

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: P585177

Luminaire Tested: **HC860D010-HM86080940-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585177  
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-HM86080940-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5425.7 lumens  
Efficiency: N/A  
Efficacy: 96.9 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

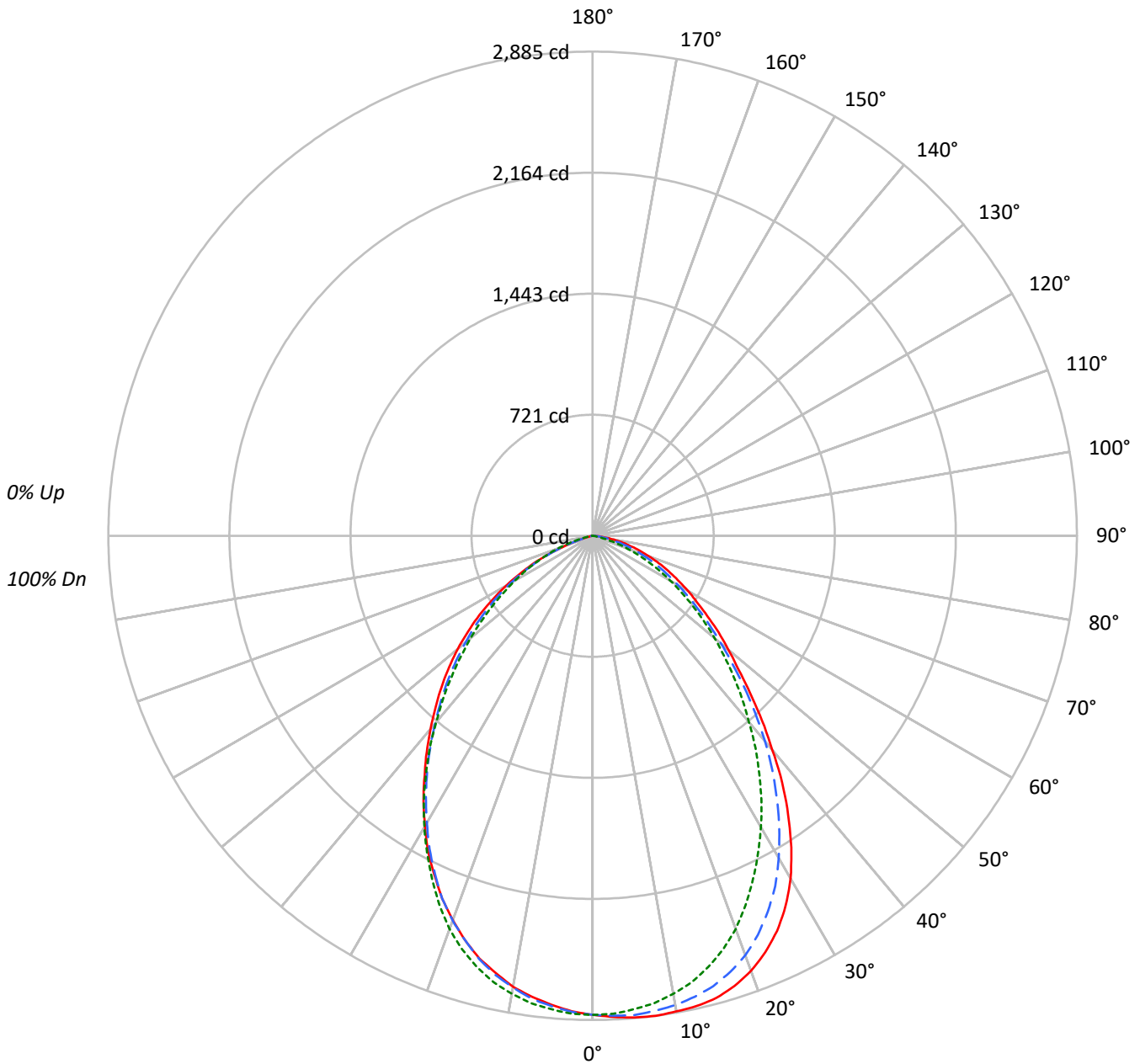
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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	85	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°	88032	88032	88032
5°	89191	87659	86832
10°	90103	86762	85454
15°	91016	84931	83226
20°	90554	81799	79922
25°	88442	76901	75867
30°	84007	71384	71114
35°	76474	65140	65715
40°	67047	58300	60449
45°	57843	51860	55514
50°	50650	45526	50285
55°	44875	39138	44262
60°	40433	32909	36671
65°	36431	26421	28092
70°	31952	19249	15462
75°	27248	9996	4087
80°	20972	2699	675
85°	13480	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	269.3	5.0
10°-20°	757.2	14.0
20°-30°	1074.7	19.8
30°-40°	1131.3	20.9
40°-50°	962.4	17.7
50°-60°	695.5	12.8
60°-70°	395.6	7.3
70°-80°	124.6	2.3
80°-90°	15.1	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°	2101.2	38.7
0°-40°	3232.5	59.6
0°-60°	4890.4	90.1
0°-90°	5425.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5425.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2855	2855	2855	2855	2855	
5°	2881	2866	2832	2813	2805	275
15°	2851	2778	2660	2611	2607	803
25°	2599	2470	2260	2222	2230	1191
35°	2032	1913	1730	1719	1746	1264
45°	1326	1277	1189	1220	1273	1031
55°	835	774	728	770	823	753
65°	499	431	362	358	385	495
75°	229	175	84	38	34	246
85°	38	23	0	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°	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8
2.5°	2870.0	2873.8	2866.2	2866.2	2873.8	2866.2	2870.0	2870.0	2866.2	2866.2	2862.4
5°	2881.4	2877.6	2877.6	2877.6	2881.4	2873.8	2870.0	2873.8	2866.2	2866.2	2866.2
7.5°	2885.2	2885.2	2881.4	2877.6	2877.6	2877.6	2873.8	2870.0	2866.2	2858.6	2854.8
10°	2877.6	2877.6	2881.4	2873.8	2873.8	2866.2	2866.2	2858.6	2858.6	2851.0	2839.6
12.5°	2870.0	2866.2	2866.2	2858.6	2858.6	2851.0	2851.0	2839.6	2835.7	2824.3	2812.9
15°	2851.0	2847.2	2839.6	2835.7	2831.9	2828.1	2820.5	2816.7	2805.2	2790.0	2778.5
17.5°	2812.9	2809.1	2805.2	2797.6	2790.0	2786.2	2782.3	2770.9	2755.7	2744.3	2725.3
