

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: P584879

Luminaire Tested: **HC850D010-HM82555930-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584879
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-HM82555930-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4529.5 lumens
Efficiency: N/A
Efficacy: 94.4 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

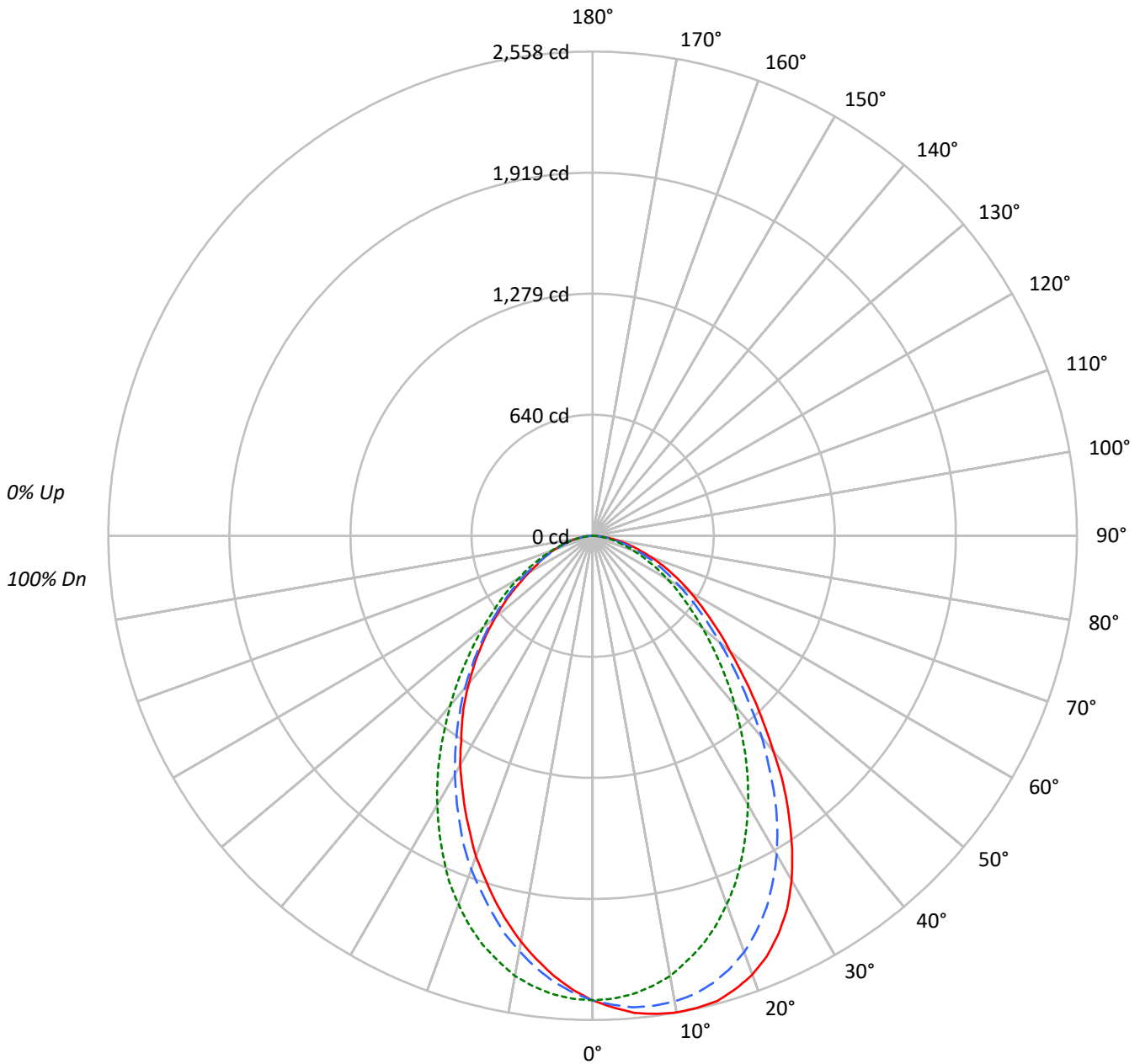
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	75682	75682	75682
5°	78342	75246	72259
10°	80080	73928	68191
15°	81221	71440	63682
20°	80975	67974	59117
25°	78970	63564	54272
30°	74820	58456	49803
35°	68068	52901	45256
40°	59785	47053	40886
45°	52135	41389	36449
50°	45368	36267	32113
55°	40461	31870	27929
60°	36763	27932	23818
65°	33046	24297	21620
70°	29428	20719	19519
75°	25794	17454	16656
80°	21878	14206	14775
85°	16487	10579	11782



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	229.9	5.1
10°-20°	633.4	14.0
20°-30°	879.2	19.4
30°-40°	909.0	20.1
40°-50°	761.1	16.8
50°-60°	552.5	12.2
60°-70°	348.7	7.7
70°-80°	172.7	3.8
80°-90°	42.9	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°	1742.5	38.5
0°-40°	2651.5	58.5
0°-60°	3965.2	87.5
0°-90°	4529.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4529.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2454	2454	2454	2454	2454	
5°	2531	2501	2431	2364	2334	242
15°	2544	2448	2238	2058	1995	716
25°	2321	2171	1868	1665	1595	1064
35°	1808	1675	1405	1246	1202	1126
45°	1196	1109	949	856	836	925
55°	753	686	593	543	520	679
65°	453	396	333	293	296	452
75°	216	180	146	140	140	232
85°	47	37	30	33	33	57
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°	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3
2.5°	2494.3	2494.3	2497.6	2494.3	2494.3	2494.3	2490.9	2490.9	2487.6	2487.6	2481.0
5°	2530.9	2524.2	2530.9	2524.2	2524.2	2524.2	2520.9	2514.3	2510.9	2504.2	2501.0
7.5°	2547.5	2544.2	2544.2	2540.9	2540.9	2537.5	2534.3	2530.9	2517.6	2514.3	2504.2
10°	2557.5	2554.1	2554.1	2550.9	2544.2	2544.2	2537.5	2534.3	2517.6	2510.9	2497.6
12.5°	2554.1	2554.1	2554.1	2550.9	2540.9	2537.5	2530.9	2520.9	2507.6	2494.3	2481.0
15°	2544.2	2544.2	2537.5	2534.3	2524.2	2517.6	2514.3	2497.6	2484.2	2467.6	2447.7
17.5°	2510.9	2510.9	2507.6	2501.0	2490.9	2484.2	2477.6	2461.0	2447.7	2421.0	2401.0
20°	2467.6	2464.3	2461.0	2450.9	2441.0	2437.6	2427.7	2404.4	2387.7	2367.7	2341.0
