

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: P585169

Luminaire Tested: **HC860D010-HM86080935-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585169
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-18)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC860D010-HM86080935-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5230.6 lumens
Efficiency: N/A
Efficacy: 93.4 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.09 / 1.18
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

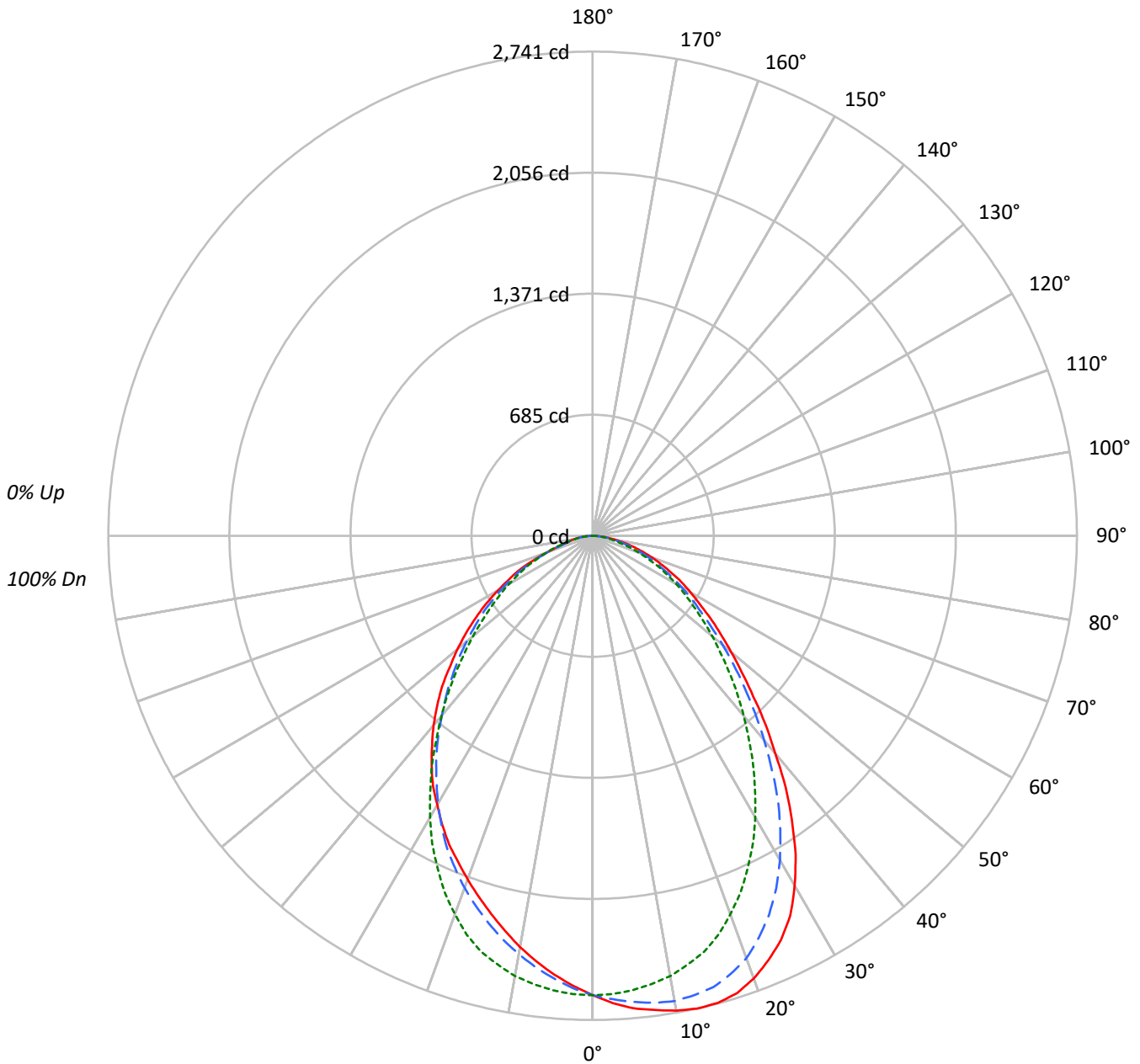
Input Watts (W): 56
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87								
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75								
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65								
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57								
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40								
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37								
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	80196	80196	80196
5°	83130	79930	77184
10°	85482	79232	74028
15°	87389	77837	70760
20°	87522	74793	67885
25°	85846	70637	65486
30°	81418	65506	62611
35°	73982	59659	59798
40°	64684	53534	56360
45°	56064	47682	52518
50°	49091	42355	47853
55°	43692	37536	43294
60°	39415	33716	38052
65°	35585	29646	33148
70°	31980	24974	24650
75°	28165	19801	18479
80°	23618	16408	17722
85°	18292	14365	15674



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.3	4.7
10°-20°	691.0	13.2
20°-30°	987.6	18.9
30°-40°	1049.3	20.1
40°-50°	903.5	17.3
50°-60°	675.5	12.9
60°-70°	430.8	8.2
70°-80°	196.1	3.7
80°-90°	51.5	1.0
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°	1923.9	36.8
0°-40°	2973.3	56.8
0°-60°	4552.2	87.0
0°-90°	5230.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5230.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2601	2601	2601	2601	2601	
5°	2686	2649	2582	2516	2494	257
15°	2737	2645	2438	2272	2216	771
25°	2523	2364	2076	1950	1925	1155
35°	1965	1829	1585	1544	1588	1224
45°	1286	1215	1093	1123	1204	999
55°	813	746	698	757	805	731
65°	488	432	406	425	454	486
