

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: P593870

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593870
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-HM86080850-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5432.2 lumens
Efficiency: N/A
Efficacy: 97.0 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

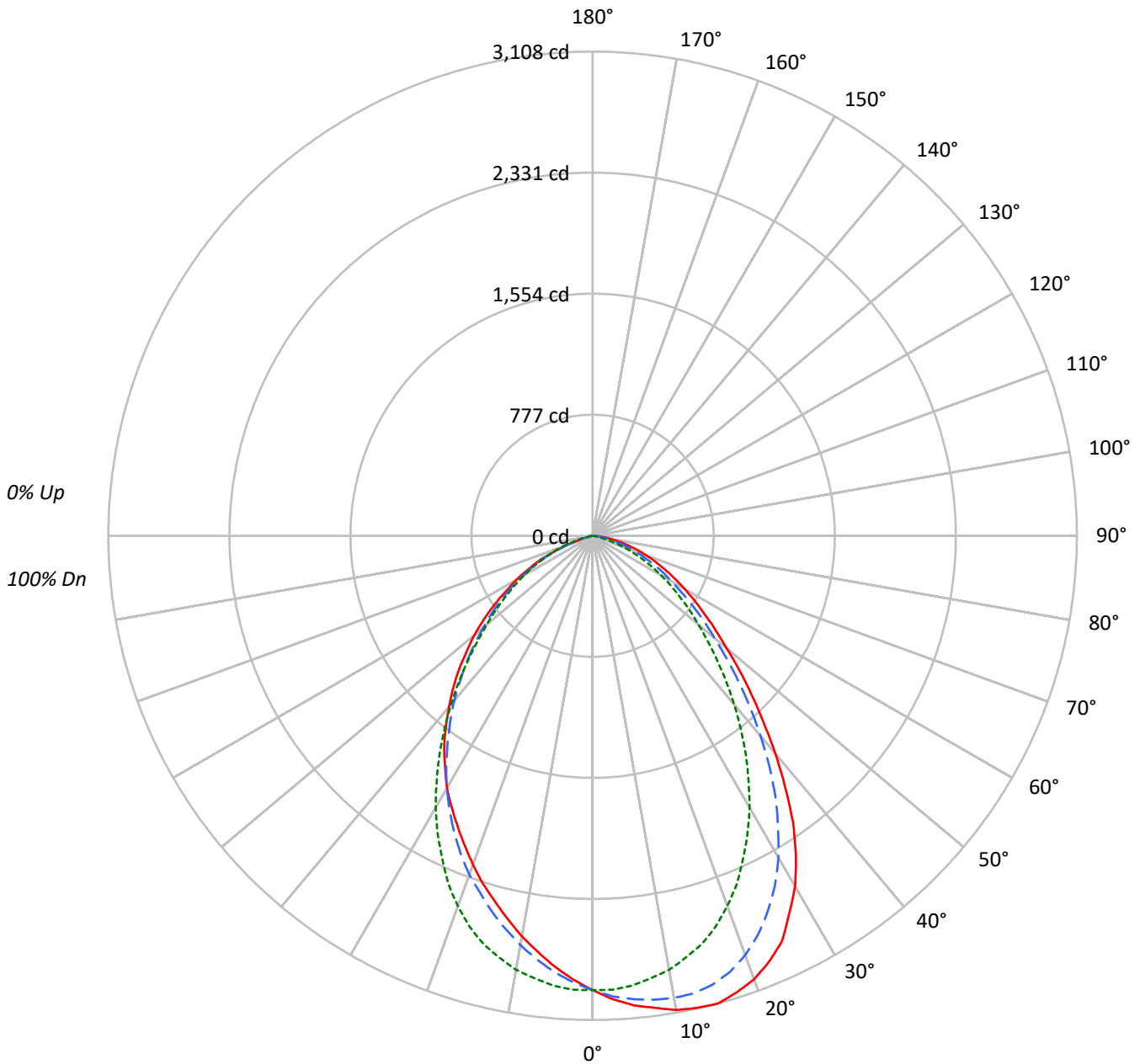
Input Watts (W): 56
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	89931	89931	89931
5°	93645	89730	85953
10°	96776	88588	81762
15°	99226	86559	77515
20°	99417	82970	73670
25°	97744	77718	69858
30°	92510	71712	66588
35°	84346	64488	62523
40°	73347	56851	57728
45°	62924	49239	52850
50°	53744	42451	47469
55°	47106	36558	41246
60°	41937	31188	34685
65°	37212	25450	27668
70°	33016	18861	15724
75°	27522	9865	4670
80°	21665	3090	781
85°	15426	1557	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	274.8	5.1
10°-20°	770.2	14.2
20°-30°	1090.1	20.1
30°-40°	1140.5	21.0
40°-50°	951.3	17.5
50°-60°	674.6	12.4
60°-70°	388.5	7.2
70°-80°	125.0	2.3
80°-90°	17.2	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°	2135.1	39.3
0°-40°	3275.6	60.3
0°-60°	4901.5	90.2
0°-90°	5432.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5432.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2916	2916	2916	2916	2916	
5°	3025	2986	2899	2812	2777	290
15°	3108	2982	2711	2498	2428	874
25°	2873	2659	2284	2101	2053	1311
35°	2241	2044	1713	1622	1661	1389
45°	1443	1325	1129	1142	1212	1118
55°	876	785	680	715	767	792
65°	510	427	349	349	379	510
75°	231	170	83	39	39	250
85°	44	22	4	0	0	54
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°	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4
2.5°	2977.4	2973.0	2968.6	2973.0	2968.6	2973.0	2968.6	2968.6	2964.2	2960.0	2960.0
5°	3025.3	3021.0	3021.0	3021.0	3016.6	3012.2	3012.2	3007.8	2999.2	2994.8	2986.0
7.5°	3055.8	3060.2	3060.2	3060.2	3051.4	3051.4	3042.8	3034.0	3025.3	3016.6	3003.6
10°	3090.7	3090.7	3086.4	3082.0	3073.2	3068.9	3064.6	3055.8	3042.8	3025.3	3012.2
12.5°	3103.8	3103.8	3099.4	3090.7	3086.4	3082.0	3077.6	3064.6	3047.1	3025.3	3007.8
15°	3108.2	3099.4	3095.0	3090.7	3082.0	3068.9	3068.9	3051.4	3029.6	3003.6	2981.8
17.5°	3073.2	3077.6	3068.9	3060.2	3047.1	3038.4	3025.3	3012.2	2986.0	2955.6	2933.8
20°	3029.6	3025.3	3021.0	3007.8	2990.4	2986.0	2973.0	2951.2	2929.4	2894.6	2864.0
