

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: P593786

Luminaire Tested: **HC845D010-HM82555950-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593786  
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: HC845D010-HM82555950-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4778.9 lumens  
Efficiency: N/A  
Efficacy: 108.6 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

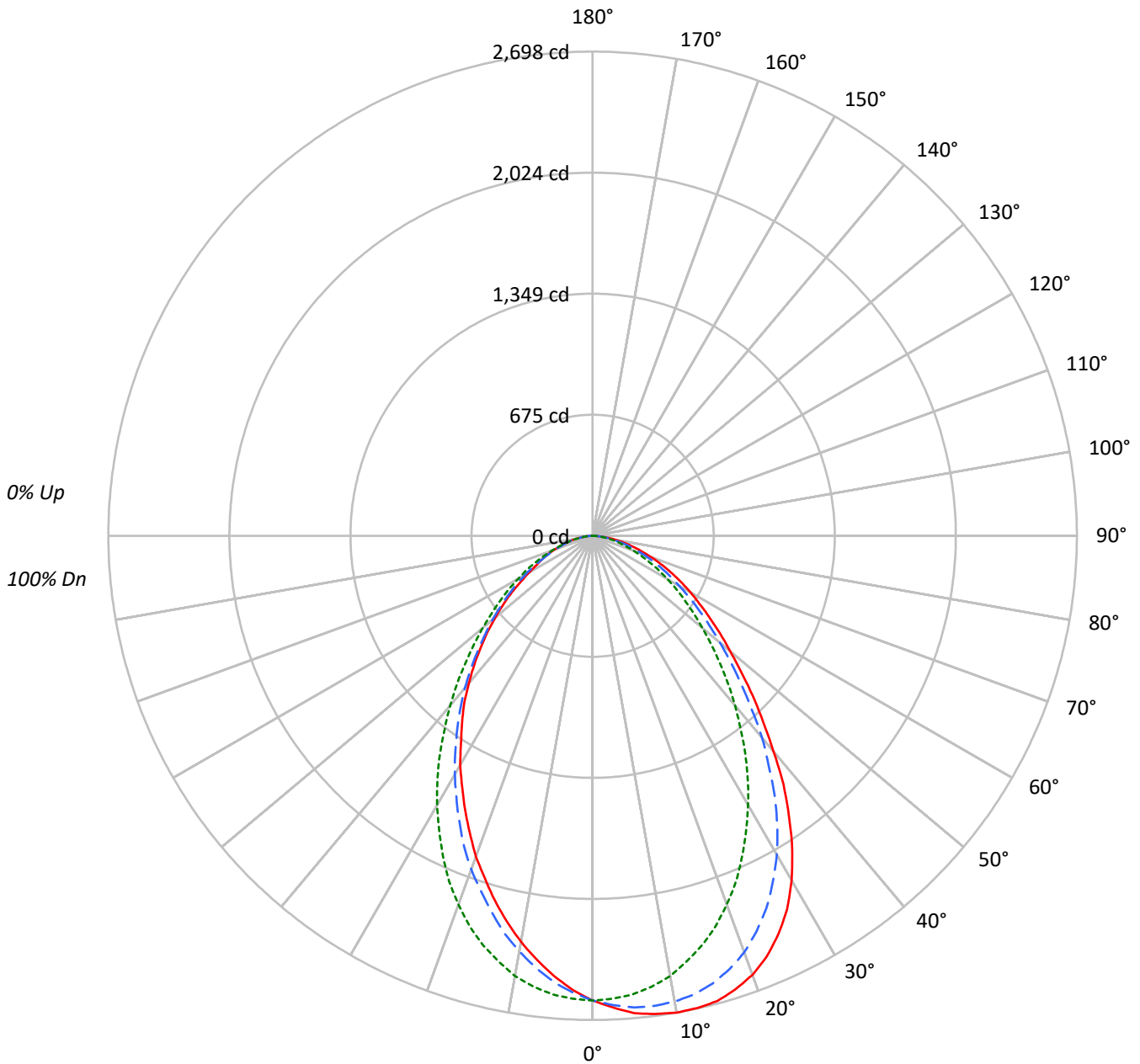
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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			100
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87			87
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76			76
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66			66
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58			58
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51			51
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46			46
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41			41
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38			38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34			34
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32			32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	79848	79848	79848
5°	82654	79394	76237
10°	84492	78001	71949
15°	85694	75373	67187
20°	85435	71715	62375
25°	83322	67065	57263
30°	78940	61678	52541
35°	71818	55815	47748
40°	63078	49645	43140
45°	55004	43670	38459
50°	47872	38258	33883
55°	42687	33622	29467
60°	38792	29473	25138
65°	34870	25633	22816
70°	31042	21864	20592
75°	27212	18419	17585
80°	23085	14970	15609
85°	17372	11216	12454



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	242.5	5.1
10°-20°	668.3	14.0
20°-30°	927.6	19.4
30°-40°	959.1	20.1
40°-50°	803.0	16.8
50°-60°	583.0	12.2
60°-70°	367.9	7.7
70°-80°	182.2	3.8
80°-90°	45.3	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°	1838.4	38.5
0°-40°	2797.5	58.5
0°-60°	4183.5	87.5
0°-90°	4778.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4778.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2589	2589	2589	2589	2589	
5°	2670	2639	2565	2495	2463	255
15°	2684	2582	2361	2171	2105	755
25°	2449	2291	1971	1757	1683	1122
35°	1908	1767	1483	1314	1268	1188
45°	1261	1170	1001	903	882	976
55°	794	724	625	573	548	717
65°	478	418	351	309	313	476
75°	228	190	155	148	148	245
85°	49	39	32	35	35	60
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°	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4
2.5°	2631.6	2631.6	2635.1	2631.6	2631.6	2631.6	2628.1	2628.1	2624.6	2624.6	2617.5
