

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: P585092

Luminaire Tested: **HC860D010-HM86080835-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585092  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC860D010-HM86080835-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5928.2 lumens  
Efficiency: N/A  
Efficacy: 105.9 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

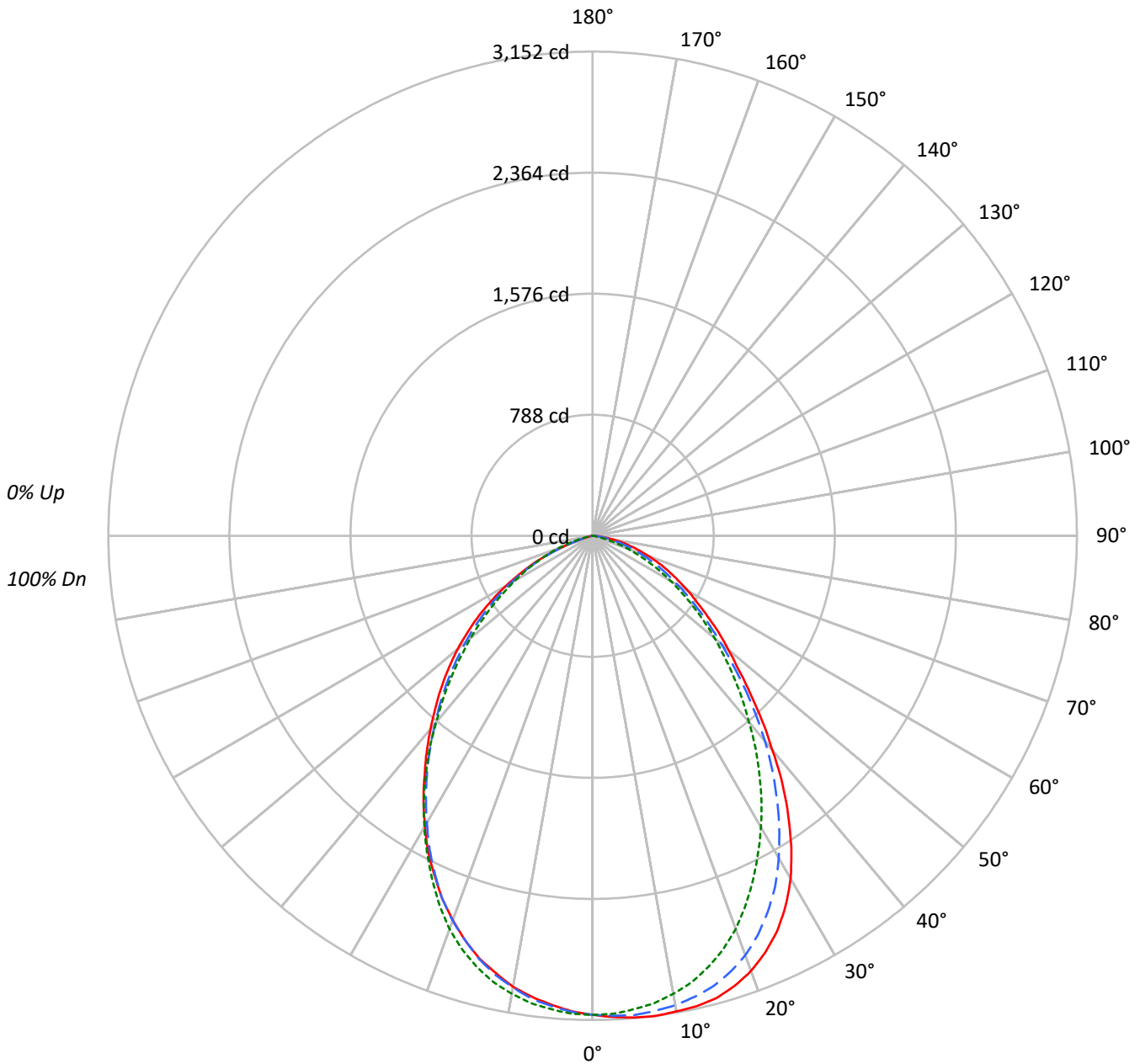
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	84	82	79	77								
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67								
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59								
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47								
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42								
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38								
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35								
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	96182	96182	96182
5°	97453	95778	94874
10°	98451	94800	93366
15°	99444	92797	90933
20°	98941	89373	87325
25°	96632	84023	82890
30°	91783	77996	77697
35°	83555	71174	71799
40°	73254	63702	66049
45°	63198	56661	60656
50°	55337	49743	54938
55°	49030	42762	48358
60°	44176	35955	40063
65°	39810	28865	30689
70°	34919	21025	16896
75°	29762	10913	4468
80°	22925	2948	746
85°	14718	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	294.3	5.0
10°-20°	827.3	14.0
20°-30°	1174.2	19.8
30°-40°	1236.0	20.9
40°-50°	1051.5	17.7
50°-60°	759.9	12.8
60°-70°	432.2	7.3
70°-80°	136.2	2.3
80°-90°	16.5	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°	2295.8	38.7
0°-40°	3531.9	59.6
0°-60°	5343.2	90.1
0°-90°	5928.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5928.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3119	3119	3119	3119	3119	
5°	3148	3132	3094	3073	3065	300
15°	3115	3036	2907	2853	2848	877
25°	2840	2698	2470	2428	2436	1301
35°	2220	2090	1891	1878	1907	1381
45°	1449	1395	1299	1333	1391	1126
55°	912	845	795	841	900	822
65°	546	471	396	392	421	541
75°	250	192	92	42	38	269
85°	42	25	0	0	0	54
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°	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1
2.5°	3135.9	3140.0	3131.6	3131.6	3140.0	3131.6	3135.9	3135.9	3131.6	3131.6	3127.4
5°	3148.3	3144.2	3144.2	3144.2	3148.3	3140.0	3135.9	3140.0	3131.6	3131.6	3131.6
7.5°	3152.5	3152.5	3148.3	3144.2	3144.2	3144.2	3140.0	3135.9	3131.6	3123.3	3119.1
10°	3144.2	3144.2	3148.3	3140.0	3140.0	3131.6	3131.6	3123.3	3123.3	3115.0	3102.5
