

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: P584828

Luminaire Tested: **HC850D010-HM82555835-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584828
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-HM82555835-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4883.2 lumens
Efficiency: N/A
Efficacy: 101.7 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

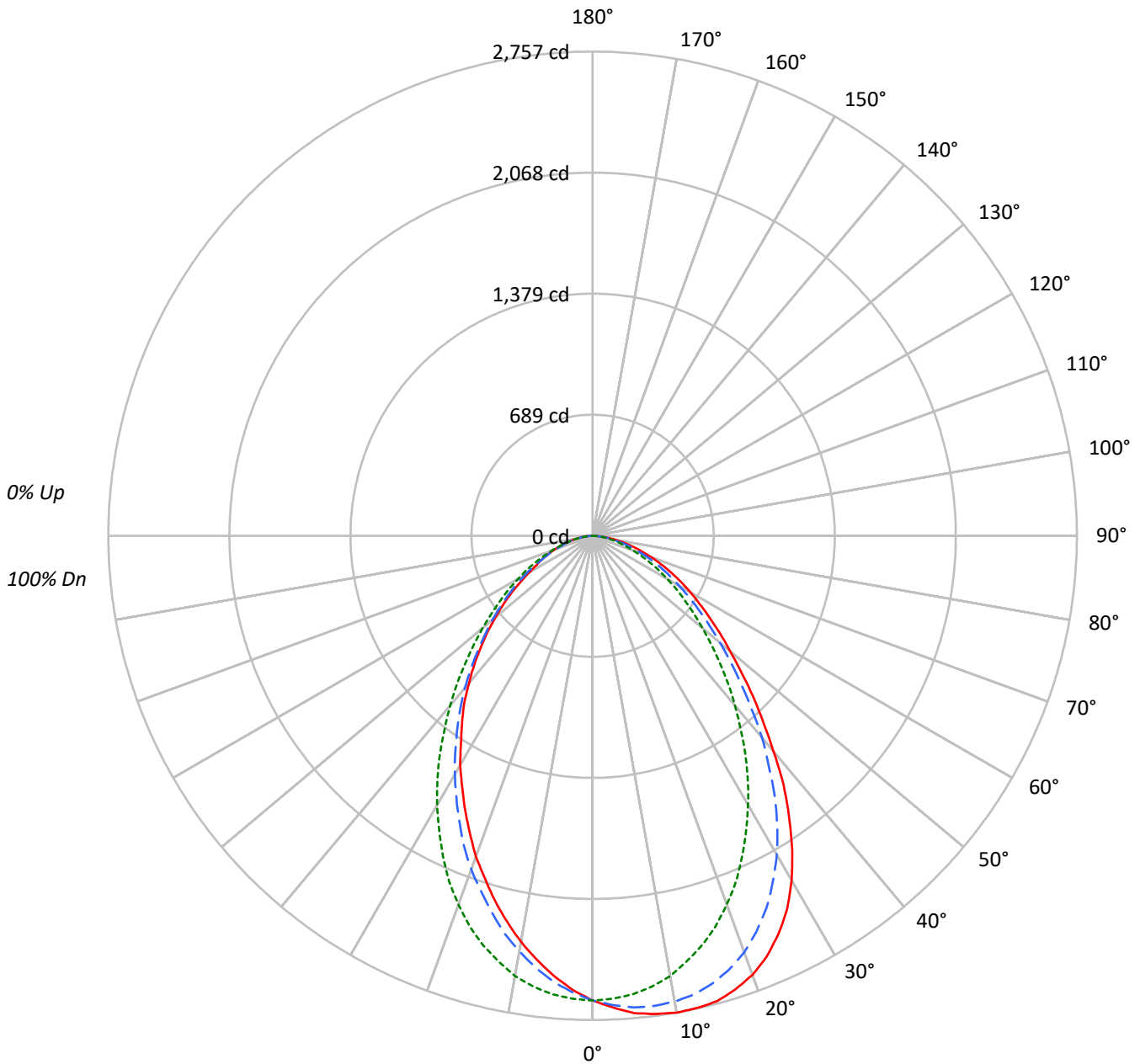
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	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°	81590	81590	81590
5°	84461	81128	77902
10°	86337	79705	73517
15°	87565	77020	68653
20°	87299	73280	63737
25°	85142	68528	58511
30°	80663	63024	53691
35°	73384	57031	48791
40°	64455	50728	44078
45°	56203	44621	39301
50°	48913	39098	34617
55°	43622	34359	30112
60°	39631	30115	25687
65°	35629	26194	23312
70°	31727	22332	21034
75°	27796	18813	17967
80°	23583	15307	15947
85°	17796	11428	12702



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	247.8	5.1
10°-20°	682.9	14.0
20°-30°	947.9	19.4
30°-40°	980.0	20.1
40°-50°	820.6	16.8
50°-60°	595.7	12.2
60°-70°	375.9	7.7
70°-80°	186.2	3.8
80°-90°	46.3	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°	1878.6	38.5
0°-40°	2858.6	58.5
0°-60°	4274.8	87.5
0°-90°	4883.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4883.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2646	2646	2646	2646	2646	
5°	2729	2696	2621	2549	2517	261
15°	2743	2639	2413	2219	2150	772
25°	2502	2341	2014	1795	1720	1147
35°	1949	1806	1515	1343	1296	1214
45°	1289	1196	1023	923	901	997
55°	811	740	639	585	560	732
65°	488	427	359	316	320	487
75°	233	194	158	151	151	250
85°	50	40	32	36	36	61
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°	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9
2.5°	2689.1	2689.1	2692.7	2689.1	2689.1	2689.1	2685.4	2685.4	2681.9	2681.9	2674.7
5°	2728.6	2721.3	2728.6	2721.3	2721.3	2721.3	2717.8	2710.6	2707.1	2699.8	2696.2
7.5°	2746.4	2742.9	2742.9	2739.3	2739.3	2735.7	2732.2	2728.6	2714.2	2710.6	2699.8
10°	2757.3	2753.7	2753.7	2750.1	2742.9	2742.9	2735.7	2732.2	2714.2	2707.1	2692.7
12.5°	2753.7	2753.7	2753.7	2750.1	2739.3	2735.7	2728.6	2717.8	2703.4	2689.1	2674.7
15°	2742.9	2742.9	2735.7	2732.2	2721.3	2714.2	2710.6	2692.7	2678.3	2660.3	2638.8
17.5°	2707.1	2707.1	2703.4	2696.2	2685.4	2678.3	2671.0	2653.2	2638.8	2610.0	2588.5
20°	2660.3	2656.8	2653.2	2642.4	2631.7	2628.0	2617.3	2592.1	2574.1	2552.6	2523.9
