

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: P585084

Luminaire Tested: **HC860D010-HM86080830-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585084
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-HM86080830-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4901.2 lumens
Efficiency: N/A
Efficacy: 87.5 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

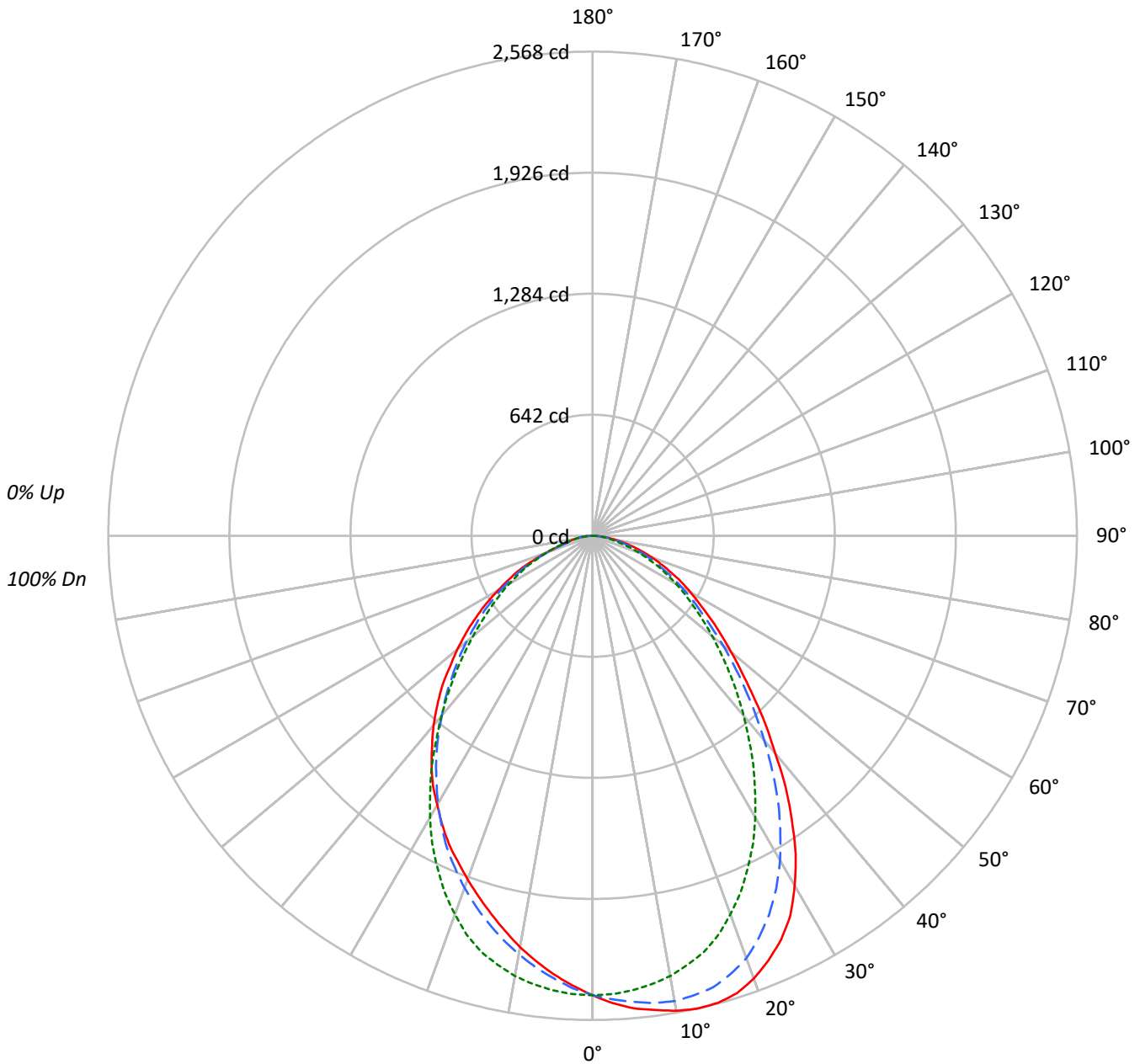
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	75145	75145	75145
5°	77896	74897	72327
10°	80099	74247	69366
15°	81885	72937	66303
20°	82012	70087	63609
25°	80440	66187	61362
30°	76294	61382	58666
35°	69322	55902	56033
40°	60614	50160	52809
45°	52532	44682	49213
50°	45996	39688	44835
55°	40945	35171	40574
60°	36930	31595	35653
65°	33345	27778	31061
70°	29960	23405	23099
75°	26402	18562	17311
80°	22126	15361	16586
85°	17124	13480	14683



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	229.9	4.7
10°-20°	647.5	13.2
20°-30°	925.4	18.9
30°-40°	983.3	20.1
40°-50°	846.6	17.3
50°-60°	632.9	12.9
60°-70°	403.7	8.2
70°-80°	183.7	3.7
80°-90°	48.2	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°	1802.8	36.8
0°-40°	2786.1	56.8
0°-60°	4265.6	87.0
0°-90°	4901.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4901.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2437	2437	2437	2437	2437	
5°	2516	2482	2420	2357	2337	241
15°	2565	2478	2285	2129	2077	723
25°	2364	2215	1945	1828	1804	1082
35°	1842	1714	1485	1447	1488	1147
45°	1205	1139	1025	1052	1128	936
55°	762	699	654	710	755	685
65°	457	405	381	398	426	456
75°	222	190	156	142	145	235
85°	48	42	38	42	42	58
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°	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9
2.5°	2481.9	2475.0	2478.4	2475.0	2478.4	2478.4	2471.5	2471.5	2471.5	2471.5	2461.1
5°	2516.5	2513.0	2513.0	2509.6	2506.1	2509.6	2506.1	2502.6	2495.7	2492.3	2481.9
7.5°	2537.2	2537.2	2537.2	2537.2	2533.8	2530.3	2526.9	2519.9	2513.0	2506.1	2499.2
10°	2558.1	2561.6	2558.1	2554.7	2551.2	2544.2	2540.7	2533.8	2523.4	2513.0	2506.1
12.5°	2568.5	2568.5	2565.0	2565.0	2558.1	2554.7	2544.2	2533.8	2523.4	2513.0	2495.7
15°	2565.0	2565.0	2561.6	2558.1	2547.7	2544.2	2537.2	2526.9	2509.6	2495.7	2478.4
17.5°	2544.2	2540.7	2533.8	2533.8	2519.9	2516.5	2509.6	2495.7	2478.4	2457.7	2436.9
20°	2499.2	2499.2	2495.7	2492.3	2478.4	2468.0	2461.1	2443.8	2430.0	2405.8	2385.0
