

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: P585066

Luminaire Tested: **HC860D010-HM86080827-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585066
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-HM86080827-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4741.7 lumens
Efficiency: N/A
Efficacy: 84.7 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

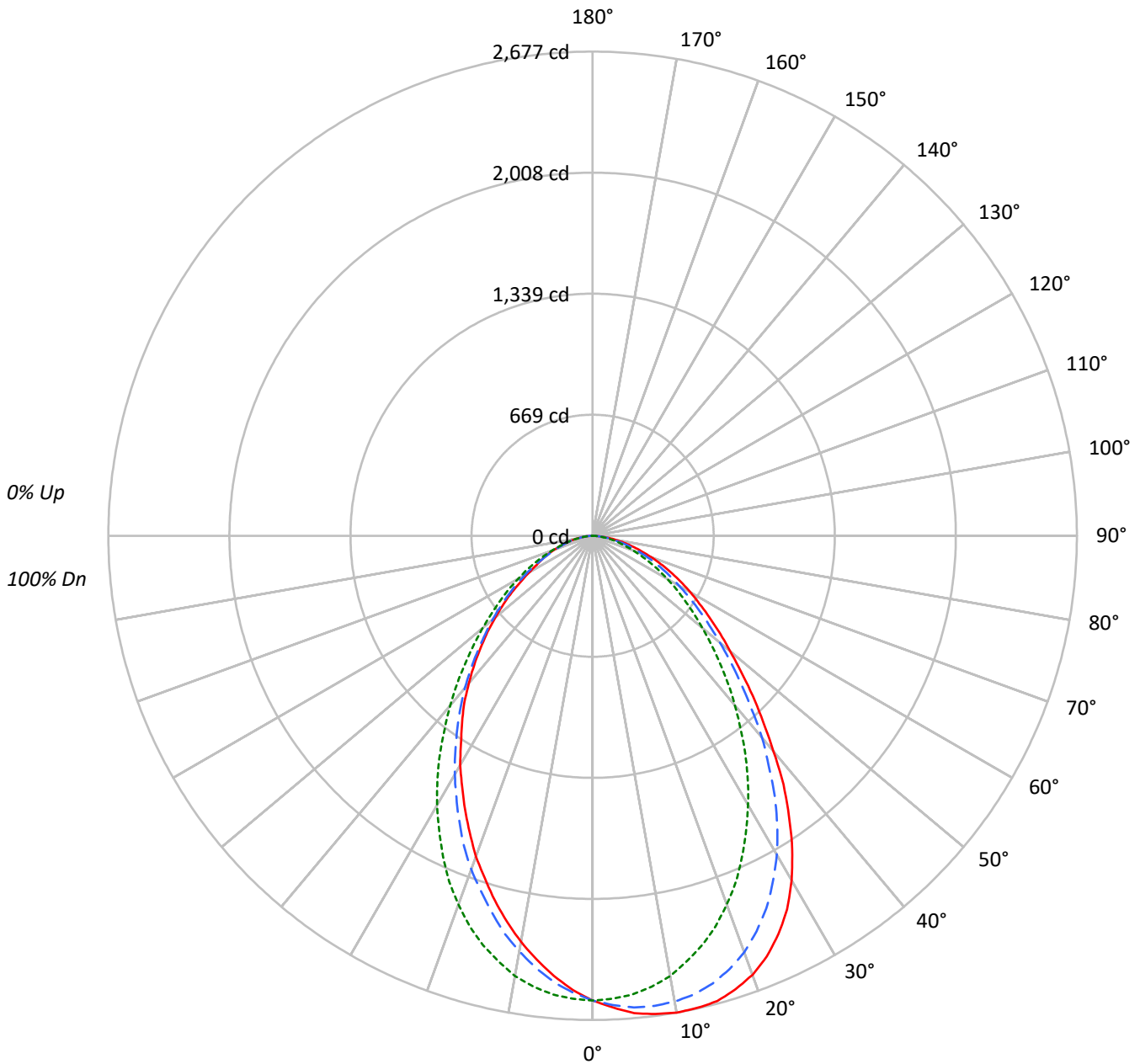
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	93	91	89	87			
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	79228	79228	79228
5°	82013	78775	75646
10°	83835	77394	71388
15°	85027	74789	66664
20°	84772	71157	61890
25°	82675	66541	56817
30°	78328	61197	52135
35°	71260	55382	47375
40°	62587	49255	42802
45°	54581	43326	38162
50°	47498	37961	33615
55°	42359	33359	29235
60°	38484	29245	24940
65°	34600	25443	22641
70°	30798	21692	20430
75°	26998	18276	17442
80°	22908	14846	15485
85°	17266	11110	12312



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	240.7	5.1
10°-20°	663.1	14.0
20°-30°	920.4	19.4
30°-40°	951.6	20.1
40°-50°	796.8	16.8
50°-60°	578.4	12.2
60°-70°	365.0	7.7
70°-80°	180.8	3.8
80°-90°	44.9	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°	1824.1	38.5
0°-40°	2775.7	58.5
0°-60°	4151.0	87.5
0°-90°	4741.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4741.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2569	2569	2569	2569	2569	
5°	2650	2618	2545	2475	2444	253
15°	2663	2562	2343	2154	2088	750
25°	2430	2273	1956	1743	1670	1114
35°	1893	1754	1471	1304	1258	1179
45°	1252	1161	994	896	875	968
55°	788	718	620	568	544	711
65°	474	415	349	307	310	473
75°	227	188	153	146	146	243
85°	49	38	31	35	35	59
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°	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3
2.5°	2611.2	2611.2	2614.6	2611.2	2611.2	2611.2	2607.6	2607.6	2604.1	2604.1	2597.2
5°	2649.5	2642.6	2649.5	2642.6	2642.6	2642.6	2639.0	2632.1	2628.6	2621.6	2618.1
7.5°	2666.9	2663.4	2663.4	2660.0	2660.0	2656.5	2652.9	2649.5	2635.5	2632.1	2621.6
10°	2677.4	2673.9	2673.9	2670.4	2663.4	2663.4	2656.5	2652.9	2635.5	2628.6	2614.6
12.5°	2673.9	2673.9	2673.9	2670.4	2660.0	2656.5	2649.5	2639.0	2625.1	2611.2	2597.2
15°	2663.4	2663.4	2656.5	2652.9	2642.6	2635.5	2632.1	2614.6	2600.7	2583.3	2562.3
17.5°	2628.6	2628.6	2625.1	2618.1	2607.6	2600.7	2593.7	2576.2	2562.3	2534.5	2513.5
20°	2583.3	2579.8	2576.2	2565.9	2555.4	2551.9	2541.4	2517.1	2499.5	2478.7	2450.7
