

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: P593868

Luminaire Tested: **HC860D010-HM86080850-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593868
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-HM86080850-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6208.2 lumens
Efficiency: N/A
Efficacy: 110.9 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

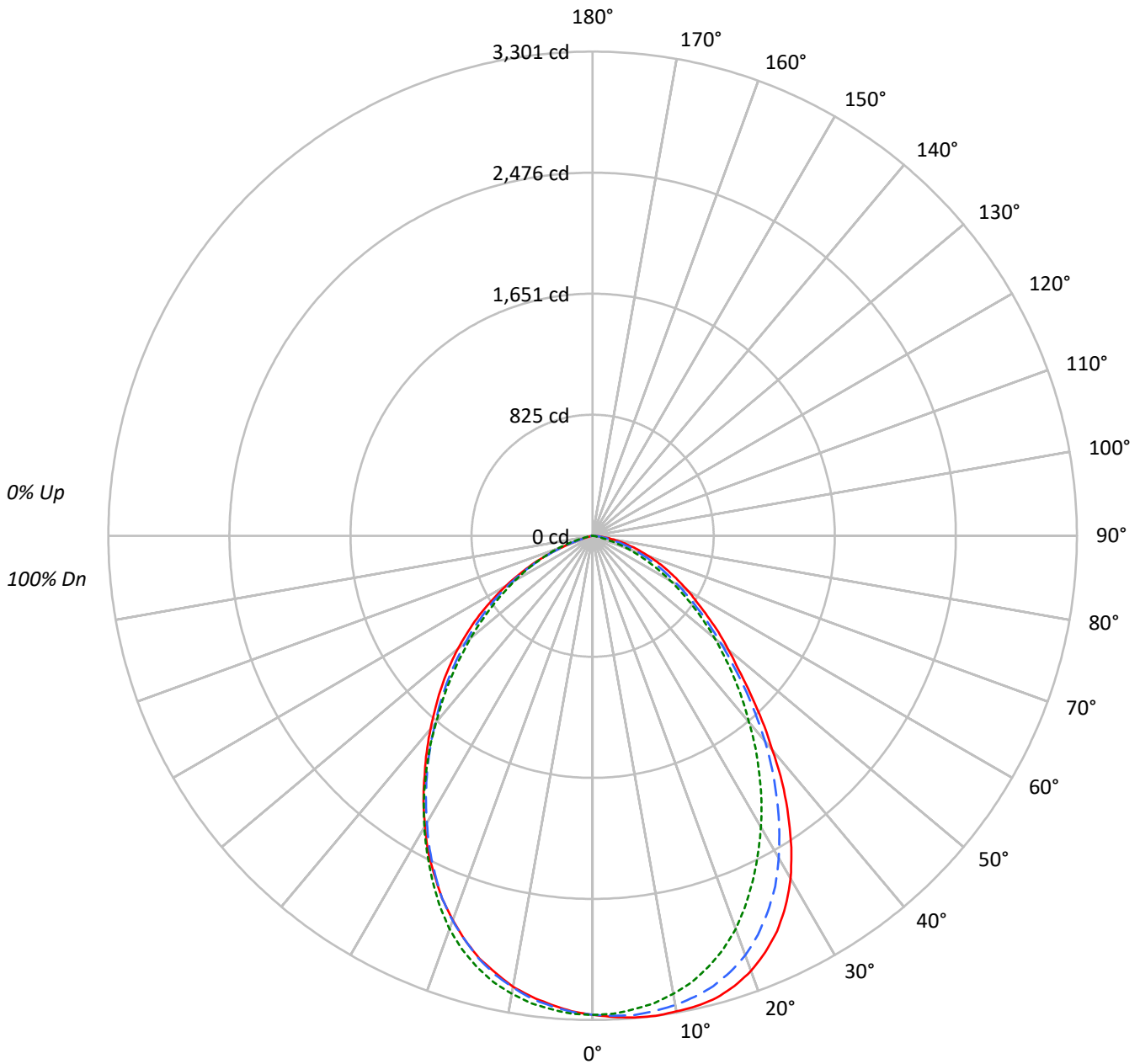
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	100727	100727	100727
5°	102059	100304	99356
10°	103101	99278	97775
15°	104143	97180	95230
20°	103614	93596	91450
25°	101198	87993	86806
30°	96120	81682	81368
35°	87508	74532	75194
40°	76720	66709	69168
45°	66181	59339	63521
50°	57956	52094	57534
55°	51348	44783	50643
60°	46267	37657	41962
65°	41685	30229	32141
70°	36560	22017	17698
75°	31180	11438	4670
80°	24009	3090	781
85°	15426	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	308.2	5.0
10°-20°	866.4	14.0
20°-30°	1229.7	19.8
30°-40°	1294.4	20.9
40°-50°	1101.2	17.7
50°-60°	795.8	12.8
60°-70°	452.6	7.3
70°-80°	142.6	2.3
80°-90°	17.3	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°	2404.3	38.7
0°-40°	3698.8	59.6
0°-60°	5595.7	90.1
0°-90°	6208.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6208.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3266	3266	3266	3266	3266	
5°	3297	3280	3240	3219	3210	315
15°	3262	3179	3044	2987	2983	919
25°	2974	2826	2586	2543	2551	1362
35°	2325	2189	1980	1967	1998	1446
45°	1518	1461	1361	1396	1457	1180
55°	955	885	833	881	942	861
65°	571	493	414	410	440	567
75°	262	201	96	44	39	282
85°	44	26	0	0	0	56
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°	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5
2.5°	3284.0	3288.3	3279.6	3279.6	3288.3	3279.6	3284.0	3284.0	3279.6	3279.6	3275.2
5°	3297.1	3292.7	3292.7	3292.7	3297.1	3288.3	3284.0	3288.3	3279.6	3279.6	3279.6
7.5°	3301.4	3301.4	3297.1	3292.7	3292.7	3292.7	3288.3	3284.0	3279.6	3270.9	3266.5
10°	3292.7	3292.7	3297.1	3288.3	3288.3	3279.6	3279.6	3270.9	3270.9	3262.2	3249.1
12.5°	3284.0	3279.6	3279.6	3270.9	3270.9	3262.2	3262.2	3249.1	3244.7	3231.6	3218.6
15°	3262.2	3257.8	3249.1	3244.7	3240.4	3236.0	3227.3	3222.9	3209.8	3192.4	3179.3
17.5°	3218.6	3214.2	3209.8	3201.1	3192.4	3188.0	3183.6	3170.6	3153.2	3140.0	3118.2
20°	3157.5	3153.2	3153.2	3140.0	3135.7	3122.6	3118.2	3100.8	3087.8	3061.6	3044.1
