

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: P585099

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585099
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC860D010-HM86080835-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5187.1 lumens
Efficiency: N/A
Efficacy: 92.6 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.07 / 1.16
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

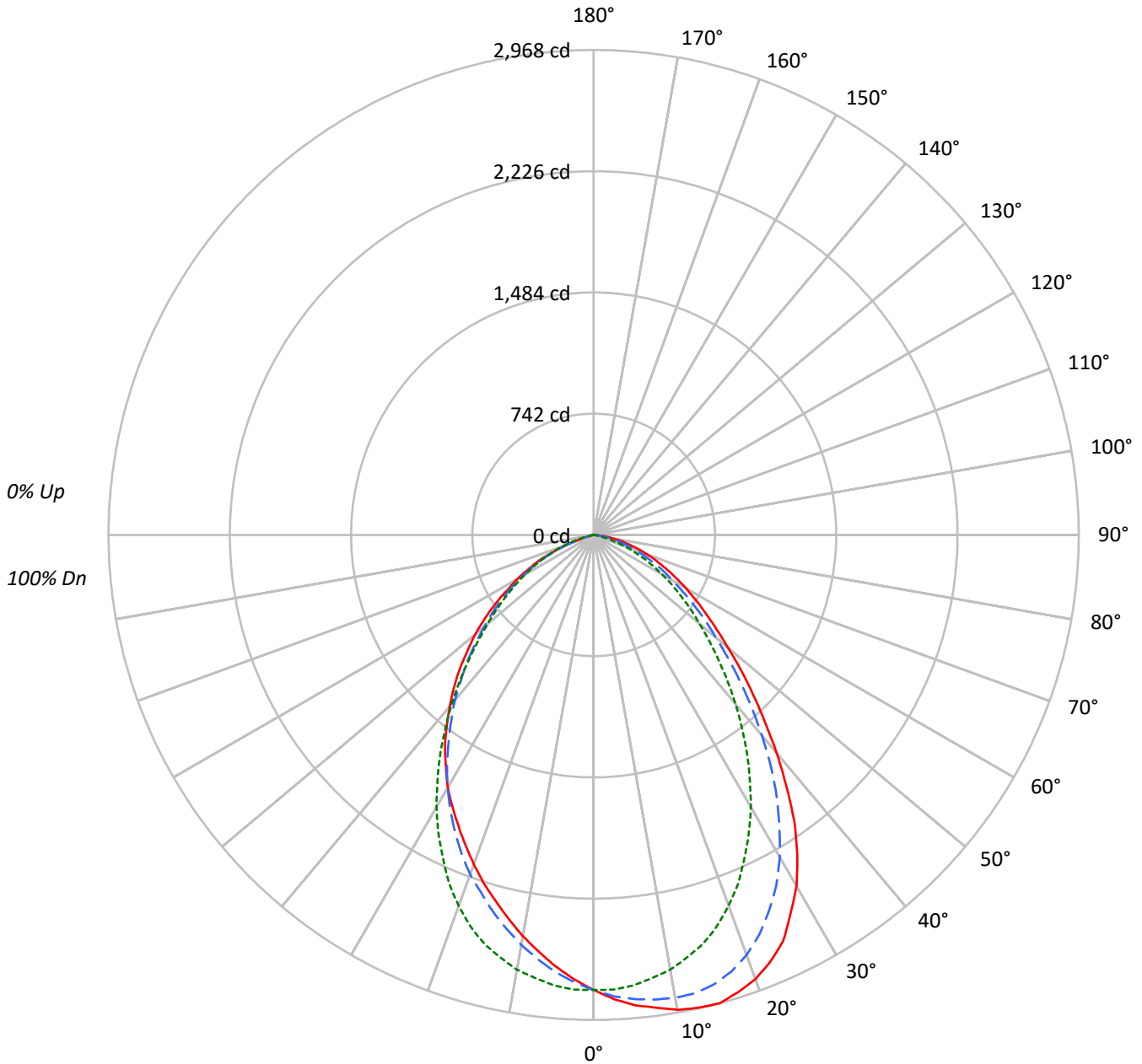
Input Watts (W): 56
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67			
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59			
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53			
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47			
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43			
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39			
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35			
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	85873	85873	85873
5°	89420	85687	82078
10°	92408	84589	78073
15°	94748	82658	74019
20°	94935	79226	70346
25°	93332	74213	66704
30°	88333	68475	63583
35°	80544	61582	59700
40°	70038	54291	55124
45°	60089	47015	50464
50°	51321	40537	45329
55°	44982	34913	39386
60°	40050	29776	33118
65°	35534	24297	26428
70°	31529	18014	15021
75°	26283	9424	4468
80°	20706	2948	746
85°	14718	1486	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	262.4	5.1
10°-20°	735.5	14.2
20°-30°	1041.0	20.1
30°-40°	1089.0	21.0
40°-50°	908.3	17.5
50°-60°	644.1	12.4
60°-70°	371.0	7.2
70°-80°	119.4	2.3
80°-90°	16.4	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°	2038.8	39.3
0°-40°	3127.9	60.3
0°-60°	4680.3	90.2
0°-90°	5187.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5187.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2785	2785	2785	2785	2785	
5°	2889	2851	2768	2685	2652	277
15°	2968	2847	2589	2385	2319	835
25°	2743	2539	2181	2006	1960	1252
35°	2140	1952	1636	1548	1586	1326
45°	1378	1265	1078	1090	1157	1068
55°	837	749	649	683	733	756
65°	487	408	333	333	362	487
75°	221	162	79	38	38	239
85°	42	21	4	0	0	52
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°	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8
2.5°	2843.0	2838.9	2834.7	2838.9	2834.7	2838.9	2834.7	2834.7	2830.6	2826.4	2826.4
5°	2888.8	2884.7	2884.7	2884.7	2880.5	2876.3	2876.3	2872.2	2863.9	2859.7	2851.3
7.5°	2918.0	2922.1	2922.1	2922.1	2913.8	2913.8	2905.4	2897.1	2888.8	2880.5	2868.0
