

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: P584845

Luminaire Tested: **HC850D010-HM82555840-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584845  
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: HC850D010-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: 5288.8 lumens  
Efficiency: N/A  
Efficacy: 110.2 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

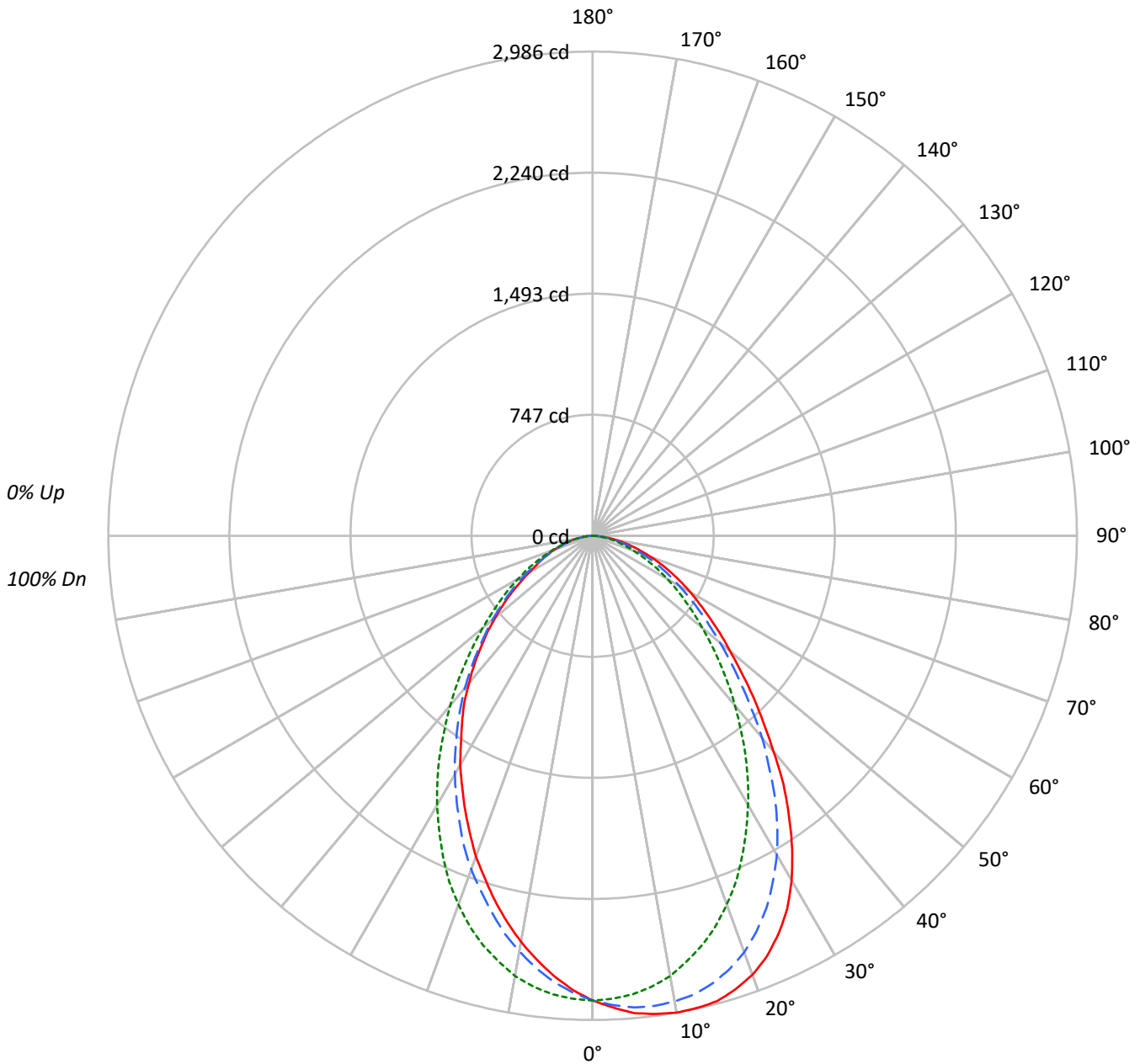
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	88368	88368	88368
5°	91472	87866	84375
10°	93507	86324	79626
15°	94840	83414	74354
20°	94548	79364	69030
25°	92212	74220	63373
30°	87365	68255	58149
35°	79482	61770	52841
40°	69808	54939	47741
45°	60874	48328	42563
50°	52981	42346	37496
55°	47240	37214	32612
60°	42924	32619	27814
65°	38591	28369	25246
70°	34360	24190	22783
75°	30107	20385	19456
80°	25554	16568	17278
85°	19282	12383	13763



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	268.4	5.1
10°-20°	739.6	14.0
20°-30°	1026.6	19.4
30°-40°	1061.4	20.1
40°-50°	888.7	16.8
50°-60°	645.2	12.2
60°-70°	407.1	7.7
70°-80°	201.7	3.8
80°-90°	50.1	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°	2034.6	38.5
0°-40°	3096.0	58.5
0°-60°	4629.9	87.5
0°-90°	5288.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5288.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2866	2866	2866	2866	2866	
5°	2955	2920	2839	2761	2726	283
15°	2971	2858	2613	2403	2329	836
25°	2710	2535	2181	1944	1863	1242
35°	2111	1956	1641	1454	1404	1315
45°	1396	1295	1108	999	976	1080
55°	879	801	692	634	607	793
65°	529	463	389	342	346	527
75°	253	210	171	163	163	271
85°	54	43	35	39	39	66
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°	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7
2.5°	2912.4	2912.4	2916.3	2912.4	2912.4	2912.4	2908.5	2908.5	2904.6	2904.6	2896.9
5°	2955.1	2947.4	2955.1	2947.4	2947.4	2947.4	2943.5	2935.7	2931.9	2924.0	2920.2
7.5°	2974.6	2970.8	2970.8	2966.8	2966.8	2962.9	2959.1	2955.1	2939.6	2935.7	2924.0
10°	2986.3	2982.4	2982.4	2978.5	2970.8	2970.8	2962.9	2959.1	2939.6	2931.9	2916.3
12.5°	2982.4	2982.4	2982.4	2978.5	2966.8	2962.9	2955.1	2943.5	2928.0	2912.4	2896.9
15°	2970.8	2970.8	2962.9	2959.1	2947.4	2939.6	2935.7	2916.3	2900.8	2881.2	2858.0
17.5°	2931.9	2931.9	2928.0	2920.2	2908.5	2900.8	2892.9	2873.5	2858.0	2826.9	2803.5
20°	2881.2	2877.4	2873.5	2861.8	2850.1	2846.3	2834.6	2807.4	2787.9	2764.7	2733.5