22.5°	2517.1	2513.5	2510.0	2503.1	2485.7	2478.7	2471.7	2454.2	2422.8	2402.0	2367.1
25°	2429.9	2429.9	2422.8	2412.5	2395.0	2388.0	2377.6	2360.1	2332.3	2300.9	2273.0
27.5°	2328.7	2325.3	2314.8	2307.8	2293.9	2283.4	2266.0	2245.1	2217.2	2192.8	2157.9
30°	2199.8	2199.8	2192.8	2182.3	2164.9	2157.9	2143.9	2119.6	2091.7	2060.3	2035.9
32.5°	2053.4	2053.4	2042.9	2035.9	2025.5	2008.1	2004.5	1976.7	1952.2	1927.8	1900.0
35°	1893.0	1896.4	1889.5	1875.5	1858.1	1858.1	1851.2	1826.8	1798.8	1774.5	1753.5
37.5°	1732.6	1722.1	1718.7	1711.8	1701.3	1687.3	1680.4	1669.9	1645.4	1628.0	1596.7
40°	1554.8	1558.4	1551.3	1544.4	1540.8	1530.4	1527.0	1509.5	1492.0	1471.2	1457.2
42.5°	1394.5	1394.5	1394.5	1387.5	1380.5	1370.0	1366.5	1356.2	1335.2	1321.2	1300.3
45°	1251.6	1241.1	1241.1	1237.6	1234.1	1227.1	1216.7	1209.7	1195.7	1185.3	1160.9
47.5°	1112.1	1115.6	1112.1	1108.6	1098.2	1094.7	1091.1	1077.3	1063.3	1052.8	1035.4
50°	990.1	997.0	990.1	990.1	983.0	979.6	972.7	962.2	951.7	934.3	916.8
52.5°	888.9	888.9	885.5	882.0	871.5	864.6	861.1	857.6	840.1	826.2	812.2
55°	787.9	791.3	791.3	780.9	777.4	770.5	767.0	756.5	749.5	728.6	718.1
57.5°	700.7	697.2	700.7	693.8	686.7	679.8	676.4	669.3	658.9	645.0	631.0
60°	624.0	617.1	617.1	613.6	606.6	603.1	596.1	585.7	575.2	561.2	550.9
62.5°	547.3	543.8	540.4	536.9	529.9	526.4	523.0	512.5	502.0	491.6	481.1
65°	474.2	474.2	470.6	463.7	460.2	456.6	453.2	446.3	432.3	425.3	414.9
67.5°	407.8	404.4	404.4	397.5	390.4	387.0	387.0	380.0	369.5	359.1	352.1
70°	341.6	345.1	341.6	338.2	331.1	331.1	324.2	320.8	306.8	303.3	292.8
72.5°	282.4	282.4	278.9	278.9	272.0	268.4	268.4	261.5	254.4	247.5	240.6
75°	226.6	226.6	226.6	223.1	219.6	212.7	212.7	209.2	202.2	195.3	188.2
77.5°	177.7	174.3	174.3	170.8	167.4	163.9	163.9	160.3	153.4	149.9	142.9
80°	129.0	125.5	125.5	125.5	118.6	122.0	118.6	115.0	111.5	108.1	104.6
82.5°	83.6	87.2	87.2	83.6	80.2	80.2	80.2	76.7	76.7	73.2	69.8
85°	48.8	48.8	48.8	48.8	45.3	45.3	45.3	41.9	41.9	41.9	38.3
87.5°	20.9	20.9	20.9	20.9	20.9	20.9	17.4	17.4	17.4	17.4	17.4
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°	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3
2.5°	2597.2	2590.2	2586.7	2583.3	2583.3	2579.8	2576.2	2569.3	2569.3	2562.3	2558.8
5°	2611.2	2600.7	2593.7	2586.7	2583.3	2576.2	2569.3	2558.8	2555.4	2544.9	2534.5
7.5°	2614.6	2597.2	2590.2	2576.2	2569.3	2562.3	2548.4	2537.9	2524.0	2513.5	2499.5
10°	2600.7	2586.7	2569.3	2551.9	2548.4	2537.9	2517.1	2503.1	2485.7	2471.7	2450.7