22.5°	2592.1	2588.5	2584.9	2577.8	2559.8	2552.6	2545.5	2527.5	2495.2	2473.6	2437.7
25°	2502.4	2502.4	2495.2	2484.4	2466.5	2459.2	2448.5	2430.6	2401.8	2369.6	2340.8
27.5°	2398.2	2394.7	2383.9	2376.7	2362.3	2351.6	2333.7	2312.0	2283.4	2258.3	2222.4
30°	2265.4	2265.4	2258.3	2247.5	2229.5	2222.4	2208.0	2182.9	2154.1	2121.9	2096.7
32.5°	2114.6	2114.6	2103.8	2096.7	2085.8	2068.0	2064.3	2035.7	2010.6	1985.4	1956.7
35°	1949.4	1953.0	1945.9	1931.5	1913.5	1913.5	1906.4	1881.3	1852.5	1827.4	1805.9
37.5°	1784.4	1773.6	1770.0	1762.7	1752.0	1737.6	1730.5	1719.7	1694.6	1676.6	1644.3
40°	1601.2	1604.8	1597.7	1590.4	1586.9	1576.0	1572.5	1554.5	1536.7	1515.0	1500.6
42.5°	1436.1	1436.1	1436.1	1428.9	1421.7	1411.0	1407.4	1396.6	1375.1	1360.7	1339.1
45°	1288.8	1278.1	1278.1	1274.6	1270.9	1263.8	1252.9	1245.8	1231.4	1220.7	1195.5
47.5°	1145.3	1148.9	1145.3	1141.6	1130.9	1127.3	1123.8	1109.4	1095.0	1084.2	1066.2
50°	1019.6	1026.8	1019.6	1019.6	1012.5	1008.8	1001.7	990.8	980.1	962.2	944.2
52.5°	915.4	915.4	911.9	908.3	897.6	890.3	886.8	883.2	865.3	850.9	836.5
55°	811.4	815.0	815.0	804.2	800.6	793.4	789.9	779.0	771.9	750.4	739.6
57.5°	721.6	718.0	721.6	714.5	707.2	700.1	696.5	689.4	678.6	664.2	649.8
60°	642.6	635.5	635.5	631.8	624.7	621.1	614.0	603.2	592.3	578.1	567.2
62.5°	563.7	560.1	556.4	552.9	545.7	542.1	538.6	527.8	516.9	506.2	495.4
65°	488.3	488.3	484.7	477.5	473.9	470.3	466.8	459.5	445.2	438.0	427.3
67.5°	420.0	416.5	416.5	409.3	402.1	398.5	398.5	391.4	380.5	369.8	362.6
70°	351.9	355.4	351.9	348.2	341.1	341.1	333.9	330.2	316.0	312.4	301.6
72.5°	290.8	290.8	287.2	287.2	280.1	276.5	276.5	269.2	262.1	255.0	247.7
75°	233.3	233.3	233.3	229.8	226.2	219.0	219.0	215.4	208.2	201.1	193.8
77.5°	183.1	179.6	179.6	175.9	172.3	168.7	168.7	165.2	157.9	154.4	147.2
80°	132.8	129.3	129.3	129.3	122.0	125.7	122.0	118.4	114.9	111.3	107.7
82.5°	86.2	89.8	89.8	86.2	82.5	82.5	82.5	79.0	79.0	75.4	71.8
85°	50.3	50.3	50.3	50.3	46.6	46.6	46.6	43.1	43.1	43.1	39.5
87.5°	21.5	21.5	21.5	21.5	21.5	21.5	18.0	18.0	18.0	18.0	18.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9
2.5°	2674.7	2667.5	2663.9	2660.3	2660.3	2656.8	2653.2	2645.9	2645.9	2638.8	2635.2
5°	2689.1	2678.3	2671.0	2663.9	2660.3	2653.2	2645.9	2635.2	2631.7	2620.9	2610.0
7.5°	2692.7	2674.7	2667.5	2653.2	2645.9	2638.8	2624.4	2613.7	2599.3	2588.5	2574.1
10°	2678.3	2663.9	2645.9	2628.0	2624.4	2613.7	2592.1	2577.8	2559.8	2545.5	2523.9
