

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: P593919

Luminaire Tested: **HC880D010-HM86080950-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593919  
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: HC880D010-HM86080950-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6480.9 lumens  
Efficiency: N/A  
Efficacy: 92.6 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

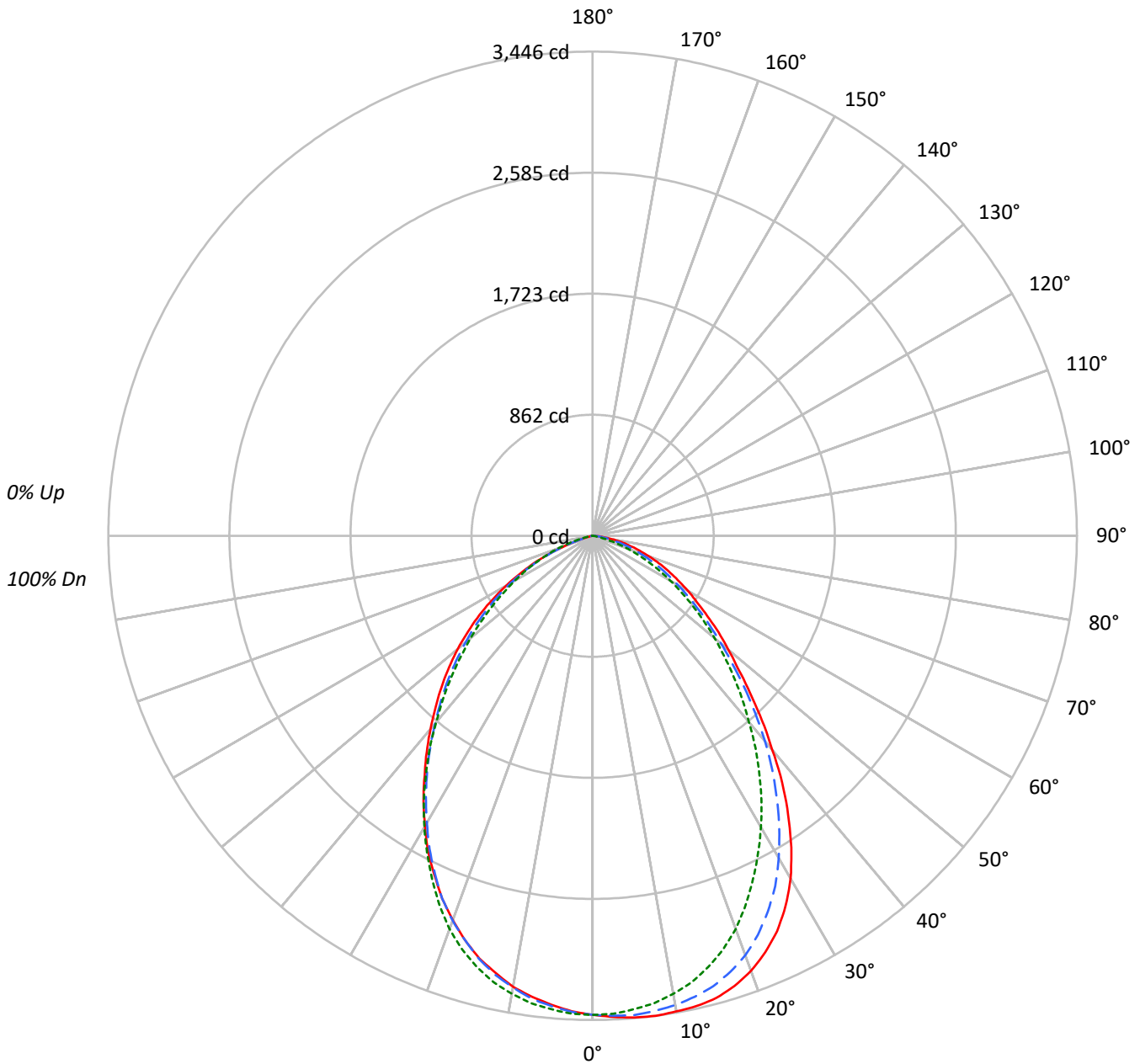
Input Watts (W): 70  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88			88
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	84	82	79	77			77
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67			67
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59			59
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32			32

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

	0°	90°	180°
0°	105155	105155	105155
5°	106541	104708	103721
10°	107629	103637	102071
15°	108714	101448	99415
20°	108163	97708	95466
25°	105645	91855	90620
30°	100347	85271	84943
35°	91347	77811	78492
40°	80089	69639	72204
45°	69090	61947	66312
50°	60498	54382	60062
55°	53606	46746	52869
60°	48296	39310	43800
65°	43516	31565	33549
70°	38173	22982	18474
75°	32538	11926	4885
80°	25056	3232	799
85°	16098	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	321.7	5.0
10°-20°	904.4	14.0
20°-30°	1283.7	19.8
30°-40°	1351.3	20.9
40°-50°	1149.6	17.7
50°-60°	830.7	12.8
60°-70°	472.5	7.3
70°-80°	148.9	2.3
80°-90°	18.1	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°	2509.9	38.7
0°-40°	3861.2	59.6
0°-60°	5841.5	90.1
0°-90°	6480.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6480.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3410	3410	3410	3410	3410	
5°	3442	3424	3383	3360	3351	328
15°	3405	3319	3178	3119	3114	959
25°	3105	2950	2700	2654	2663	1422
35°	2427	2286	2067	2053	2085	1510
45°	1584	1525	1420	1457	1521	1232
55°	997	924	870	920	983	899
65°	596	514	433	428	460	592
75°	273	209	100	46	41	294
85°	46	27	0	0	0	59
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°	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1
2.5°	3428.2	3432.8	3423.6	3423.6	3432.8	3423.6	3428.2	3428.2	3423.6	3423.6	3419.1
5°	3441.9	3437.3	3437.3	3437.3	3441.9	3432.8	3428.2	3432.8	3423.6	3423.6	3423.6
7.5°	3446.4	3446.4	3441.9	3437.3	3437.3	3437.3	3432.8	3428.2	3423.6	3414.6	3410.1
10°	3437.3	3437.3	3441.9	3432.8	3432.8	3423.6	3423.6	3414.6	3414.6	3405.4	3391.7