22.5°	2404.4	2401.0	2397.7	2391.1	2374.4	2367.7	2361.0	2344.4	2314.4	2294.4	2261.2
25°	2321.0	2321.0	2314.4	2304.4	2287.8	2281.2	2271.1	2254.5	2227.9	2197.8	2171.2
27.5°	2224.5	2221.2	2211.2	2204.5	2191.2	2181.2	2164.5	2144.6	2118.0	2094.6	2061.3
30°	2101.3	2101.3	2094.6	2084.7	2068.0	2061.3	2048.0	2024.7	1998.1	1968.1	1944.7
32.5°	1961.5	1961.5	1951.4	1944.7	1934.8	1918.1	1914.8	1888.2	1864.9	1841.5	1814.9
35°	1808.2	1811.6	1804.9	1791.6	1775.0	1775.0	1768.3	1745.0	1718.3	1695.0	1675.1
37.5°	1655.1	1645.1	1641.7	1635.1	1625.1	1611.8	1605.2	1595.1	1571.8	1555.1	1525.2
40°	1485.2	1488.6	1481.9	1475.3	1471.9	1462.0	1458.6	1442.0	1425.2	1405.3	1392.0
42.5°	1332.1	1332.1	1332.1	1325.4	1318.7	1308.7	1305.4	1295.4	1275.4	1262.2	1242.2
45°	1195.5	1185.5	1185.5	1182.2	1178.8	1172.2	1162.2	1155.6	1142.2	1132.3	1108.9
47.5°	1062.3	1065.7	1062.3	1059.0	1048.9	1045.7	1042.3	1029.0	1015.7	1005.7	989.1
50°	945.7	952.4	945.7	945.7	939.1	935.8	929.1	919.1	909.1	892.4	875.8
52.5°	849.2	849.2	845.9	842.5	832.6	825.9	822.5	819.2	802.5	789.2	775.9
55°	752.6	756.0	756.0	745.9	742.7	736.0	732.6	722.7	716.0	696.0	686.0
57.5°	669.4	666.0	669.4	662.7	656.0	649.4	646.0	639.3	629.4	616.1	602.7
60°	596.1	589.4	589.4	586.1	579.5	576.1	569.4	559.5	549.4	536.1	526.2
62.5°	522.8	519.5	516.1	512.8	506.2	502.9	499.5	489.6	479.5	469.6	459.5
65°	452.9	452.9	449.6	442.9	439.5	436.3	432.9	426.2	412.9	406.2	396.3
67.5°	389.6	386.2	386.2	379.7	373.0	369.6	369.6	363.0	353.0	343.0	336.3
70°	326.4	329.7	326.4	323.0	316.3	316.3	309.7	306.4	293.1	289.7	279.7
72.5°	269.7	269.7	266.4	266.4	259.8	256.4	256.4	249.8	243.2	236.5	229.8
75°	216.5	216.5	216.5	213.1	209.8	203.2	203.2	199.8	193.1	186.5	179.8
77.5°	169.9	166.5	166.5	163.2	159.8	156.5	156.5	153.1	146.5	143.2	136.5
80°	123.2	119.9	119.9	119.9	113.3	116.5	113.3	109.9	106.6	103.2	99.9
82.5°	80.0	83.2	83.2	80.0	76.6	76.6	76.6	73.3	73.3	69.9	66.6
85°	46.6	46.6	46.6	46.6	43.3	43.3	43.3	40.0	40.0	40.0	36.6
87.5°	20.0	20.0	20.0	20.0	20.0	20.0	16.6	16.6	16.6	16.6	16.6
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°	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3
2.5°	2481.0	2474.3	2470.9	2467.6	2467.6	2464.3	2461.0	2454.3	2454.3	2447.7	2444.3
5°	2494.3	2484.2	2477.6	2470.9	2467.6	2461.0	2454.3	2444.3	2441.0	2430.9	2421.0
7.5°	2497.6	2481.0	2474.3	2461.0	2454.3	2447.7	2434.3	2424.3	2411.1	2401.0	2387.7
10°	2484.2	2470.9	2454.3	2437.6	2434.3	2424.3	2404.4	2391.1	2374.4	2361.0	2341.0