22.5°	3074.6	3079.0	3070.2	3061.6	3052.8	3039.8	3031.0	3013.6	2991.8	2965.6	2943.8
25°	2974.3	2978.7	2970.0	2961.2	2948.2	2939.4	2930.7	2904.5	2882.7	2852.2	2826.1
27.5°	2847.9	2847.9	2847.9	2839.1	2817.3	2812.9	2804.3	2778.1	2747.5	2721.3	2695.3
30°	2699.5	2695.3	2695.3	2682.1	2673.4	2655.9	2642.9	2621.1	2599.3	2568.7	2538.2
32.5°	2520.8	2525.1	2512.0	2503.3	2490.2	2490.2	2472.8	2455.4	2429.2	2398.6	2368.2
35°	2324.6	2328.8	2320.2	2315.8	2294.0	2289.6	2285.2	2263.4	2246.0	2224.2	2189.3
37.5°	2123.9	2119.5	2115.2	2115.2	2102.1	2093.4	2084.7	2071.5	2045.4	2027.9	2010.5
40°	1905.9	1905.9	1905.9	1901.5	1897.1	1888.3	1884.1	1875.3	1857.9	1840.4	1827.3
42.5°	1709.6	1709.6	1705.2	1700.9	1692.2	1696.5	1687.8	1679.0	1661.6	1648.6	1639.8
45°	1517.6	1517.6	1517.6	1522.0	1513.4	1500.2	1500.2	1491.6	1482.8	1474.0	1461.0
47.5°	1347.6	1360.7	1352.0	1347.6	1352.0	1334.5	1334.5	1325.8	1317.1	1308.3	1290.9
50°	1208.1	1208.1	1208.1	1199.3	1194.9	1194.9	1181.9	1173.1	1168.7	1160.1	1142.7
52.5°	1081.5	1072.9	1072.9	1068.5	1064.1	1055.4	1055.4	1046.7	1029.3	1020.5	1007.4
55°	955.1	955.1	950.7	946.4	942.0	937.6	933.3	920.2	911.5	898.4	885.3
57.5°	841.8	850.4	846.0	837.4	828.6	828.6	820.0	811.2	798.2	785.0	772.0
60°	750.2	745.8	745.8	741.4	732.6	728.4	724.0	710.8	697.8	684.7	671.6
62.5°	654.2	654.2	654.2	645.4	636.7	632.4	628.0	619.3	601.8	588.8	580.0
65°	571.3	567.0	562.6	558.2	553.9	545.1	540.8	532.1	519.0	505.9	492.8
67.5°	488.5	484.1	484.1	479.7	466.7	462.3	462.3	449.2	436.1	423.1	409.9
70°	405.5	405.5	405.5	396.9	392.5	388.1	383.7	375.1	361.9	348.9	335.8
72.5°	335.8	331.5	331.5	327.1	314.0	309.7	305.3	296.5	283.5	274.7	266.1
75°	261.7	261.7	257.3	252.9	248.6	244.2	239.9	231.1	218.1	205.0	200.6
77.5°	200.6	196.3	196.3	191.9	183.2	178.8	178.8	170.1	157.0	148.3	139.6
80°	135.2	139.6	135.2	130.8	126.5	122.1	117.8	113.4	104.6	96.0	87.2
82.5°	82.8	87.2	82.8	82.8	78.5	74.2	74.2	65.4	61.0	56.7	52.4
85°	43.6	43.6	43.6	43.6	39.2	39.2	39.2	34.8	30.6	26.2	26.2
87.5°	13.0	17.4	13.0	13.0	13.0	13.0	13.0	13.0	8.8	8.8	8.8
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°	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5
2.5°	3279.6	3275.2	3270.9	3270.9	3270.9	3270.9	3270.9	3266.5	3262.2	3262.2	3262.2
5°	3270.9	3270.9	3270.9	3266.5	3262.2	3262.2	3253.4	3249.1	3244.7	3240.4	3236.0
7.5°	3262.2	3253.4	3249.1	3244.7	3240.4	3240.4	3231.6	3222.9	3222.9	3214.2	3205.4