5°	2670.2	2663.2	2670.2	2663.2	2663.2	2663.2	2659.7	2652.7	2649.2	2642.2	2638.7
7.5°	2687.8	2684.3	2684.3	2680.8	2680.8	2677.3	2673.7	2670.2	2656.1	2652.7	2642.2
10°	2698.4	2694.9	2694.9	2691.3	2684.3	2684.3	2677.3	2673.7	2656.1	2649.2	2635.1
12.5°	2694.9	2694.9	2694.9	2691.3	2680.8	2677.3	2670.2	2659.7	2645.7	2631.6	2617.5
15°	2684.3	2684.3	2677.3	2673.7	2663.2	2656.1	2652.7	2635.1	2621.1	2603.5	2582.4
17.5°	2649.2	2649.2	2645.7	2638.7	2628.1	2621.1	2614.0	2596.4	2582.4	2554.3	2533.2
20°	2603.5	2600.0	2596.4	2585.9	2575.4	2571.9	2561.4	2536.7	2519.1	2498.1	2470.0
22.5°	2536.7	2533.2	2529.7	2522.7	2505.2	2498.1	2491.1	2473.5	2441.8	2420.8	2385.6
25°	2448.9	2448.9	2441.8	2431.3	2413.8	2406.8	2396.2	2378.6	2350.6	2318.9	2290.8
27.5°	2347.1	2343.5	2333.0	2325.9	2311.9	2301.3	2283.7	2262.7	2234.6	2209.9	2174.9
30°	2217.0	2217.0	2209.9	2199.5	2181.9	2174.9	2160.8	2136.2	2108.1	2076.4	2051.9
32.5°	2069.4	2069.4	2058.8	2051.9	2041.4	2023.8	2020.3	1992.1	1967.6	1943.0	1914.8
35°	1907.8	1911.3	1904.4	1890.3	1872.7	1872.7	1865.7	1841.0	1813.0	1788.4	1767.2
37.5°	1746.2	1735.7	1732.2	1725.1	1714.6	1700.5	1693.5	1683.0	1658.4	1640.8	1609.1
40°	1567.0	1570.5	1563.5	1556.5	1552.9	1542.4	1538.9	1521.4	1503.8	1482.7	1468.6
42.5°	1405.4	1405.4	1405.4	1398.3	1391.3	1380.9	1377.3	1366.8	1345.7	1331.6	1310.5
45°	1261.3	1250.8	1250.8	1247.3	1243.7	1236.7	1226.3	1219.2	1205.1	1194.6	1170.0
47.5°	1120.8	1124.3	1120.8	1117.3	1106.7	1103.2	1099.7	1085.6	1071.7	1061.1	1043.5
50°	997.9	1004.9	997.9	997.9	990.8	987.3	980.3	969.7	959.2	941.6	924.1
52.5°	895.9	895.9	892.4	888.9	878.3	871.3	867.8	864.3	846.8	832.7	818.6
55°	794.0	797.5	797.5	787.0	783.6	776.5	773.0	762.4	755.4	734.3	723.7
57.5°	706.3	702.7	706.3	699.2	692.2	685.1	681.6	674.6	664.0	650.0	635.9
60°	629.0	621.9	621.9	618.4	611.4	607.8	600.8	590.3	579.7	565.6	555.2
62.5°	551.7	548.1	544.6	541.1	534.1	530.5	527.0	516.5	505.9	495.4	484.9
65°	477.9	477.9	474.4	467.3	463.8	460.3	456.8	449.7	435.7	428.6	418.1
67.5°	411.1	407.6	407.6	400.6	393.5	390.0	390.0	383.0	372.4	361.9	354.8
70°	344.3	347.8	344.3	340.8	333.8	333.8	326.8	323.3	309.2	305.7	295.1
72.5°	284.6	284.6	281.1	281.1	274.0	270.5	270.5	263.5	256.5	249.5	242.5
75°	228.4	228.4	228.4	224.9	221.3	214.3	214.3	210.8	203.8	196.7	189.7
77.5°	179.2	175.7	175.7	172.2	168.7	165.2	165.2	161.6	154.6	151.1	144.0
80°	130.0	126.4	126.4	126.4	119.4	122.9	119.4	115.9	112.4	109.0	105.5
82.5°	84.3	87.9	87.9	84.3	80.8	80.8	80.8	77.3	77.3	73.8	70.3
85°	49.1	49.1	49.1	49.1	45.6	45.6	45.6	42.1	42.1	42.1	38.6
87.5°	21.1	21.1	21.1	21.1	21.1	21.1	17.6	17.6	17.6	17.6	17.6
