

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: P584844

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584844
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC850D010-HM82555840-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4845.5 lumens
Efficiency: N/A
Efficacy: 100.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.07 / 1.16
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

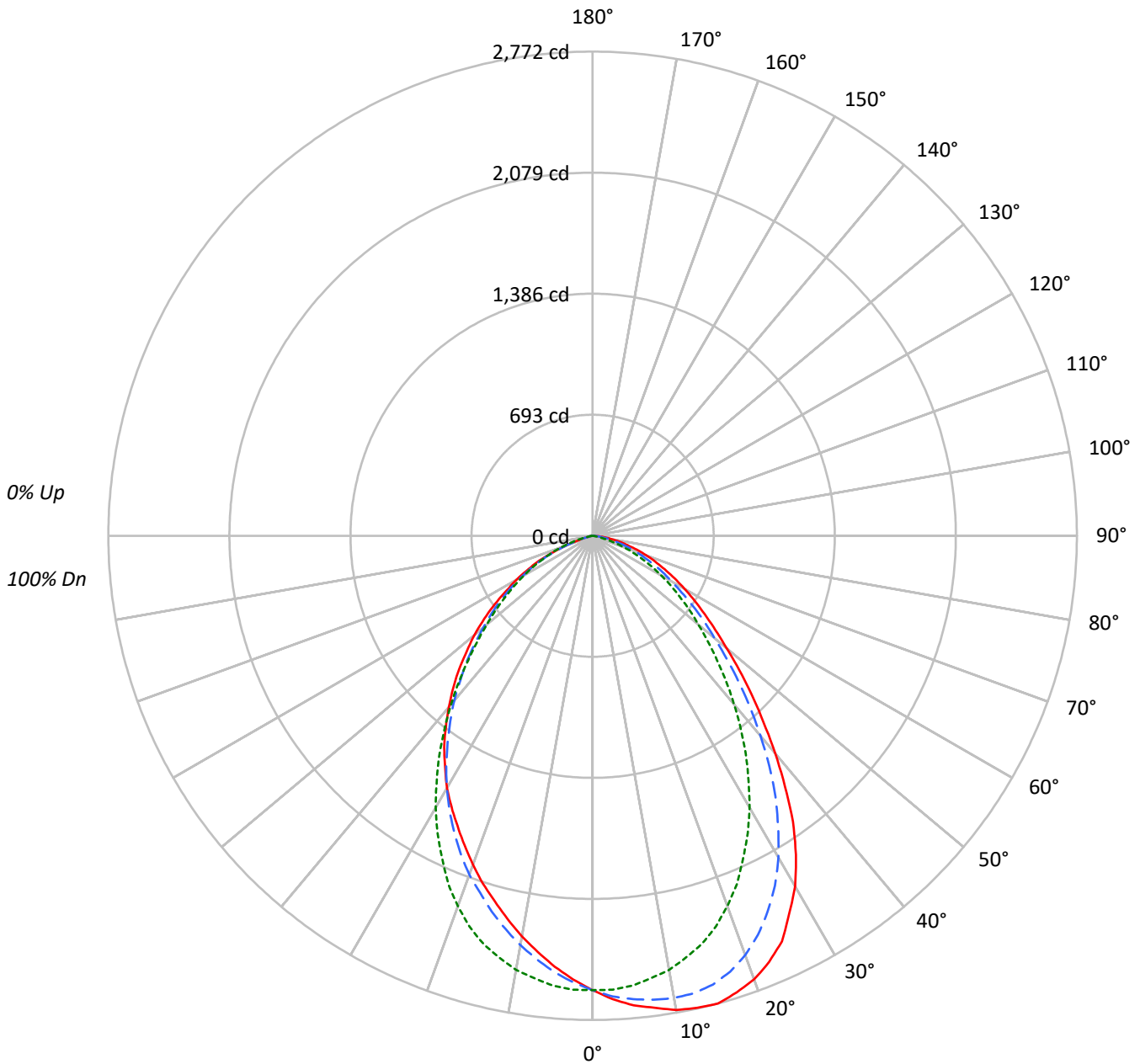
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88			88
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77			77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67			67
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59			59
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53			53
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47			47
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43			43
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39			39
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35			35
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	80218	80218	80218
5°	83530	80041	76670
10°	86324	79016	72929
15°	88506	77208	69141
20°	88683	74005	65713
25°	87183	69328	62315
30°	82519	63964	59399
35°	75236	57524	55770
40°	65429	50712	51493
45°	56129	43919	47141
50°	47944	37865	42346
55°	42020	32612	36789
60°	37411	27814	30935
65°	33199	22699	24684
70°	29446	16833	14029
75°	24555	8805	4170
80°	19321	2752	693
85°	13763	1380	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.1	5.1
10°-20°	687.0	14.2
20°-30°	972.4	20.1
30°-40°	1017.3	21.0
40°-50°	848.5	17.5
50°-60°	601.7	12.4
60°-70°	346.6	7.2
70°-80°	111.5	2.3
80°-90°	15.3	0.3
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°	1904.5	39.3
0°-40°	2921.8	60.3
0°-60°	4372.1	90.2
0°-90°	4845.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4845.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2601	2601	2601	2601	2601	
5°	2698	2664	2586	2508	2477	259
15°	2772	2660	2418	2228	2166	780
25°	2562	2372	2038	1874	1832	1169
35°	1999	1824	1528	1446	1482	1239
45°	1287	1182	1007	1019	1081	997
55°	782	700	607	638	684	706
65°	455	381	311	311	338	455
75°	206	152	74	35	35	223
85°	39	19	4	0	0	49
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°	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4
2.5°	2655.7	2651.9	2648.0	2651.9	2648.0	2651.9	2648.0	2648.0	2644.2	2640.2	2640.2
5°	2698.5	2694.7	2694.7	2694.7	2690.8	2686.9	2686.9	2683.0	2675.3	2671.3	2663.6