75°	236	203	166	151	155	251
85°	52	44	41	44	44	62
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°	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7
2.5°	2648.7	2641.3	2645.0	2641.3	2645.0	2645.0	2637.6	2637.6	2637.6	2637.6	2626.5
5°	2685.6	2681.9	2681.9	2678.2	2674.5	2678.2	2674.5	2670.8	2663.4	2659.7	2648.7
7.5°	2707.8	2707.8	2707.8	2707.8	2704.1	2700.5	2696.6	2689.3	2681.9	2674.5	2667.1
10°	2730.0	2733.7	2730.0	2726.3	2722.6	2715.2	2711.5	2704.1	2693.0	2681.9	2674.5
12.5°	2741.1	2741.1	2737.4	2737.4	2730.0	2726.3	2715.2	2704.1	2693.0	2681.9	2663.4
15°	2737.4	2737.4	2733.7	2730.0	2718.9	2715.2	2707.8	2696.6	2678.2	2663.4	2645.0
17.5°	2715.2	2711.5	2704.1	2704.1	2689.3	2685.6	2678.2	2663.4	2645.0	2622.8	2600.7
20°	2667.1	2667.1	2663.4	2659.7	2645.0	2633.9	2626.5	2608.1	2593.3	2567.5	2545.2
22.5°	2600.7	2608.1	2600.7	2593.3	2574.9	2571.2	2560.0	2537.8	2515.7	2486.2	2460.3
25°	2523.1	2519.4	2515.7	2508.3	2493.5	2486.2	2471.4	2449.2	2427.0	2393.8	2364.2
27.5°	2423.3	2408.5	2408.5	2393.8	2382.7	2371.6	2364.2	2342.1	2312.6	2286.6	2249.7
30°	2286.6	2290.3	2271.9	2268.2	2249.7	2242.3	2227.6	2205.4	2179.6	2149.9	2120.4
32.5°	2138.9	2127.8	2127.8	2113.0	2098.3	2087.2	2083.5	2057.7	2035.4	2005.9	1976.4
35°	1965.3	1965.3	1954.2	1950.5	1935.8	1928.4	1917.3	1902.4	1876.6	1850.7	1828.6
37.5°	1795.4	1788.0	1784.3	1776.9	1765.7	1754.7	1754.7	1728.8	1725.1	1695.6	1666.1
40°	1606.9	1614.3	1606.9	1595.8	1592.2	1584.8	1581.1	1566.3	1555.2	1529.4	1510.8
42.5°	1448.1	1440.7	1440.7	1437.0	1422.3	1422.3	1414.9	1407.5	1389.0	1381.5	1359.4
45°	1285.6	1293.0	1281.9	1285.6	1270.8	1270.8	1270.8	1256.1	1241.2	1230.1	1215.3
47.5°	1145.2	1148.9	1148.9	1137.8	1134.1	1134.1	1126.8	1119.4	1108.2	1093.4	1082.4
50°	1023.3	1027.0	1019.6	1015.9	1008.5	1004.8	1004.8	990.1	982.6	967.8	960.4
52.5°	912.5	912.5	908.8	908.8	897.7	897.7	890.3	879.2	871.9	864.5	845.9
55°	812.7	812.7	809.0	805.3	805.3	794.2	790.5	779.5	772.1	757.3	746.2
57.5°	716.6	720.3	716.6	712.9	709.2	705.5	698.2	687.1	679.7	668.6	661.2
60°	639.1	639.1	635.4	631.7	624.3	620.6	617.0	609.6	598.5	591.0	579.9