22.5°	2807.4	2803.5	2799.6	2791.8	2772.4	2764.7	2756.9	2737.4	2702.4	2679.1	2640.2
25°	2710.2	2710.2	2702.4	2690.8	2671.3	2663.6	2651.9	2632.5	2601.4	2566.3	2535.2
27.5°	2597.4	2593.5	2581.9	2574.1	2558.6	2546.9	2527.5	2504.1	2473.0	2445.8	2406.9
30°	2453.6	2453.6	2445.8	2434.1	2414.7	2406.9	2391.3	2364.2	2333.0	2298.0	2270.8
32.5°	2290.3	2290.3	2278.6	2270.8	2259.1	2239.7	2235.8	2204.7	2177.5	2150.3	2119.2
35°	2111.4	2115.3	2107.5	2091.9	2072.5	2072.5	2064.7	2037.6	2006.4	1979.2	1955.9
37.5°	1932.5	1920.9	1916.9	1909.2	1897.5	1882.0	1874.1	1862.6	1835.3	1815.9	1780.9
40°	1734.2	1738.1	1730.4	1722.5	1718.7	1707.0	1703.1	1683.7	1664.2	1640.9	1625.4
42.5°	1555.4	1555.4	1555.4	1547.5	1539.8	1528.1	1524.3	1512.6	1489.3	1473.6	1450.4
45°	1395.9	1384.2	1384.2	1380.4	1376.5	1368.7	1357.1	1349.3	1333.7	1322.0	1294.8
47.5°	1240.4	1244.3	1240.4	1236.5	1224.9	1220.9	1217.0	1201.5	1186.0	1174.3	1154.9
50°	1104.4	1112.1	1104.4	1104.4	1096.5	1092.7	1084.8	1073.1	1061.6	1042.0	1022.6
52.5°	991.5	991.5	987.7	983.7	972.1	964.3	960.5	956.6	937.1	921.5	906.0
55°	878.7	882.7	882.7	871.0	867.2	859.3	855.5	843.8	836.0	812.7	801.0
57.5°	781.6	777.6	781.6	773.8	766.0	758.2	754.4	746.5	735.0	719.4	703.9
60°	696.0	688.2	688.2	684.3	676.6	672.6	664.9	653.2	641.5	626.0	614.3
62.5°	610.5	606.6	602.7	598.8	591.0	587.2	583.2	571.6	560.0	548.3	536.6
65°	528.9	528.9	524.9	517.2	513.3	509.3	505.5	497.8	482.2	474.4	462.7
67.5°	455.0	451.0	451.0	443.3	435.5	431.6	431.6	423.9	412.2	400.5	392.8
70°	381.1	385.0	381.1	377.1	369.4	369.4	361.6	357.7	342.2	338.3	326.6
72.5°	314.9	314.9	311.1	311.1	303.2	299.4	299.4	291.7	283.8	276.1	268.3
75°	252.7	252.7	252.7	248.9	245.0	237.2	237.2	233.3	225.5	217.8	210.0
77.5°	198.3	194.4	194.4	190.5	186.7	182.7	182.7	178.9	171.1	167.2	159.5
80°	143.9	139.9	139.9	139.9	132.2	136.1	132.2	128.4	124.4	120.5	116.7
82.5°	93.3	97.3	97.3	93.3	89.4	89.4	89.4	85.6	85.6	81.7	77.7
85°	54.5	54.5	54.5	54.5	50.5	50.5	50.5	46.6	46.6	46.6	42.8
87.5°	23.4	23.4	23.4	23.4	23.4	23.4	19.4	19.4	19.4	19.4	19.4
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°	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7
2.5°	2896.9	2889.1	2885.2	2881.2	2881.2	2877.4	2873.5	2865.7	2865.7	2858.0	2854.1
5°	2912.4	2900.8	2892.9	2885.2	2881.2	2873.5	2865.7	2854.1	2850.1	2838.6	2826.9
7.5°	2916.3	2896.9	2889.1	2873.5	2865.7	2858.0	2842.4	2830.7	2815.2	2803.5	2787.9
10°	2900.8	2885.2	2865.7	2846.3	2842.4	2830.7	2807.4	2791.8	2772.4	2756.9	2733.5
