

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: P584913

Luminaire Tested: **HC850D010-HM82555940-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584913
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-HM82555940-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5033.7 lumens
Efficiency: N/A
Efficacy: 104.9 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

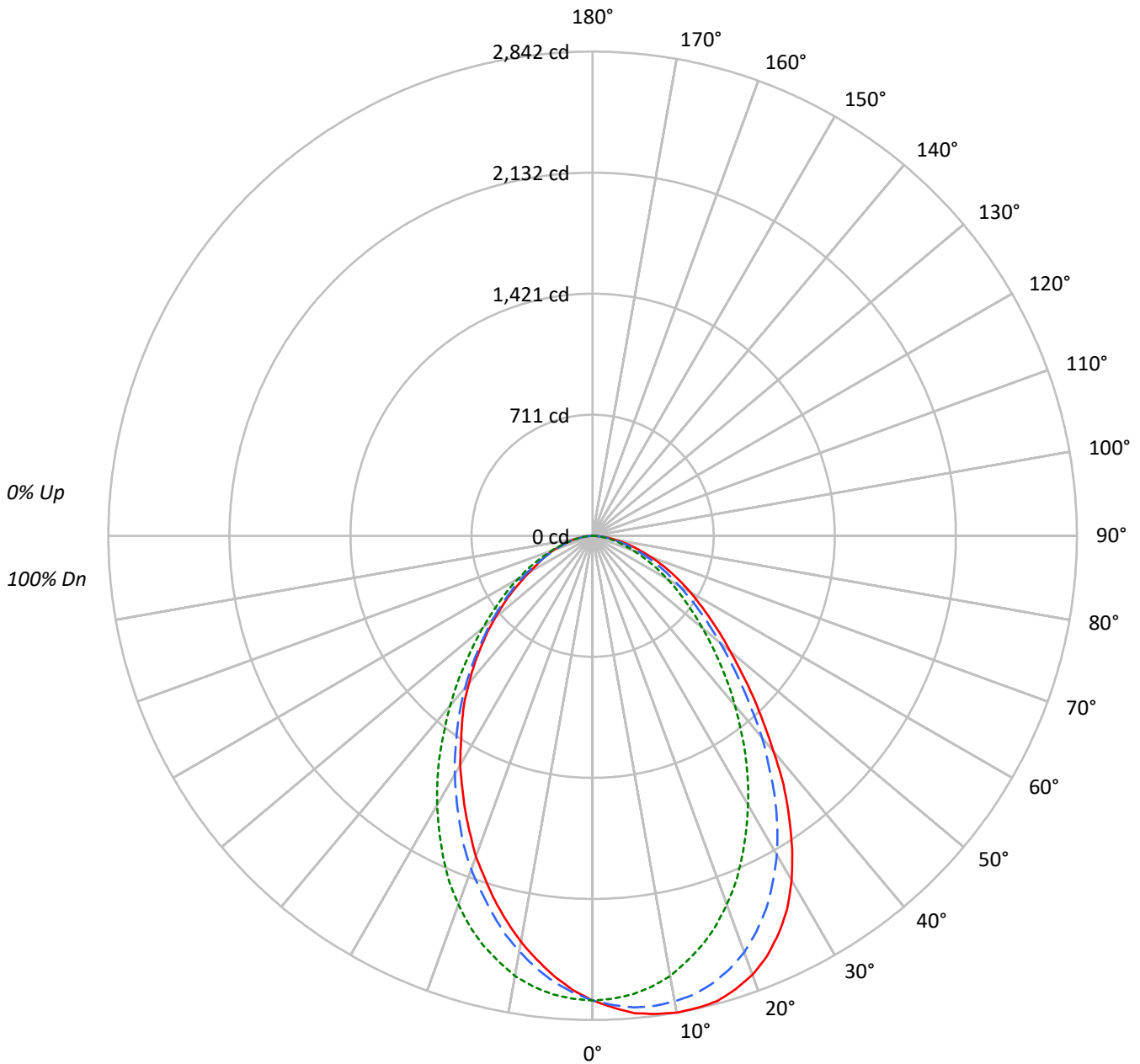
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	84106	84106	84106
5°	87062	83626	80301
10°	88995	82156	75784
15°	90265	79392	70769
20°	89986	75538	65700
25°	87762	70637	60315
30°	83149	64964	55344
35°	75646	58793	50289
40°	66439	52290	45439
45°	57939	45995	40509
50°	50419	40297	35682
55°	44966	35413	31042
60°	40858	31040	26476
65°	36723	27004	24035
70°	32692	23018	21692
75°	28666	19396	18527
80°	24311	15769	16426
85°	18327	11782	13126