62.5°	565.2	561.5	557.8	554.1	546.7	546.7	539.3	531.9	520.9	513.5	506.1
65°	487.7	487.7	484.0	484.0	480.3	472.9	469.2	465.5	450.6	446.9	432.2
67.5°	417.4	421.1	413.7	413.7	406.3	406.3	402.7	391.6	387.9	380.5	373.1
70°	354.7	354.7	354.7	351.0	343.6	339.9	336.2	328.7	325.0	317.6	310.3
72.5°	291.8	291.8	288.1	288.1	284.4	280.7	277.0	269.7	269.7	262.3	254.9
75°	236.4	236.4	232.8	229.1	225.4	225.4	221.7	218.0	210.6	206.9	203.2
77.5°	181.0	181.0	181.0	177.3	173.6	173.6	173.6	166.2	158.8	158.8	155.1
80°	133.0	133.0	129.3	129.3	125.6	125.6	125.6	121.9	118.2	114.5	110.8
82.5°	88.7	88.7	88.7	88.7	85.0	85.0	85.0	81.3	77.6	77.6	77.6
85°	51.7	51.7	51.7	51.7	48.0	48.0	48.0	48.0	48.0	44.3	44.3
87.5°	22.1	18.5	22.1	18.5	22.1	18.5	22.1	18.5	18.5	18.5	18.5
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°	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7
2.5°	2630.2	2626.5	2622.8	2619.1	2619.1	2615.4	2608.1	2604.4	2600.7	2597.0	2597.0
5°	2645.0	2641.3	2633.9	2626.5	2622.8	2615.4	2608.1	2600.7	2593.3	2582.2	2578.5
7.5°	2656.0	2645.0	2637.6	2622.8	2619.1	2611.8	2600.7	2589.6	2574.9	2560.0	2548.9
10°	2656.0	2641.3	2630.2	2611.8	2604.4	2597.0	2582.2	2563.7	2545.2	2530.4	2512.0
12.5°	2648.7	2630.2	2611.8	2593.3	2582.2	2571.2	2548.9	2530.4	2508.3	2486.2	2471.4
15°	2622.8	2600.7	2578.5	2556.3	2545.2	2530.4	2508.3	2482.5	2460.3	2438.2	2412.2
17.5°	2574.9	2552.6	2526.8	2500.9	2486.2	2475.1	2441.9	2423.3	2390.1	2367.9	2345.8
20°	2512.0	2486.2	2452.9	2427.0	2408.5	2397.5	2371.6	2338.4	2312.6	2279.2	2257.1
22.5°	2430.7	2397.5	2364.2	2338.4	2319.9	2305.2	2271.9	2238.6	2216.5	2187.0	2161.0
25°	2334.7	2301.4	2268.2	2231.3	2212.8	2198.0	2168.4	2138.9	2109.3	2076.1	2054.0
27.5°	2220.2	2183.3	2153.6	2120.4	2102.0	2079.8	2046.6	2017.0	1987.4	1965.3	1935.8
30°	2094.6	2054.0	2024.3	1991.1	1972.7	1954.2	1921.0	1891.3	1865.5	1839.7	1824.9
32.5°	1943.1	1913.6	1884.0	1850.7	1836.0	1824.9	1791.7	1762.0	1732.5	1710.4	1699.3
35°	1799.1	1765.7	1739.9	1710.4	1691.9	1680.8	1651.3	1625.4	1610.6	1584.8	1570.0
37.5°	1647.6	1621.7	1592.2	1562.6	1551.6	1540.5	1518.3	1492.4	1470.2	1451.8	1444.4