22.5°	2436.9	2443.8	2436.9	2430.0	2412.7	2409.2	2398.8	2378.1	2357.3	2329.6	2305.4
25°	2364.2	2360.8	2357.3	2350.4	2336.6	2329.6	2315.8	2295.0	2274.3	2243.0	2215.3
27.5°	2270.8	2257.0	2257.0	2243.0	2232.6	2222.3	2215.3	2194.6	2166.9	2142.7	2108.1
30°	2142.7	2146.1	2128.8	2125.4	2108.1	2101.1	2087.3	2066.5	2042.3	2014.6	1987.0
32.5°	2004.3	1993.9	1993.9	1980.0	1966.2	1955.8	1952.4	1928.0	1907.3	1879.6	1851.9
35°	1841.5	1841.5	1831.1	1827.7	1813.8	1806.9	1796.5	1782.7	1758.5	1734.3	1713.5
37.5°	1682.3	1675.4	1672.0	1665.0	1654.7	1644.2	1644.2	1620.0	1616.5	1588.8	1561.1
40°	1505.8	1512.7	1505.8	1495.4	1491.9	1485.0	1481.5	1467.7	1457.3	1433.1	1415.8
42.5°	1357.0	1350.1	1350.1	1346.5	1332.6	1332.6	1325.7	1318.8	1301.5	1294.6	1273.8
45°	1204.6	1211.5	1201.2	1204.6	1190.8	1190.8	1190.8	1176.9	1163.1	1152.7	1138.9
47.5°	1073.1	1076.6	1076.6	1066.2	1062.7	1062.7	1055.8	1048.8	1038.4	1024.6	1014.2
50°	958.8	962.3	955.4	951.9	945.0	941.5	941.5	927.7	920.8	906.9	900.0
52.5°	855.0	855.0	851.6	851.6	841.2	841.2	834.3	823.9	817.0	810.0	792.7
55°	761.6	761.6	758.1	754.7	754.7	744.2	740.7	730.3	723.4	709.6	699.2
57.5°	671.5	675.0	671.5	668.0	664.6	661.1	654.2	643.8	636.9	626.5	619.6
60°	598.8	598.8	595.4	591.9	585.0	581.5	578.1	571.2	560.8	553.9	543.5
62.5°	529.6	526.2	522.7	519.3	512.3	512.3	505.4	498.5	488.1	481.2	474.3
65°	457.0	457.0	453.5	453.5	450.1	443.0	439.6	436.1	422.3	418.8	405.0
67.5°	391.1	394.6	387.7	387.7	380.7	380.7	377.3	366.9	363.4	356.5	349.6
70°	332.3	332.3	332.3	328.8	321.9	318.5	315.0	308.1	304.6	297.7	290.8
72.5°	273.5	273.5	270.0	270.0	266.6	263.1	259.6	252.7	252.7	245.8	238.9
75°	221.6	221.6	218.1	214.6	211.2	211.2	207.7	204.3	197.3	193.9	190.4
77.5°	169.7	169.7	169.7	166.2	162.7	162.7	162.7	155.8	148.8	148.8	145.3
80°	124.6	124.6	121.1	121.1	117.6	117.6	117.6	114.2	110.7	107.3	103.8
82.5°	83.0	83.0	83.0	83.0	79.6	79.6	79.6	76.1	72.7	72.7	72.7
85°	48.4	48.4	48.4	48.4	45.0	45.0	45.0	45.0	45.0	41.5	41.5
87.5°	20.8	17.3	20.8	17.3	20.8	17.3	20.8	17.3	17.3	17.3	17.3
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°	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9
2.5°	2464.6	2461.1	2457.7	2454.2	2454.2	2450.7	2443.8	2440.4	2436.9	2433.4	2433.4
5°	2478.4	2475.0	2468.0	2461.1	2457.7	2450.7	2443.8	2436.9	2430.0	2419.6	2416.1
7.5°	2488.8	2478.4	2471.5	2457.7	2454.2	2447.3	2436.9	2426.5	2412.7	2398.8	2388.5
10°	2488.8	2475.0	2464.6	2447.3	2440.4	2433.4	2419.6	2402.3	2385.0	2371.2	2353.9