10°	3236.0	3231.6	3222.9	3214.2	3209.8	3205.4	3196.8	3183.6	3179.3	3170.6	3161.8
12.5°	3205.4	3196.8	3188.0	3170.6	3166.2	3161.8	3144.4	3131.4	3122.6	3118.2	3096.4
15°	3166.2	3148.8	3135.7	3113.8	3109.6	3100.8	3087.8	3074.6	3057.2	3044.1	3035.4
17.5°	3096.4	3079.0	3057.2	3035.4	3026.6	3026.6	3004.8	2987.4	2965.6	2956.9	2939.4
20°	3013.6	2991.8	2974.3	2948.2	2935.1	2922.0	2908.9	2882.7	2865.3	2852.2	2830.4
22.5°	2917.6	2887.1	2865.3	2839.1	2817.3	2804.3	2782.5	2760.7	2738.9	2725.7	2708.3
25°	2795.5	2769.3	2734.5	2708.3	2695.3	2677.7	2651.6	2629.8	2608.0	2586.2	2577.5
27.5°	2660.3	2625.5	2594.9	2564.4	2551.3	2538.2	2507.7	2481.5	2464.1	2442.2	2433.6
30°	2512.0	2477.2	2442.2	2416.1	2403.0	2381.2	2363.8	2333.2	2311.4	2294.0	2272.2
32.5°	2342.0	2315.8	2285.2	2246.0	2237.2	2219.8	2193.7	2180.6	2154.4	2141.3	2123.9
35°	2158.8	2141.3	2110.8	2080.3	2067.2	2058.5	2036.7	2010.5	1993.1	1979.9	1971.3
37.5°	1984.3	1962.5	1932.1	1910.1	1901.5	1888.3	1862.3	1849.1	1831.7	1822.9	1805.5
40°	1796.8	1775.0	1753.2	1740.1	1727.0	1718.3	1700.9	1687.8	1670.4	1657.2	1652.9
42.5°	1613.6	1600.6	1583.2	1565.6	1561.4	1548.2	1539.4	1526.4	1513.4	1509.0	1495.8
45°	1447.9	1434.8	1417.4	1400.0	1395.6	1386.8	1382.5	1369.4	1360.7	1360.7	1360.7
47.5°	1282.2	1269.1	1251.7	1242.9	1247.3	1229.9	1229.9	1225.5	1216.7	1216.7	1221.1
50°	1133.9	1116.5	1112.1	1103.3	1094.7	1085.9	1090.3	1077.2	1077.2	1085.9	1081.5
52.5°	994.3	976.9	972.5	963.8	959.5	959.5	955.1	955.1	950.7	955.1	955.1
55°	867.8	854.8	846.0	837.4	833.0	833.0	833.0	828.6	824.2	833.0	837.4
57.5°	754.4	750.2	741.4	728.4	724.0	719.6	715.2	715.2	715.2	715.2	719.6
60°	654.2	645.4	636.7	623.6	623.6	619.3	614.9	610.6	610.6	610.6	610.6
62.5°	567.0	553.9	540.8	532.1	527.7	523.3	519.0	510.3	510.3	510.3	510.3
65°	479.7	466.7	457.9	449.2	440.5	440.5	431.7	427.5	418.7	414.3	405.5
67.5°	396.9	388.1	379.5	366.3	361.9	357.7	348.9	344.5	331.5	327.1	322.7
70°	322.7	309.7	300.9	292.2	287.9	279.1	270.4	261.7	252.9	244.2	235.5
72.5°	252.9	239.9	231.1	222.4	213.7	213.7	200.6	191.9	178.8	170.1	157.0
75°	187.5	174.4	165.7	152.6	148.3	143.9	130.8	122.1	109.0	96.0	87.2
77.5°	126.5	117.8	109.0	96.0	87.2	87.2	74.2	65.4	56.7	43.6	39.2
80°	78.5	69.8	61.0	52.4	52.4	43.6	39.2	30.6	21.8	17.4	13.0
82.5°	43.6	39.2	34.8	26.2	26.2	21.8	17.4	13.0	8.8	4.4	4.4
85°	21.8	17.4	13.0	13.0	8.8	8.8	8.8	4.4	4.4	0.0	0.0