22.5°	2960.0	2955.6	2946.8	2938.2	2920.6	2912.0	2898.8	2872.8	2842.2	2807.4	2772.4
25°	2872.8	2864.0	2851.0	2833.6	2820.4	2811.8	2794.2	2768.2	2733.2	2694.0	2659.2
27.5°	2733.2	2746.4	2737.6	2711.4	2698.4	2681.0	2676.6	2641.7	2611.2	2572.0	2532.8
30°	2598.1	2598.1	2585.0	2572.0	2550.2	2537.0	2519.6	2493.5	2463.0	2415.0	2384.5
32.5°	2428.1	2423.8	2406.3	2402.0	2384.5	2358.4	2354.0	2319.1	2288.6	2253.7	2214.5
35°	2240.6	2231.9	2214.5	2201.4	2192.7	2179.6	2166.5	2136.0	2105.5	2070.6	2044.5
37.5°	2027.1	2027.1	2022.7	2000.9	1992.2	1983.5	1970.4	1939.9	1922.4	1887.5	1861.4
40°	1822.1	1817.8	1804.7	1800.3	1791.7	1778.5	1769.9	1752.4	1726.3	1700.1	1673.9
42.5°	1621.7	1625.9	1608.5	1612.9	1595.5	1586.7	1582.3	1556.3	1543.1	1517.1	1495.3
45°	1442.9	1438.5	1429.9	1425.5	1416.7	1408.1	1399.3	1386.3	1364.5	1338.3	1325.3
47.5°	1277.3	1264.1	1264.1	1259.9	1255.5	1238.1	1233.7	1220.5	1207.5	1181.3	1163.9
50°	1120.3	1120.3	1120.3	1115.9	1102.9	1098.5	1089.8	1076.7	1063.7	1046.2	1020.1
52.5°	993.9	993.9	993.9	989.5	972.1	967.7	963.4	945.9	928.5	915.5	898.0
55°	876.2	880.6	876.2	867.5	854.4	854.4	841.3	832.6	815.2	802.1	784.7
57.5°	775.9	775.9	767.2	762.9	754.1	749.8	741.1	732.3	710.6	697.5	675.7
60°	680.0	675.7	675.7	667.0	658.2	649.5	645.2	632.1	623.4	601.6	584.1
62.5°	592.8	592.8	584.1	584.1	566.7	566.7	562.4	549.2	536.2	514.4	505.7
65°	510.0	510.0	505.7	501.3	488.2	483.9	479.5	466.4	453.4	440.3	427.2
67.5°	435.9	435.9	427.2	422.8	414.1	409.8	401.0	392.4	379.2	366.2	353.1
70°	366.2	361.8	357.4	353.1	344.4	340.0	331.3	322.6	309.5	300.8	287.7
72.5°	296.4	296.4	292.0	283.4	279.0	274.6	270.2	261.6	248.4	235.4	226.6
75°	231.0	231.0	231.0	222.4	213.6	209.2	209.2	200.6	191.8	178.8	170.0
77.5°	178.8	174.4	170.0	170.0	161.2	157.0	152.6	148.2	135.2	130.8	122.0
80°	122.0	126.4	122.0	117.6	113.4	109.0	109.0	100.2	95.8	87.2	78.4
82.5°	82.8	78.4	78.4	74.2	74.2	69.8	69.8	61.0	56.6	52.4	48.0
85°	43.6	43.6	39.2	39.2	39.2	34.8	34.8	30.6	30.6	26.2	21.8
87.5°	13.0	13.0	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°	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4
2.5°	2955.6	2946.8	2942.4	2942.4	2938.2	2933.8	2929.4	2925.0	2916.4	2916.4	2907.6
5°	2977.4	2968.6	2964.2	2951.2	2942.4	2942.4	2925.0	2920.6	2907.6	2898.8	2890.2
7.5°	2994.8	2977.4	2964.2	2951.2	2942.4	2933.8	2916.4	2898.8	2881.4	2864.0	2855.2
10°	2994.8	2977.4	2955.6	2933.8	2925.0	2916.4	2894.6	2868.4	2846.6	2829.2	2807.4