7.5°	2725.8	2729.6	2729.6	2729.6	2721.9	2721.9	2714.1	2706.4	2698.5	2690.8	2679.1
10°	2756.9	2756.9	2753.0	2749.1	2741.3	2737.4	2733.6	2725.8	2714.1	2698.5	2686.9
12.5°	2768.5	2768.5	2764.7	2756.9	2753.0	2749.1	2745.2	2733.6	2718.0	2698.5	2683.0
15°	2772.4	2764.7	2760.8	2756.9	2749.1	2737.4	2737.4	2721.9	2702.5	2679.1	2659.7
17.5°	2741.3	2745.2	2737.4	2729.6	2718.0	2710.2	2698.5	2686.9	2663.6	2636.3	2616.9
20°	2702.5	2698.5	2694.7	2683.0	2667.4	2663.6	2651.9	2632.5	2613.1	2581.9	2554.7
22.5°	2640.2	2636.3	2628.6	2620.8	2605.2	2597.4	2585.8	2562.4	2535.2	2504.1	2473.0
25°	2562.4	2554.7	2543.0	2527.5	2515.8	2508.0	2492.4	2469.2	2438.1	2403.0	2371.9
27.5°	2438.1	2449.6	2441.9	2418.5	2407.0	2391.4	2387.4	2356.4	2329.1	2294.2	2259.2
30°	2317.5	2317.5	2305.9	2294.2	2274.8	2263.1	2247.5	2224.1	2196.9	2154.2	2127.0
32.5°	2165.8	2161.9	2146.4	2142.5	2127.0	2103.6	2099.8	2068.7	2041.4	2010.3	1975.3
35°	1998.6	1990.9	1975.3	1963.7	1955.9	1944.2	1932.6	1905.4	1878.1	1847.0	1823.6
37.5°	1808.1	1808.1	1804.2	1784.8	1777.0	1769.3	1757.6	1730.4	1714.8	1683.7	1660.3
40°	1625.4	1621.5	1609.8	1605.9	1598.1	1586.4	1578.7	1563.2	1539.8	1516.4	1493.2
42.5°	1446.5	1450.4	1434.8	1438.7	1423.1	1415.4	1411.5	1388.2	1376.5	1353.1	1333.7
45°	1287.1	1283.2	1275.4	1271.5	1263.7	1256.0	1248.1	1236.6	1217.0	1193.8	1182.1
47.5°	1139.3	1127.6	1127.6	1123.8	1119.9	1104.4	1100.4	1088.8	1077.1	1053.7	1038.2
50°	999.4	999.4	999.4	995.4	983.7	979.9	972.1	960.5	948.8	933.2	909.8
52.5°	886.6	886.6	886.6	882.7	867.2	863.2	859.3	843.8	828.2	816.5	801.0
55°	781.6	785.5	781.6	773.8	762.1	762.1	750.5	742.7	727.1	715.4	699.9
57.5°	692.2	692.2	684.3	680.5	672.6	668.8	661.1	653.2	633.8	622.1	602.7
60°	606.6	602.7	602.7	594.9	587.2	579.4	575.5	563.8	556.1	536.6	521.0
62.5°	528.9	528.9	521.0	521.0	505.5	505.5	501.6	489.9	478.2	458.8	451.0
65°	455.0	455.0	451.0	447.1	435.5	431.6	427.7	416.0	404.4	392.8	381.1
67.5°	388.8	388.8	381.1	377.1	369.4	365.5	357.7	350.0	338.3	326.6	314.9
70°	326.6	322.8	318.9	314.9	307.2	303.2	295.5	287.7	276.1	268.3	256.6
72.5°	264.4	264.4	260.6	252.7	248.9	245.0	241.0	233.3	221.6	210.0	202.2
75°	206.1	206.1	206.1	198.3	190.5	186.7	186.7	178.9	171.1	159.5	151.6
77.5°	159.5	155.6	151.6	151.6	143.9	139.9	136.1	132.2	120.5	116.7	108.8
80°	108.8	112.8	108.8	105.0	101.1	97.3	97.3	89.4	85.6	77.7	70.0
82.5°	73.9	70.0	70.0	66.0	66.0	62.2	62.2	54.5	50.5	46.6	42.8
85°	38.9	38.9	35.0	35.0	35.0	31.1	31.1	27.2	27.2	23.4	19.4
87.5°	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7	7.8	7.8	7.8