12.5°	2656.8	2635.2	2617.3	2595.8	2584.9	2574.1	2552.6	2531.1	2506.0	2480.9	2459.2
15°	2620.9	2595.8	2570.6	2545.5	2531.1	2520.4	2495.2	2470.1	2445.0	2412.6	2391.1
17.5°	2567.0	2538.2	2513.1	2480.9	2466.5	2455.7	2423.3	2394.7	2362.3	2330.1	2308.5
20°	2498.7	2462.8	2434.2	2398.2	2387.4	2369.6	2337.2	2304.9	2269.0	2233.1	2208.0
22.5°	2409.1	2373.1	2340.8	2304.9	2286.9	2269.0	2236.6	2197.3	2161.2	2132.6	2107.5
25°	2304.9	2272.5	2233.1	2200.8	2179.2	2157.7	2121.9	2089.5	2057.2	2014.1	1988.9
27.5°	2190.0	2150.5	2121.9	2078.7	2057.2	2042.8	2003.3	1960.3	1931.5	1892.0	1863.3
30°	2060.7	2024.8	1992.6	1949.4	1927.9	1913.5	1877.6	1838.1	1809.5	1770.0	1741.2
32.5°	1924.3	1884.9	1845.4	1816.6	1791.5	1777.1	1737.6	1712.5	1676.6	1644.3	1612.1
35°	1777.1	1737.6	1709.0	1669.4	1655.1	1640.7	1608.4	1576.0	1543.8	1515.0	1489.9
37.5°	1619.2	1590.4	1558.2	1529.4	1518.6	1504.3	1464.8	1436.1	1411.0	1382.2	1360.7
40°	1464.8	1439.6	1418.1	1389.4	1371.5	1360.7	1332.0	1306.8	1278.1	1260.2	1238.7
42.5°	1324.8	1296.1	1274.6	1252.9	1235.0	1224.3	1199.2	1181.2	1159.6	1141.6	1116.5
45°	1177.5	1163.3	1138.1	1120.1	1109.4	1095.0	1077.0	1055.5	1037.6	1023.2	1005.2
47.5°	1048.4	1034.0	1016.0	994.5	987.3	976.6	958.6	944.2	929.8	915.4	897.6
50°	929.8	911.9	897.6	883.2	876.0	865.3	847.3	840.2	829.3	815.0	804.2
52.5°	822.2	807.8	793.4	775.5	771.9	764.8	753.9	739.6	728.8	721.6	714.5
55°	725.2	710.9	700.1	685.7	682.1	675.0	660.6	653.5	646.2	639.1	631.8
57.5°	639.1	624.7	610.3	603.2	596.0	588.8	585.2	574.4	567.2	563.7	556.4
60°	560.1	545.7	534.9	524.2	520.6	516.9	509.8	502.7	495.4	488.3	484.7
62.5°	484.7	470.3	463.2	455.9	448.8	448.8	441.6	434.4	427.3	423.6	416.5
65°	416.5	409.3	398.5	387.8	384.1	384.1	373.4	369.8	366.2	359.0	351.9
67.5°	351.9	344.6	333.9	330.2	326.7	323.1	319.5	312.4	305.1	301.6	294.4
70°	294.4	287.2	280.1	276.5	272.8	269.2	262.1	258.5	251.3	247.7	244.1
72.5°	237.0	233.3	226.2	222.6	219.0	215.4	211.8	208.2	201.1	197.4	193.8
75°	190.3	186.7	179.6	175.9	172.3	172.3	168.7	161.6	157.9	157.9	154.4
77.5°	143.6	140.0	136.4	132.8	129.3	129.3	125.7	122.0	118.4	118.4	114.9
80°	104.2	100.5	96.9	96.9	96.9	93.4	89.8	89.8	86.2	86.2	82.5
82.5°	68.3	68.3	64.6	64.6	64.6	61.0	61.0	57.4	57.4	57.4	57.4
85°	39.5	39.5	39.5	35.9	35.9	35.9	35.9	35.9	35.9	32.3	35.9
87.5°	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	14.4	14.4	14.4
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9