12.5°	2986.0	2960.0	2933.8	2916.4	2898.8	2885.8	2859.6	2833.6	2807.4	2772.4	2755.0
15°	2960.0	2925.0	2898.8	2868.4	2855.2	2833.6	2811.8	2772.4	2742.0	2711.4	2689.6
17.5°	2907.6	2864.0	2833.6	2803.0	2781.2	2768.2	2733.2	2698.4	2663.5	2628.6	2602.4
20°	2829.2	2790.0	2755.0	2715.8	2698.4	2681.0	2637.4	2602.4	2567.6	2528.4	2502.2
22.5°	2733.2	2694.0	2646.0	2615.6	2589.4	2567.6	2528.4	2489.2	2454.2	2419.4	2384.5
25°	2615.6	2576.3	2532.8	2484.8	2467.4	2445.6	2402.0	2362.7	2323.5	2284.2	2253.7
27.5°	2489.2	2436.8	2402.0	2349.6	2332.2	2310.4	2262.4	2218.8	2184.0	2153.5	2118.6
30°	2336.6	2297.3	2249.4	2201.4	2184.0	2162.2	2122.9	2083.7	2048.8	2014.0	1979.1
32.5°	2170.9	2131.7	2083.7	2048.8	2022.7	2005.3	1966.0	1931.1	1896.3	1861.4	1830.9
35°	1996.5	1952.9	1918.1	1883.2	1861.4	1839.6	1800.3	1769.9	1743.7	1713.1	1682.7
37.5°	1817.8	1787.3	1752.4	1713.1	1691.3	1673.9	1643.5	1608.5	1586.7	1560.6	1538.9
40°	1643.5	1608.5	1578.1	1543.1	1525.7	1512.7	1482.1	1455.9	1434.1	1412.3	1399.3
42.5°	1464.7	1434.1	1403.7	1381.9	1368.9	1355.7	1333.9	1303.5	1290.3	1268.5	1255.5
45°	1299.1	1272.9	1251.1	1220.5	1211.9	1203.1	1177.0	1155.2	1142.1	1129.1	1120.3
47.5°	1142.1	1124.7	1098.5	1081.1	1068.0	1059.3	1041.9	1024.4	1011.3	1002.7	993.9
50°	1007.0	985.2	967.7	950.3	941.6	928.5	911.1	902.3	893.7	884.9	884.9
52.5°	880.6	858.8	841.3	828.3	819.5	810.8	797.7	793.4	784.7	784.7	780.3
55°	762.9	749.8	732.3	714.9	710.6	706.2	697.5	688.8	684.4	680.0	684.4
57.5°	662.6	649.5	632.1	619.0	614.6	610.3	605.9	597.2	592.8	592.8	592.8
60°	571.0	558.0	544.9	531.8	531.8	523.1	518.8	514.4	510.0	505.7	505.7
62.5°	488.2	475.2	462.1	453.4	449.0	444.6	435.9	431.6	427.2	427.2	422.8
65°	414.1	396.7	392.4	379.2	374.9	370.6	366.2	357.4	353.1	348.8	344.4
67.5°	340.0	331.3	318.2	309.5	305.2	300.8	296.4	287.7	283.4	279.0	270.2
70°	274.6	265.9	257.2	248.4	244.1	239.8	231.0	222.4	218.0	209.2	196.2
72.5°	213.6	204.8	196.2	187.4	183.0	178.8	170.0	161.2	152.6	143.8	135.2
75°	161.2	152.6	139.4	130.8	126.4	126.4	113.4	104.6	95.8	82.8	74.2
77.5°	113.4	100.2	95.8	87.2	82.8	74.2	65.4	56.6	48.0	43.6	34.8
80°	74.2	65.4	56.6	52.4	48.0	43.6	39.2	30.6	21.8	17.4	13.0
82.5°	43.6	39.2	34.8	30.6	26.2	21.8	17.4	17.4	13.0	8.8	4.4
85°	21.8	17.4	13.0	13.0	8.8	8.8	8.8	4.4	4.4	4.4	4.4
