

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: P585100

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585100
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: HC860D010-HM86080835-81WWW
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: 5661.7 lumens
Efficiency: N/A
Efficacy: 101.1 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

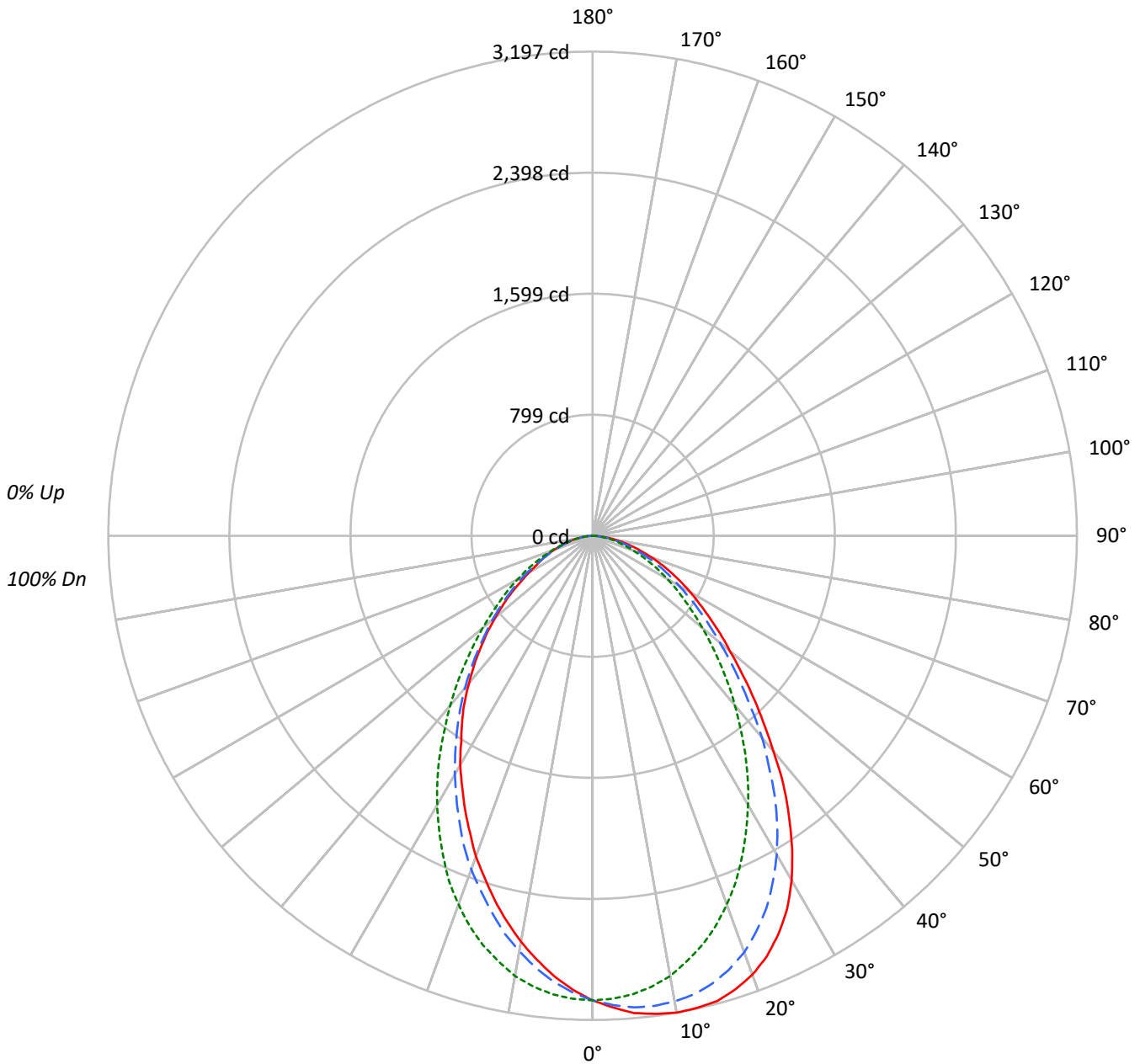
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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°	94600	94600	94600
5°	97923	94057	90324
10°	100101	92408	85241
15°	101525	89298	79596
20°	101216	84965	73897
25°	98714	79453	67841
30°	93521	73069	62248
35°	85083	66126	56564
40°	74731	58811	51102
45°	65165	51734	45558
50°	56709	45329	40139
55°	50573	39832	34913
60°	45952	34913	29776
65°	41305	30375	27034
70°	36785	25894	24397
75°	32240	21827	20838
80°	27347	17740	18468
85°	20592	13268	14718



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	287.3	5.1
10°-20°	791.7	14.0
20°-30°	1099.0	19.4
30°-40°	1136.2	20.1
40°-50°	951.4	16.8
50°-60°	690.6	12.2
60°-70°	435.9	7.7
70°-80°	215.9	3.8
80°-90°	53.7	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°	2178.1	38.5
0°-40°	3314.3	58.5
0°-60°	4956.3	87.5
0°-90°	5661.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5661.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3068	3068	3068	3068	3068	
5°	3164	3126	3039	2955	2918	303
15°	3180	3060	2797	2572	2493	895
25°	2901	2714	2335	2081	1994	1330
35°	2260	2094	1757	1557	1503	1408
45°	1494	1386	1186	1070	1045	1156
55°	941	857	741	678	649	849
65°	566	495	416	366	370	564
75°	271	225	183	175	175	290
85°	58	46	38	42	42	71
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°	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8
2.5°	3117.8	3117.8	3121.9	3117.8	3117.8	3117.8	3113.6	3113.6	3109.5	3109.5	3101.0
5°	3163.5	3155.2	3163.5	3155.2	3155.2	3155.2	3151.1	3142.7	3138.5	3130.2	3126.1
7.5°	3184.3	3180.2	3180.2	3176.0	3176.0	3171.8	3167.7	3163.5	3146.8	3142.7	3130.2
10°	3196.9	3192.6	3192.6	3188.5	3180.2	3180.2	3171.8	3167.7	3146.8	3138.5	3121.9
12.5°	3192.6	3192.6	3192.6	3188.5	3176.0	3171.8	3163.5	3151.1	3134.4	3117.8	3101.0
15°	3180.2	3180.2	3171.8	3167.7	3155.2	3146.8	3142.7	3121.9	3105.3	3084.4	3059.5
17.5°	3138.5	3138.5	3134.4	3126.1	3113.6	3105.3	3096.9	3076.1	3059.5	3026.2	3001.1
20°	3084.4	3080.3	3076.1	3063.7	3051.1	3046.9	3034.5	3005.3	2984.5	2959.5	2926.3