12.5°	3135.9	3131.6	3131.6	3123.3	3123.3	3115.0	3115.0	3102.5	3098.4	3085.8	3073.3
15°	3115.0	3110.8	3102.5	3098.4	3094.2	3090.0	3081.7	3077.5	3065.0	3048.3	3035.9
17.5°	3073.3	3069.2	3065.0	3056.7	3048.3	3044.2	3040.0	3027.6	3010.8	2998.4	2977.6
20°	3015.1	3010.8	3010.8	2998.4	2994.2	2981.8	2977.6	2960.9	2948.4	2923.4	2906.8
22.5°	2936.0	2940.1	2931.7	2923.4	2915.1	2902.6	2894.2	2877.6	2856.9	2831.8	2811.0
25°	2840.1	2844.3	2836.0	2827.7	2815.1	2806.8	2798.5	2773.5	2752.7	2723.5	2698.5
27.5°	2719.4	2719.4	2719.4	2711.1	2690.2	2686.0	2677.7	2652.7	2623.6	2598.6	2573.6
30°	2577.7	2573.6	2573.6	2561.1	2552.8	2536.1	2523.6	2502.9	2482.0	2452.8	2423.8
32.5°	2407.0	2411.2	2398.7	2390.4	2377.8	2377.8	2361.2	2344.6	2319.6	2290.4	2261.2
35°	2219.6	2223.8	2215.5	2211.3	2190.5	2186.3	2182.1	2161.4	2144.6	2123.9	2090.5
37.5°	2028.0	2023.9	2019.7	2019.7	2007.3	1999.0	1990.7	1978.1	1953.2	1936.4	1919.8
40°	1819.8	1819.8	1819.8	1815.7	1811.5	1803.2	1799.1	1790.7	1774.0	1757.4	1744.9
42.5°	1632.4	1632.4	1628.3	1624.1	1615.8	1620.0	1611.6	1603.3	1586.6	1574.2	1565.9
45°	1449.2	1449.2	1449.2	1453.4	1445.1	1432.5	1432.5	1424.2	1415.9	1407.6	1395.0
47.5°	1286.8	1299.3	1291.0	1286.8	1291.0	1274.3	1274.3	1266.0	1257.7	1249.4	1232.6
50°	1153.5	1153.5	1153.5	1145.2	1141.1	1141.1	1128.6	1120.2	1116.0	1107.7	1091.1
52.5°	1032.8	1024.4	1024.4	1020.3	1016.1	1007.8	1007.8	999.4	982.8	974.5	961.9
55°	912.0	912.0	907.8	903.7	899.5	895.4	891.2	878.7	870.4	857.9	845.3
57.5°	803.7	812.1	808.0	799.5	791.2	791.2	782.9	774.6	762.1	749.6	737.1
60°	716.3	712.1	712.1	708.0	699.7	695.5	691.3	678.8	666.3	653.9	641.3
62.5°	624.7	624.7	624.7	616.4	608.0	603.8	599.7	591.3	574.7	562.2	553.9
65°	545.6	541.4	537.3	533.1	528.8	520.5	516.4	508.1	495.6	483.0	470.6
67.5°	466.4	462.3	462.3	458.1	445.6	441.4	441.4	428.9	416.5	403.9	391.5
70°	387.3	387.3	387.3	379.0	374.9	370.6	366.4	358.1	345.7	333.1	320.6
72.5°	320.6	316.5	316.5	312.3	299.9	295.7	291.5	283.2	270.7	262.4	254.0
75°	249.8	249.8	245.7	241.5	237.4	233.2	229.1	220.8	208.2	195.7	191.6
77.5°	191.6	187.4	187.4	183.3	174.9	170.7	170.7	162.4	149.9	141.6	133.2
80°	129.1	133.2	129.1	124.9	120.8	116.6	112.5	108.3	100.0	91.6	83.3
82.5°	79.1	83.3	79.1	79.1	75.0	70.8	70.8	62.5	58.2	54.1	49.9
85°	41.6	41.6	41.6	41.6	37.5	37.5	37.5	33.3	29.2	25.0	25.0
87.5°	12.5	16.6	12.5	12.5	12.5	12.5	12.5	12.5	8.3	8.3	8.3
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1