12.5°	2877.4	2854.1	2834.6	2811.3	2799.6	2787.9	2764.7	2741.3	2714.1	2686.8	2663.6
15°	2838.6	2811.3	2784.1	2756.9	2741.3	2729.6	2702.4	2675.3	2648.0	2612.9	2589.7
17.5°	2780.2	2749.1	2721.9	2686.8	2671.3	2659.7	2624.6	2593.5	2558.6	2523.5	2500.3
20°	2706.4	2667.4	2636.3	2597.4	2585.8	2566.3	2531.4	2496.3	2457.5	2418.5	2391.3
22.5°	2609.1	2570.2	2535.2	2496.3	2476.9	2457.5	2422.5	2379.7	2340.8	2309.7	2282.5
25°	2496.3	2461.3	2418.5	2383.6	2360.2	2336.9	2298.0	2263.1	2228.0	2181.4	2154.1
27.5°	2371.9	2329.1	2298.0	2251.4	2228.0	2212.4	2169.7	2123.0	2091.9	2049.1	2018.0
30°	2232.0	2193.0	2158.1	2111.4	2088.1	2072.5	2033.6	1990.8	1959.7	1916.9	1885.8
32.5°	2084.2	2041.4	1998.6	1967.5	1940.3	1924.8	1882.0	1854.7	1815.9	1780.9	1745.9
35°	1924.8	1882.0	1850.9	1808.1	1792.5	1777.0	1742.0	1707.0	1672.0	1640.9	1613.7
37.5°	1753.6	1722.5	1687.6	1656.5	1644.8	1629.2	1586.4	1555.4	1528.1	1497.0	1473.6
40°	1586.4	1559.2	1535.9	1504.9	1485.3	1473.6	1442.5	1415.4	1384.2	1364.8	1341.5
42.5°	1434.8	1403.7	1380.4	1357.1	1337.6	1325.9	1298.8	1279.2	1256.0	1236.5	1209.3
45°	1275.4	1259.8	1232.6	1213.2	1201.5	1186.0	1166.5	1143.2	1123.8	1108.2	1088.7
47.5°	1135.4	1119.9	1100.4	1077.1	1069.3	1057.6	1038.2	1022.6	1007.1	991.5	972.1
50°	1007.1	987.7	972.1	956.6	948.8	937.1	917.7	909.8	898.3	882.7	871.0
52.5°	890.4	874.9	859.3	839.9	836.0	828.2	816.5	801.0	789.3	781.6	773.8
55°	785.5	769.9	758.2	742.7	738.8	731.0	715.4	707.7	699.9	692.2	684.3
57.5°	692.2	676.6	661.1	653.2	645.5	637.7	633.8	622.1	614.3	610.5	602.7
60°	606.6	591.0	579.4	567.7	563.8	560.0	552.1	544.4	536.6	528.9	524.9
62.5°	524.9	509.3	501.6	493.8	486.1	486.1	478.2	470.5	462.7	458.8	451.0
65°	451.0	443.3	431.6	419.9	416.0	416.0	404.4	400.5	396.6	388.8	381.1
67.5°	381.1	373.3	361.6	357.7	353.9	350.0	346.0	338.3	330.5	326.6	318.9
70°	318.9	311.1	303.2	299.4	295.5	291.7	283.8	280.0	272.1	268.3	264.4
72.5°	256.6	252.7	245.0	241.0	237.2	233.3	229.4	225.5	217.8	213.8	210.0
75°	206.1	202.2	194.4	190.5	186.7	186.7	182.7	175.0	171.1	171.1	167.2
77.5°	155.5	151.6	147.8	143.9	139.9	139.9	136.1	132.2	128.4	128.4	124.4
80°	112.8	108.8	105.0	105.0	105.0	101.1	97.3	97.3	93.3	93.3	89.4
82.5°	73.9	73.9	70.0	70.0	70.0	66.0	66.0	62.2	62.2	62.2	62.2
85°	42.8	42.8	42.8	38.9	38.9	38.9	38.9	38.9	38.9	35.0	38.9
87.5°	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	15.5	15.5	15.5
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7