22.5°	3005.3	3001.1	2997.0	2988.7	2967.9	2959.5	2951.2	2930.4	2893.0	2867.9	2826.4
25°	2901.3	2901.3	2893.0	2880.5	2859.6	2851.3	2838.9	2818.0	2784.8	2747.3	2714.0
27.5°	2780.6	2776.5	2763.9	2755.6	2739.0	2726.4	2705.6	2680.6	2647.4	2618.2	2576.6
30°	2626.5	2626.5	2618.2	2605.8	2584.9	2576.6	2560.0	2530.8	2497.6	2460.1	2430.9
32.5°	2451.8	2451.8	2439.2	2430.9	2418.4	2397.6	2393.4	2360.2	2331.0	2301.8	2268.6
35°	2260.2	2264.5	2256.1	2239.4	2218.7	2218.7	2210.3	2181.2	2147.9	2118.7	2093.8
37.5°	2068.7	2056.3	2052.1	2043.8	2031.4	2014.6	2006.3	1993.9	1964.7	1943.9	1906.5
40°	1856.5	1860.7	1852.4	1844.1	1839.8	1827.3	1823.2	1802.4	1781.5	1756.6	1739.9
42.5°	1665.0	1665.0	1665.0	1656.7	1648.3	1635.9	1631.7	1619.3	1594.2	1577.6	1552.6
45°	1494.3	1481.9	1481.9	1477.7	1473.6	1465.2	1452.7	1444.4	1427.8	1415.2	1386.2
47.5°	1327.8	1332.1	1327.8	1323.6	1311.2	1307.0	1302.9	1286.3	1269.5	1257.1	1236.3
50°	1182.1	1190.5	1182.1	1182.1	1173.8	1169.7	1161.4	1148.9	1136.3	1115.6	1094.7
52.5°	1061.5	1061.5	1057.3	1053.2	1040.6	1032.3	1028.1	1024.0	1003.2	986.5	969.9
55°	940.7	944.9	944.9	932.4	928.3	920.0	915.8	903.2	894.9	870.0	857.4
57.5°	836.7	832.5	836.7	828.4	820.1	811.6	807.5	799.2	786.7	770.1	753.4
60°	745.1	736.8	736.8	732.6	724.3	720.1	711.8	699.3	686.8	670.1	657.7
62.5°	653.5	649.4	645.2	641.1	632.8	628.5	624.3	611.9	599.4	587.0	574.4
65°	566.1	566.1	561.9	553.6	549.5	545.3	541.2	532.8	516.1	507.8	495.4
67.5°	487.0	482.8	482.8	474.5	466.2	462.1	462.1	453.7	441.2	428.7	420.4
70°	408.0	412.1	408.0	403.8	395.4	395.4	387.1	382.9	366.3	362.2	349.6
72.5°	337.1	337.1	333.0	333.0	324.7	320.5	320.5	312.2	303.9	295.5	287.2
75°	270.6	270.6	270.6	266.4	262.3	253.9	253.9	249.7	241.4	233.1	224.8
77.5°	212.3	208.1	208.1	203.9	199.8	195.6	195.6	191.5	183.2	179.0	170.7
80°	154.0	149.8	149.8	149.8	141.5	145.7	141.5	137.4	133.2	129.1	124.9
82.5°	99.9	104.0	104.0	99.9	95.7	95.7	95.7	91.6	91.6	87.4	83.3
85°	58.2	58.2	58.2	58.2	54.1	54.1	54.1	49.9	49.9	49.9	45.8
87.5°	25.0	25.0	25.0	25.0	25.0	25.0	20.8	20.8	20.8	20.8	20.8
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°	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8
2.5°	3101.0	3092.7	3088.6	3084.4	3084.4	3080.3	3076.1	3067.8	3067.8	3059.5	3055.4
5°	3117.8	3105.3	3096.9	3088.6	3084.4	3076.1	3067.8	3055.4	3051.1	3038.6	3026.2
7.5°	3121.9	3101.0	3092.7	3076.1	3067.8	3059.5	3042.8	3030.3	3013.7	3001.1	2984.5
10°	3105.3	3088.6	3067.8	3046.9	3042.8	3030.3	3005.3	2988.7	2967.9	2951.2	2926.3