40°	1488.7	1466.5	1440.7	1422.3	1411.2	1400.1	1381.5	1363.1	1348.3	1329.9	1322.5
42.5°	1337.3	1322.5	1300.3	1278.2	1267.1	1263.4	1241.2	1226.4	1219.0	1211.6	1204.3
45°	1200.6	1178.4	1163.7	1148.9	1137.8	1130.4	1119.4	1108.2	1100.8	1093.4	1086.0
47.5°	1067.6	1049.1	1034.4	1023.3	1012.2	1008.5	1001.2	990.1	982.6	982.6	982.6
50°	945.7	930.9	916.1	908.8	905.1	897.7	890.3	886.6	882.9	882.9	882.9
52.5°	838.5	823.8	812.7	805.3	805.3	797.9	790.5	786.8	786.8	786.8	786.8
55°	738.9	727.8	720.3	712.9	705.5	701.8	701.8	701.8	698.2	698.2	701.8
57.5°	650.2	642.8	631.7	624.3	620.6	620.6	617.0	613.3	617.0	620.6	624.3
60°	568.9	561.5	557.8	546.7	546.7	546.7	543.0	543.0	543.0	546.7	550.4
62.5°	495.0	491.3	484.0	480.3	476.6	476.6	472.9	472.9	472.9	472.9	476.6
65°	428.5	421.1	413.7	413.7	413.7	410.0	410.0	402.7	406.3	406.3	402.7
67.5°	365.7	358.4	354.7	351.0	347.3	347.3	343.6	339.9	336.2	336.2	336.2
70°	306.6	299.2	299.2	291.8	291.8	288.1	284.4	284.4	280.7	277.0	273.4
72.5°	247.5	243.8	240.1	236.4	236.4	236.4	232.8	229.1	225.4	221.7	214.3
75°	195.7	195.7	188.4	184.7	184.7	181.0	177.3	173.6	169.9	166.2	162.5
77.5°	151.4	147.8	140.4	136.7	136.7	136.7	133.0	129.3	125.6	121.9	118.2
80°	110.8	107.2	103.5	99.8	99.8	99.8	96.1	96.1	92.4	92.4	92.4
82.5°	73.9	73.9	70.2	70.2	70.2	70.2	66.6	66.6	66.6	66.6	66.6
85°	44.3	44.3	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
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°	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7
2.5°	2589.6	2589.6	2582.2	2578.5	2574.9	2578.5	2571.2	2567.5	2563.7	2563.7	2560.0
5°	2567.5	2563.7	2548.9	2545.2	2541.5	2537.8	2530.4	2523.1	2515.7	2512.0	2508.3
7.5°	2537.8	2526.8	2512.0	2508.3	2504.6	2493.5	2482.5	2475.1	2464.0	2460.3	2452.9
10°	2497.2	2482.5	2471.4	2460.3	2452.9	2441.9	2430.7	2419.6	2404.8	2401.1	2390.1
12.5°	2449.2	2430.7	2408.5	2404.8	2393.8	2379.0	2364.2	2353.2	2342.1	2334.7	2323.6
15°	2390.1	2371.6	2349.5	2338.4	2327.3	2316.3	2297.7	2282.9	2271.9	2260.8	2249.7
17.5°	2319.9	2297.7	2279.2	2268.2	2260.8	2242.3	2227.6	2209.1	2198.0	2187.0	2175.9
20°	2234.9	2216.5	2190.7	2179.6	2175.9	2161.0	2142.6	2135.2	2120.4	2109.3	2102.0