12.5°	3428.2	3423.6	3423.6	3414.6	3414.6	3405.4	3405.4	3391.7	3387.2	3373.5	3359.9
15°	3405.4	3400.9	3391.7	3387.2	3382.7	3378.2	3369.0	3364.5	3350.8	3332.6	3319.0
17.5°	3359.9	3355.4	3350.8	3341.7	3332.6	3328.0	3323.5	3309.8	3291.6	3278.0	3255.2
20°	3296.1	3291.6	3291.6	3278.0	3273.4	3259.8	3255.2	3237.1	3223.4	3196.0	3177.8
22.5°	3209.7	3214.2	3205.2	3196.0	3186.9	3173.3	3164.2	3146.0	3123.1	3095.9	3073.1
25°	3105.0	3109.5	3100.4	3091.3	3077.6	3068.6	3059.4	3032.2	3009.4	2977.5	2950.1
27.5°	2973.0	2973.0	2973.0	2963.8	2941.1	2936.5	2927.4	2900.1	2868.2	2840.9	2813.6
30°	2818.2	2813.6	2813.6	2800.0	2790.8	2772.6	2759.0	2736.2	2713.4	2681.6	2649.7
32.5°	2631.5	2636.0	2622.3	2613.3	2599.6	2599.6	2581.4	2563.2	2535.9	2504.0	2472.2
35°	2426.6	2431.1	2422.1	2417.5	2394.8	2390.2	2385.6	2362.9	2344.7	2321.9	2285.5
37.5°	2217.1	2212.6	2208.1	2208.1	2194.4	2185.3	2176.2	2162.6	2135.2	2117.0	2098.8
40°	1989.6	1989.6	1989.6	1985.0	1980.4	1971.4	1966.8	1957.7	1939.5	1921.3	1907.6
42.5°	1784.7	1784.7	1780.2	1775.5	1766.5	1771.0	1761.9	1752.8	1734.6	1721.0	1711.8
45°	1584.3	1584.3	1584.3	1588.9	1579.8	1566.2	1566.2	1557.0	1548.0	1538.8	1525.1
47.5°	1406.8	1420.5	1411.3	1406.8	1411.3	1393.2	1393.2	1384.0	1375.0	1365.8	1347.6
50°	1261.1	1261.1	1261.1	1252.0	1247.5	1247.5	1233.8	1224.7	1220.2	1211.0	1192.8
52.5°	1129.1	1119.9	1119.9	1115.4	1110.9	1101.7	1101.7	1092.7	1074.5	1065.3	1051.7
55°	997.1	997.1	992.5	987.9	983.4	978.8	974.3	960.6	951.6	937.9	924.2
57.5°	878.7	887.8	883.2	874.2	865.0	865.0	856.0	846.8	833.1	819.5	805.8
60°	783.1	778.6	778.6	773.9	764.9	760.4	755.7	742.1	728.4	714.8	701.2
62.5°	683.0	683.0	683.0	673.8	664.7	660.1	655.6	646.5	628.3	614.6	605.6
65°	596.4	591.9	587.2	582.7	578.2	569.1	564.5	555.4	541.8	528.2	514.5
67.5°	510.0	505.3	505.3	500.8	487.1	482.6	482.6	468.9	455.3	441.6	427.9
70°	423.4	423.4	423.4	414.2	409.7	405.2	400.7	391.5	377.9	364.2	350.5
72.5°	350.5	346.0	346.0	341.5	327.8	323.3	318.7	309.6	295.9	286.8	277.8
75°	273.1	273.1	268.6	264.1	259.6	254.9	250.4	241.2	227.7	214.0	209.4
77.5°	209.4	204.9	204.9	200.3	191.2	186.7	186.7	177.5	163.8	154.8	145.7
80°	141.1	145.7	141.1	136.6	132.0	127.5	122.9	118.4	109.3	100.1	91.1
82.5°	86.6	91.1	86.6	86.6	81.9	77.4	77.4	68.2	63.7	59.2	54.6
85°	45.5	45.5	45.5	45.5	41.0	41.0	41.0	36.4	31.9	27.3	27.3
87.5°	13.7	18.2	13.7	13.7	13.7	13.7	13.7	13.7	9.2	9.2	9.2
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°	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1