12.5°	2481.9	2464.6	2447.3	2430.0	2419.6	2409.2	2388.5	2371.2	2350.4	2329.6	2315.8
15°	2457.7	2436.9	2416.1	2395.4	2385.0	2371.2	2350.4	2326.2	2305.4	2284.7	2260.4
17.5°	2412.7	2391.9	2367.7	2343.5	2329.6	2319.3	2288.1	2270.8	2239.6	2218.8	2198.0
20°	2353.9	2329.6	2298.5	2274.3	2257.0	2246.5	2222.3	2191.1	2166.9	2135.8	2115.0
22.5°	2277.7	2246.5	2215.3	2191.1	2173.8	2160.0	2128.8	2097.7	2076.9	2049.2	2025.0
25°	2187.7	2156.5	2125.4	2090.8	2073.5	2059.6	2031.9	2004.3	1976.6	1945.3	1924.6
27.5°	2080.4	2045.8	2018.1	1987.0	1969.7	1948.9	1917.6	1890.0	1862.3	1841.5	1813.8
30°	1962.7	1924.6	1896.9	1865.7	1848.4	1831.1	1800.0	1772.3	1748.1	1723.9	1710.0
32.5°	1820.8	1793.1	1765.4	1734.3	1720.4	1710.0	1678.9	1651.2	1623.4	1602.6	1592.3
35°	1685.8	1654.7	1630.3	1602.6	1585.3	1575.0	1547.3	1523.1	1509.2	1485.0	1471.2
37.5°	1543.8	1519.6	1491.9	1464.2	1453.9	1443.5	1422.7	1398.5	1377.7	1360.4	1353.5
40°	1395.0	1374.3	1350.1	1332.6	1322.3	1311.9	1294.6	1277.3	1263.4	1246.1	1239.2
42.5°	1253.1	1239.2	1218.5	1197.7	1187.3	1183.8	1163.1	1149.2	1142.3	1135.4	1128.5
45°	1125.0	1104.3	1090.4	1076.6	1066.2	1059.3	1048.8	1038.4	1031.5	1024.6	1017.6
47.5°	1000.3	983.0	969.2	958.8	948.4	945.0	938.1	927.7	920.8	920.8	920.8
50°	886.2	872.3	858.5	851.6	848.1	841.2	834.3	830.8	827.3	827.3	827.3
52.5°	785.8	772.0	761.6	754.7	754.7	747.6	740.7	737.3	737.3	737.3	737.3
55°	692.3	681.9	675.0	668.0	661.1	657.7	657.7	657.7	654.2	654.2	657.7
57.5°	609.2	602.3	591.9	585.0	581.5	581.5	578.1	574.6	578.1	581.5	585.0
60°	533.1	526.2	522.7	512.3	512.3	512.3	508.9	508.9	508.9	512.3	515.8
62.5°	463.9	460.4	453.5	450.1	446.5	446.5	443.0	443.0	443.0	443.0	446.5
65°	401.5	394.6	387.7	387.7	387.7	384.2	384.2	377.3	380.7	380.7	377.3
67.5°	342.7	335.8	332.3	328.8	325.4	325.4	321.9	318.5	315.0	315.0	315.0
70°	287.3	280.4	280.4	273.5	273.5	270.0	266.6	266.6	263.1	259.6	256.2
72.5°	231.9	228.5	225.0	221.6	221.6	221.6	218.1	214.6	211.2	207.7	200.8
75°	183.5	183.5	176.6	173.1	173.1	169.7	166.2	162.7	159.3	155.8	152.4
77.5°	141.9	138.4	131.5	128.0	128.0	128.0	124.6	121.1	117.6	114.2	110.7
80°	103.8	100.3	96.9	93.4	93.4	93.4	90.0	90.0	86.5	86.5	86.5
82.5°	69.2	69.2	65.7	65.7	65.7	65.7	62.3	62.3	62.3	62.3	62.3
85°	41.5	41.5	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1
87.5°	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9
2.5°	2426.5	2426.5	2419.6	2416.1	2412.7	2416.1	2409.2	2405.8	2402.3	2402.3	2398.8