2.5°	3131.6	3127.4	3123.3	3123.3	3123.3	3123.3	3123.3	3119.1	3115.0	3115.0	3115.0
5°	3123.3	3123.3	3123.3	3119.1	3115.0	3115.0	3106.7	3102.5	3098.4	3094.2	3090.0
7.5°	3115.0	3106.7	3102.5	3098.4	3094.2	3094.2	3085.8	3077.5	3077.5	3069.2	3060.9
10°	3090.0	3085.8	3077.5	3069.2	3065.0	3060.9	3052.5	3040.0	3035.9	3027.6	3019.3
12.5°	3060.9	3052.5	3044.2	3027.6	3023.4	3019.3	3002.5	2990.1	2981.8	2977.6	2956.7
15°	3023.4	3006.7	2994.2	2973.3	2969.2	2960.9	2948.4	2936.0	2919.3	2906.8	2898.5
17.5°	2956.7	2940.1	2919.3	2898.5	2890.1	2890.1	2869.3	2852.6	2831.8	2823.5	2806.8
20°	2877.6	2856.9	2840.1	2815.1	2802.6	2790.2	2777.6	2752.7	2736.0	2723.5	2702.8
22.5°	2786.0	2756.9	2736.0	2711.1	2690.2	2677.7	2656.9	2636.1	2615.2	2602.8	2586.2
25°	2669.4	2644.4	2611.1	2586.2	2573.6	2557.0	2531.9	2511.2	2490.3	2469.5	2461.1
27.5°	2540.2	2507.0	2477.8	2448.7	2436.2	2423.8	2394.6	2369.5	2352.9	2332.1	2323.8
30°	2398.7	2365.4	2332.1	2307.1	2294.6	2273.8	2257.1	2228.0	2207.1	2190.5	2169.7
32.5°	2236.3	2211.3	2182.1	2144.6	2136.3	2119.7	2094.7	2082.2	2057.2	2044.7	2028.0
35°	2061.4	2044.7	2015.6	1986.4	1973.9	1965.6	1944.7	1919.8	1903.1	1890.7	1882.3
37.5°	1894.8	1874.0	1844.9	1824.0	1815.7	1803.2	1778.2	1765.7	1749.0	1740.7	1724.1
40°	1715.8	1694.9	1674.0	1661.6	1649.1	1640.8	1624.1	1611.6	1594.9	1582.5	1578.3
42.5°	1540.8	1528.4	1511.6	1495.0	1490.9	1478.4	1470.0	1457.6	1445.1	1440.9	1428.4
45°	1382.6	1370.1	1353.4	1336.8	1332.6	1324.3	1320.2	1307.6	1299.3	1299.3	1299.3
47.5°	1224.3	1211.9	1195.2	1186.8	1191.0	1174.4	1174.4	1170.2	1161.8	1161.8	1166.1
50°	1082.7	1066.1	1061.9	1053.6	1045.3	1036.9	1041.1	1028.6	1028.6	1036.9	1032.8
52.5°	949.5	932.9	928.7	920.3	916.1	916.1	912.0	912.0	907.8	912.0	912.0
55°	828.7	816.3	808.0	799.5	795.4	795.4	795.4	791.2	787.1	795.4	799.5
57.5°	720.4	716.3	708.0	695.5	691.3	687.1	682.9	682.9	682.9	682.9	687.1
60°	624.7	616.4	608.0	595.5	595.5	591.3	587.2	583.0	583.0	583.0	583.0
62.5°	541.4	528.8	516.4	508.1	503.9	499.8	495.6	487.2	487.2	487.2	487.2
65°	458.1	445.6	437.3	428.9	420.6	420.6	412.2	408.1	399.8	395.6	387.3
67.5°	379.0	370.6	362.3	349.8	345.7	341.5	333.1	328.9	316.5	312.3	308.2
70°	308.2	295.7	287.3	279.0	274.9	266.6	258.2	249.8	241.5	233.2	224.9
72.5°	241.5	229.1	220.8	212.3	204.0	204.0	191.6	183.3	170.7	162.4	149.9
75°	179.1	166.6	158.2	145.8	141.6	137.4	124.9	116.6	104.2	91.6	83.3
77.5°	120.8	112.5	104.2	91.6	83.3	83.3	70.8	62.5	54.1	41.6	37.5
80°	75.0	66.7	58.2	49.9	49.9	41.6	37.5	29.2	20.9	16.6	12.5