20°	2759.5	2755.7	2755.7	2744.3	2740.5	2729.1	2725.3	2709.9	2698.5	2675.7	2660.4
22.5°	2687.1	2690.9	2683.3	2675.7	2668.0	2656.6	2649.0	2633.7	2614.6	2591.8	2572.8
25°	2599.4	2603.2	2595.6	2588.0	2576.6	2569.0	2561.4	2538.4	2519.4	2492.7	2469.8
27.5°	2488.9	2488.9	2488.9	2481.3	2462.2	2458.4	2450.7	2427.9	2401.3	2378.3	2355.5
30°	2359.3	2355.5	2355.5	2344.1	2336.4	2321.2	2309.8	2290.7	2271.6	2245.0	2218.2
32.5°	2203.0	2206.8	2195.4	2187.8	2176.4	2176.4	2161.1	2145.9	2122.9	2096.3	2069.7
35°	2031.5	2035.3	2027.7	2023.9	2004.8	2001.0	1997.2	1978.2	1962.9	1943.8	1913.4
37.5°	1856.2	1852.4	1848.6	1848.6	1837.1	1829.5	1821.9	1810.5	1787.5	1772.3	1757.1
40°	1665.6	1665.6	1665.6	1661.8	1658.0	1650.4	1646.6	1639.0	1623.6	1608.4	1597.0
42.5°	1494.1	1494.1	1490.3	1486.5	1478.9	1482.7	1475.1	1467.5	1452.1	1440.7	1433.1
45°	1326.4	1326.4	1326.4	1330.2	1322.6	1311.2	1311.2	1303.6	1295.8	1288.2	1276.8
47.5°	1177.7	1189.2	1181.5	1177.7	1181.5	1166.3	1166.3	1158.7	1151.1	1143.5	1128.1
50°	1055.8	1055.8	1055.8	1048.2	1044.3	1044.3	1032.9	1025.3	1021.5	1013.8	998.6
52.5°	945.2	937.6	937.6	933.8	930.0	922.4	922.4	914.8	899.5	891.9	880.5
55°	834.7	834.7	830.9	827.1	823.3	819.5	815.7	804.3	796.7	785.1	773.7
57.5°	735.6	743.3	739.4	731.8	724.2	724.2	716.6	708.9	697.5	686.0	674.6
60°	655.6	651.8	651.8	648.0	640.4	636.6	632.8	621.2	609.8	598.4	587.0
62.5°	571.7	571.7	571.7	564.1	556.5	552.7	548.9	541.2	526.0	514.5	506.9
65°	499.3	495.5	491.7	487.9	484.1	476.5	472.7	465.1	453.5	442.1	430.7
67.5°	426.9	423.1	423.1	419.3	407.8	404.0	404.0	392.6	381.2	369.7	358.2
70°	354.4	354.4	354.4	346.8	343.0	339.2	335.4	327.8	316.4	305.0	293.5
72.5°	293.5	289.6	289.6	285.8	274.4	270.6	266.8	259.2	247.8	240.1	232.5
75°	228.7	228.7	224.9	221.1	217.3	213.5	209.7	202.0	190.5	179.1	175.3
77.5°	175.3	171.5	171.5	167.7	160.1	156.3	156.3	148.7	137.3	129.6	121.9
80°	118.1	121.9	118.1	114.3	110.5	106.7	102.9	99.1	91.5	83.9	76.2
82.5°	72.4	76.2	72.4	72.4	68.6	64.8	64.8	57.2	53.4	49.6	45.8
85°	38.1	38.1	38.1	38.1	34.3	34.3	34.3	30.4	26.6	22.8	22.8
87.5°	11.4	15.2	11.4	11.4	11.4	11.4	11.4	11.4	7.6	7.6	7.6
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°	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8
2.5°	2866.2	2862.4	2858.6	2858.6	2858.6	2858.6	2858.6	2854.8	2851.0	2851.0	2851.0
5°	2858.6	2858.6	2858.6	2854.8	2851.0	2851.0	2843.4	2839.6	2835.7	2831.9	2828.1