5°	2405.8	2402.3	2388.5	2385.0	2381.5	2378.1	2371.2	2364.2	2357.3	2353.9	2350.4
7.5°	2378.1	2367.7	2353.9	2350.4	2346.9	2336.6	2326.2	2319.3	2308.9	2305.4	2298.5
10°	2340.0	2326.2	2315.8	2305.4	2298.5	2288.1	2277.7	2267.4	2253.5	2250.1	2239.6
12.5°	2295.0	2277.7	2257.0	2253.5	2243.0	2229.2	2215.3	2205.0	2194.6	2187.7	2177.3
15°	2239.6	2222.3	2201.5	2191.1	2180.7	2170.4	2153.1	2139.2	2128.8	2118.4	2108.1
17.5°	2173.8	2153.1	2135.8	2125.4	2118.4	2101.1	2087.3	2070.0	2059.6	2049.2	2038.9
20°	2094.2	2076.9	2052.7	2042.3	2038.9	2025.0	2007.7	2000.8	1987.0	1976.6	1969.7
22.5°	2004.3	1987.0	1966.2	1959.3	1945.3	1938.4	1921.1	1914.2	1907.3	1896.9	1893.4
25°	1903.8	1886.5	1869.2	1865.7	1855.4	1848.4	1838.1	1827.7	1827.7	1817.3	1817.3
27.5°	1800.0	1782.7	1768.9	1761.9	1758.5	1751.6	1741.2	1737.7	1734.3	1730.8	1730.8
30°	1689.3	1668.5	1661.6	1658.1	1654.7	1647.6	1644.2	1637.3	1640.7	1644.2	1640.7
32.5°	1571.5	1564.6	1550.7	1543.8	1547.3	1543.8	1536.9	1543.8	1540.4	1547.3	1550.7
35°	1457.3	1450.4	1443.5	1443.5	1436.6	1436.6	1436.6	1440.0	1446.9	1450.4	1457.3
37.5°	1346.5	1336.1	1332.6	1329.2	1332.6	1332.6	1332.6	1339.6	1346.5	1353.5	1363.9
40°	1228.8	1221.9	1221.9	1221.9	1221.9	1232.3	1228.8	1235.8	1242.7	1253.1	1263.4
42.5°	1118.1	1118.1	1121.6	1121.6	1121.6	1121.6	1128.5	1138.9	1149.2	1159.6	1170.0
45°	1014.2	1014.2	1014.2	1021.1	1021.1	1024.6	1038.4	1045.3	1052.4	1062.7	1073.1
47.5°	917.3	917.3	920.8	924.2	927.7	934.6	941.5	951.9	962.3	969.2	979.6
50°	827.3	830.8	837.7	844.6	844.6	848.1	858.5	865.4	872.3	882.7	886.2
52.5°	740.7	747.6	754.7	758.1	761.6	768.5	772.0	782.4	785.8	796.2	799.7
55°	661.1	664.6	675.0	678.4	678.4	685.4	692.3	699.2	709.6	709.6	716.5
57.5°	588.5	591.9	598.8	602.3	598.8	609.2	612.7	619.6	623.1	630.0	633.4
60°	515.8	522.7	526.2	526.2	529.6	533.1	540.0	540.0	546.9	553.9	553.9
62.5°	446.5	450.1	453.5	457.0	460.4	457.0	467.4	467.4	474.3	477.7	484.7
65°	380.7	384.2	384.2	387.7	387.7	391.1	391.1	394.6	398.0	405.0	408.4
67.5°	315.0	315.0	315.0	318.5	315.0	318.5	318.5	321.9	321.9	328.8	332.3
70°	256.2	252.7	249.2	249.2	249.2	249.2	245.8	249.2	249.2	252.7	252.7
72.5°	197.3	193.9	190.4	187.0	187.0	183.5	180.0	183.5	183.5	187.0	187.0
75°	148.8	141.9	141.9	141.9	138.4	138.4	138.4	141.9	141.9	141.9	145.3
77.5°	110.7	110.7	107.3	107.3	107.3	110.7	110.7	114.2	114.2	114.2	114.2
80°	83.0	86.5	86.5	86.5	86.5	90.0	90.0	90.0	90.0	93.4	93.4