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°	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4
2.5°	2617.5	2610.5	2607.0	2603.5	2603.5	2600.0	2596.4	2589.4	2589.4	2582.4	2579.0
5°	2631.6	2621.1	2614.0	2607.0	2603.5	2596.4	2589.4	2579.0	2575.4	2564.9	2554.3
7.5°	2635.1	2617.5	2610.5	2596.4	2589.4	2582.4	2568.4	2557.8	2543.8	2533.2	2519.1
10°	2621.1	2607.0	2589.4	2571.9	2568.4	2557.8	2536.7	2522.7	2505.2	2491.1	2470.0
12.5°	2600.0	2579.0	2561.4	2540.2	2529.7	2519.1	2498.1	2477.0	2452.4	2427.9	2406.8
15°	2564.9	2540.2	2515.6	2491.1	2477.0	2466.5	2441.8	2417.3	2392.7	2361.0	2340.0
17.5°	2512.1	2484.1	2459.4	2427.9	2413.8	2403.2	2371.6	2343.5	2311.9	2280.3	2259.2
20°	2445.4	2410.3	2382.1	2347.1	2336.5	2318.9	2287.2	2255.7	2220.5	2185.4	2160.8
22.5°	2357.5	2322.4	2290.8	2255.7	2238.1	2220.5	2188.9	2150.2	2115.2	2087.0	2062.4
25°	2255.7	2224.0	2185.4	2153.7	2132.6	2111.6	2076.4	2044.9	2013.2	1971.1	1946.5
27.5°	2143.2	2104.6	2076.4	2034.3	2013.2	1999.1	1960.6	1918.3	1890.3	1851.6	1823.5
30°	2016.7	1981.7	1950.0	1907.8	1886.8	1872.7	1837.5	1798.9	1770.8	1732.2	1704.0
32.5°	1883.3	1844.5	1806.0	1777.8	1753.3	1739.2	1700.5	1676.0	1640.8	1609.1	1577.6
35°	1739.2	1700.5	1672.5	1633.8	1619.7	1605.7	1574.0	1542.4	1510.8	1482.7	1458.2
37.5°	1584.6	1556.5	1524.9	1496.7	1486.2	1472.1	1433.5	1405.4	1380.9	1352.7	1331.6
40°	1433.5	1408.9	1387.8	1359.7	1342.1	1331.6	1303.6	1278.9	1250.8	1233.3	1212.2
42.5°	1296.5	1268.4	1247.3	1226.3	1208.7	1198.1	1173.5	1156.0	1134.9	1117.3	1092.6
45°	1152.5	1138.4	1113.8	1096.2	1085.6	1071.7	1054.1	1032.9	1015.3	1001.4	983.8
47.5°	1025.9	1011.8	994.4	973.2	966.2	955.6	938.0	924.1	910.0	895.9	878.3
50°	910.0	892.4	878.3	864.3	857.3	846.8	829.2	822.2	811.6	797.5	787.0
52.5°	804.6	790.5	776.5	758.9	755.4	748.4	737.8	723.7	713.2	706.3	699.2
55°	709.8	695.7	685.1	671.1	667.6	660.5	646.4	639.4	632.5	625.4	618.4
57.5°	625.4	611.4	597.3	590.3	583.2	576.2	572.7	562.1	555.2	551.7	544.6
60°	548.1	534.1	523.5	513.0	509.4	505.9	498.9	491.8	484.9	477.9	474.4
62.5°	474.4	460.3	453.2	446.2	439.2	439.2	432.1	425.1	418.1	414.5	407.6
65°	407.6	400.6	390.0	379.5	375.9	375.9	365.4	361.9	358.4	351.3	344.3
67.5°	344.3	337.2	326.8	323.3	319.8	316.2	312.7	305.7	298.6	295.1	288.1
70°	288.1	281.1	274.0	270.5	267.0	263.5	256.5	253.0	246.0	242.5	238.9
72.5°	231.9	228.4	221.3	217.8	214.3	210.8	207.3	203.8	196.7	193.2	189.7
75°	186.3	182.8	175.7	172.2	168.7	168.7	165.2	158.1	154.6	154.6	151.1
77.5°	140.5	137.0	133.5	130.0	126.4	126.4	122.9	119.4	115.9	115.9	112.4
80°	101.9	98.4	94.9	94.9	94.9	91.4	87.9	87.9	84.3	84.3	80.8