22.5°	2138.9	2120.4	2098.3	2090.9	2076.1	2068.7	2050.3	2042.9	2035.4	2024.3	2020.6
25°	2031.7	2013.3	1994.8	1991.1	1980.0	1972.7	1961.6	1950.5	1950.5	1939.4	1939.4
27.5°	1921.0	1902.4	1887.7	1880.3	1876.6	1869.2	1858.1	1854.4	1850.7	1847.1	1847.1
30°	1802.8	1780.6	1773.1	1769.4	1765.7	1758.4	1754.7	1747.3	1751.0	1754.7	1751.0
32.5°	1677.2	1669.8	1655.0	1647.6	1651.3	1647.6	1640.1	1647.6	1643.8	1651.3	1655.0
35°	1555.2	1547.9	1540.5	1540.5	1533.1	1533.1	1533.1	1536.8	1544.2	1547.9	1555.2
37.5°	1437.0	1425.9	1422.3	1418.6	1422.3	1422.3	1422.3	1429.6	1437.0	1444.4	1455.5
40°	1311.4	1304.0	1304.0	1304.0	1304.0	1315.1	1311.4	1318.8	1326.2	1337.3	1348.3
42.5°	1193.2	1193.2	1196.9	1196.9	1196.9	1196.9	1204.3	1215.3	1226.4	1237.5	1248.6
45°	1082.4	1082.4	1082.4	1089.7	1089.7	1093.4	1108.2	1115.6	1123.1	1134.1	1145.2
47.5°	978.9	978.9	982.6	986.3	990.1	997.5	1004.8	1015.9	1027.0	1034.4	1045.4
50°	882.9	886.6	894.0	901.4	901.4	905.1	916.1	923.5	930.9	942.0	945.7
52.5°	790.5	797.9	805.3	809.0	812.7	820.1	823.8	834.8	838.5	849.6	853.3
55°	705.5	709.2	720.3	724.1	724.1	731.5	738.9	746.2	757.3	757.3	764.7
57.5°	628.0	631.7	639.1	642.8	639.1	650.2	653.9	661.2	664.9	672.3	676.0
60°	550.4	557.8	561.5	561.5	565.2	568.9	576.2	576.2	583.6	591.0	591.0
62.5°	476.6	480.3	484.0	487.7	491.3	487.7	498.7	498.7	506.1	509.8	517.2
65°	406.3	410.0	410.0	413.7	413.7	417.4	417.4	421.1	424.8	432.2	435.9
67.5°	336.2	336.2	336.2	339.9	336.2	339.9	339.9	343.6	343.6	351.0	354.7
70°	273.4	269.7	266.0	266.0	266.0	266.0	262.3	266.0	266.0	269.7	269.7
72.5°	210.6	206.9	203.2	199.5	199.5	195.7	192.0	195.7	195.7	199.5	199.5
75°	158.8	151.4	151.4	151.4	147.8	147.8	147.8	151.4	151.4	151.4	155.1
77.5°	118.2	118.2	114.5	114.5	114.5	118.2	118.2	121.9	121.9	121.9	121.9
80°	88.7	92.4	92.4	92.4	92.4	96.1	96.1	96.1	96.1	99.8	99.8
82.5°	66.6	66.6	66.6	66.6	70.2	70.2	70.2	70.2	70.2	70.2	70.2
85°	40.6	44.3	44.3	40.6	44.3	44.3	44.3	44.3	44.3	44.3	44.3
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
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: P585169