TEST NUMBER: P584913

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	255.5	5.1
10°-20°	703.9	14.0
20°-30°	977.1	19.4
30°-40°	1010.2	20.1
40°-50°	845.8	16.8
50°-60°	614.0	12.2
60°-70°	387.5	7.7
70°-80°	192.0	3.8
80°-90°	47.7	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°	1936.5	38.5
0°-40°	2946.6	58.5
0°-60°	4406.5	87.5
0°-90°	5033.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5033.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2728	2728	2728	2728	2728	
5°	2813	2779	2702	2628	2594	269
15°	2828	2720	2487	2287	2217	796
25°	2579	2413	2076	1850	1773	1182
35°	2010	1862	1562	1384	1336	1251
45°	1329	1232	1055	951	929	1028
55°	836	762	659	603	577	755
65°	503	440	370	326	329	502
75°	241	200	163	156	156	258
85°	52	41	33	37	37	63
90°	0	0	0	0	0	



TEST NUMBER: P584913

CATALOG NUMBER: HC850D010-HM82555940-81WWW

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5
2.5°	2771.9	2771.9	2775.6	2771.9	2771.9	2771.9	2768.2	2768.2	2764.5	2764.5	2757.1
5°	2812.6	2805.2	2812.6	2805.2	2805.2	2805.2	2801.5	2794.1	2790.4	2783.0	2779.3
7.5°	2831.1	2827.5	2827.5	2823.7	2823.7	2820.0	2816.4	2812.6	2797.8	2794.1	2783.0
10°	2842.2	2838.6	2838.6	2834.8	2827.5	2827.5	2820.0	2816.4	2797.8	2790.4	2775.6
12.5°	2838.6	2838.6	2838.6	2834.8	2823.7	2820.0	2812.6	2801.5	2786.7	2771.9	2757.1
15°	2827.5	2827.5	2820.0	2816.4	2805.2	2797.8	2794.1	2775.6	2760.8	2742.2	2720.0
17.5°	2790.4	2790.4	2786.7	2779.3	2768.2	2760.8	2753.3	2734.9	2720.0	2690.5	2668.2
20°	2742.2	2738.6	2734.9	2723.8	2712.7	2709.0	2697.9	2672.0	2653.5	2631.3	2601.6
22.5°	2672.0	2668.2	2664.6	2657.1	2638.7	2631.3	2623.8	2605.4	2572.0	2549.8	2512.9
25°	2579.4	2579.4	2572.0	2560.9	2542.5	2535.1	2524.0	2505.4	2475.8	2442.5	2412.9
27.5°	2472.1	2468.5	2457.4	2449.9	2435.1	2424.0	2405.6	2383.4	2353.7	2327.8	2290.8