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4
2.5°	2636.3	2628.6	2624.6	2624.6	2620.8	2616.9	2613.1	2609.1	2601.4	2601.4	2593.5
5°	2655.7	2648.0	2644.2	2632.5	2624.6	2624.6	2609.1	2605.2	2593.5	2585.8	2578.0
7.5°	2671.3	2655.7	2644.2	2632.5	2624.6	2616.9	2601.4	2585.8	2570.3	2554.7	2546.9
10°	2671.3	2655.7	2636.3	2616.9	2609.1	2601.4	2581.9	2558.6	2539.2	2523.5	2504.1
12.5°	2663.6	2640.2	2616.9	2601.4	2585.8	2574.1	2550.8	2527.5	2504.1	2473.0	2457.5
15°	2640.2	2609.1	2585.8	2558.6	2546.9	2527.5	2508.0	2473.0	2445.8	2418.5	2399.1
17.5°	2593.5	2554.7	2527.5	2500.3	2480.9	2469.2	2438.1	2407.0	2375.9	2344.7	2321.4
20°	2523.5	2488.6	2457.5	2422.5	2407.0	2391.4	2352.5	2321.4	2290.3	2255.2	2232.0
22.5°	2438.1	2403.0	2360.2	2333.1	2309.7	2290.3	2255.2	2220.3	2189.2	2158.1	2127.0
25°	2333.1	2298.0	2259.2	2216.4	2200.9	2181.4	2142.5	2107.5	2072.5	2037.6	2010.3
27.5°	2220.3	2173.6	2142.5	2095.9	2080.4	2060.8	2018.0	1979.2	1948.1	1920.9	1889.8
30°	2084.2	2049.1	2006.5	1963.7	1948.1	1928.6	1893.7	1858.7	1827.5	1796.4	1765.3
32.5°	1936.4	1901.4	1858.7	1827.5	1804.2	1788.7	1753.6	1722.5	1691.4	1660.3	1633.1
35°	1780.9	1742.0	1710.9	1679.7	1660.3	1640.9	1605.9	1578.7	1555.4	1528.1	1500.9
37.5°	1621.5	1594.3	1563.2	1528.1	1508.7	1493.2	1465.9	1434.8	1415.4	1392.0	1372.6
40°	1465.9	1434.8	1407.6	1376.5	1360.9	1349.3	1322.0	1298.8	1279.2	1259.8	1248.1
42.5°	1306.5	1279.2	1252.1	1232.6	1220.9	1209.3	1189.8	1162.7	1151.0	1131.5	1119.9
45°	1158.7	1135.4	1115.9	1088.8	1081.0	1073.3	1049.9	1030.5	1018.8	1007.1	999.4
47.5°	1018.8	1003.2	979.9	964.3	952.6	944.9	929.4	913.8	902.1	894.3	886.6
50°	898.3	878.7	863.2	847.6	839.9	828.2	812.7	804.9	797.1	789.3	789.3
52.5°	785.5	766.0	750.5	738.8	731.0	723.3	711.6	707.7	699.9	699.9	696.0
55°	680.5	668.8	653.2	637.7	633.8	630.0	622.1	614.4	610.5	606.6	610.5
57.5°	591.0	579.4	563.8	552.1	548.3	544.4	540.5	532.7	528.9	528.9	528.9
60°	509.3	497.8	486.1	474.4	474.4	466.7	462.7	458.8	455.0	451.0	451.0
62.5°	435.5	423.9	412.2	404.4	400.5	396.6	388.8	385.0	381.1	381.1	377.1
65°	369.4	353.9	350.0	338.3	334.5	330.5	326.6	318.9	314.9	311.1	307.2
67.5°	303.2	295.5	283.8	276.1	272.1	268.3	264.4	256.6	252.7	248.9	241.0
70°	245.0	237.2	229.4	221.6	217.8	213.8	206.1	198.3	194.4	186.7	175.0
72.5°	190.5	182.7	175.0	167.2	163.3	159.5	151.6	143.9	136.1	128.4	120.5
75°	143.9	136.1	124.4	116.7	112.8	112.8	101.1	93.3	85.6	73.9	66.0
77.5°	101.1	89.4	85.6	77.7	73.9	66.0	58.3	50.5	42.8	38.9	31.1