87.5°	8.8	4.4	4.4	4.4	4.4	4.4	4.4	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°	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4
2.5°	2903.2	2898.8	2894.6	2890.2	2890.2	2881.4	2881.4	2877.0	2868.4	2864.0	2864.0
5°	2877.0	2864.0	2855.2	2851.0	2846.6	2833.6	2829.2	2820.4	2811.8	2803.0	2798.6
7.5°	2837.8	2816.0	2807.4	2803.0	2790.0	2776.8	2768.2	2755.0	2742.0	2728.8	2724.6
10°	2790.0	2768.2	2746.4	2737.6	2724.6	2715.8	2698.4	2681.0	2667.8	2654.8	2641.7
12.5°	2728.8	2702.8	2681.0	2672.2	2659.2	2641.7	2615.6	2606.8	2585.0	2576.3	2558.8
15°	2659.2	2628.6	2606.8	2593.8	2580.6	2554.6	2537.0	2519.6	2497.8	2489.2	2471.7
17.5°	2572.0	2537.0	2515.3	2502.2	2493.5	2471.7	2445.6	2423.8	2402.0	2393.2	2380.2
20°	2467.4	2445.6	2415.0	2402.0	2393.2	2367.0	2340.9	2332.2	2314.8	2297.3	2284.2
22.5°	2349.6	2327.8	2297.3	2284.2	2279.9	2258.1	2236.3	2223.2	2210.1	2197.0	2184.0
25°	2227.6	2201.4	2175.3	2166.5	2157.8	2140.4	2122.9	2114.2	2101.1	2092.4	2083.7
27.5°	2096.8	2070.6	2048.8	2035.8	2027.1	2014.0	2005.3	1996.5	1987.8	1979.1	1974.7
30°	1957.3	1931.1	1913.7	1905.0	1896.3	1891.9	1878.8	1874.5	1870.1	1861.4	1865.7
32.5°	1817.8	1796.0	1778.5	1765.5	1765.5	1756.7	1752.4	1752.4	1748.1	1748.1	1748.1
35°	1665.3	1652.1	1639.1	1634.7	1630.3	1625.9	1621.7	1625.9	1621.7	1625.9	1630.3
37.5°	1525.7	1512.7	1503.9	1499.5	1495.3	1499.5	1495.3	1495.3	1499.5	1508.3	1512.7
40°	1381.9	1373.1	1364.5	1368.9	1364.5	1364.5	1364.5	1377.5	1381.9	1386.3	1390.5
42.5°	1246.7	1238.1	1233.7	1233.7	1238.1	1233.7	1242.3	1246.7	1255.5	1268.5	1277.3
45°	1115.9	1111.6	1111.6	1115.9	1111.6	1120.3	1120.3	1129.1	1142.1	1150.9	1159.5
47.5°	993.9	993.9	993.9	998.3	998.3	1002.7	1011.3	1015.7	1024.4	1033.1	1041.9
50°	880.6	884.9	889.3	889.3	889.3	898.0	906.7	911.1	915.5	919.8	932.9
52.5°	780.3	784.7	784.7	789.0	793.4	797.7	802.1	810.8	815.2	823.9	828.3
55°	684.4	684.4	693.1	697.5	697.5	697.5	706.2	706.2	714.9	719.3	728.0
57.5°	592.8	597.2	597.2	601.6	601.6	605.9	610.3	614.6	619.0	623.4	627.7
60°	505.7	505.7	505.7	510.0	514.4	518.8	514.4	523.1	523.1	531.8	536.2
62.5°	422.8	427.2	427.2	427.2	427.2	427.2	427.2	431.6	435.9	440.3	444.6
65°	344.4	344.4	344.4	340.0	344.4	340.0	344.4	348.8	348.8	353.1	357.4
67.5°	265.9	265.9	257.2	257.2	261.6	261.6	261.6	261.6	257.2	265.9	265.9
70°	191.8	187.4	183.0	178.8	178.8	174.4	174.4	170.0	170.0	170.0	170.0
72.5°	126.4	117.6	109.0	104.6	100.2	100.2	91.6	87.2	91.6	91.6	91.6