10°	2951.2	2951.2	2947.1	2942.9	2934.6	2930.4	2926.3	2918.0	2905.4	2888.8	2876.3
12.5°	2963.8	2963.8	2959.6	2951.2	2947.1	2942.9	2938.7	2926.3	2909.7	2888.8	2872.2
15°	2967.9	2959.6	2955.5	2951.2	2942.9	2930.4	2930.4	2913.8	2893.0	2868.0	2847.2
17.5°	2934.6	2938.7	2930.4	2922.1	2909.7	2901.3	2888.8	2876.3	2851.3	2822.3	2801.4
20°	2893.0	2888.8	2884.7	2872.2	2855.5	2851.3	2838.9	2818.1	2797.2	2763.9	2734.8
22.5°	2826.4	2822.3	2813.9	2805.5	2788.9	2780.6	2768.2	2743.1	2714.0	2680.7	2647.4
25°	2743.1	2734.8	2722.4	2705.6	2693.2	2684.9	2668.2	2643.2	2609.9	2572.4	2539.2
27.5°	2609.9	2622.4	2614.1	2589.2	2576.6	2560.0	2555.8	2522.5	2493.4	2455.9	2418.4
30°	2480.8	2480.8	2468.4	2455.9	2435.1	2422.6	2406.0	2381.0	2351.9	2306.1	2276.9
32.5°	2318.6	2314.4	2297.7	2293.5	2276.9	2251.9	2247.7	2214.5	2185.3	2152.0	2114.5
35°	2139.6	2131.3	2114.5	2102.1	2093.8	2081.3	2068.7	2039.7	2010.5	1977.3	1952.2
37.5°	1935.6	1935.6	1931.5	1910.6	1902.3	1894.0	1881.4	1852.4	1835.6	1802.4	1777.4
40°	1739.9	1735.8	1723.3	1719.1	1710.8	1698.4	1690.0	1673.4	1648.3	1623.4	1598.4
42.5°	1548.4	1552.6	1536.0	1540.1	1523.5	1515.2	1511.0	1486.0	1473.6	1448.6	1427.8
45°	1377.9	1373.7	1365.3	1361.1	1352.8	1344.5	1336.2	1323.6	1302.9	1277.9	1265.4
47.5°	1219.6	1207.1	1207.1	1203.0	1198.8	1182.1	1178.0	1165.5	1153.1	1128.0	1111.4
50°	1069.8	1069.8	1069.8	1065.6	1053.2	1049.0	1040.6	1028.1	1015.7	999.0	974.0
52.5°	949.0	949.0	949.0	944.9	928.3	924.1	920.0	903.2	886.6	874.2	857.4
55°	836.7	840.8	836.7	828.4	815.9	815.9	803.3	795.0	778.4	765.9	749.2
57.5°	740.9	740.9	732.6	728.5	720.1	715.9	707.6	699.3	678.5	666.0	645.2
60°	649.4	645.2	645.2	636.9	628.6	620.2	616.0	603.6	595.3	574.4	557.8
62.5°	566.1	566.1	557.8	557.8	541.2	541.2	537.0	524.5	512.0	491.2	482.8
65°	487.0	487.0	482.8	478.7	466.2	462.1	457.9	445.4	432.9	420.4	408.0
67.5°	416.3	416.3	408.0	403.8	395.5	391.2	382.9	374.6	362.2	349.7	337.1
70°	349.7	345.4	341.3	337.1	328.8	324.7	316.4	308.1	295.5	287.2	274.7
72.5°	283.0	283.0	278.9	270.6	266.4	262.3	258.1	249.7	237.3	224.8	216.5
75°	220.6	220.6	220.6	212.3	203.9	199.8	199.8	191.5	183.2	170.7	162.3
77.5°	170.7	166.6	162.3	162.3	154.0	149.8	145.7	141.5	129.1	124.9	116.6
80°	116.6	120.8	116.6	112.3	108.2	104.0	104.0	95.7	91.6	83.3	75.0
82.5°	79.1	75.0	75.0	70.8	70.8	66.6	66.6	58.2	54.1	49.9	45.8
85°	41.6	41.6	37.5	37.5	37.5	33.3	33.3	29.2	29.2	25.0	20.8
87.5°	12.5	12.5	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°	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8