30°	2335.2	2335.2	2327.8	2316.7	2298.3	2290.8	2276.0	2250.1	2220.5	2187.2	2161.2
32.5°	2179.7	2179.7	2168.6	2161.2	2150.1	2131.7	2127.9	2098.4	2072.4	2046.6	2017.0
35°	2009.5	2013.3	2005.9	1991.0	1972.6	1972.6	1965.1	1939.3	1909.6	1883.7	1861.5
37.5°	1839.3	1828.2	1824.5	1817.1	1806.0	1791.1	1783.8	1772.7	1746.7	1728.2	1694.9
40°	1650.5	1654.3	1646.9	1639.4	1635.8	1624.7	1620.9	1602.5	1584.0	1561.8	1546.9
42.5°	1480.3	1480.3	1480.3	1472.9	1465.5	1454.5	1450.7	1439.6	1417.4	1402.6	1380.4
45°	1328.6	1317.5	1317.5	1313.8	1310.1	1302.7	1291.6	1284.1	1269.4	1258.3	1232.4
47.5°	1180.6	1184.3	1180.6	1176.8	1165.7	1162.1	1158.4	1143.5	1128.8	1117.7	1099.1
50°	1051.0	1058.4	1051.0	1051.0	1043.7	1039.9	1032.6	1021.5	1010.4	991.8	973.3
52.5°	943.7	943.7	940.0	936.3	925.1	917.8	914.0	910.4	891.9	877.1	862.3
55°	836.4	840.0	840.0	828.9	825.3	817.8	814.2	803.1	795.6	773.4	762.4
57.5°	743.8	740.2	743.8	736.5	729.1	721.6	718.0	710.5	699.4	684.7	669.8
60°	662.5	655.0	655.0	651.4	643.9	640.3	632.8	621.8	610.7	595.8	584.7
62.5°	581.0	577.4	573.6	569.9	562.5	558.8	555.2	544.1	532.9	521.8	510.7
65°	503.3	503.3	499.6	492.1	488.5	484.8	481.2	473.7	458.9	451.5	440.4
67.5°	433.0	429.3	429.3	421.9	414.5	410.8	410.8	403.4	392.3	381.2	373.7
70°	362.6	366.4	362.6	359.0	351.5	351.5	344.2	340.5	325.7	321.9	310.8
72.5°	299.7	299.7	296.1	296.1	288.6	285.0	285.0	277.5	270.2	262.8	255.3
75°	240.6	240.6	240.6	236.8	233.1	225.7	225.7	222.0	214.6	207.3	199.9
77.5°	188.8	185.1	185.1	181.3	177.7	173.9	173.9	170.2	162.8	159.1	151.7
80°	136.9	133.3	133.3	133.3	125.8	129.5	125.8	122.2	118.4	114.7	111.1
82.5°	88.8	92.5	92.5	88.8	85.1	85.1	85.1	81.4	81.4	77.7	74.0
85°	51.8	51.8	51.8	51.8	48.2	48.2	48.2	44.4	44.4	44.4	40.7
87.5°	22.2	22.2	22.2	22.2	22.2	22.2	18.5	18.5	18.5	18.5	18.5
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: P584913