12.5°	3080.3	3055.4	3034.5	3009.6	2997.0	2984.5	2959.5	2934.6	2905.4	2876.3	2851.3
15°	3038.6	3009.6	2980.4	2951.2	2934.6	2922.1	2893.0	2863.8	2834.7	2797.2	2772.2
17.5°	2976.2	2942.9	2913.7	2876.3	2859.6	2847.2	2809.7	2776.5	2739.0	2701.5	2676.5
20°	2897.1	2855.5	2822.3	2780.6	2768.0	2747.3	2709.8	2672.3	2630.7	2589.2	2560.0
22.5°	2793.1	2751.4	2714.0	2672.3	2651.6	2630.7	2593.3	2547.5	2505.9	2472.5	2443.4
25°	2672.3	2634.8	2589.2	2551.7	2526.6	2501.7	2460.1	2422.6	2385.1	2335.2	2306.0
27.5°	2539.1	2493.3	2460.1	2410.1	2385.1	2368.5	2322.7	2272.8	2239.4	2193.7	2160.3
30°	2389.3	2347.6	2310.3	2260.2	2235.3	2218.7	2177.0	2131.3	2097.9	2052.1	2018.8
32.5°	2231.1	2185.3	2139.6	2106.2	2077.2	2060.4	2014.6	1985.6	1943.9	1906.5	1869.0
35°	2060.4	2014.6	1981.3	1935.6	1918.9	1902.3	1864.8	1827.3	1789.8	1756.6	1727.4
37.5°	1877.3	1844.1	1806.6	1773.2	1760.8	1744.1	1698.3	1665.0	1635.9	1602.5	1577.6
40°	1698.3	1669.2	1644.2	1611.0	1590.1	1577.6	1544.3	1515.1	1481.9	1461.0	1436.1
42.5°	1536.0	1502.6	1477.7	1452.7	1431.9	1419.4	1390.3	1369.4	1344.5	1323.6	1294.6
45°	1365.3	1348.7	1319.5	1298.7	1286.3	1269.5	1248.8	1223.8	1203.0	1186.3	1165.5
47.5°	1215.5	1198.8	1178.0	1153.1	1144.7	1132.2	1111.4	1094.7	1078.1	1061.5	1040.6
50°	1078.1	1057.3	1040.6	1024.0	1015.7	1003.2	982.4	974.0	961.6	944.9	932.4
52.5°	953.2	936.6	920.0	899.1	894.9	886.6	874.2	857.4	845.0	836.7	828.4
55°	840.8	824.2	811.6	795.0	790.9	782.6	765.9	757.6	749.2	740.9	732.6
57.5°	740.9	724.3	707.6	699.3	691.0	682.7	678.5	666.0	657.7	653.5	645.2
60°	649.4	632.8	620.2	607.7	603.6	599.4	591.1	582.7	574.4	566.1	561.9
62.5°	561.9	545.3	537.0	528.6	520.3	520.3	512.0	503.7	495.4	491.2	482.8
65°	482.8	474.5	462.1	449.6	445.4	445.4	432.9	428.7	424.6	416.3	408.0
67.5°	408.0	399.7	387.1	382.9	378.8	374.6	370.5	362.2	353.9	349.6	341.3
70°	341.3	333.0	324.7	320.5	316.4	312.2	303.9	299.7	291.3	287.2	283.0
72.5°	274.7	270.6	262.3	258.1	253.9	249.7	245.6	241.4	233.1	228.9	224.8
75°	220.6	216.5	208.1	203.9	199.8	199.8	195.6	187.3	183.2	183.2	179.0
77.5°	166.6	162.3	158.1	154.0	149.8	149.8	145.7	141.5	137.4	137.4	133.2
80°	120.8	116.5	112.3	112.3	112.3	108.2	104.0	104.0	99.9	99.9	95.7
82.5°	79.1	79.1	75.0	75.0	75.0	70.8	70.8	66.6	66.6	66.6	66.6
85°	45.8	45.8	45.8	41.6	41.6	41.6	41.6	41.6	41.6	37.5	41.6
87.5°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	16.6	16.6	16.6
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8