80°	66.0	58.3	50.5	46.6	42.8	38.9	35.0	27.2	19.4	15.5	11.7
82.5°	38.9	35.0	31.1	27.2	23.4	19.4	15.5	15.5	11.7	7.8	3.9
85°	19.4	15.5	11.7	11.7	7.8	7.8	7.8	3.9	3.9	3.9	3.9
87.5°	7.8	3.9	3.9	3.9	3.9	3.9	3.9	0.0	0.0	0.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4
2.5°	2589.7	2585.8	2581.9	2578.0	2578.0	2570.3	2570.3	2566.3	2558.6	2554.7	2554.7
5°	2566.3	2554.7	2546.9	2543.0	2539.2	2527.5	2523.5	2515.8	2508.0	2500.3	2496.4
7.5°	2531.4	2511.9	2504.1	2500.3	2488.6	2476.9	2469.2	2457.5	2445.8	2434.1	2430.2
10°	2488.6	2469.2	2449.6	2441.9	2430.2	2422.5	2407.0	2391.4	2379.7	2368.0	2356.4
12.5°	2434.1	2410.8	2391.4	2383.6	2371.9	2356.4	2333.1	2325.3	2305.9	2298.0	2282.5
15°	2371.9	2344.7	2325.3	2313.6	2302.0	2278.6	2263.1	2247.5	2228.1	2220.3	2204.7
17.5°	2294.2	2263.1	2243.7	2232.0	2224.1	2204.7	2181.4	2161.9	2142.5	2134.7	2123.0
20°	2200.9	2181.4	2154.2	2142.5	2134.7	2111.4	2088.1	2080.4	2064.7	2049.1	2037.6
22.5°	2095.9	2076.4	2049.1	2037.6	2033.6	2014.2	1994.8	1983.1	1971.4	1959.7	1948.1
25°	1986.9	1963.7	1940.3	1932.6	1924.8	1909.2	1893.7	1885.8	1874.3	1866.4	1858.7
27.5°	1870.3	1847.0	1827.5	1815.9	1808.1	1796.4	1788.7	1780.9	1773.1	1765.3	1761.4
30°	1745.9	1722.5	1707.0	1699.3	1691.4	1687.6	1675.9	1672.0	1668.2	1660.3	1664.2
32.5°	1621.5	1602.0	1586.4	1574.8	1574.8	1567.0	1563.2	1563.2	1559.2	1559.2	1559.2
35°	1485.3	1473.8	1462.1	1458.2	1454.2	1450.4	1446.5	1450.4	1446.5	1450.4	1454.2
37.5°	1360.9	1349.3	1341.5	1337.6	1333.7	1337.6	1333.7	1333.7	1337.6	1345.4	1349.3
40°	1232.6	1224.9	1217.0	1220.9	1217.0	1217.0	1217.0	1228.7	1232.6	1236.6	1240.4
42.5°	1112.1	1104.4	1100.4	1100.4	1104.4	1100.4	1108.2	1112.1	1119.9	1131.5	1139.3
45°	995.4	991.5	991.5	995.4	991.5	999.4	999.4	1007.1	1018.8	1026.5	1034.3
47.5°	886.6	886.6	886.6	890.4	890.4	894.3	902.1	906.0	913.8	921.5	929.4
50°	785.5	789.3	793.3	793.3	793.3	801.0	808.8	812.7	816.5	820.4	832.1
52.5°	696.0	699.9	699.9	703.9	707.7	711.6	715.4	723.3	727.1	735.0	738.8
55°	610.5	610.5	618.3	622.1	622.1	622.1	630.0	630.0	637.7	641.5	649.4
57.5°	528.9	532.7	532.7	536.6	536.6	540.5	544.4	548.3	552.1	556.1	560.0
60°	451.0	451.0	451.0	455.0	458.8	462.7	458.8	466.7	466.7	474.4	478.2
62.5°	377.1	381.1	381.1	381.1	381.1	381.1	381.1	385.0	388.8	392.8	396.6
65°	307.2	307.2	307.2	303.2	307.2	303.2	307.2	311.1	311.1	314.9	318.9
67.5°	237.2	237.2	229.4	229.4	233.3	233.3	233.3	233.3	229.4	237.2	237.2
70°	171.1	167.2	163.3	159.5	159.5	155.6	155.6	151.6	151.6	151.6	151.6