2.5°	2850.1	2846.3	2838.6	2838.6	2830.7	2830.7	2826.9	2823.0	2819.0	2815.2	2811.3
5°	2823.0	2807.4	2799.6	2795.8	2787.9	2784.1	2772.4	2764.7	2760.7	2753.0	2745.2
7.5°	2772.4	2756.9	2741.3	2737.4	2733.5	2717.9	2706.4	2694.7	2686.8	2679.1	2671.3
10°	2714.1	2698.5	2679.1	2671.3	2663.6	2644.0	2628.5	2616.9	2601.4	2585.8	2581.9
12.5°	2644.0	2620.8	2597.4	2589.7	2578.0	2558.6	2543.0	2523.5	2511.9	2492.4	2488.6
15°	2562.4	2535.2	2515.8	2496.3	2488.6	2469.2	2441.9	2426.4	2403.0	2395.3	2375.8
17.5°	2465.2	2438.1	2410.8	2403.0	2391.3	2364.2	2336.9	2317.4	2294.2	2282.5	2270.8
20°	2364.2	2329.1	2301.9	2294.2	2278.6	2255.2	2228.0	2208.6	2189.2	2165.8	2154.1
22.5°	2247.5	2208.6	2185.2	2165.8	2161.9	2134.7	2103.6	2088.1	2072.5	2053.1	2037.6
25°	2119.2	2084.2	2057.0	2041.4	2033.6	2010.3	1986.9	1967.5	1944.2	1932.5	1913.1
27.5°	1986.9	1963.7	1928.6	1913.1	1901.4	1882.0	1854.7	1843.0	1819.8	1804.2	1792.5
30°	1858.6	1823.6	1804.2	1784.7	1773.1	1753.6	1730.4	1718.7	1699.3	1683.7	1672.0
32.5°	1718.7	1695.3	1668.2	1660.3	1644.8	1625.4	1609.8	1590.3	1574.8	1559.2	1555.4
35°	1590.3	1559.2	1532.0	1524.3	1512.6	1493.2	1485.3	1473.6	1454.2	1450.4	1434.8
37.5°	1450.4	1434.8	1403.7	1392.0	1388.2	1372.6	1357.1	1349.3	1337.6	1325.9	1322.0
40°	1318.2	1298.8	1283.2	1271.5	1263.7	1252.1	1236.5	1232.6	1224.9	1209.3	1205.4
42.5°	1193.8	1174.3	1158.7	1154.9	1143.2	1131.5	1123.8	1112.1	1108.2	1104.4	1096.5
45°	1073.1	1061.6	1046.0	1042.0	1038.2	1022.6	1014.8	1007.1	999.3	995.4	987.7
47.5°	964.3	952.6	941.0	937.1	929.4	925.4	913.8	909.8	898.3	894.3	890.4
50°	859.3	851.5	843.8	839.9	832.1	828.2	820.4	812.7	804.9	801.0	797.1
52.5°	766.0	758.2	750.5	746.5	742.7	735.0	727.1	719.4	715.4	711.6	707.7
55°	676.6	668.8	664.9	661.1	657.1	653.2	641.5	637.7	633.8	630.0	622.1
57.5°	594.9	587.2	579.4	579.4	575.5	571.6	563.8	556.1	556.1	548.3	540.4
60°	521.0	513.3	505.5	501.6	497.8	489.9	486.1	482.2	478.2	474.4	466.5
62.5°	443.3	439.4	431.6	431.6	423.9	419.9	416.0	412.2	408.3	400.5	396.6
65°	377.1	373.3	365.5	361.6	361.6	357.7	350.0	346.0	342.2	342.2	338.3
67.5°	314.9	311.1	303.2	299.4	299.4	295.5	291.7	291.7	287.7	283.8	287.7
70°	260.6	252.7	252.7	248.9	248.9	245.0	241.0	241.0	241.0	245.0	245.0
72.5°	206.1	202.2	198.3	198.3	198.3	198.3	194.4	194.4	198.3	202.2	202.2
75°	163.3	159.5	159.5	159.5	155.5	155.5	159.5	159.5	163.3	163.3	163.3
77.5°	120.5	120.5	120.5	120.5	120.5	120.5	124.4	124.4	128.4	128.4	128.4
80°	89.4	89.4	89.4	89.4	89.4	93.3	93.3	93.3	93.3	93.3	97.3