12.5°	2579.8	2558.8	2541.4	2520.5	2510.0	2499.5	2478.7	2457.8	2433.3	2409.0	2388.0
15°	2544.9	2520.5	2496.1	2471.7	2457.8	2447.3	2422.8	2398.5	2374.0	2342.7	2321.8
17.5°	2492.6	2464.7	2440.4	2409.0	2395.0	2384.5	2353.2	2325.3	2293.9	2262.5	2241.6
20°	2426.4	2391.5	2363.7	2328.7	2318.3	2300.9	2269.5	2238.2	2203.2	2168.4	2143.9
22.5°	2339.2	2304.4	2273.0	2238.2	2220.6	2203.2	2171.9	2133.6	2098.7	2070.8	2046.4
25°	2238.2	2206.7	2168.4	2137.0	2116.1	2095.2	2060.3	2028.9	1997.6	1955.7	1931.4
27.5°	2126.5	2088.2	2060.3	2018.4	1997.6	1983.6	1945.3	1903.5	1875.5	1837.3	1809.3
30°	2001.0	1966.2	1934.8	1893.0	1872.1	1858.1	1823.3	1784.9	1757.0	1718.7	1690.8
32.5°	1868.6	1830.2	1791.9	1764.0	1739.6	1725.6	1687.3	1662.9	1628.0	1596.7	1565.3
35°	1725.6	1687.3	1659.4	1621.1	1607.1	1593.2	1561.8	1530.4	1499.1	1471.2	1446.7
37.5°	1572.3	1544.4	1513.0	1485.1	1474.6	1460.7	1422.4	1394.5	1370.0	1342.2	1321.2
40°	1422.4	1397.9	1377.0	1349.1	1331.7	1321.2	1293.4	1269.0	1241.1	1223.6	1202.8
42.5°	1286.4	1258.5	1237.6	1216.7	1199.2	1188.8	1164.4	1146.9	1126.1	1108.6	1084.2
45°	1143.5	1129.5	1105.1	1087.7	1077.3	1063.3	1045.9	1024.9	1007.5	993.5	976.1
47.5°	1018.0	1004.0	986.6	965.6	958.7	948.2	930.8	916.8	902.9	888.9	871.5
50°	902.9	885.5	871.5	857.6	850.6	840.1	822.7	815.8	805.3	791.3	780.9
52.5°	798.4	784.4	770.5	753.1	749.5	742.6	732.1	718.1	707.7	700.7	693.8
55°	704.2	690.3	679.8	665.9	662.4	655.4	641.4	634.5	627.6	620.5	613.6
57.5°	620.5	606.6	592.6	585.7	578.7	571.7	568.3	557.8	550.9	547.3	540.4
60°	543.8	529.9	519.5	509.0	505.5	502.0	495.0	488.1	481.1	474.2	470.6
62.5°	470.6	456.6	449.7	442.8	435.8	435.8	428.8	421.8	414.9	411.4	404.4
65°	404.4	397.5	387.0	376.5	373.0	373.0	362.5	359.1	355.6	348.7	341.6
67.5°	341.6	334.7	324.2	320.8	317.2	313.7	310.3	303.3	296.3	292.8	285.8
70°	285.8	278.9	272.0	268.4	264.9	261.5	254.4	251.0	244.1	240.6	237.0
72.5°	230.1	226.6	219.6	216.1	212.7	209.2	205.7	202.2	195.3	191.7	188.2
75°	184.8	181.3	174.3	170.8	167.4	167.4	163.9	156.9	153.4	153.4	149.9
77.5°	139.4	136.0	132.5	129.0	125.5	125.5	122.0	118.6	115.0	115.0	111.5
80°	101.2	97.6	94.1	94.1	94.1	90.7	87.2	87.2	83.6	83.6	80.2
82.5°	66.2	66.2	62.7	62.7	62.7	59.3	59.3	55.8	55.8	55.8	55.8
85°	38.3	38.3	38.3	34.8	34.8	34.8	34.8	34.8	34.8	31.4	34.8
87.5°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4	14.0	14.0	14.0
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°	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3