75°	65.4	56.6	52.4	48.0	43.6	43.6	39.2	39.2	39.2	39.2	39.2
77.5°	26.2	21.8	17.4	17.4	13.0	13.0	13.0	13.0	13.0	13.0	13.0
80°	8.8	8.8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
82.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
85°	4.4	0.0	0.0	4.4	0.0	4.4	4.4	4.4	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: P593870

CATALOG NUMBER: HC860D010-HM86080850-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4	2916.4
2.5°	2859.6	2859.6	2855.2	2859.6	2851.0	2855.2	2851.0	2851.0
5°	2794.2	2785.6	2785.6	2785.6	2781.2	2781.2	2776.8	2776.8
7.5°	2715.8	2711.4	2707.0	2702.8	2698.4	2694.0	2694.0	2694.0
10°	2637.4	2628.6	2628.6	2624.2	2615.6	2611.2	2611.2	2611.2
12.5°	2545.8	2541.4	2537.0	2537.0	2519.6	2524.0	2519.6	2519.6
15°	2458.6	2454.2	2454.2	2441.2	2432.4	2432.4	2432.4	2428.1
17.5°	2367.0	2362.7	2358.4	2349.6	2340.9	2340.9	2336.6	2340.9
20°	2271.2	2266.8	2258.1	2258.1	2253.7	2249.4	2240.6	2245.0
22.5°	2175.3	2166.5	2162.2	2162.2	2157.8	2157.8	2149.1	2149.1
25°	2075.0	2070.6	2066.3	2070.6	2061.9	2061.9	2053.2	2053.2
27.5°	1970.4	1966.0	1966.0	1966.0	1961.7	1966.0	1961.7	1961.7
30°	1865.7	1865.7	1861.4	1861.4	1865.7	1861.4	1865.7	1870.1
32.5°	1752.4	1752.4	1756.7	1756.7	1761.1	1761.1	1761.1	1761.1
35°	1634.7	1643.5	1643.5	1647.7	1652.1	1656.5	1656.5	1660.9
37.5°	1525.7	1530.1	1534.5	1538.9	1547.5	1547.5	1547.5	1547.5
40°	1408.1	1412.3	1421.1	1416.7	1434.1	1438.5	1434.1	1434.1
42.5°	1285.9	1294.7	1299.1	1307.7	1312.1	1320.9	1325.3	1325.3
45°	1172.7	1177.0	1185.7	1194.5	1198.8	1211.9	1211.9	1211.9
47.5°	1054.9	1063.7	1068.0	1076.7	1081.1	1094.1	1098.5	1094.1
50°	941.6	950.3	959.1	959.1	972.1	976.5	985.2	989.5
52.5°	832.6	837.0	845.7	850.1	858.8	867.5	871.9	876.2
55°	728.0	732.3	741.1	741.1	754.1	758.5	767.2	767.2
57.5°	632.1	636.4	645.2	640.8	649.5	658.2	658.2	653.9
60°	540.6	540.6	540.6	549.2	553.6	558.0	562.4	562.4
62.5°	444.6	453.4	457.7	457.7	462.1	466.4	466.4	462.1
65°	357.4	366.2	370.6	370.6	374.9	374.9	374.9	379.2
67.5°	270.2	270.2	270.2	274.6	270.2	270.2	270.2	270.2
70°	170.0	170.0	170.0	170.0	165.6	170.0	170.0	174.4
72.5°	91.6	91.6	91.6	91.6	91.6	91.6	91.6	91.6
75°	39.2	39.2	39.2	43.6	39.2	39.2	39.2	39.2
77.5°	17.4	13.0	17.4	17.4	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°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
85°	0.0	4.4	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)