2.5°	3051.1	3046.9	3038.6	3038.6	3030.3	3030.3	3026.2	3022.0	3017.9	3013.7	3009.6
5°	3022.0	3005.3	2997.0	2992.8	2984.5	2980.4	2967.9	2959.5	2955.4	2947.1	2938.7
7.5°	2967.9	2951.2	2934.6	2930.4	2926.3	2909.6	2897.1	2884.7	2876.3	2867.9	2859.6
10°	2905.4	2888.8	2867.9	2859.6	2851.3	2830.6	2813.8	2801.4	2784.8	2768.0	2763.9
12.5°	2830.6	2805.5	2780.6	2772.2	2759.7	2739.0	2722.3	2701.5	2689.0	2668.2	2664.0
15°	2743.1	2714.0	2693.2	2672.3	2664.0	2643.2	2614.1	2597.5	2572.4	2564.1	2543.4
17.5°	2639.1	2609.9	2580.7	2572.4	2560.0	2530.8	2501.7	2480.8	2455.9	2443.4	2430.9
20°	2530.8	2493.3	2464.2	2455.9	2439.2	2414.3	2385.1	2364.4	2343.5	2318.6	2306.0
22.5°	2406.0	2364.4	2339.3	2318.6	2314.4	2285.2	2251.9	2235.3	2218.7	2197.8	2181.2
25°	2268.6	2231.1	2202.0	2185.3	2177.0	2152.0	2127.1	2106.2	2081.3	2068.7	2048.0
27.5°	2127.1	2102.1	2064.6	2048.0	2035.5	2014.6	1985.6	1973.0	1948.1	1931.4	1918.9
30°	1989.7	1952.2	1931.4	1910.6	1898.2	1877.3	1852.4	1839.8	1819.0	1802.4	1789.8
32.5°	1839.8	1814.9	1785.7	1777.4	1760.8	1739.9	1723.3	1702.5	1685.8	1669.2	1665.0
35°	1702.5	1669.2	1640.0	1631.7	1619.3	1598.4	1590.1	1577.6	1556.7	1552.6	1536.0
37.5°	1552.6	1536.0	1502.6	1490.2	1486.0	1469.4	1452.7	1444.4	1431.9	1419.4	1415.2
40°	1411.1	1390.3	1373.6	1361.1	1352.8	1340.4	1323.6	1319.5	1311.2	1294.6	1290.4
42.5°	1277.9	1257.1	1240.5	1236.3	1223.8	1211.3	1203.0	1190.5	1186.3	1182.1	1173.8
45°	1148.9	1136.3	1119.7	1115.6	1111.4	1094.7	1086.4	1078.1	1069.8	1065.6	1057.3
47.5°	1032.3	1019.8	1007.4	1003.2	994.8	990.7	978.2	974.0	961.6	957.4	953.2
50°	920.0	911.6	903.2	899.1	890.8	886.6	878.3	870.0	861.6	857.4	853.3
52.5°	820.1	811.6	803.3	799.2	795.0	786.7	778.4	770.1	765.9	761.7	757.6
55°	724.3	715.9	711.8	707.6	703.5	699.3	686.8	682.7	678.5	674.3	666.0
57.5°	636.9	628.5	620.2	620.2	616.0	611.9	603.6	595.3	595.3	587.0	578.5
60°	557.8	549.5	541.2	537.0	532.8	524.5	520.3	516.1	512.0	507.8	499.5
62.5°	474.5	470.4	462.1	462.1	453.7	449.6	445.4	441.2	437.0	428.7	424.6
65°	403.8	399.7	391.2	387.1	387.1	382.9	374.6	370.5	366.3	366.3	362.2
67.5°	337.1	333.0	324.7	320.5	320.5	316.4	312.2	312.2	308.1	303.9	308.1
70°	278.9	270.6	270.6	266.4	266.4	262.3	258.1	258.1	258.1	262.3	262.3
72.5°	220.6	216.5	212.3	212.3	212.3	212.3	208.1	208.1	212.3	216.5	216.5
75°	174.9	170.7	170.7	170.7	166.6	166.6	170.7	170.7	174.9	174.9	174.9
77.5°	129.1	129.1	129.1	129.1	129.1	129.1	133.2	133.2	137.4	137.4	137.4