7.5°	2851.0	2843.4	2839.6	2835.7	2831.9	2831.9	2824.3	2816.7	2816.7	2809.1	2801.4
10°	2828.1	2824.3	2816.7	2809.1	2805.2	2801.4	2793.8	2782.3	2778.5	2770.9	2763.3
12.5°	2801.4	2793.8	2786.2	2770.9	2767.1	2763.3	2748.1	2736.7	2729.1	2725.3	2706.1
15°	2767.1	2751.9	2740.5	2721.3	2717.5	2709.9	2698.5	2687.1	2671.9	2660.4	2652.8
17.5°	2706.1	2690.9	2671.9	2652.8	2645.2	2645.2	2626.1	2610.8	2591.8	2584.2	2569.0
20°	2633.7	2614.6	2599.4	2576.6	2565.2	2553.6	2542.2	2519.4	2504.1	2492.7	2473.7
22.5°	2549.8	2523.2	2504.1	2481.3	2462.2	2450.7	2431.7	2412.7	2393.7	2382.1	2366.9
25°	2443.1	2420.3	2389.8	2366.9	2355.5	2340.2	2317.4	2298.3	2279.2	2260.2	2252.6
27.5°	2325.0	2294.5	2267.8	2241.2	2229.8	2218.2	2191.6	2168.7	2153.5	2134.4	2126.8
30°	2195.4	2164.9	2134.4	2111.5	2100.1	2081.1	2065.9	2039.1	2020.1	2004.8	1985.8
32.5°	2046.7	2023.9	1997.2	1962.9	1955.2	1940.0	1917.2	1905.8	1882.8	1871.4	1856.2
35°	1886.7	1871.4	1844.7	1818.1	1806.7	1799.0	1779.9	1757.1	1741.9	1730.4	1722.8
37.5°	1734.3	1715.1	1688.5	1669.4	1661.8	1650.4	1627.4	1616.0	1600.8	1593.2	1578.0
40°	1570.4	1551.3	1532.2	1520.8	1509.3	1501.7	1486.5	1475.1	1459.7	1448.3	1444.5
42.5°	1410.3	1398.8	1383.6	1368.3	1364.5	1353.1	1345.4	1334.0	1322.6	1318.8	1307.4
45°	1265.4	1254.0	1238.8	1223.5	1219.7	1212.0	1208.2	1196.8	1189.2	1189.2	1189.2
47.5°	1120.5	1109.1	1093.9	1086.3	1090.1	1074.9	1074.9	1071.0	1063.4	1063.4	1067.2
50°	991.0	975.8	972.0	964.4	956.6	949.0	952.8	941.4	941.4	949.0	945.2
52.5°	869.0	853.7	849.9	842.3	838.5	838.5	834.7	834.7	830.9	834.7	834.7
55°	758.5	747.1	739.4	731.8	728.0	728.0	728.0	724.2	720.4	728.0	731.8
57.5°	659.4	655.6	648.0	636.6	632.8	628.9	625.0	625.0	625.0	625.0	628.9
60°	571.7	564.1	556.5	545.1	545.1	541.2	537.4	533.6	533.6	533.6	533.6
62.5°	495.5	484.1	472.7	465.1	461.2	457.3	453.5	445.9	445.9	445.9	445.9
65°	419.3	407.8	400.2	392.6	385.0	385.0	377.4	373.5	365.9	362.1	354.4
67.5°	346.8	339.2	331.6	320.2	316.4	312.6	305.0	301.2	289.6	285.8	282.0
70°	282.0	270.6	263.0	255.4	251.6	243.9	236.3	228.7	221.1	213.5	205.8
72.5°	221.1	209.7	202.0	194.3	186.7	186.7	175.3	167.7	156.3	148.7	137.3
75°	163.9	152.5	144.9	133.4	129.6	125.8	114.3	106.7	95.3	83.9	76.2
77.5°	110.5	102.9	95.3	83.9	76.2	76.2	64.8	57.2	49.6	38.1	34.3
80°	68.6	61.0	53.4	45.8	45.8	38.1	34.3	26.6	19.0	15.2	11.4
82.5°	38.1	34.3	30.4	22.8	22.8	19.0	15.2	11.4	7.6	3.8	3.8