2.5°	2822.3	2813.9	2809.7	2809.7	2805.5	2801.4	2797.2	2793.1	2784.8	2784.8	2776.5
5°	2843.0	2834.7	2830.6	2818.1	2809.7	2809.7	2793.1	2788.9	2776.5	2768.2	2759.7
7.5°	2859.7	2843.0	2830.6	2818.1	2809.7	2801.4	2784.8	2768.2	2751.4	2734.8	2726.5
10°	2859.7	2843.0	2822.3	2801.4	2793.1	2784.8	2763.9	2739.0	2718.1	2701.5	2680.7
12.5°	2851.3	2826.4	2801.4	2784.8	2768.2	2755.6	2730.7	2705.6	2680.7	2647.4	2630.8
15°	2826.4	2793.1	2768.2	2739.0	2726.5	2705.6	2684.9	2647.4	2618.2	2589.2	2568.3
17.5°	2776.5	2734.8	2705.6	2676.6	2655.7	2643.2	2609.9	2576.6	2543.4	2510.0	2485.0
20°	2701.5	2664.0	2630.8	2593.3	2576.6	2560.0	2518.3	2485.0	2451.8	2414.3	2389.3
22.5°	2609.9	2572.4	2526.6	2497.6	2472.5	2451.8	2414.3	2376.8	2343.5	2310.3	2276.9
25°	2497.6	2460.1	2418.4	2372.7	2356.1	2335.2	2293.5	2256.2	2218.7	2181.2	2152.0
27.5°	2376.8	2326.9	2293.5	2243.6	2227.0	2206.1	2160.3	2118.8	2085.5	2056.3	2023.1
30°	2231.1	2193.7	2147.9	2102.1	2085.5	2064.6	2027.2	1989.7	1956.4	1923.1	1889.8
32.5°	2073.0	2035.5	1989.7	1956.4	1931.5	1914.8	1877.3	1844.1	1810.7	1777.4	1748.3
35°	1906.5	1864.8	1831.5	1798.3	1777.4	1756.6	1719.1	1690.0	1665.0	1635.9	1606.8
37.5°	1735.8	1706.7	1673.4	1635.9	1615.1	1598.4	1569.3	1536.0	1515.2	1490.2	1469.4
40°	1569.3	1536.0	1506.8	1473.6	1456.9	1444.4	1415.2	1390.3	1369.4	1348.7	1336.2
42.5°	1398.6	1369.4	1340.4	1319.5	1307.0	1294.6	1273.7	1244.6	1232.2	1211.3	1198.8
45°	1240.5	1215.5	1194.7	1165.5	1157.2	1148.9	1123.9	1103.1	1090.5	1078.1	1069.8
47.5°	1090.5	1073.9	1049.0	1032.3	1019.8	1011.5	994.8	978.2	965.7	957.4	949.0
50°	961.6	940.7	924.1	907.5	899.1	886.6	870.0	861.7	853.3	845.0	845.0
52.5°	840.8	820.1	803.3	790.9	782.6	774.3	761.7	757.6	749.2	749.2	745.1
55°	728.5	715.9	699.3	682.7	678.5	674.4	666.0	657.7	653.5	649.4	653.5
57.5°	632.8	620.2	603.6	591.1	587.0	582.8	578.5	570.2	566.1	566.1	566.1
60°	545.3	532.8	520.3	507.8	507.8	499.5	495.4	491.2	487.0	482.8	482.8
62.5°	466.2	453.7	441.2	432.9	428.7	424.6	416.3	412.1	408.0	408.0	403.8
65°	395.5	378.8	374.6	362.2	358.0	353.9	349.7	341.3	337.1	333.0	328.8
67.5°	324.7	316.4	303.9	295.5	291.3	287.2	283.0	274.7	270.6	266.4	258.1
70°	262.3	253.9	245.6	237.3	233.1	228.9	220.6	212.3	208.1	199.8	187.3
72.5°	203.9	195.6	187.3	179.0	174.9	170.7	162.3	154.0	145.7	137.4	129.1
75°	154.0	145.7	133.2	124.9	120.8	120.8	108.2	99.9	91.6	79.1	70.8
77.5°	108.2	95.7	91.6	83.3	79.1	70.8	62.4	54.1	45.8	41.6	33.3
80°	70.8	62.4	54.1	49.9	45.8	41.6	37.5	29.2	20.8	16.6	12.5