CATALOG NUMBER: HC860D010-HM86080935-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7	2600.7
2.5°	2556.3	2556.3	2556.3	2556.3	2552.6	2552.6	2552.6	2548.9
5°	2500.9	2500.9	2500.9	2493.5	2497.2	2497.2	2489.8	2493.5
7.5°	2445.6	2441.9	2438.2	2438.2	2434.4	2430.7	2427.0	2430.7
10°	2382.7	2371.6	2371.6	2367.9	2367.9	2360.5	2360.5	2364.2
12.5°	2312.6	2305.2	2305.2	2301.4	2297.7	2294.0	2290.3	2290.3
15°	2242.3	2234.9	2231.3	2227.6	2223.9	2216.5	2220.2	2216.5
17.5°	2172.2	2161.0	2161.0	2157.3	2153.6	2146.2	2146.2	2142.6
20°	2090.9	2087.2	2079.8	2083.5	2079.8	2072.4	2068.7	2068.7
22.5°	2009.6	2009.6	2005.9	2005.9	2002.2	1998.5	1994.8	1994.8
25°	1932.1	1928.4	1932.1	1932.1	1921.0	1921.0	1921.0	1924.7
27.5°	1843.4	1847.1	1843.4	1843.4	1843.4	1843.4	1847.1	1843.4
30°	1754.7	1754.7	1754.7	1758.4	1765.7	1762.0	1762.0	1758.4
32.5°	1658.7	1662.4	1662.4	1666.1	1669.8	1677.2	1677.2	1680.8
35°	1562.6	1570.0	1573.7	1570.0	1581.1	1581.1	1588.5	1588.5
37.5°	1462.9	1466.5	1473.9	1477.6	1485.0	1488.7	1492.4	1492.4
40°	1355.7	1370.5	1374.2	1377.9	1389.0	1389.0	1392.7	1400.1
42.5°	1256.1	1270.8	1274.5	1278.2	1285.6	1296.7	1293.0	1300.3
45°	1160.0	1171.0	1174.7	1178.4	1189.5	1193.2	1193.2	1204.3
47.5°	1056.5	1063.9	1067.6	1075.0	1082.4	1089.7	1097.1	1093.4
50°	953.1	964.1	971.5	975.2	986.3	990.1	993.8	997.5
52.5°	860.8	868.2	871.9	875.5	886.6	890.3	894.0	901.4
55°	772.1	775.8	783.2	779.5	790.5	794.2	797.9	805.3
57.5°	683.4	687.1	690.8	690.8	698.2	705.5	709.2	712.9
60°	598.5	605.9	609.6	609.6	609.6	617.0	617.0	617.0
62.5°	520.9	520.9	524.6	524.6	531.9	531.9	531.9	531.9
65°	439.6	443.3	446.9	446.9	454.3	450.6	458.0	454.3
67.5°	354.7	354.7	362.1	362.1	358.4	362.1	362.1	362.1
70°	269.7	269.7	273.4	273.4	273.4	273.4	273.4	273.4
72.5°	199.5	199.5	199.5	203.2	199.5	199.5	203.2	199.5
75°	155.1	155.1	155.1	155.1	155.1	155.1	155.1	155.1
77.5°	121.9	121.9	125.6	125.6	125.6	125.6	125.6	125.6
80°	99.8	99.8	99.8	99.8	103.5	99.8	99.8	99.8
82.5°	73.9	70.2	73.9	70.2	73.9	73.9	73.9	73.9
85°	44.3	44.3	44.3	44.3	44.3	44.3	44.3	44.3
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
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)