87.5°	8.8	4.4	4.4	4.4	4.4	4.4	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°	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5
2.5°	3257.8	3257.8	3253.4	3253.4	3253.4	3249.1	3253.4	3249.1	3249.1	3249.1	3253.4
5°	3240.4	3231.6	3231.6	3227.3	3227.3	3222.9	3227.3	3222.9	3218.6	3214.2	3218.6
7.5°	3205.4	3196.8	3192.4	3188.0	3188.0	3188.0	3183.6	3179.3	3183.6	3170.6	3179.3
10°	3157.5	3153.2	3144.4	3140.0	3135.7	3140.0	3135.7	3127.0	3127.0	3127.0	3122.6
12.5°	3096.4	3087.8	3083.4	3079.0	3070.2	3070.2	3074.6	3066.0	3066.0	3057.2	3057.2
15°	3022.3	3013.6	3004.8	3004.8	2996.2	2996.2	2991.8	2991.8	2987.4	2983.0	2983.0
17.5°	2930.7	2917.6	2908.9	2913.3	2908.9	2904.5	2904.5	2895.8	2891.5	2895.8	2895.8
20°	2821.7	2812.9	2804.3	2808.6	2799.9	2795.5	2799.9	2786.8	2791.1	2791.1	2791.1
22.5°	2699.5	2695.3	2682.1	2682.1	2673.4	2669.1	2673.4	2673.4	2677.7	2673.4	2673.4
25°	2564.4	2555.7	2546.9	2546.9	2542.6	2538.2	2542.6	2546.9	2542.6	2546.9	2546.9
27.5°	2420.4	2407.4	2407.4	2398.6	2398.6	2403.0	2398.6	2403.0	2407.4	2407.4	2416.1
30°	2263.4	2259.0	2254.8	2250.4	2250.4	2254.8	2254.8	2254.8	2259.0	2267.8	2267.8
32.5°	2115.2	2106.5	2097.7	2097.7	2106.5	2102.1	2106.5	2106.5	2115.2	2115.2	2123.9
35°	1953.9	1953.9	1945.1	1949.5	1949.5	1949.5	1949.5	1958.1	1966.9	1971.3	1979.9
37.5°	1805.5	1792.5	1796.8	1796.8	1801.1	1796.8	1809.9	1809.9	1818.6	1818.6	1827.3
40°	1644.2	1644.2	1648.6	1644.2	1648.6	1648.6	1657.2	1666.0	1670.4	1679.0	1683.4
42.5°	1491.6	1500.2	1491.6	1495.8	1500.2	1504.6	1509.0	1513.4	1530.8	1539.4	1552.6
45°	1352.0	1356.3	1360.7	1365.0	1360.7	1369.4	1373.8	1382.5	1395.6	1400.0	1404.3
47.5°	1216.7	1221.1	1225.5	1229.9	1229.9	1238.5	1242.9	1251.7	1260.4	1264.7	1269.1
50°	1085.9	1094.7	1099.1	1099.1	1103.3	1112.1	1120.9	1120.9	1129.5	1142.7	1146.9
52.5°	968.2	968.2	976.9	981.3	985.6	985.6	998.7	1003.1	1007.4	1016.1	1024.9
55°	837.4	850.4	854.8	854.8	863.6	872.2	876.6	881.0	881.0	898.4	898.4
57.5°	724.0	728.4	737.0	737.0	737.0	750.2	750.2	758.8	763.2	767.6	776.2
60°	610.6	619.3	619.3	623.6	619.3	628.0	632.4	641.1	645.4	649.8	654.2
62.5°	505.9	505.9	510.3	510.3	510.3	510.3	519.0	519.0	527.7	532.1	536.4
65°	405.5	405.5	405.5	405.5	405.5	405.5	405.5	405.5	409.9	409.9	418.7
67.5°	314.0	309.7	300.9	305.3	300.9	300.9	296.5	296.5	300.9	300.9	309.7
70°	226.8	222.4	213.7	213.7	209.3	205.0	200.6	196.3	191.9	191.9	191.9
72.5°	148.3	139.6	126.5	122.1	122.1	113.4	104.6	100.3	100.3	100.3	100.3