82.5°	41.6	37.5	33.3	29.2	25.0	20.8	16.6	16.6	12.5	8.3	4.2
85°	20.8	16.6	12.5	12.5	8.3	8.3	8.3	4.2	4.2	4.2	4.2
87.5°	8.3	4.2	4.2	4.2	4.2	4.2	4.2	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°	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8
2.5°	2772.3	2768.2	2763.9	2759.7	2759.7	2751.4	2751.4	2747.3	2739.0	2734.8	2734.8
5°	2747.3	2734.8	2726.5	2722.4	2718.1	2705.6	2701.5	2693.2	2684.9	2676.6	2672.3
7.5°	2709.8	2689.0	2680.7	2676.6	2664.0	2651.6	2643.2	2630.8	2618.2	2605.8	2601.6
10°	2664.0	2643.2	2622.4	2614.1	2601.6	2593.3	2576.6	2560.0	2547.5	2535.1	2522.5
12.5°	2605.8	2580.8	2560.0	2551.7	2539.2	2522.5	2497.6	2489.3	2468.4	2460.1	2443.5
15°	2539.2	2510.0	2489.3	2476.7	2464.2	2439.2	2422.6	2406.0	2385.1	2376.8	2360.2
17.5°	2455.9	2422.6	2401.8	2389.3	2381.0	2360.2	2335.2	2314.4	2293.5	2285.2	2272.8
20°	2356.1	2335.2	2306.1	2293.5	2285.2	2260.3	2235.3	2227.0	2210.4	2193.7	2181.2
22.5°	2243.6	2222.8	2193.7	2181.2	2177.0	2156.2	2135.4	2122.9	2110.4	2097.9	2085.5
25°	2127.1	2102.1	2077.2	2068.7	2060.4	2043.8	2027.2	2018.8	2006.3	1998.0	1989.7
27.5°	2002.2	1977.3	1956.4	1943.9	1935.6	1923.1	1914.8	1906.5	1898.2	1889.8	1885.7
30°	1869.0	1844.1	1827.3	1819.0	1810.7	1806.6	1794.1	1789.8	1785.7	1777.4	1781.5
32.5°	1735.8	1715.0	1698.4	1685.8	1685.8	1677.5	1673.4	1673.4	1669.2	1669.2	1669.2
35°	1590.1	1577.6	1565.2	1561.0	1556.7	1552.6	1548.4	1552.6	1548.4	1552.6	1556.7
37.5°	1456.9	1444.4	1436.1	1431.9	1427.8	1431.9	1427.8	1427.8	1431.9	1440.3	1444.4
40°	1319.5	1311.2	1302.9	1307.0	1302.9	1302.9	1302.9	1315.3	1319.5	1323.6	1327.9
42.5°	1190.5	1182.1	1178.0	1178.0	1182.1	1178.0	1186.4	1190.5	1198.8	1211.3	1219.6
45°	1065.6	1061.5	1061.5	1065.6	1061.5	1069.8	1069.8	1078.1	1090.5	1099.0	1107.3
47.5°	949.0	949.0	949.0	953.3	953.3	957.4	965.7	969.9	978.2	986.5	994.8
50°	840.8	845.0	849.1	849.1	849.1	857.4	865.9	870.0	874.2	878.3	890.8
52.5°	745.1	749.2	749.2	753.4	757.6	761.7	765.9	774.3	778.4	786.7	790.9
55°	653.5	653.5	661.8	666.0	666.0	666.0	674.4	674.4	682.7	686.8	695.2
57.5°	566.1	570.2	570.2	574.4	574.4	578.5	582.8	587.0	591.1	595.3	599.4
60°	482.8	482.8	482.8	487.0	491.2	495.4	491.2	499.5	499.5	507.8	512.0
62.5°	403.8	408.0	408.0	408.0	408.0	408.0	408.0	412.1	416.3	420.4	424.6
65°	328.8	328.8	328.8	324.7	328.8	324.7	328.8	333.0	333.0	337.1	341.3
67.5°	253.9	253.9	245.6	245.6	249.7	249.7	249.7	249.7	245.6	253.9	253.9
70°	183.2	179.0	174.9	170.7	170.7	166.6	166.6	162.3	162.3	162.3	162.3