2.5°	3423.6	3419.1	3414.6	3414.6	3414.6	3414.6	3414.6	3410.1	3405.4	3405.4	3405.4
5°	3414.6	3414.6	3414.6	3410.1	3405.4	3405.4	3396.4	3391.7	3387.2	3382.7	3378.2
7.5°	3405.4	3396.4	3391.7	3387.2	3382.7	3382.7	3373.5	3364.5	3364.5	3355.4	3346.3
10°	3378.2	3373.5	3364.5	3355.4	3350.8	3346.3	3337.2	3323.5	3319.0	3309.8	3300.8
12.5°	3346.3	3337.2	3328.0	3309.8	3305.3	3300.8	3282.5	3268.9	3259.8	3255.2	3232.4
15°	3305.3	3287.1	3273.4	3250.6	3246.1	3237.1	3223.4	3209.7	3191.5	3177.8	3168.7
17.5°	3232.4	3214.2	3191.5	3168.7	3159.6	3159.6	3136.8	3118.6	3095.9	3086.8	3068.6
20°	3146.0	3123.1	3105.0	3077.6	3064.1	3050.4	3036.7	3009.4	2991.2	2977.5	2954.8
22.5°	3045.7	3013.9	2991.2	2963.8	2941.1	2927.4	2904.6	2881.9	2859.1	2845.5	2827.2
25°	2918.3	2890.9	2854.6	2827.2	2813.6	2795.3	2768.1	2745.3	2722.6	2699.7	2690.7
27.5°	2777.1	2740.8	2708.9	2677.0	2663.4	2649.7	2617.8	2590.5	2572.3	2549.6	2540.4
30°	2622.3	2586.0	2549.6	2522.2	2508.6	2485.8	2467.5	2435.7	2413.0	2394.8	2371.9
32.5°	2444.8	2417.5	2385.6	2344.7	2335.6	2317.4	2290.0	2276.3	2249.1	2235.4	2217.1
35°	2253.6	2235.4	2203.6	2171.7	2158.0	2148.9	2126.2	2098.8	2080.6	2067.0	2057.8
37.5°	2071.5	2048.8	2016.9	1994.1	1985.0	1971.4	1944.0	1930.3	1912.1	1903.0	1884.8
40°	1875.8	1852.9	1830.2	1816.6	1802.9	1793.7	1775.5	1761.9	1743.7	1730.0	1725.5
42.5°	1684.6	1670.9	1652.6	1634.4	1629.9	1616.2	1607.2	1593.5	1579.8	1575.3	1561.6
45°	1511.5	1497.9	1479.6	1461.4	1456.9	1447.7	1443.2	1429.5	1420.5	1420.5	1420.5
47.5°	1338.5	1324.9	1306.6	1297.6	1302.1	1283.9	1283.9	1279.4	1270.2	1270.2	1274.7
50°	1183.8	1165.5	1160.9	1151.9	1142.7	1133.6	1138.2	1124.6	1124.6	1133.6	1129.1
52.5°	1038.0	1019.8	1015.3	1006.1	1001.6	1001.6	997.1	997.1	992.5	997.1	997.1
55°	906.0	892.3	883.2	874.2	869.5	869.5	869.5	865.0	860.5	869.5	874.2
57.5°	787.6	783.1	773.9	760.4	755.7	751.2	746.7	746.7	746.7	746.7	751.2
60°	683.0	673.8	664.7	651.1	651.1	646.5	641.9	637.4	637.4	637.4	637.4
62.5°	591.9	578.2	564.5	555.4	550.9	546.3	541.8	532.7	532.7	532.7	532.7
65°	500.8	487.1	478.1	468.9	459.8	459.8	450.7	446.1	437.1	432.6	423.4
67.5°	414.2	405.2	396.1	382.4	377.9	373.3	364.2	359.7	346.0	341.5	337.0
70°	337.0	323.3	314.1	305.0	300.5	291.4	282.3	273.1	264.1	254.9	245.9
72.5°	264.1	250.4	241.2	232.2	223.1	223.1	209.4	200.3	186.7	177.5	163.8
75°	195.7	182.2	173.0	159.3	154.8	150.3	136.6	127.5	113.8	100.1	91.1
77.5°	132.0	122.9	113.8	100.1	91.1	91.1	77.4	68.2	59.2	45.5	41.0