CATALOG NUMBER: HC850D010-HM82555940-81WWW

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5
2.5°	2757.1	2749.7	2746.0	2742.2	2742.2	2738.6	2734.9	2727.5	2727.5	2720.0	2716.4
5°	2771.9	2760.8	2753.3	2746.0	2742.2	2734.9	2727.5	2716.4	2712.7	2701.6	2690.5
7.5°	2775.6	2757.1	2749.7	2734.9	2727.5	2720.0	2705.3	2694.2	2679.3	2668.2	2653.5
10°	2760.8	2746.0	2727.5	2709.0	2705.3	2694.2	2672.0	2657.1	2638.7	2623.8	2601.6
12.5°	2738.6	2716.4	2697.9	2675.7	2664.6	2653.5	2631.3	2609.1	2583.1	2557.3	2535.1
15°	2701.6	2675.7	2649.8	2623.8	2609.1	2598.0	2572.0	2546.2	2520.2	2486.9	2464.7
17.5°	2646.0	2616.5	2590.5	2557.3	2542.5	2531.4	2498.0	2468.5	2435.1	2401.8	2379.6
20°	2575.8	2538.7	2509.1	2472.1	2461.0	2442.5	2409.2	2375.9	2338.9	2301.9	2276.0
22.5°	2483.2	2446.2	2412.9	2375.9	2357.4	2338.9	2305.6	2264.9	2227.9	2198.3	2172.4
25°	2375.9	2342.6	2301.9	2268.6	2246.4	2224.1	2187.2	2153.9	2120.6	2076.1	2050.2
27.5°	2257.5	2216.8	2187.2	2142.8	2120.6	2105.7	2065.0	2020.6	1991.0	1950.4	1920.7
30°	2124.3	2087.2	2053.9	2009.5	1987.3	1972.6	1935.5	1894.8	1865.3	1824.5	1794.9
32.5°	1983.7	1942.9	1902.2	1872.6	1846.7	1831.9	1791.1	1765.3	1728.2	1694.9	1661.6
35°	1831.9	1791.1	1761.6	1720.9	1706.0	1691.3	1658.0	1624.7	1591.4	1561.8	1535.8
37.5°	1669.1	1639.4	1606.1	1576.5	1565.4	1550.7	1509.9	1480.3	1454.5	1424.8	1402.6
40°	1509.9	1484.0	1461.8	1432.3	1413.7	1402.6	1373.0	1347.0	1317.5	1299.0	1276.8
42.5°	1365.6	1335.9	1313.8	1291.6	1273.0	1261.9	1236.1	1217.5	1195.3	1176.8	1151.0
45°	1213.9	1199.0	1173.2	1154.6	1143.5	1128.8	1110.2	1088.0	1069.5	1054.7	1036.2
47.5°	1080.6	1065.8	1047.3	1025.1	1017.7	1006.6	988.2	973.3	958.5	943.7	925.1
50°	958.5	940.0	925.1	910.4	903.1	891.9	873.4	866.0	854.9	840.0	828.9
52.5°	847.5	832.7	817.8	799.4	795.6	788.3	777.2	762.4	751.3	743.8	736.5
55°	747.6	732.7	721.6	706.9	703.2	695.8	680.9	673.6	666.1	658.7	651.4
57.5°	658.7	643.9	629.2	621.8	614.3	606.9	603.2	592.1	584.7	581.0	573.6
60°	577.4	562.5	551.4	540.3	536.6	532.9	525.5	518.1	510.7	503.3	499.6
62.5°	499.6	484.8	477.4	470.1	462.6	462.6	455.2	447.8	440.4	436.7	429.3
65°	429.3	421.9	410.8	399.7	395.9	395.9	384.8	381.2	377.5	370.1	362.6
67.5°	362.6	355.3	344.2	340.5	336.8	333.0	329.4	321.9	314.6	310.8	303.5
70°	303.5	296.1	288.6	285.0	281.3	277.5	270.2	266.4	259.1	255.3	251.7
72.5°	244.2	240.6	233.1	229.5	225.7	222.0	218.4	214.6	207.3	203.5	199.9
75°	196.2	192.4	185.1	181.3	177.7	177.7	173.9	166.6	162.8	162.8	159.1
77.5°	148.0	144.4	140.6	136.9	133.3	133.3	129.5	125.8	122.2	122.2	118.4
80°	107.3	103.6	99.9	99.9	99.9	96.2	92.5	92.5	88.8	88.8	85.1
82.5°	70.3	70.3	66.6	66.6	66.6	62.9	62.9	59.3	59.3	59.3	59.3
85°	40.7	40.7	40.7	37.1	37.1	37.1	37.1	37.1	37.1	33.3	37.1
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	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: P584913

