

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: P584735

Luminaire Tested: **HC845D010-HM82555930-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584735  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC845D010-HM82555930-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4502.6 lumens  
Efficiency: N/A  
Efficacy: 102.3 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

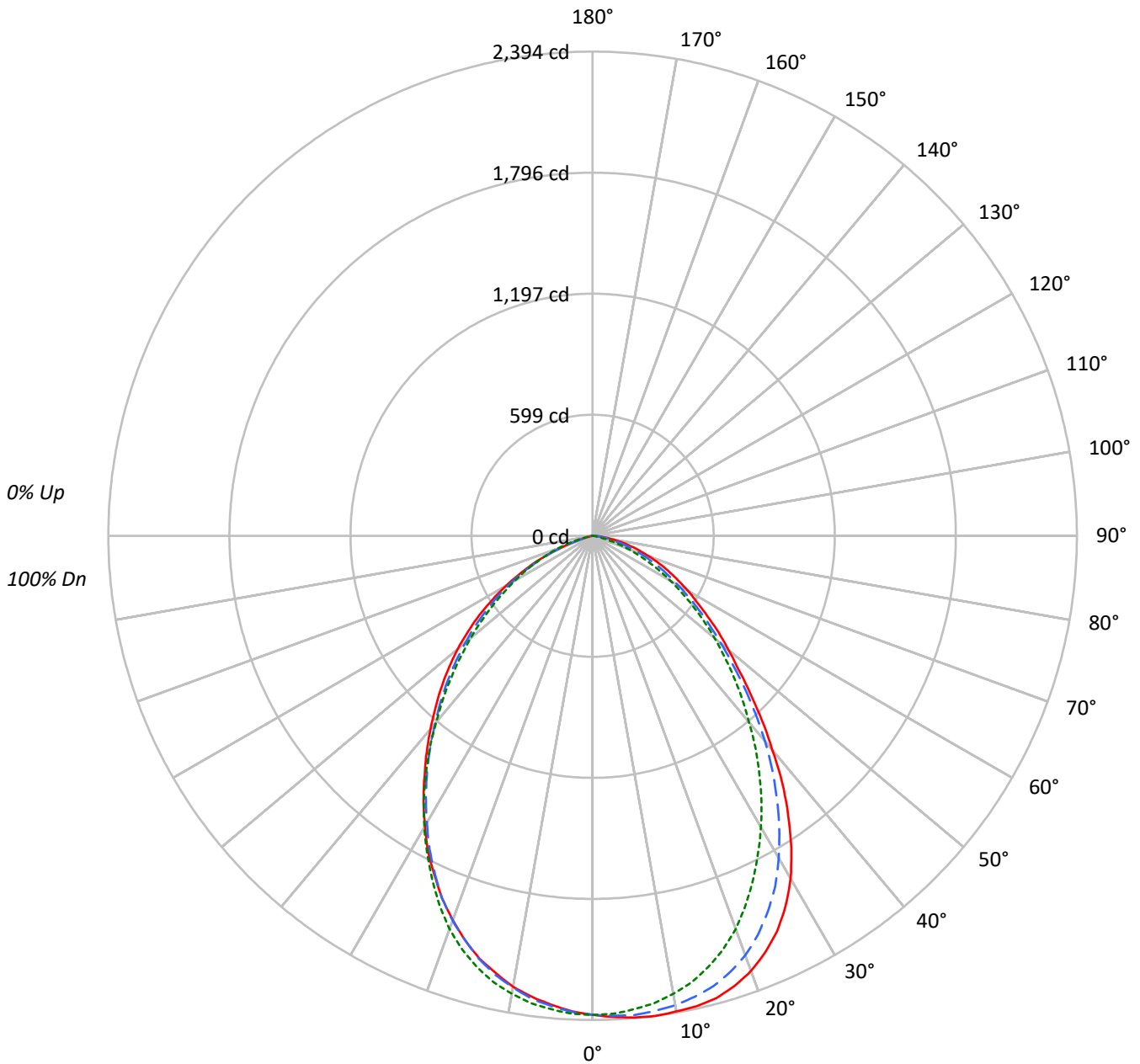
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	85	100	94	89	84	91	86	82	87	84	81	84	82	79	77			77
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67			67
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59			59
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32			32

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

	0°	90°	180°
0°	73054	73054	73054
5°	74021	72745	72058
10°	74776	72002	70912
15°	75529	70482	69068
20°	75147	67882	66326
25°	73393	63816	62958
30°	69714	59242	59015
35°	63461	54057	54535
40°	55643	48385	50164
45°	48001	43033	46069
50°	42029	37783	41727
55°	37241	32477	36730
60°	33550	27309	30435
65°	30229	21926	23305
70°	26525	15967	12830
75°	22613	8292	3396
80°	17421	2255	568
85°	11216	0	0