2.5°	2631.7	2628.0	2620.9	2620.9	2613.7	2613.7	2610.0	2606.5	2602.9	2599.3	2595.8
5°	2606.5	2592.1	2584.9	2581.4	2574.1	2570.6	2559.8	2552.6	2549.0	2541.9	2534.6
7.5°	2559.8	2545.5	2531.1	2527.5	2523.9	2509.5	2498.7	2488.0	2480.9	2473.6	2466.5
10°	2506.0	2491.6	2473.6	2466.5	2459.2	2441.3	2427.0	2416.2	2401.8	2387.4	2383.9
12.5°	2441.3	2419.8	2398.2	2391.1	2380.3	2362.3	2347.9	2330.1	2319.3	2301.3	2297.7
15°	2365.9	2340.8	2322.8	2304.9	2297.7	2279.8	2254.7	2240.3	2218.8	2211.5	2193.6
17.5°	2276.2	2251.0	2225.9	2218.8	2208.0	2182.9	2157.7	2139.7	2118.2	2107.5	2096.7
20°	2182.9	2150.5	2125.4	2118.2	2103.8	2082.3	2057.2	2039.2	2021.3	1999.7	1988.9
22.5°	2075.1	2039.2	2017.7	1999.7	1996.2	1971.1	1942.3	1927.9	1913.5	1895.7	1881.3
25°	1956.7	1924.3	1899.2	1884.9	1877.6	1856.1	1834.6	1816.6	1795.1	1784.4	1766.4
27.5°	1834.6	1813.0	1780.7	1766.4	1755.6	1737.6	1712.5	1701.7	1680.2	1665.8	1655.1
30°	1716.1	1683.8	1665.8	1647.9	1637.2	1619.2	1597.7	1586.9	1568.9	1554.5	1543.8
32.5°	1586.9	1565.3	1540.2	1533.0	1518.6	1500.6	1486.4	1468.4	1454.0	1439.6	1436.1
35°	1468.4	1439.6	1414.5	1407.4	1396.6	1378.6	1371.5	1360.7	1342.7	1339.1	1324.8
37.5°	1339.1	1324.8	1296.1	1285.3	1281.7	1267.3	1252.9	1245.8	1235.0	1224.3	1220.7
40°	1217.0	1199.2	1184.8	1174.0	1166.8	1156.0	1141.6	1138.1	1130.9	1116.5	1113.0
42.5°	1102.1	1084.2	1069.9	1066.2	1055.5	1044.7	1037.6	1026.8	1023.2	1019.6	1012.5
45°	990.8	980.1	965.7	962.2	958.6	944.2	937.1	929.8	922.7	919.1	911.9
47.5°	890.3	879.6	868.8	865.3	858.0	854.4	843.7	840.2	829.3	825.8	822.2
50°	793.4	786.3	779.0	775.5	768.3	764.8	757.5	750.4	743.1	739.6	736.0
52.5°	707.2	700.1	692.9	689.4	685.7	678.6	671.4	664.2	660.6	657.0	653.5
55°	624.7	617.5	614.0	610.3	606.7	603.2	592.3	588.8	585.2	581.6	574.4
57.5°	549.3	542.1	534.9	534.9	531.3	527.8	520.6	513.4	513.4	506.2	499.0
60°	481.0	473.9	466.8	463.2	459.5	452.4	448.8	445.2	441.6	438.0	430.8
62.5°	409.3	405.6	398.5	398.5	391.4	387.8	384.1	380.5	377.0	369.8	366.2
65°	348.2	344.6	337.5	333.9	333.9	330.2	323.1	319.5	316.0	316.0	312.4
67.5°	290.8	287.2	280.1	276.5	276.5	272.8	269.2	269.2	265.7	262.1	265.7
70°	240.6	233.3	233.3	229.8	229.8	226.2	222.6	222.6	222.6	222.6	226.2
72.5°	190.3	186.7	183.1	183.1	183.1	183.1	179.6	179.6	183.1	186.7	186.7
75°	150.8	147.2	147.2	147.2	143.6	143.6	147.2	147.2	150.8	150.8	150.8
77.5°	111.3	111.3	111.3	111.3	111.3	111.3	114.9	114.9	118.4	118.4	118.4
80°	82.5	82.5	82.5	82.5	82.5	86.2	86.2	86.2	86.2	86.2	89.8