82.5°	41.6	37.5	33.3	25.0	25.0	20.9	16.6	12.5	8.3	4.2	4.2
85°	20.9	16.6	12.5	12.5	8.3	8.3	8.3	4.2	4.2	0.0	0.0
87.5°	8.3	4.2	4.2	4.2	4.2	4.2	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1
2.5°	3110.8	3110.8	3106.7	3106.7	3106.7	3102.5	3106.7	3102.5	3102.5	3102.5	3106.7
5°	3094.2	3085.8	3085.8	3081.7	3081.7	3077.5	3081.7	3077.5	3073.3	3069.2	3073.3
7.5°	3060.9	3052.5	3048.3	3044.2	3044.2	3044.2	3040.0	3035.9	3040.0	3027.6	3035.9
10°	3015.1	3010.8	3002.5	2998.4	2994.2	2998.4	2994.2	2985.9	2985.9	2985.9	2981.8
12.5°	2956.7	2948.4	2944.3	2940.1	2931.7	2931.7	2936.0	2927.6	2927.6	2919.3	2919.3
15°	2885.9	2877.6	2869.3	2869.3	2861.0	2861.0	2856.9	2856.9	2852.6	2848.4	2848.4
17.5°	2798.5	2786.0	2777.6	2781.9	2777.6	2773.5	2773.5	2765.2	2761.0	2765.2	2765.2
20°	2694.3	2686.0	2677.7	2681.9	2673.6	2669.4	2673.6	2661.1	2665.3	2665.3	2665.3
22.5°	2577.7	2573.6	2561.1	2561.1	2552.8	2548.7	2552.8	2552.8	2557.0	2552.8	2552.8
25°	2448.7	2440.4	2432.1	2432.1	2427.9	2423.8	2427.9	2432.1	2427.9	2432.1	2432.1
27.5°	2311.3	2298.7	2298.7	2290.4	2290.4	2294.6	2290.4	2294.6	2298.7	2298.7	2307.1
30°	2161.4	2157.2	2153.1	2148.9	2148.9	2153.1	2153.1	2153.1	2157.2	2165.5	2165.5
32.5°	2019.7	2011.4	2003.1	2003.1	2011.4	2007.3	2011.4	2011.4	2019.7	2019.7	2028.0
35°	1865.6	1865.6	1857.3	1861.5	1861.5	1861.5	1861.5	1869.8	1878.2	1882.3	1890.7
37.5°	1724.1	1711.5	1715.8	1715.8	1720.0	1715.8	1728.3	1728.3	1736.6	1736.6	1744.9
40°	1570.0	1570.0	1574.2	1570.0	1574.2	1574.2	1582.5	1590.8	1594.9	1603.3	1607.5
42.5°	1424.2	1432.5	1424.2	1428.4	1432.5	1436.7	1440.9	1445.1	1461.7	1470.0	1482.6
45°	1291.0	1295.2	1299.3	1303.5	1299.3	1307.6	1311.8	1320.2	1332.6	1336.8	1340.9
47.5°	1161.8	1166.1	1170.2	1174.4	1174.4	1182.7	1186.8	1195.2	1203.6	1207.7	1211.9
50°	1036.9	1045.3	1049.5	1049.5	1053.6	1061.9	1070.2	1070.2	1078.5	1091.1	1095.3
52.5°	924.5	924.5	932.9	937.0	941.2	941.2	953.6	957.8	961.9	970.4	978.7
55°	799.5	812.1	816.3	816.3	824.6	832.9	837.0	841.2	841.2	857.9	857.9
57.5°	691.3	695.5	703.8	703.8	703.8	716.3	716.3	724.6	728.7	733.0	741.3
60°	583.0	591.3	591.3	595.5	591.3	599.7	603.8	612.2	616.4	620.5	624.7
62.5°	483.0	483.0	487.2	487.2	487.2	487.2	495.6	495.6	503.9	508.1	512.2
65°	387.3	387.3	387.3	387.3	387.3	387.3	387.3	387.3	391.5	391.5	399.8
67.5°	299.9	295.7	287.3	291.5	287.3	287.3	283.2	283.2	287.3	287.3	295.7
70°	216.5	212.3	204.0	204.0	199.9	195.7	191.6	187.4	183.3	183.3	183.3
72.5°	141.6	133.2	120.8	116.6	116.6	108.3	100.0	95.7	95.7	95.7	95.7