12.5°	2464.3	2444.3	2427.7	2407.7	2397.7	2387.7	2367.7	2347.7	2324.4	2301.1	2281.2
15°	2430.9	2407.7	2384.4	2361.0	2347.7	2337.8	2314.4	2291.1	2267.9	2237.8	2217.8
17.5°	2381.0	2354.4	2331.1	2301.1	2287.8	2277.8	2247.9	2221.2	2191.2	2161.2	2141.3
20°	2317.8	2284.5	2257.8	2224.5	2214.6	2197.8	2167.9	2138.0	2104.7	2071.4	2048.0
22.5°	2234.5	2201.2	2171.2	2138.0	2121.3	2104.7	2074.6	2038.0	2004.7	1978.1	1954.8
25°	2138.0	2107.9	2071.4	2041.3	2021.4	2001.4	1968.1	1938.1	1908.2	1868.2	1844.9
27.5°	2031.4	1994.8	1968.1	1928.1	1908.2	1894.8	1858.2	1818.3	1791.6	1755.0	1728.4
30°	1911.4	1878.2	1848.2	1808.2	1788.2	1775.0	1741.7	1705.0	1678.3	1641.7	1615.1
32.5°	1784.9	1748.4	1711.6	1685.0	1661.7	1648.4	1611.8	1588.4	1555.1	1525.2	1495.3
35°	1648.4	1611.8	1585.2	1548.5	1535.1	1521.9	1491.9	1462.0	1431.9	1405.3	1382.0
37.5°	1501.9	1475.3	1445.2	1418.6	1408.6	1395.3	1358.7	1332.1	1308.7	1282.0	1262.2
40°	1358.7	1335.3	1315.4	1288.7	1272.1	1262.2	1235.5	1212.1	1185.5	1168.9	1148.9
42.5°	1228.9	1202.2	1182.2	1162.2	1145.6	1135.6	1112.3	1095.6	1075.6	1059.0	1035.6
45°	1092.3	1079.0	1055.6	1039.0	1029.0	1015.7	999.0	979.0	962.4	949.1	932.4
47.5°	972.4	959.0	942.4	922.5	915.8	905.7	889.1	875.8	862.5	849.2	832.6
50°	862.5	845.9	832.6	819.2	812.6	802.5	785.9	779.3	769.2	756.0	745.9
52.5°	762.7	749.3	736.0	719.3	716.0	709.3	699.3	686.0	676.0	669.4	662.7
55°	672.6	659.3	649.4	636.1	632.8	626.1	612.8	606.1	599.5	592.8	586.1
57.5°	592.8	579.5	566.1	559.5	552.8	546.2	542.8	532.8	526.2	522.8	516.1
60°	519.5	506.2	496.2	486.2	482.9	479.5	472.9	466.2	459.5	452.9	449.6
62.5°	449.6	436.3	429.6	422.9	416.3	416.3	409.6	403.0	396.3	392.9	386.2
65°	386.2	379.7	369.6	359.7	356.3	356.3	346.4	343.0	339.7	333.0	326.4
67.5°	326.4	319.7	309.7	306.4	303.0	299.7	296.3	289.7	283.0	279.7	273.1
70°	273.1	266.4	259.8	256.4	253.1	249.8	243.2	239.8	233.1	229.8	226.4
72.5°	219.8	216.5	209.8	206.4	203.2	199.8	196.5	193.1	186.5	183.2	179.8
75°	176.5	173.1	166.5	163.2	159.8	159.8	156.5	149.9	146.5	146.5	143.2
77.5°	133.1	129.9	126.6	123.2	119.9	119.9	116.5	113.3	109.9	109.9	106.6
80°	96.6	93.3	89.9	89.9	89.9	86.6	83.2	83.2	80.0	80.0	76.6
82.5°	63.2	63.2	60.0	60.0	60.0	56.6	56.6	53.3	53.3	53.3	53.3
85°	36.6	36.6	36.6	33.3	33.3	33.3	33.3	33.3	33.3	29.9	33.3
87.5°	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	13.3	13.3	13.3
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°	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3