72.5°	120.8	112.3	104.0	99.9	95.7	95.7	87.4	83.3	87.4	87.4	87.4
75°	62.4	54.1	49.9	45.8	41.6	41.6	37.5	37.5	37.5	37.5	37.5
77.5°	25.0	20.8	16.6	16.6	12.5	12.5	12.5	12.5	12.5	12.5	12.5
80°	8.3	8.3	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
82.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
85°	4.2	0.0	0.0	4.2	0.0	4.2	4.2	4.2	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: P585099

CATALOG NUMBER: HC860D010-HM86080835-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8	2784.8
2.5°	2730.7	2730.7	2726.5	2730.7	2722.4	2726.5	2722.4	2722.4
5°	2668.2	2659.9	2659.9	2659.9	2655.7	2655.7	2651.6	2651.6
7.5°	2593.3	2589.2	2585.0	2580.8	2576.6	2572.4	2572.4	2572.4
10°	2518.3	2510.0	2510.0	2505.9	2497.6	2493.4	2493.4	2493.4
12.5°	2430.9	2426.8	2422.6	2422.6	2406.0	2410.1	2406.0	2406.0
15°	2347.6	2343.5	2343.5	2331.0	2322.7	2322.7	2322.7	2318.6
17.5°	2260.3	2256.2	2251.9	2243.6	2235.3	2235.3	2231.1	2235.3
20°	2168.7	2164.6	2156.2	2156.2	2152.0	2147.9	2139.6	2143.7
22.5°	2077.2	2068.7	2064.6	2064.6	2060.4	2060.4	2052.1	2052.1
25°	1981.4	1977.3	1973.0	1977.3	1968.9	1968.9	1960.5	1960.5
27.5°	1881.4	1877.3	1877.3	1877.3	1873.1	1877.3	1873.1	1873.1
30°	1781.5	1781.5	1777.4	1777.4	1781.5	1777.4	1781.5	1785.7
32.5°	1673.4	1673.4	1677.5	1677.5	1681.7	1681.7	1681.7	1681.7
35°	1561.0	1569.3	1569.3	1573.5	1577.6	1581.8	1581.8	1585.9
37.5°	1456.9	1461.0	1465.3	1469.4	1477.7	1477.7	1477.7	1477.7
40°	1344.5	1348.7	1357.0	1352.8	1369.4	1373.7	1369.4	1369.4
42.5°	1227.9	1236.3	1240.5	1248.8	1252.9	1261.2	1265.4	1265.4
45°	1119.7	1123.9	1132.2	1140.6	1144.7	1157.2	1157.2	1157.2
47.5°	1007.4	1015.7	1019.8	1028.1	1032.3	1044.7	1049.0	1044.7
50°	899.1	907.5	915.8	915.8	928.3	932.4	940.7	944.9
52.5°	795.0	799.2	807.5	811.6	820.1	828.4	832.5	836.7
55°	695.2	699.3	707.6	707.6	720.1	724.3	732.6	732.6
57.5°	603.6	607.7	616.0	611.9	620.2	628.6	628.6	624.3
60°	516.1	516.1	516.1	524.5	528.6	532.8	537.0	537.0
62.5°	424.6	432.9	437.0	437.0	441.2	445.4	445.4	441.2
65°	341.3	349.7	353.9	353.9	358.0	358.0	358.0	362.2
67.5°	258.1	258.1	258.1	262.3	258.1	258.1	258.1	258.1
70°	162.3	162.3	162.3	162.3	158.1	162.3	162.3	166.6
72.5°	87.4	87.4	87.4	87.4	87.4	87.4	87.4	87.4
75°	37.5	37.5	37.5	41.6	37.5	37.5	37.5	37.5
77.5°	16.6	12.5	16.6	16.6	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°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
85°	0.0	4.2	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)