85°	19.0	15.2	11.4	11.4	7.6	7.6	7.6	3.8	3.8	0.0	0.0
87.5°	7.6	3.8	3.8	3.8	3.8	3.8	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°	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8
2.5°	2847.2	2847.2	2843.4	2843.4	2843.4	2839.6	2843.4	2839.6	2839.6	2839.6	2843.4
5°	2831.9	2824.3	2824.3	2820.5	2820.5	2816.7	2820.5	2816.7	2812.9	2809.1	2812.9
7.5°	2801.4	2793.8	2790.0	2786.2	2786.2	2786.2	2782.3	2778.5	2782.3	2770.9	2778.5
10°	2759.5	2755.7	2748.1	2744.3	2740.5	2744.3	2740.5	2732.9	2732.9	2732.9	2729.1
12.5°	2706.1	2698.5	2694.7	2690.9	2683.3	2683.3	2687.1	2679.5	2679.5	2671.9	2671.9
15°	2641.4	2633.7	2626.1	2626.1	2618.4	2618.4	2614.6	2614.6	2610.8	2607.0	2607.0
17.5°	2561.4	2549.8	2542.2	2546.0	2542.2	2538.4	2538.4	2530.8	2527.0	2530.8	2530.8
20°	2466.0	2458.4	2450.7	2454.6	2446.9	2443.1	2446.9	2435.5	2439.3	2439.3	2439.3
22.5°	2359.3	2355.5	2344.1	2344.1	2336.4	2332.6	2336.4	2336.4	2340.2	2336.4	2336.4
25°	2241.2	2233.6	2225.9	2225.9	2222.1	2218.2	2222.1	2225.9	2222.1	2225.9	2225.9
27.5°	2115.3	2103.9	2103.9	2096.3	2096.3	2100.1	2096.3	2100.1	2103.9	2103.9	2111.5
30°	1978.2	1974.4	1970.6	1966.7	1966.7	1970.6	1970.6	1970.6	1974.4	1982.0	1982.0
32.5°	1848.6	1840.9	1833.3	1833.3	1840.9	1837.1	1840.9	1840.9	1848.6	1848.6	1856.2
35°	1707.5	1707.5	1699.9	1703.7	1703.7	1703.7	1703.7	1711.3	1719.0	1722.8	1730.4
37.5°	1578.0	1566.5	1570.4	1570.4	1574.2	1570.4	1581.8	1581.8	1589.4	1589.4	1597.0
40°	1436.9	1436.9	1440.7	1436.9	1440.7	1440.7	1448.3	1455.9	1459.7	1467.5	1471.3
42.5°	1303.6	1311.2	1303.6	1307.4	1311.2	1315.0	1318.8	1322.6	1337.8	1345.4	1356.9
45°	1181.5	1185.3	1189.2	1193.0	1189.2	1196.8	1200.6	1208.2	1219.7	1223.5	1227.3
47.5°	1063.4	1067.2	1071.0	1074.9	1074.9	1082.5	1086.3	1093.9	1101.5	1105.3	1109.1
50°	949.0	956.6	960.4	960.4	964.4	972.0	979.6	979.6	987.2	998.6	1002.4
52.5°	846.1	846.1	853.7	857.6	861.4	861.4	872.8	876.6	880.5	888.1	895.7
55°	731.8	743.3	747.1	747.1	754.7	762.3	766.1	769.9	769.9	785.1	785.1
57.5°	632.8	636.6	644.2	644.2	644.2	655.6	655.6	663.2	667.0	670.8	678.4
60°	533.6	541.2	541.2	545.1	541.2	548.9	552.7	560.3	564.1	567.9	571.7
62.5°	442.1	442.1	445.9	445.9	445.9	445.9	453.5	453.5	461.2	465.1	468.9
65°	354.4	354.4	354.4	354.4	354.4	354.4	354.4	354.4	358.2	358.2	365.9
67.5°	274.4	270.6	263.0	266.8	263.0	263.0	259.2	259.2	263.0	263.0	270.6
