.3	151.3	155.1	155.1	155.1
77.5°	114.5	114.5	114.5	114.5	114.5	114.5	118.1	118.1	121.9	121.9	121.9
80°	84.9	84.9	84.9	84.9	84.9	88.6	88.6	88.6	88.6	88.6	92.3
82.5°	59.1	59.1	59.1	59.1	59.1	59.1	59.1	62.8	62.8	62.8	62.8
85°	33.2	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9
87.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P584709

CATALOG NUMBER: HC845D010-HM82555840-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7	2720.7
2.5°	2665.3	2665.3	2665.3	2669.0	2661.7	2661.7	2661.7	2661.7
5°	2602.5	2598.9	2595.1	2598.9	2591.5	2591.5	2587.8	2587.8
7.5°	2525.0	2521.4	2517.6	2517.6	2510.2	2510.2	2506.6	2502.9
10°	2440.1	2432.8	2436.4	2429.0	2425.4	2421.7	2418.0	2414.3
12.5°	2347.9	2340.5	2336.7	2329.3	2322.0	2318.3	2322.0	2314.6
15°	2248.2	2237.1	2233.4	2226.0	2218.6	2215.0	2215.0	2211.2
17.5°	2137.4	2130.1	2126.3	2118.9	2115.3	2107.9	2104.2	2100.5
20°	2034.1	2015.6	2019.3	2011.9	2008.2	1993.4	1993.4	1997.1
22.5°	1919.6	1908.6	1901.2	1893.8	1890.1	1882.7	1882.7	1879.0
25°	1805.1	1794.1	1790.5	1783.1	1779.3	1771.9	1768.3	1768.3
27.5°	1694.4	1679.6	1679.6	1672.2	1665.0	1661.2	1657.6	1653.8
30°	1576.3	1565.3	1561.5	1561.5	1557.9	1557.9	1546.7	1550.5
32.5°	1465.5	1458.2	1454.5	1447.1	1447.1	1443.4	1443.4	1432.4
35°	1354.8	1343.8	1347.4	1340.0	1336.4	1332.6	1336.4	1332.6
37.5°	1247.7	1240.3	1240.3	1232.9	1232.9	1229.3	1225.6	1232.9
40°	1140.7	1137.0	1133.4	1129.6	1133.4	1129.6	1122.2	1126.0
42.5°	1033.6	1033.6	1029.9	1029.9	1026.3	1026.3	1026.3	1026.3
45°	937.7	933.9	933.9	930.3	930.3	930.3	930.3	926.6
47.5°	841.6	838.0	838.0	838.0	834.4	834.4	830.6	834.4
50°	749.4	749.4	745.7	745.7	749.4	745.7	742.0	742.0
52.5°	664.5	664.5	660.8	660.8	657.1	653.4	657.1	657.1
55°	587.0	583.2	579.6	579.6	575.9	572.2	572.2	575.9
57.5°	513.2	509.4	505.8	505.8	498.4	494.7	494.7	494.7
60°	443.0	435.7	435.7	431.9	431.9	428.3	428.3	428.3
62.5°	376.5	372.9	372.9	372.9	372.9	369.1	369.1	369.1
65°	321.2	321.2	321.2	324.8	324.8	328.6	328.6	328.6
67.5°	276.8	280.6	280.6	280.6	284.2	284.2	284.2	280.6
70°	236.2	236.2	236.2	240.0	240.0	240.0	240.0	240.0
72.5°	195.7	195.7	195.7	195.7	195.7	195.7	195.7	195.7
75°	155.1	158.7	158.7	158.7	155.1	158.7	158.7	155.1
77.5°	121.9	121.9	121.9	121.9	121.9	121.9	121.9	121.9
80°	92.3	92.3	92.3	92.3	92.3	92.3	92.3	92.3
82.5°	62.8	62.8	62.8	62.8	62.8	62.8	62.8	62.8
85°	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9
87.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)