2.5°	2441.0	2437.6	2430.9	2430.9	2424.3	2424.3	2421.0	2417.7	2414.3	2411.1	2407.7
5°	2417.7	2404.4	2397.7	2394.3	2387.7	2384.4	2374.4	2367.7	2364.4	2357.8	2351.1
7.5°	2374.4	2361.0	2347.7	2344.4	2341.0	2327.7	2317.8	2307.7	2301.1	2294.4	2287.8
10°	2324.4	2311.1	2294.4	2287.8	2281.2	2264.5	2251.1	2241.2	2227.9	2214.6	2211.2
12.5°	2264.5	2244.5	2224.5	2217.8	2207.9	2191.2	2177.8	2161.2	2151.3	2134.6	2131.3
15°	2194.6	2171.2	2154.6	2138.0	2131.3	2114.6	2091.3	2078.0	2058.0	2051.4	2034.8
17.5°	2111.3	2088.0	2064.7	2058.0	2048.0	2024.7	2001.4	1984.7	1964.7	1954.8	1944.7
20°	2024.7	1994.8	1971.4	1964.7	1951.4	1931.4	1908.2	1891.6	1874.8	1854.9	1844.9
22.5°	1924.8	1891.6	1871.6	1854.9	1851.6	1828.2	1801.5	1788.2	1775.0	1758.3	1745.0
25°	1814.9	1784.9	1761.7	1748.4	1741.7	1721.7	1701.7	1685.0	1665.0	1655.1	1638.5
27.5°	1701.7	1681.7	1651.8	1638.5	1628.4	1611.8	1588.4	1578.5	1558.5	1545.2	1535.1
30°	1591.8	1561.8	1545.2	1528.5	1518.5	1501.9	1481.9	1471.9	1455.3	1442.0	1431.9
32.5°	1471.9	1451.9	1428.6	1422.0	1408.6	1392.0	1378.7	1362.0	1348.7	1335.3	1332.1
35°	1362.0	1335.3	1312.1	1305.4	1295.4	1278.8	1272.1	1262.2	1245.5	1242.2	1228.9
37.5°	1242.2	1228.9	1202.2	1192.1	1188.9	1175.5	1162.2	1155.6	1145.6	1135.6	1132.3
40°	1128.9	1112.3	1099.0	1088.9	1082.3	1072.3	1059.0	1055.6	1048.9	1035.6	1032.3
42.5°	1022.3	1005.7	992.4	989.1	979.0	969.1	962.4	952.4	949.1	945.7	939.1
45°	919.1	909.1	895.8	892.4	889.1	875.8	869.2	862.5	855.8	852.6	845.9
47.5°	825.9	815.8	805.9	802.5	795.9	792.6	782.5	779.3	769.2	765.9	762.7
50°	736.0	729.3	722.7	719.3	712.6	709.3	702.7	696.0	689.4	686.0	682.7
52.5°	656.0	649.4	642.7	639.3	636.1	629.4	622.7	616.1	612.8	609.4	606.1
55°	579.5	572.8	569.4	566.1	562.8	559.5	549.4	546.2	542.8	539.5	532.8
57.5°	509.5	502.9	496.2	496.2	492.9	489.6	482.9	476.3	476.3	469.6	462.9
60°	446.2	439.5	432.9	429.6	426.2	419.6	416.3	412.9	409.6	406.2	399.6
62.5°	379.7	376.3	369.6	369.6	363.0	359.7	356.3	353.0	349.6	343.0	339.7
65°	323.0	319.7	313.1	309.7	309.7	306.4	299.7	296.3	293.1	293.1	289.7
67.5°	269.7	266.4	259.8	256.4	256.4	253.1	249.8	249.8	246.4	243.2	246.4
70°	223.2	216.5	216.5	213.1	213.1	209.8	206.4	206.4	206.4	209.8	209.8
72.5°	176.5	173.1	169.9	169.9	169.9	169.9	166.5	166.5	169.9	173.1	173.1
75°	139.8	136.5	136.5	136.5	133.1	133.1	136.5	136.5	139.8	139.8	139.8
77.5°	103.2	103.2	103.2	103.2	103.2	103.2	106.6	106.6	109.9	109.9	109.9