80°	81.9	72.9	63.7	54.6	54.6	45.5	41.0	31.9	22.7	18.2	13.7
82.5°	45.5	41.0	36.4	27.3	27.3	22.7	18.2	13.7	9.2	4.5	4.5
85°	22.7	18.2	13.7	13.7	9.2	9.2	9.2	4.5	4.5	0.0	0.0
87.5°	9.2	4.5	4.5	4.5	4.5	4.5	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°	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1
2.5°	3400.9	3400.9	3396.4	3396.4	3396.4	3391.7	3396.4	3391.7	3391.7	3391.7	3396.4
5°	3382.7	3373.5	3373.5	3369.0	3369.0	3364.5	3369.0	3364.5	3359.9	3355.4	3359.9
7.5°	3346.3	3337.2	3332.6	3328.0	3328.0	3328.0	3323.5	3319.0	3323.5	3309.8	3319.0
10°	3296.1	3291.6	3282.5	3278.0	3273.4	3278.0	3273.4	3264.3	3264.3	3264.3	3259.8
12.5°	3232.4	3223.4	3218.7	3214.2	3205.2	3205.2	3209.7	3200.6	3200.6	3191.5	3191.5
15°	3155.0	3146.0	3136.8	3136.8	3127.8	3127.8	3123.1	3123.1	3118.6	3114.1	3114.1
17.5°	3059.4	3045.7	3036.7	3041.2	3036.7	3032.2	3032.2	3023.0	3018.5	3023.0	3023.0
20°	2945.6	2936.5	2927.4	2932.0	2922.9	2918.3	2922.9	2909.2	2913.8	2913.8	2913.8
22.5°	2818.2	2813.6	2800.0	2800.0	2790.8	2786.3	2790.8	2790.8	2795.3	2790.8	2790.8
25°	2677.0	2667.9	2658.8	2658.8	2654.2	2649.7	2654.2	2658.8	2654.2	2658.8	2658.8
27.5°	2526.7	2513.1	2513.1	2504.0	2504.0	2508.6	2504.0	2508.6	2513.1	2513.1	2522.2
30°	2362.9	2358.4	2353.7	2349.2	2349.2	2353.7	2353.7	2353.7	2358.4	2367.4	2367.4
32.5°	2208.1	2198.9	2189.9	2189.9	2198.9	2194.4	2198.9	2198.9	2208.1	2208.1	2217.1
35°	2039.6	2039.6	2030.6	2035.1	2035.1	2035.1	2035.1	2044.1	2053.3	2057.8	2067.0
37.5°	1884.8	1871.1	1875.8	1875.8	1880.3	1875.8	1889.4	1889.4	1898.5	1898.5	1907.6
40°	1716.4	1716.4	1721.0	1716.4	1721.0	1721.0	1730.0	1739.2	1743.7	1752.8	1757.3
42.5°	1557.0	1566.2	1557.0	1561.6	1566.2	1570.7	1575.3	1579.8	1598.0	1607.2	1620.7
45°	1411.3	1415.9	1420.5	1425.0	1420.5	1429.5	1434.2	1443.2	1456.9	1461.4	1466.0
47.5°	1270.2	1274.7	1279.4	1283.9	1283.9	1293.0	1297.6	1306.6	1315.7	1320.3	1324.9
50°	1133.6	1142.7	1147.3	1147.3	1151.9	1160.9	1170.1	1170.1	1179.1	1192.8	1197.3
52.5°	1010.8	1010.8	1019.8	1024.3	1029.0	1029.0	1042.6	1047.2	1051.7	1060.8	1069.9
55°	874.2	887.8	892.3	892.3	901.5	910.5	915.1	919.7	919.7	937.9	937.9
57.5°	755.7	760.4	769.4	769.4	769.4	783.1	783.1	792.2	796.7	801.3	810.4
60°	637.4	646.5	646.5	651.1	646.5	655.6	660.1	669.3	673.8	678.3	683.0
62.5°	528.2	528.2	532.7	532.7	532.7	532.7	541.8	541.8	550.9	555.4	560.0
65°	423.4	423.4	423.4	423.4	423.4	423.4	423.4	423.4	427.9	427.9	437.1
67.5°	327.8	323.3	314.1	318.7	314.1	314.1	309.6	309.6	314.1	314.1	323.3