2.5°	2555.4	2551.9	2544.9	2544.9	2537.9	2537.9	2534.5	2530.9	2527.4	2524.0	2520.5
5°	2530.9	2517.1	2510.0	2506.6	2499.5	2496.1	2485.7	2478.7	2475.2	2468.2	2461.2
7.5°	2485.7	2471.7	2457.8	2454.2	2450.7	2436.8	2426.4	2415.9	2409.0	2402.0	2395.0
10°	2433.3	2419.4	2402.0	2395.0	2388.0	2370.6	2356.6	2346.1	2332.3	2318.3	2314.8
12.5°	2370.6	2349.7	2328.7	2321.8	2311.3	2293.9	2279.9	2262.5	2252.0	2234.6	2231.1
15°	2297.3	2273.0	2255.6	2238.2	2231.1	2213.7	2189.3	2175.3	2154.4	2147.5	2130.1
17.5°	2210.3	2185.8	2161.5	2154.4	2143.9	2119.6	2095.2	2077.7	2056.9	2046.4	2035.9
20°	2119.6	2088.2	2063.8	2056.9	2042.9	2022.0	1997.6	1980.2	1962.7	1941.7	1931.4
22.5°	2015.0	1980.2	1959.3	1941.7	1938.3	1914.0	1886.0	1872.1	1858.1	1840.7	1826.8
25°	1900.0	1868.6	1844.2	1830.2	1823.3	1802.3	1781.4	1764.0	1743.1	1732.6	1715.2
27.5°	1781.4	1760.5	1729.2	1715.2	1704.7	1687.3	1662.9	1652.5	1631.5	1617.5	1607.1
30°	1666.4	1635.1	1617.5	1600.1	1589.7	1572.3	1551.3	1540.8	1523.4	1509.5	1499.1
32.5°	1540.8	1520.0	1495.6	1488.6	1474.6	1457.2	1443.2	1425.8	1411.9	1397.9	1394.5
35°	1425.8	1397.9	1373.6	1366.5	1356.2	1338.6	1331.7	1321.2	1303.8	1300.3	1286.4
37.5°	1300.3	1286.4	1258.5	1248.1	1244.5	1230.6	1216.7	1209.7	1199.2	1188.8	1185.3
40°	1181.8	1164.4	1150.4	1140.0	1133.0	1122.5	1108.6	1105.1	1098.2	1084.2	1080.7
42.5°	1070.2	1052.8	1038.9	1035.4	1024.9	1014.5	1007.5	997.0	993.5	990.1	983.0
45°	962.2	951.7	937.8	934.3	930.8	916.8	909.9	902.9	896.0	892.5	885.5
47.5°	864.6	854.1	843.6	840.1	833.2	829.8	819.3	815.8	805.3	801.8	798.4
50°	770.5	763.4	756.5	753.1	746.0	742.6	735.5	728.6	721.7	718.1	714.6
52.5°	686.7	679.8	672.8	669.3	665.9	658.9	651.9	645.0	641.4	637.9	634.5
55°	606.6	599.7	596.1	592.6	589.2	585.7	575.2	571.7	568.3	564.7	557.8
57.5°	533.3	526.4	519.5	519.5	515.9	512.5	505.5	498.5	498.5	491.6	484.5
60°	467.1	460.2	453.2	449.7	446.3	439.2	435.8	432.3	428.8	425.3	418.3
62.5°	397.5	393.9	387.0	387.0	380.0	376.5	373.0	369.5	366.1	359.1	355.6
65°	338.2	334.7	327.7	324.2	324.2	320.8	313.7	310.3	306.8	306.8	303.3
67.5°	282.4	278.9	272.0	268.4	268.4	264.9	261.5	261.5	258.0	254.4	258.0
70°	233.6	226.6	226.6	223.1	223.1	219.6	216.1	216.1	216.1	219.6	219.6
72.5°	184.8	181.3	177.7	177.7	177.7	177.7	174.3	174.3	177.7	181.3	181.3
75°	146.4	142.9	142.9	142.9	139.4	139.4	142.9	142.9	146.4	146.4	146.4
77.5°	108.1	108.1	108.1	108.1	108.1	108.1	111.5	111.5	115.0	115.0	115.0