CATALOG NUMBER: HC850D010-HM82555940-81WWW

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5
2.5°	2712.7	2709.0	2701.6	2701.6	2694.2	2694.2	2690.5	2686.8	2683.1	2679.3	2675.7
5°	2686.8	2672.0	2664.6	2660.9	2653.5	2649.8	2638.7	2631.3	2627.6	2620.2	2612.7
7.5°	2638.7	2623.8	2609.1	2605.4	2601.6	2586.9	2575.8	2564.7	2557.3	2549.8	2542.5
10°	2583.1	2568.4	2549.8	2542.5	2535.1	2516.5	2501.8	2490.7	2475.8	2461.0	2457.4
12.5°	2516.5	2494.3	2472.1	2464.7	2453.6	2435.1	2420.3	2401.8	2390.7	2372.3	2368.5
15°	2438.9	2412.9	2394.5	2375.9	2368.5	2350.0	2324.1	2309.2	2287.1	2279.7	2261.2
17.5°	2346.3	2320.3	2294.5	2287.1	2276.0	2250.1	2224.1	2205.7	2183.5	2172.4	2161.2
20°	2250.1	2216.8	2190.8	2183.5	2168.6	2146.5	2120.6	2102.1	2083.5	2061.3	2050.2
22.5°	2139.0	2102.1	2079.9	2061.3	2057.7	2031.7	2002.1	1987.3	1972.6	1954.0	1939.3
25°	2017.0	1983.7	1957.7	1942.9	1935.5	1913.3	1891.1	1872.6	1850.4	1839.3	1820.8
27.5°	1891.1	1868.9	1835.6	1820.8	1809.7	1791.1	1765.3	1754.2	1732.0	1717.1	1706.0
30°	1768.9	1735.7	1717.1	1698.7	1687.6	1669.1	1646.9	1635.8	1617.2	1602.5	1591.4
32.5°	1635.8	1613.6	1587.6	1580.3	1565.4	1546.9	1532.1	1513.6	1498.8	1484.0	1480.3
35°	1513.6	1484.0	1458.1	1450.7	1439.6	1421.2	1413.7	1402.6	1384.1	1380.4	1365.6
37.5°	1380.4	1365.6	1335.9	1324.8	1321.2	1306.4	1291.6	1284.1	1273.0	1261.9	1258.3
40°	1254.6	1236.1	1221.3	1210.1	1202.8	1191.7	1176.8	1173.2	1165.7	1151.0	1147.3
42.5°	1136.2	1117.7	1102.8	1099.1	1088.0	1076.9	1069.5	1058.4	1054.7	1051.0	1043.7
45°	1021.5	1010.4	995.5	991.8	988.2	973.3	965.9	958.5	951.1	947.4	940.0
47.5°	917.8	906.7	895.6	891.9	884.5	880.8	869.7	866.0	854.9	851.1	847.5
50°	817.8	810.5	803.1	799.4	792.0	788.3	780.9	773.4	766.0	762.4	758.7
52.5°	729.1	721.6	714.3	710.5	706.9	699.4	692.0	684.7	680.9	677.2	673.6
55°	643.9	636.5	632.8	629.2	625.4	621.8	610.7	606.9	603.2	599.6	592.1
57.5°	566.3	558.8	551.4	551.4	547.7	544.1	536.6	529.2	529.2	521.8	514.4
60°	495.9	488.5	481.2	477.4	473.7	466.3	462.6	458.9	455.2	451.5	444.1
62.5°	421.9	418.2	410.8	410.8	403.4	399.7	395.9	392.3	388.6	381.2	377.5
65°	359.0	355.3	347.9	344.2	344.2	340.5	333.0	329.4	325.7	325.7	321.9
67.5°	299.7	296.1	288.6	285.0	285.0	281.3	277.5	277.5	273.9	270.2	273.9
70°	247.9	240.6	240.6	236.8	236.8	233.1	229.5	229.5	229.5	233.1	233.1
72.5°	196.2	192.4	188.8	188.8	188.8	188.8	185.1	185.1	188.8	192.4	192.4
75°	155.5	151.7	151.7	151.7	148.0	148.0	151.7	151.7	155.5	155.5	155.5
77.5°	114.7	114.7	114.7	114.7	114.7	114.7	118.4	118.4	122.2	122.2	122.2
80°	85.1	85.1	85.1	85.1	85.1	88.8	88.8	88.8	88.8	88.8	92.5
82.5°	59.3	59.3	59.3	59.3	59.3	59.3	59.3	62.9	62.9	62.9	62.9
85°	33.3	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1
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: P584913