82.5°	62.2	62.2	62.2	62.2	62.2	62.2	62.2	66.0	66.0	66.0	66.0
85°	35.0	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
87.5°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
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: P584845

CATALOG NUMBER: HC850D010-HM82555840-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7	2865.7
2.5°	2807.4	2807.4	2807.4	2811.3	2803.5	2803.5	2803.5	2803.5
5°	2741.3	2737.4	2733.5	2737.4	2729.6	2729.6	2725.8	2725.8
7.5°	2659.7	2655.7	2651.9	2651.9	2644.0	2644.0	2640.2	2636.3
10°	2570.2	2562.4	2566.3	2558.6	2554.6	2550.8	2546.9	2543.0
12.5°	2473.0	2465.2	2461.3	2453.6	2445.8	2441.9	2445.8	2438.1
15°	2368.0	2356.4	2352.5	2344.7	2336.9	2333.0	2333.0	2329.1
17.5°	2251.4	2243.5	2239.7	2232.0	2228.0	2220.3	2216.4	2212.4
20°	2142.5	2123.0	2127.0	2119.2	2115.3	2099.8	2099.8	2103.6
22.5°	2021.9	2010.3	2002.5	1994.8	1990.8	1983.1	1983.1	1979.2
25°	1901.4	1889.8	1885.8	1878.1	1874.1	1866.4	1862.6	1862.6
27.5°	1784.7	1769.2	1769.2	1761.4	1753.6	1749.8	1745.9	1742.0
30°	1660.3	1648.6	1644.8	1644.8	1640.9	1640.9	1629.2	1633.1
32.5°	1543.7	1535.9	1532.0	1524.3	1524.3	1520.4	1520.4	1508.7
35°	1427.0	1415.4	1419.3	1411.5	1407.6	1403.7	1407.6	1403.7
37.5°	1314.3	1306.5	1306.5	1298.8	1298.8	1294.8	1290.9	1298.8
40°	1201.5	1197.6	1193.8	1189.8	1193.8	1189.8	1182.1	1186.0
42.5°	1088.7	1088.7	1084.8	1084.8	1081.0	1081.0	1081.0	1081.0
45°	987.7	983.7	983.7	979.9	979.9	979.9	979.9	976.0
47.5°	886.6	882.7	882.7	882.7	878.7	878.7	874.9	878.7
50°	789.3	789.3	785.5	785.5	789.3	785.5	781.6	781.6
52.5°	699.9	699.9	696.0	696.0	692.2	688.2	692.2	692.2
55°	618.3	614.3	610.5	610.5	606.6	602.7	602.7	606.6
57.5°	540.4	536.6	532.7	532.7	524.9	521.0	521.0	521.0
60°	466.5	458.8	458.8	455.0	455.0	451.0	451.0	451.0
62.5°	396.6	392.8	392.8	392.8	392.8	388.8	388.8	388.8
65°	338.3	338.3	338.3	342.2	342.2	346.0	346.0	346.0
67.5°	291.7	295.5	295.5	295.5	299.4	299.4	299.4	295.5
70°	248.9	248.9	248.9	252.7	252.7	252.7	252.7	252.7
72.5°	206.1	206.1	206.1	206.1	206.1	206.1	206.1	206.1
75°	163.3	167.2	167.2	167.2	163.3	167.2	167.2	163.3
77.5°	128.4	128.4	128.4	128.4	128.4	128.4	128.4	128.4
80°	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3
82.5°	66.0	66.0	66.0	66.0	66.0	66.0	66.0	66.0
85°	38.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
87.5°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
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)