70°	198.2	194.3	186.7	186.7	182.9	179.1	175.3	171.5	167.7	167.7	167.7
72.5°	129.6	121.9	110.5	106.7	106.7	99.1	91.5	87.7	87.7	87.7	87.7
75°	64.8	57.2	49.6	45.8	45.8	38.1	42.0	38.1	38.1	38.1	38.1
77.5°	26.6	19.0	15.2	15.2	15.2	11.4	11.4	11.4	11.4	11.4	11.4
80°	7.6	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
82.5°	3.8	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: P585177

CATALOG NUMBER: HC860D010-HM86080940-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8	2854.8
2.5°	2839.6	2839.6	2831.9	2835.7	2835.7	2835.7	2835.7	2835.7
5°	2805.2	2809.1	2805.2	2809.1	2809.1	2805.2	2805.2	2805.2
7.5°	2770.9	2774.7	2770.9	2774.7	2774.7	2774.7	2770.9	2770.9
10°	2729.1	2729.1	2729.1	2729.1	2729.1	2725.3	2729.1	2729.1
12.5°	2671.9	2671.9	2671.9	2675.7	2675.7	2671.9	2671.9	2668.0
15°	2610.8	2603.2	2607.0	2610.8	2607.0	2607.0	2607.0	2607.0
17.5°	2527.0	2530.8	2527.0	2527.0	2527.0	2527.0	2530.8	2527.0
20°	2439.3	2439.3	2443.1	2439.3	2439.3	2439.3	2439.3	2435.5
22.5°	2340.2	2336.4	2336.4	2340.2	2340.2	2336.4	2340.2	2340.2
25°	2229.8	2233.6	2229.8	2229.8	2233.6	2233.6	2233.6	2229.8
27.5°	2111.5	2115.3	2119.1	2115.3	2115.3	2115.3	2119.1	2122.9
30°	1989.6	1997.2	1989.6	1989.6	1997.2	1993.4	1997.2	1997.2
32.5°	1860.0	1871.4	1863.8	1871.4	1871.4	1875.2	1871.4	1875.2
35°	1730.4	1741.9	1741.9	1741.9	1745.7	1749.5	1749.5	1745.7
37.5°	1608.4	1612.2	1612.2	1619.8	1623.6	1627.4	1627.4	1623.6
40°	1482.7	1490.3	1494.1	1494.1	1494.1	1501.7	1509.3	1501.7
42.5°	1360.7	1364.5	1368.3	1368.3	1375.9	1379.7	1383.6	1383.6
45°	1242.6	1250.2	1254.0	1257.8	1261.6	1269.2	1265.4	1273.0
47.5°	1120.5	1132.1	1135.9	1139.7	1147.3	1151.1	1154.9	1158.7
50°	1010.0	1017.6	1017.6	1025.3	1036.7	1036.7	1044.3	1048.2
52.5°	899.5	903.3	907.1	911.0	918.6	926.2	926.2	933.8
55°	792.7	796.7	796.7	800.5	804.3	819.5	823.3	823.3
57.5°	682.2	682.2	689.8	693.7	697.5	705.1	705.1	705.1
60°	575.5	579.4	579.4	583.2	587.0	594.6	598.4	594.6
62.5°	468.9	472.7	472.7	476.5	484.1	487.9	484.1	484.1
65°	369.7	373.5	373.5	377.4	385.0	385.0	381.2	385.0
67.5°	270.6	270.6	270.6	270.6	270.6	270.6	270.6	270.6
70°	171.5	167.7	163.9	167.7	167.7	167.7	163.9	171.5
72.5°	83.9	87.7	87.7	87.7	87.7	87.7	87.7	83.9
75°	38.1	38.1	34.3	34.3	34.3	38.1	38.1	34.3
77.5°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
80°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
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)