80°	95.7	95.7	95.7	95.7	95.7	99.9	99.9	99.9	99.9	99.9	104.0
82.5°	66.6	66.6	66.6	66.6	66.6	66.6	66.6	70.8	70.8	70.8	70.8
85°	37.5	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6
87.5°	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
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: P585100

CATALOG NUMBER: HC860D010-HM86080835-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8	3067.8
2.5°	3005.3	3005.3	3005.3	3009.6	3001.1	3001.1	3001.1	3001.1
5°	2934.6	2930.4	2926.3	2930.4	2922.1	2922.1	2918.0	2918.0
7.5°	2847.2	2843.0	2838.9	2838.9	2830.6	2830.6	2826.4	2822.3
10°	2751.4	2743.1	2747.3	2739.0	2734.8	2730.7	2726.4	2722.3
12.5°	2647.4	2639.1	2634.8	2626.5	2618.2	2614.1	2618.2	2609.9
15°	2534.9	2522.5	2518.3	2510.0	2501.7	2497.6	2497.6	2493.3
17.5°	2410.1	2401.7	2397.6	2389.3	2385.1	2376.8	2372.7	2368.5
20°	2293.5	2272.8	2276.9	2268.6	2264.5	2247.7	2247.7	2251.9
22.5°	2164.5	2152.0	2143.7	2135.4	2131.3	2122.9	2122.9	2118.7
25°	2035.5	2022.9	2018.8	2010.5	2006.3	1998.0	1993.9	1993.9
27.5°	1910.6	1894.0	1894.0	1885.6	1877.3	1873.1	1869.0	1864.8
30°	1777.4	1764.9	1760.8	1760.8	1756.6	1756.6	1744.1	1748.2
32.5°	1652.5	1644.2	1640.0	1631.7	1631.7	1627.6	1627.6	1615.1
35°	1527.7	1515.1	1519.4	1511.0	1506.8	1502.6	1506.8	1502.6
37.5°	1406.9	1398.6	1398.6	1390.3	1390.3	1386.2	1382.0	1390.3
40°	1286.3	1282.0	1277.9	1273.7	1277.9	1273.7	1265.4	1269.5
42.5°	1165.5	1165.5	1161.4	1161.4	1157.2	1157.2	1157.2	1157.2
45°	1057.3	1053.2	1053.2	1048.9	1048.9	1048.9	1048.9	1044.7
47.5°	949.0	944.9	944.9	944.9	940.7	940.7	936.6	940.7
50°	845.0	845.0	840.8	840.8	845.0	840.8	836.7	836.7
52.5°	749.2	749.2	745.1	745.1	740.9	736.8	740.9	740.9
55°	661.8	657.7	653.5	653.5	649.4	645.2	645.2	649.4
57.5°	578.5	574.4	570.2	570.2	561.9	557.8	557.8	557.8
60°	499.5	491.2	491.2	487.0	487.0	482.8	482.8	482.8
62.5°	424.6	420.4	420.4	420.4	420.4	416.3	416.3	416.3
65°	362.2	362.2	362.2	366.3	366.3	370.5	370.5	370.5
67.5°	312.2	316.4	316.4	316.4	320.5	320.5	320.5	316.4
70°	266.4	266.4	266.4	270.6	270.6	270.6	270.6	270.6
72.5°	220.6	220.6	220.6	220.6	220.6	220.6	220.6	220.6
75°	174.9	179.0	179.0	179.0	174.9	179.0	179.0	174.9
77.5°	137.4	137.4	137.4	137.4	137.4	137.4	137.4	137.4
80°	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0
82.5°	70.8	70.8	70.8	70.8	70.8	70.8	70.8	70.8
85°	41.6	41.6	41.6	41.6	41.6	41.6	41.6	41.6
87.5°	16.6	16.6	16.6	16.6	16.6	16.6	16.6	16.6
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)