72.5°	112.8	105.0	97.3	93.3	89.4	89.4	81.7	77.7	81.7	81.7	81.7
75°	58.3	50.5	46.6	42.8	38.9	38.9	35.0	35.0	35.0	35.0	35.0
77.5°	23.4	19.4	15.5	15.5	11.7	11.7	11.7	11.7	11.7	11.7	11.7
80°	7.8	7.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
85°	3.9	0.0	0.0	3.9	0.0	3.9	3.9	3.9	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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



TEST NUMBER: P584844

CATALOG NUMBER: HC850D010-HM82555840-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4	2601.4
2.5°	2550.8	2550.8	2546.9	2550.8	2543.0	2546.9	2543.0	2543.0
5°	2492.4	2484.7	2484.7	2484.7	2480.9	2480.9	2476.9	2476.9
7.5°	2422.5	2418.5	2414.7	2410.8	2407.0	2403.0	2403.0	2403.0
10°	2352.5	2344.7	2344.7	2340.8	2333.1	2329.1	2329.1	2329.1
12.5°	2270.8	2266.9	2263.1	2263.1	2247.5	2251.4	2247.5	2247.5
15°	2193.0	2189.2	2189.2	2177.5	2169.8	2169.8	2169.8	2165.8
17.5°	2111.4	2107.5	2103.6	2095.9	2088.1	2088.1	2084.2	2088.1
20°	2025.9	2022.0	2014.2	2014.2	2010.3	2006.5	1998.6	2002.5
22.5°	1940.3	1932.6	1928.6	1928.6	1924.8	1924.8	1917.0	1917.0
25°	1850.9	1847.0	1843.2	1847.0	1839.2	1839.2	1831.5	1831.5
27.5°	1757.6	1753.6	1753.6	1753.6	1749.8	1753.6	1749.8	1749.8
30°	1664.2	1664.2	1660.3	1660.3	1664.2	1660.3	1664.2	1668.2
32.5°	1563.2	1563.2	1567.0	1567.0	1570.9	1570.9	1570.9	1570.9
35°	1458.2	1465.9	1465.9	1469.8	1473.8	1477.6	1477.6	1481.5
37.5°	1360.9	1364.8	1368.7	1372.6	1380.4	1380.4	1380.4	1380.4
40°	1256.0	1259.8	1267.7	1263.7	1279.2	1283.2	1279.2	1279.2
42.5°	1147.0	1154.9	1158.7	1166.5	1170.4	1178.2	1182.1	1182.1
45°	1046.0	1049.9	1057.6	1065.4	1069.3	1081.0	1081.0	1081.0
47.5°	941.0	948.8	952.6	960.5	964.3	976.0	979.9	976.0
50°	839.9	847.6	855.5	855.5	867.2	871.0	878.7	882.7
52.5°	742.7	746.5	754.4	758.2	766.0	773.8	777.7	781.6
55°	649.4	653.2	661.1	661.1	672.6	676.6	684.3	684.3
57.5°	563.8	567.7	575.5	571.6	579.4	587.2	587.2	583.2
60°	482.2	482.2	482.2	489.9	493.8	497.8	501.6	501.6
62.5°	396.6	404.4	408.3	408.3	412.2	416.0	416.0	412.2
65°	318.9	326.6	330.5	330.5	334.5	334.5	334.5	338.3
67.5°	241.0	241.0	241.0	245.0	241.0	241.0	241.0	241.0
70°	151.6	151.6	151.6	151.6	147.8	151.6	151.6	155.6
72.5°	81.7	81.7	81.7	81.7	81.7	81.7	81.7	81.7
75°	35.0	35.0	35.0	38.9	35.0	35.0	35.0	35.0
77.5°	15.5	11.7	15.5	15.5	11.7	11.7	11.7	11.7
80°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
82.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
85°	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)