CATALOG NUMBER: HC850D010-HM82555940-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5	2727.5
2.5°	2672.0	2672.0	2672.0	2675.7	2668.2	2668.2	2668.2	2668.2
5°	2609.1	2605.4	2601.6	2605.4	2598.0	2598.0	2594.2	2594.2
7.5°	2531.4	2527.6	2524.0	2524.0	2516.5	2516.5	2512.9	2509.1
10°	2446.2	2438.9	2442.5	2435.1	2431.4	2427.8	2424.0	2420.3
12.5°	2353.7	2346.3	2342.6	2335.2	2327.8	2324.1	2327.8	2320.3
15°	2253.8	2242.7	2239.0	2231.6	2224.1	2220.5	2220.5	2216.8
17.5°	2142.8	2135.4	2131.7	2124.3	2120.6	2113.2	2109.5	2105.7
20°	2039.1	2020.6	2024.4	2017.0	2013.3	1998.4	1998.4	2002.1
22.5°	1924.4	1913.3	1905.9	1898.5	1894.8	1887.4	1887.4	1883.7
25°	1809.7	1798.6	1794.9	1787.5	1783.8	1776.4	1772.7	1772.7
27.5°	1698.7	1683.8	1683.8	1676.5	1669.1	1665.4	1661.6	1658.0
30°	1580.3	1569.1	1565.4	1565.4	1561.8	1561.8	1550.7	1554.3
32.5°	1469.2	1461.8	1458.1	1450.7	1450.7	1447.0	1447.0	1435.9
35°	1358.1	1347.0	1350.8	1343.4	1339.7	1335.9	1339.7	1335.9
37.5°	1250.8	1243.5	1243.5	1236.1	1236.1	1232.4	1228.6	1236.1
40°	1143.5	1139.9	1136.2	1132.4	1136.2	1132.4	1125.0	1128.8
42.5°	1036.2	1036.2	1032.6	1032.6	1028.8	1028.8	1028.8	1028.8
45°	940.0	936.3	936.3	932.6	932.6	932.6	932.6	928.9
47.5°	843.8	840.0	840.0	840.0	836.4	836.4	832.7	836.4
50°	751.3	751.3	747.6	747.6	751.3	747.6	743.8	743.8
52.5°	666.1	666.1	662.5	662.5	658.7	655.0	658.7	658.7
55°	588.5	584.7	581.0	581.0	577.4	573.6	573.6	577.4
57.5°	514.4	510.7	507.0	507.0	499.6	495.9	495.9	495.9
60°	444.1	436.7	436.7	433.0	433.0	429.3	429.3	429.3
62.5°	377.5	373.7	373.7	373.7	373.7	370.1	370.1	370.1
65°	321.9	321.9	321.9	325.7	325.7	329.4	329.4	329.4
67.5°	277.5	281.3	281.3	281.3	285.0	285.0	285.0	281.3
70°	236.8	236.8	236.8	240.6	240.6	240.6	240.6	240.6
72.5°	196.2	196.2	196.2	196.2	196.2	196.2	196.2	196.2
75°	155.5	159.1	159.1	159.1	155.5	159.1	159.1	155.5
77.5°	122.2	122.2	122.2	122.2	122.2	122.2	122.2	122.2
80°	92.5	92.5	92.5	92.5	92.5	92.5	92.5	92.5
82.5°	62.9	62.9	62.9	62.9	62.9	62.9	62.9	62.9
85°	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1
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)