75°	74.2	65.4	56.7	52.4	52.4	43.6	48.0	43.6	43.6	43.6	43.6
77.5°	30.6	21.8	17.4	17.4	17.4	13.0	13.0	13.0	13.0	13.0	13.0
80°	8.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
82.5°	4.4	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: P593868

CATALOG NUMBER: HC860D010-HM86080850-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5	3266.5
2.5°	3249.1	3249.1	3240.4	3244.7	3244.7	3244.7	3244.7	3244.7
5°	3209.8	3214.2	3209.8	3214.2	3214.2	3209.8	3209.8	3209.8
7.5°	3170.6	3175.0	3170.6	3175.0	3175.0	3175.0	3170.6	3170.6
10°	3122.6	3122.6	3122.6	3122.6	3122.6	3118.2	3122.6	3122.6
12.5°	3057.2	3057.2	3057.2	3061.6	3061.6	3057.2	3057.2	3052.8
15°	2987.4	2978.7	2983.0	2987.4	2983.0	2983.0	2983.0	2983.0
17.5°	2891.5	2895.8	2891.5	2891.5	2891.5	2891.5	2895.8	2891.5
20°	2791.1	2791.1	2795.5	2791.1	2791.1	2791.1	2791.1	2786.8
22.5°	2677.7	2673.4	2673.4	2677.7	2677.7	2673.4	2677.7	2677.7
25°	2551.3	2555.7	2551.3	2551.3	2555.7	2555.7	2555.7	2551.3
27.5°	2416.1	2420.4	2424.8	2420.4	2420.4	2420.4	2424.8	2429.2
30°	2276.6	2285.2	2276.6	2276.6	2285.2	2280.8	2285.2	2285.2
32.5°	2128.3	2141.3	2132.6	2141.3	2141.3	2145.7	2141.3	2145.7
35°	1979.9	1993.1	1993.1	1993.1	1997.5	2001.8	2001.8	1997.5
37.5°	1840.4	1844.7	1844.7	1853.5	1857.9	1862.3	1862.3	1857.9
40°	1696.5	1705.2	1709.6	1709.6	1709.6	1718.3	1727.0	1718.3
42.5°	1557.0	1561.4	1565.6	1565.6	1574.4	1578.8	1583.2	1583.2
45°	1421.8	1430.4	1434.8	1439.2	1443.6	1452.2	1447.9	1456.6
47.5°	1282.2	1295.3	1299.7	1304.0	1312.7	1317.1	1321.5	1325.8
50°	1155.7	1164.5	1164.5	1173.1	1186.3	1186.3	1194.9	1199.3
52.5°	1029.3	1033.6	1037.9	1042.3	1051.1	1059.7	1059.7	1068.5
55°	907.1	911.5	911.5	915.8	920.2	937.6	942.0	942.0
57.5°	780.6	780.6	789.4	793.8	798.2	806.8	806.8	806.8
60°	658.6	662.9	662.9	667.2	671.6	680.4	684.7	680.4
62.5°	536.4	540.8	540.8	545.1	553.9	558.2	553.9	553.9
65°	423.1	427.5	427.5	431.7	440.5	440.5	436.1	440.5
67.5°	309.7	309.7	309.7	309.7	309.7	309.7	309.7	309.7
70°	196.3	191.9	187.5	191.9	191.9	191.9	187.5	196.3
72.5°	96.0	100.3	100.3	100.3	100.3	100.3	100.3	96.0
75°	43.6	43.6	39.2	39.2	39.2	43.6	43.6	39.2
77.5°	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
80°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
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



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













(END OF REPORT)