82.5°	66.7	66.7	63.2	63.2	63.2	59.7	59.7	56.2	56.2	56.2	56.2
85°	38.6	38.6	38.6	35.2	35.2	35.2	35.2	35.2	35.2	31.7	35.2
87.5°	17.6	17.6	17.6	17.6	17.6	17.6	17.6	17.6	14.1	14.1	14.1
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°	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4
2.5°	2575.4	2571.9	2564.9	2564.9	2557.8	2557.8	2554.3	2550.8	2547.3	2543.8	2540.2
5°	2550.8	2536.7	2529.7	2526.2	2519.1	2515.6	2505.2	2498.1	2494.6	2487.6	2480.5
7.5°	2505.2	2491.1	2477.0	2473.5	2470.0	2455.9	2445.4	2434.8	2427.9	2420.8	2413.8
10°	2452.4	2438.3	2420.8	2413.8	2406.8	2389.2	2375.1	2364.5	2350.6	2336.5	2333.0
12.5°	2389.2	2368.1	2347.1	2340.0	2329.5	2311.9	2297.8	2280.3	2269.8	2252.2	2248.6
15°	2315.4	2290.8	2273.3	2255.7	2248.6	2231.0	2206.5	2192.5	2171.3	2164.3	2146.7
17.5°	2227.5	2203.0	2178.4	2171.3	2160.8	2136.2	2111.6	2094.0	2072.9	2062.4	2051.9
20°	2136.2	2104.6	2080.0	2072.9	2058.8	2037.9	2013.2	1995.6	1978.1	1957.0	1946.5
22.5°	2030.8	1995.6	1974.6	1957.0	1953.5	1928.9	1900.8	1886.8	1872.7	1855.1	1841.0
25°	1914.8	1883.3	1858.6	1844.5	1837.5	1816.5	1795.4	1777.8	1756.8	1746.2	1728.7
27.5°	1795.4	1774.3	1742.7	1728.7	1718.1	1700.5	1676.0	1665.4	1644.3	1630.2	1619.7
30°	1679.5	1647.8	1630.2	1612.6	1602.2	1584.6	1563.5	1552.9	1535.3	1521.4	1510.8
32.5°	1552.9	1531.9	1507.3	1500.3	1486.2	1468.6	1454.6	1437.0	1423.0	1408.9	1405.4
35°	1437.0	1408.9	1384.3	1377.3	1366.8	1349.2	1342.1	1331.6	1314.0	1310.5	1296.5
37.5°	1310.5	1296.5	1268.4	1257.8	1254.3	1240.2	1226.3	1219.2	1208.7	1198.1	1194.6
40°	1191.1	1173.5	1159.5	1149.0	1141.9	1131.4	1117.3	1113.8	1106.7	1092.6	1089.1
42.5°	1078.7	1061.1	1047.0	1043.5	1032.9	1022.4	1015.3	1004.9	1001.4	997.9	990.8
45°	969.7	959.2	945.1	941.6	938.0	924.1	917.1	910.0	903.0	899.5	892.4
47.5°	871.3	860.7	850.3	846.8	839.8	836.2	825.7	822.2	811.6	808.1	804.6
50°	776.5	769.5	762.4	758.9	751.9	748.4	741.3	734.3	727.3	723.7	720.2
52.5°	692.2	685.1	678.1	674.6	671.1	664.0	657.0	650.0	646.4	642.9	639.4
55°	611.4	604.3	600.8	597.3	593.8	590.3	579.7	576.2	572.7	569.1	562.1
57.5°	537.6	530.5	523.5	523.5	520.0	516.5	509.4	502.4	502.4	495.4	488.3
60°	470.8	463.8	456.8	453.2	449.7	442.7	439.2	435.7	432.1	428.6	421.6
62.5°	400.6	397.1	390.0	390.0	383.0	379.5	375.9	372.4	368.9	361.9	358.4
65°	340.8	337.2	330.3	326.8	326.8	323.3	316.2	312.7	309.2	309.2	305.7
67.5°	284.6	281.1	274.0	270.5	270.5	267.0	263.5	263.5	260.1	256.5	260.1
70°	235.4	228.4	228.4	224.9	224.9	221.3	217.8	217.8	217.8	221.3	221.3
72.5°	186.3	182.8	179.2	179.2	179.2	179.2	175.7	175.7	179.2	182.8	182.8