70°	236.7	232.2	223.1	223.1	218.5	214.0	209.4	204.9	200.3	200.3	200.3
72.5°	154.8	145.7	132.0	127.5	127.5	118.4	109.3	104.8	104.8	104.8	104.8
75°	77.4	68.2	59.2	54.6	54.6	45.5	50.1	45.5	45.5	45.5	45.5
77.5°	31.9	22.7	18.2	18.2	18.2	13.7	13.7	13.7	13.7	13.7	13.7
80°	9.2	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
82.5°	4.5	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: P593919

CATALOG NUMBER: HC880D010-HM86080950-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1	3410.1
2.5°	3391.7	3391.7	3382.7	3387.2	3387.2	3387.2	3387.2	3387.2
5°	3350.8	3355.4	3350.8	3355.4	3355.4	3350.8	3350.8	3350.8
7.5°	3309.8	3314.5	3309.8	3314.5	3314.5	3314.5	3309.8	3309.8
10°	3259.8	3259.8	3259.8	3259.8	3259.8	3255.2	3259.8	3259.8
12.5°	3191.5	3191.5	3191.5	3196.0	3196.0	3191.5	3191.5	3186.9
15°	3118.6	3109.5	3114.1	3118.6	3114.1	3114.1	3114.1	3114.1
17.5°	3018.5	3023.0	3018.5	3018.5	3018.5	3018.5	3023.0	3018.5
20°	2913.8	2913.8	2918.3	2913.8	2913.8	2913.8	2913.8	2909.2
22.5°	2795.3	2790.8	2790.8	2795.3	2795.3	2790.8	2795.3	2795.3
25°	2663.4	2667.9	2663.4	2663.4	2667.9	2667.9	2667.9	2663.4
27.5°	2522.2	2526.7	2531.4	2526.7	2526.7	2526.7	2531.4	2535.9
30°	2376.6	2385.6	2376.6	2376.6	2385.6	2381.1	2385.6	2385.6
32.5°	2221.8	2235.4	2226.3	2235.4	2235.4	2240.0	2235.4	2240.0
35°	2067.0	2080.6	2080.6	2080.6	2085.1	2089.7	2089.7	2085.1
37.5°	1921.3	1925.8	1925.8	1934.9	1939.5	1944.0	1944.0	1939.5
40°	1771.0	1780.2	1784.7	1784.7	1784.7	1793.7	1802.9	1793.7
42.5°	1625.4	1629.9	1634.4	1634.4	1643.6	1648.1	1652.6	1652.6
45°	1484.2	1493.3	1497.9	1502.4	1506.9	1516.1	1511.5	1520.6
47.5°	1338.5	1352.1	1356.8	1361.3	1370.3	1375.0	1379.5	1384.0
50°	1206.5	1215.6	1215.6	1224.7	1238.3	1238.3	1247.5	1252.0
52.5°	1074.5	1079.0	1083.5	1088.1	1097.2	1106.4	1106.4	1115.4
55°	946.9	951.6	951.6	956.1	960.6	978.8	983.4	983.4
57.5°	814.9	814.9	824.1	828.6	833.1	842.3	842.3	842.3
60°	687.5	692.0	692.0	696.5	701.2	710.2	714.8	710.2
62.5°	560.0	564.5	564.5	569.1	578.2	582.7	578.2	578.2
65°	441.6	446.1	446.1	450.7	459.8	459.8	455.3	459.8
67.5°	323.3	323.3	323.3	323.3	323.3	323.3	323.3	323.3
70°	204.9	200.3	195.7	200.3	200.3	200.3	195.7	204.9
72.5°	100.1	104.8	104.8	104.8	104.8	104.8	104.8	100.1
75°	45.5	45.5	41.0	41.0	41.0	45.5	45.5	41.0
77.5°	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
80°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
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)