75°	70.8	62.5	54.1	49.9	49.9	41.6	45.8	41.6	41.6	41.6	41.6
77.5°	29.2	20.9	16.6	16.6	16.6	12.5	12.5	12.5	12.5	12.5	12.5
80°	8.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
82.5°	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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	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: P585092

CATALOG NUMBER: HC860D010-HM86080835-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1	3119.1
2.5°	3102.5	3102.5	3094.2	3098.4	3098.4	3098.4	3098.4	3098.4
5°	3065.0	3069.2	3065.0	3069.2	3069.2	3065.0	3065.0	3065.0
7.5°	3027.6	3031.7	3027.6	3031.7	3031.7	3031.7	3027.6	3027.6
10°	2981.8	2981.8	2981.8	2981.8	2981.8	2977.6	2981.8	2981.8
12.5°	2919.3	2919.3	2919.3	2923.4	2923.4	2919.3	2919.3	2915.1
15°	2852.6	2844.3	2848.4	2852.6	2848.4	2848.4	2848.4	2848.4
17.5°	2761.0	2765.2	2761.0	2761.0	2761.0	2761.0	2765.2	2761.0
20°	2665.3	2665.3	2669.4	2665.3	2665.3	2665.3	2665.3	2661.1
22.5°	2557.0	2552.8	2552.8	2557.0	2557.0	2552.8	2557.0	2557.0
25°	2436.2	2440.4	2436.2	2436.2	2440.4	2440.4	2440.4	2436.2
27.5°	2307.1	2311.3	2315.5	2311.3	2311.3	2311.3	2315.5	2319.6
30°	2173.8	2182.1	2173.8	2173.8	2182.1	2178.0	2182.1	2182.1
32.5°	2032.3	2044.7	2036.4	2044.7	2044.7	2048.9	2044.7	2048.9
35°	1890.7	1903.1	1903.1	1903.1	1907.3	1911.5	1911.5	1907.3
37.5°	1757.4	1761.6	1761.6	1769.9	1774.0	1778.2	1778.2	1774.0
40°	1620.0	1628.3	1632.4	1632.4	1632.4	1640.8	1649.1	1640.8
42.5°	1486.7	1490.9	1495.0	1495.0	1503.3	1507.5	1511.6	1511.6
45°	1357.6	1366.0	1370.1	1374.3	1378.4	1386.7	1382.6	1390.9
47.5°	1224.3	1236.8	1240.9	1245.2	1253.5	1257.7	1261.8	1266.0
50°	1103.6	1111.9	1111.9	1120.2	1132.8	1132.8	1141.1	1145.2
52.5°	982.8	987.0	991.1	995.3	1003.6	1012.0	1012.0	1020.3
55°	866.2	870.4	870.4	874.5	878.7	895.4	899.5	899.5
57.5°	745.4	745.4	753.7	757.9	762.1	770.5	770.5	770.5
60°	628.8	633.0	633.0	637.1	641.3	649.6	653.9	649.6
62.5°	512.2	516.4	516.4	520.5	528.8	533.1	528.8	528.8
65°	403.9	408.1	408.1	412.2	420.6	420.6	416.5	420.6
67.5°	295.7	295.7	295.7	295.7	295.7	295.7	295.7	295.7
70°	187.4	183.3	179.1	183.3	183.3	183.3	179.1	187.4
72.5°	91.6	95.7	95.7	95.7	95.7	95.7	95.7	91.6
75°	41.6	41.6	37.5	37.5	37.5	41.6	41.6	37.5
77.5°	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
80°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	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



Report Generated By 670245859 / DESKTOP-HRDQ47P





— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)