75°	147.6	144.0	144.0	144.0	140.5	140.5	144.0	144.0	147.6	147.6	147.6
77.5°	109.0	109.0	109.0	109.0	109.0	109.0	112.4	112.4	115.9	115.9	115.9
80°	80.8	80.8	80.8	80.8	80.8	84.3	84.3	84.3	84.3	84.3	87.9
82.5°	56.2	56.2	56.2	56.2	56.2	56.2	56.2	59.7	59.7	59.7	59.7
85°	31.7	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2
87.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
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: P593786

CATALOG NUMBER: HC845D010-HM82555950-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4	2589.4
2.5°	2536.7	2536.7	2536.7	2540.2	2533.2	2533.2	2533.2	2533.2
5°	2477.0	2473.5	2470.0	2473.5	2466.5	2466.5	2462.9	2462.9
7.5°	2403.2	2399.7	2396.2	2396.2	2389.2	2389.2	2385.6	2382.1
10°	2322.4	2315.4	2318.9	2311.9	2308.3	2304.8	2301.3	2297.8
12.5°	2234.6	2227.5	2224.0	2217.0	2209.9	2206.5	2209.9	2203.0
15°	2139.7	2129.2	2125.7	2118.7	2111.6	2108.1	2108.1	2104.6
17.5°	2034.3	2027.3	2023.8	2016.7	2013.2	2006.2	2002.7	1999.1
20°	1935.9	1918.3	1921.8	1914.8	1911.3	1897.3	1897.3	1900.8
22.5°	1827.1	1816.5	1809.5	1802.4	1798.9	1791.9	1791.9	1788.4
25°	1718.1	1707.5	1704.0	1697.0	1693.5	1686.4	1683.0	1683.0
27.5°	1612.6	1598.7	1598.7	1591.6	1584.6	1581.1	1577.6	1574.0
30°	1500.3	1489.7	1486.2	1486.2	1482.7	1482.7	1472.1	1475.6
32.5°	1394.8	1387.8	1384.3	1377.3	1377.3	1373.8	1373.8	1363.3
35°	1289.5	1278.9	1282.4	1275.4	1271.9	1268.4	1271.9	1268.4
37.5°	1187.5	1180.5	1180.5	1173.5	1173.5	1170.0	1166.4	1173.5
40°	1085.6	1082.2	1078.7	1075.2	1078.7	1075.2	1068.1	1071.7
42.5°	983.8	983.8	980.3	980.3	976.8	976.8	976.8	976.8
45°	892.4	888.9	888.9	885.4	885.4	885.4	885.4	881.9
47.5°	801.0	797.5	797.5	797.5	794.0	794.0	790.5	794.0
50°	713.2	713.2	709.8	709.8	713.2	709.8	706.3	706.3
52.5°	632.5	632.5	629.0	629.0	625.4	621.9	625.4	625.4
55°	558.7	555.2	551.7	551.7	548.1	544.6	544.6	548.1
57.5°	488.3	484.9	481.4	481.4	474.4	470.8	470.8	470.8
60°	421.6	414.5	414.5	411.1	411.1	407.6	407.6	407.6
62.5°	358.4	354.8	354.8	354.8	354.8	351.3	351.3	351.3
65°	305.7	305.7	305.7	309.2	309.2	312.7	312.7	312.7
67.5°	263.5	267.0	267.0	267.0	270.5	270.5	270.5	267.0
70°	224.9	224.9	224.9	228.4	228.4	228.4	228.4	228.4
72.5°	186.3	186.3	186.3	186.3	186.3	186.3	186.3	186.3
75°	147.6	151.1	151.1	151.1	147.6	151.1	151.1	147.6
77.5°	115.9	115.9	115.9	115.9	115.9	115.9	115.9	115.9
80°	87.9	87.9	87.9	87.9	87.9	87.9	87.9	87.9
82.5°	59.7	59.7	59.7	59.7	59.7	59.7	59.7	59.7
85°	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2
87.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
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)