80°	76.6	76.6	76.6	76.6	76.6	80.0	80.0	80.0	80.0	80.0	83.2
82.5°	53.3	53.3	53.3	53.3	53.3	53.3	53.3	56.6	56.6	56.6	56.6
85°	29.9	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
87.5°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
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: P584879

CATALOG NUMBER: HC850D010-HM82555930-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3	2454.3
2.5°	2404.4	2404.4	2404.4	2407.7	2401.0	2401.0	2401.0	2401.0
5°	2347.7	2344.4	2341.0	2344.4	2337.8	2337.8	2334.4	2334.4
7.5°	2277.8	2274.5	2271.1	2271.1	2264.5	2264.5	2261.2	2257.8
10°	2201.2	2194.6	2197.8	2191.2	2187.9	2184.5	2181.2	2177.8
12.5°	2118.0	2111.3	2107.9	2101.3	2094.6	2091.3	2094.6	2088.0
15°	2028.1	2018.0	2014.8	2008.1	2001.4	1998.1	1998.1	1994.8
17.5°	1928.1	1921.5	1918.1	1911.4	1908.2	1901.5	1898.2	1894.8
20°	1834.9	1818.3	1821.5	1814.9	1811.6	1798.3	1798.3	1801.5
22.5°	1731.6	1721.7	1715.0	1708.4	1705.0	1698.3	1698.3	1695.0
25°	1628.4	1618.5	1615.1	1608.4	1605.2	1598.5	1595.1	1595.1
27.5°	1528.5	1515.3	1515.3	1508.6	1501.9	1498.5	1495.3	1491.9
30°	1422.0	1411.9	1408.6	1408.6	1405.3	1405.3	1395.3	1398.7
32.5°	1322.0	1315.4	1312.1	1305.4	1305.4	1302.0	1302.0	1292.1
35°	1222.2	1212.1	1215.5	1208.9	1205.5	1202.2	1205.5	1202.2
37.5°	1125.6	1119.0	1119.0	1112.3	1112.3	1108.9	1105.6	1112.3
40°	1029.0	1025.7	1022.3	1019.0	1022.3	1019.0	1012.4	1015.7
42.5°	932.4	932.4	929.1	929.1	925.7	925.7	925.7	925.7
45°	845.9	842.5	842.5	839.2	839.2	839.2	839.2	835.8
47.5°	759.3	756.0	756.0	756.0	752.6	752.6	749.3	752.6
50°	676.0	676.0	672.6	672.6	676.0	672.6	669.4	669.4
52.5°	599.5	599.5	596.1	596.1	592.8	589.4	592.8	592.8
55°	529.4	526.2	522.8	522.8	519.5	516.1	516.1	519.5
57.5°	462.9	459.5	456.3	456.3	449.6	446.2	446.2	446.2
60°	399.6	392.9	392.9	389.6	389.6	386.2	386.2	386.2
62.5°	339.7	336.3	336.3	336.3	336.3	333.0	333.0	333.0
65°	289.7	289.7	289.7	293.1	293.1	296.3	296.3	296.3
67.5°	249.8	253.1	253.1	253.1	256.4	256.4	256.4	253.1
70°	213.1	213.1	213.1	216.5	216.5	216.5	216.5	216.5
72.5°	176.5	176.5	176.5	176.5	176.5	176.5	176.5	176.5
75°	139.8	143.2	143.2	143.2	139.8	143.2	143.2	139.8
77.5°	109.9	109.9	109.9	109.9	109.9	109.9	109.9	109.9
80°	83.2	83.2	83.2	83.2	83.2	83.2	83.2	83.2
82.5°	56.6	56.6	56.6	56.6	56.6	56.6	56.6	56.6
85°	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
87.5°	13.3	13.3	13.3	13.3	13.3	13.3	13.3	13.3
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)