82.5°	62.3	62.3	62.3	62.3	65.7	65.7	65.7	65.7	65.7	65.7	65.7
85°	38.1	41.5	41.5	38.1	41.5	41.5	41.5	41.5	41.5	41.5	41.5
87.5°	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
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: P585084

CATALOG NUMBER: HC860D010-HM86080830-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9	2436.9
2.5°	2395.4	2395.4	2395.4	2395.4	2391.9	2391.9	2391.9	2388.5
5°	2343.5	2343.5	2343.5	2336.6	2340.0	2340.0	2333.1	2336.6
7.5°	2291.6	2288.1	2284.7	2284.7	2281.2	2277.7	2274.3	2277.7
10°	2232.6	2222.3	2222.3	2218.8	2218.8	2211.9	2211.9	2215.3
12.5°	2166.9	2160.0	2160.0	2156.5	2153.1	2149.6	2146.1	2146.1
15°	2101.1	2094.2	2090.8	2087.3	2083.8	2076.9	2080.4	2076.9
17.5°	2035.4	2025.0	2025.0	2021.6	2018.1	2011.2	2011.2	2007.7
20°	1959.3	1955.8	1948.9	1952.4	1948.9	1941.9	1938.4	1938.4
22.5°	1883.0	1883.0	1879.6	1879.6	1876.1	1872.7	1869.2	1869.2
25°	1810.4	1806.9	1810.4	1810.4	1800.0	1800.0	1800.0	1803.5
27.5°	1727.3	1730.8	1727.3	1727.3	1727.3	1727.3	1730.8	1727.3
30°	1644.2	1644.2	1644.2	1647.6	1654.7	1651.2	1651.2	1647.6
32.5°	1554.2	1557.7	1557.7	1561.1	1564.6	1571.5	1571.5	1575.0
35°	1464.2	1471.2	1474.6	1471.2	1481.5	1481.5	1488.5	1488.5
37.5°	1370.8	1374.3	1381.2	1384.7	1391.6	1395.0	1398.5	1398.5
40°	1270.4	1284.2	1287.7	1291.1	1301.5	1301.5	1305.0	1311.9
42.5°	1176.9	1190.8	1194.2	1197.7	1204.6	1215.0	1211.5	1218.5
45°	1087.0	1097.3	1100.8	1104.3	1114.6	1118.1	1118.1	1128.5
47.5°	990.0	996.9	1000.3	1007.3	1014.2	1021.1	1028.0	1024.6
50°	893.1	903.5	910.4	913.8	924.2	927.7	931.1	934.6
52.5°	806.6	813.5	817.0	820.4	830.8	834.3	837.7	844.6
55°	723.4	726.9	733.8	730.3	740.7	744.2	747.6	754.7
57.5°	640.4	643.8	647.3	647.3	654.2	661.1	664.6	668.0
60°	560.8	567.7	571.2	571.2	571.2	578.1	578.1	578.1
62.5°	488.1	488.1	491.6	491.6	498.5	498.5	498.5	498.5
65°	411.9	415.3	418.8	418.8	425.7	422.3	429.2	425.7
67.5°	332.3	332.3	339.2	339.2	335.8	339.2	339.2	339.2
70°	252.7	252.7	256.2	256.2	256.2	256.2	256.2	256.2
72.5°	187.0	187.0	187.0	190.4	187.0	187.0	190.4	187.0
75°	145.3	145.3	145.3	145.3	145.3	145.3	145.3	145.3
77.5°	114.2	114.2	117.6	117.6	117.6	117.6	117.6	117.6
80°	93.4	93.4	93.4	93.4	96.9	93.4	93.4	93.4
82.5°	69.2	65.7	69.2	65.7	69.2	69.2	69.2	69.2
85°	41.5	41.5	41.5	41.5	41.5	41.5	41.5	41.5
87.5°	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
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)