82.5°	57.4	57.4	57.4	57.4	57.4	57.4	57.4	61.0	61.0	61.0	61.0
85°	32.3	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9
87.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
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: P584828

CATALOG NUMBER: HC850D010-HM82555835-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9	2645.9
2.5°	2592.1	2592.1	2592.1	2595.8	2588.5	2588.5	2588.5	2588.5
5°	2531.1	2527.5	2523.9	2527.5	2520.4	2520.4	2516.7	2516.7
7.5°	2455.7	2452.1	2448.5	2448.5	2441.3	2441.3	2437.7	2434.2
10°	2373.1	2365.9	2369.6	2362.3	2358.8	2355.2	2351.6	2347.9
12.5°	2283.4	2276.2	2272.5	2265.4	2258.3	2254.7	2258.3	2251.0
15°	2186.4	2175.6	2172.1	2164.9	2157.7	2154.1	2154.1	2150.5
17.5°	2078.7	2071.6	2068.0	2060.7	2057.2	2050.0	2046.5	2042.8
20°	1978.2	1960.3	1963.8	1956.7	1953.0	1938.7	1938.7	1942.3
22.5°	1866.9	1856.1	1849.0	1841.8	1838.1	1831.0	1831.0	1827.4
25°	1755.6	1744.8	1741.2	1734.1	1730.5	1723.3	1719.7	1719.7
27.5°	1647.9	1633.6	1633.6	1626.3	1619.2	1615.6	1612.1	1608.4
30°	1533.0	1522.3	1518.6	1518.6	1515.0	1515.0	1504.3	1507.9
32.5°	1425.4	1418.1	1414.5	1407.4	1407.4	1403.7	1403.7	1393.0
35°	1317.6	1306.8	1310.4	1303.2	1299.7	1296.1	1299.7	1296.1
37.5°	1213.5	1206.3	1206.3	1199.2	1199.2	1195.5	1191.9	1199.2
40°	1109.4	1105.8	1102.1	1098.6	1102.1	1098.6	1091.4	1095.0
42.5°	1005.2	1005.2	1001.7	1001.7	998.1	998.1	998.1	998.1
45°	911.9	908.3	908.3	904.7	904.7	904.7	904.7	901.2
47.5°	818.5	815.0	815.0	815.0	811.4	811.4	807.8	811.4
50°	728.8	728.8	725.2	725.2	728.8	725.2	721.6	721.6
52.5°	646.2	646.2	642.6	642.6	639.1	635.5	639.1	639.1
55°	570.8	567.2	563.7	563.7	560.1	556.4	556.4	560.1
57.5°	499.0	495.4	491.8	491.8	484.7	481.0	481.0	481.0
60°	430.8	423.6	423.6	420.0	420.0	416.5	416.5	416.5
62.5°	366.2	362.6	362.6	362.6	362.6	359.0	359.0	359.0
65°	312.4	312.4	312.4	316.0	316.0	319.5	319.5	319.5
67.5°	269.2	272.8	272.8	272.8	276.5	276.5	276.5	272.8
70°	229.8	229.8	229.8	233.3	233.3	233.3	233.3	233.3
72.5°	190.3	190.3	190.3	190.3	190.3	190.3	190.3	190.3
75°	150.8	154.4	154.4	154.4	150.8	154.4	154.4	150.8
77.5°	118.4	118.4	118.4	118.4	118.4	118.4	118.4	118.4
80°	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8
82.5°	61.0	61.0	61.0	61.0	61.0	61.0	61.0	61.0
85°	35.9	35.9	35.9	35.9	35.9	35.9	35.9	35.9
87.5°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
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)