80°	80.2	80.2	80.2	80.2	80.2	83.6	83.6	83.6	83.6	83.6	87.2
82.5°	55.8	55.8	55.8	55.8	55.8	55.8	55.8	59.3	59.3	59.3	59.3
85°	31.4	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
87.5°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
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: P585066

CATALOG NUMBER: HC860D010-HM86080827-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3	2569.3
2.5°	2517.1	2517.1	2517.1	2520.5	2513.5	2513.5	2513.5	2513.5
5°	2457.8	2454.2	2450.7	2454.2	2447.3	2447.3	2443.8	2443.8
7.5°	2384.5	2381.1	2377.6	2377.6	2370.6	2370.6	2367.1	2363.7
10°	2304.4	2297.3	2300.9	2293.9	2290.4	2287.0	2283.4	2279.9
12.5°	2217.2	2210.3	2206.7	2199.8	2192.8	2189.3	2192.8	2185.8
15°	2123.1	2112.6	2109.1	2102.2	2095.2	2091.7	2091.7	2088.2
17.5°	2018.4	2011.5	2008.1	2001.0	1997.6	1990.7	1987.1	1983.6
20°	1920.9	1903.5	1906.9	1900.0	1896.4	1882.6	1882.6	1886.0
22.5°	1812.8	1802.3	1795.4	1788.3	1784.9	1778.0	1778.0	1774.5
25°	1704.7	1694.2	1690.8	1683.8	1680.4	1673.4	1669.9	1669.9
27.5°	1600.1	1586.2	1586.2	1579.2	1572.3	1568.7	1565.3	1561.8
30°	1488.6	1478.1	1474.6	1474.6	1471.2	1471.2	1460.7	1464.2
32.5°	1384.0	1377.0	1373.6	1366.5	1366.5	1363.1	1363.1	1352.6
35°	1279.5	1269.0	1272.4	1265.5	1261.9	1258.5	1261.9	1258.5
37.5°	1178.3	1171.4	1171.4	1164.4	1164.4	1160.9	1157.4	1164.4
40°	1077.3	1073.7	1070.2	1066.8	1070.2	1066.8	1059.7	1063.3
42.5°	976.1	976.1	972.7	972.7	969.2	969.2	969.2	969.2
45°	885.5	882.0	882.0	878.5	878.5	878.5	878.5	875.1
47.5°	794.8	791.3	791.3	791.3	787.9	787.9	784.4	787.9
50°	707.7	707.7	704.2	704.2	707.7	704.2	700.7	700.7
52.5°	627.6	627.6	624.0	624.0	620.5	617.1	620.5	620.5
55°	554.3	550.9	547.3	547.3	543.8	540.4	540.4	543.8
57.5°	484.5	481.1	477.6	477.6	470.6	467.1	467.1	467.1
60°	418.3	411.4	411.4	407.8	407.8	404.4	404.4	404.4
62.5°	355.6	352.1	352.1	352.1	352.1	348.7	348.7	348.7
65°	303.3	303.3	303.3	306.8	306.8	310.3	310.3	310.3
67.5°	261.5	264.9	264.9	264.9	268.4	268.4	268.4	264.9
70°	223.1	223.1	223.1	226.6	226.6	226.6	226.6	226.6
72.5°	184.8	184.8	184.8	184.8	184.8	184.8	184.8	184.8
75°	146.4	149.9	149.9	149.9	146.4	149.9	149.9	146.4
77.5°	115.0	115.0	115.0	115.0	115.0	115.0	115.0	115.0
80°	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2
82.5°	59.3	59.3	59.3	59.3	59.3	59.3	59.3	59.3
85°	34.8	34.8	34.8	34.8	34.8	34.8	34.8	34.8
87.5°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
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)