TEST NUMBER: P584735

CATALOG NUMBER: HC845D010-HM82555930-81RWWC

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	223.5	5.0
10°-20°	628.4	14.0
20°-30°	891.9	19.8
30°-40°	938.8	20.9
40°-50°	798.6	17.7
50°-60°	577.1	12.8
60°-70°	328.3	7.3
70°-80°	103.4	2.3
80°-90°	12.6	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°	1743.8	38.7
0°-40°	2682.6	59.6
0°-60°	4058.4	90.1
0°-90°	4502.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4502.6	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2369	2369	2369	2369	2369	
5°	2391	2379	2350	2334	2328	228
15°	2366	2306	2208	2167	2164	666
25°	2157	2050	1876	1844	1850	988
35°	1686	1588	1436	1426	1449	1049
45°	1101	1060	987	1012	1056	856
55°	693	642	604	639	683	625
65°	414	357	300	297	319	411
75°	190	146	70	32	28	204
85°	32	19	0	0	0	41
90°	0	0	0	0	0	



TEST NUMBER: P584735

CATALOG NUMBER: HC845D010-HM82555930-81RWWC

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1
2.5°	2381.8	2384.9	2378.6	2378.6	2384.9	2378.6	2381.8	2381.8	2378.6	2378.6	2375.4
5°	2391.3	2388.1	2388.1	2388.1	2391.3	2384.9	2381.8	2384.9	2378.6	2378.6	2378.6
7.5°	2394.4	2394.4	2391.3	2388.1	2388.1	2388.1	2384.9	2381.8	2378.6	2372.3	2369.1
10°	2388.1	2388.1	2391.3	2384.9	2384.9	2378.6	2378.6	2372.3	2372.3	2365.9	2356.4
12.5°	2381.8	2378.6	2378.6	2372.3	2372.3	2365.9	2365.9	2356.4	2353.3	2343.8	2334.3
15°	2365.9	2362.8	2356.4	2353.3	2350.1	2346.9	2340.6	2337.4	2327.9	2315.3	2305.9
17.5°	2334.3	2331.1	2327.9	2321.6	2315.3	2312.2	2309.1	2299.5	2286.9	2277.4	2261.5
20°	2290.0	2286.9	2286.9	2277.4	2274.2	2264.7	2261.5	2248.9	2239.4	2220.5	2207.8
22.5°	2229.9	2233.0	2226.7	2220.5	2214.2	2204.7	2198.3	2185.7	2169.8	2150.8	2135.0
25°	2157.1	2160.3	2154.0	2147.6	2138.1	2131.9	2125.6	2106.6	2090.8	2068.6	2049.6
27.5°	2065.4	2065.4	2065.4	2059.1	2043.2	2040.2	2033.9	2014.9	1992.7	1973.7	1954.7
30°	1957.9	1954.7	1954.7	1945.3	1939.0	1926.3	1916.8	1901.0	1885.1	1863.0	1840.9
32.5°	1828.2	1831.4	1821.9	1815.6	1806.1	1806.1	1793.4	1780.7	1761.8	1739.7	1717.5
35°	1685.8	1689.0	1682.7	1679.6	1663.8	1660.6	1657.4	1641.6	1628.9	1613.1	1587.9
37.5°	1540.4	1537.2	1534.0	1534.0	1524.5	1518.2	1511.9	1502.4	1483.5	1470.8	1458.2
40°	1382.3	1382.3	1382.3	1379.1	1375.9	1369.6	1366.4	1360.1	1347.4	1334.8	1325.3
42.5°	1239.9	1239.9	1236.7	1233.5	1227.2	1230.4	1224.1	1217.8	1205.1	1195.6	1189.3
45°	1100.7	1100.7	1100.7	1103.9	1097.6	1088.1	1088.1	1081.7	1075.4	1069.1	1059.6
47.5°	977.3	986.8	980.5	977.3	980.5	967.8	967.8	961.5	955.2	949.0	936.3
50°	876.1	876.1	876.1	869.8	866.6	866.6	857.2	850.9	847.7	841.4	828.7
52.5°	784.4	778.1	778.1	774.9	771.7	765.5	765.5	759.2	746.5	740.2	730.7
55°	692.7	692.7	689.5	686.3	683.2	680.1	676.9	667.4	661.1	651.6	642.1
57.5°	610.4	616.8	613.6	607.3	600.9	600.9	594.6	588.4	578.9	569.4	559.9
60°	544.0	540.9	540.9	537.7	531.4	528.2	525.0	515.5	506.0	496.6	487.1
62.5°	474.5	474.5	474.5	468.1	461.8	458.6	455.5	449.1	436.5	427.0	420.6
65°	414.3	411.1	408.1	404.9	401.8	395.4	392.3	385.9	376.4	366.9	357.4
67.5°	354.2	351.1	351.1	347.9	338.4	335.2	335.2	325.7	316.4	306.9	297.4
70°	294.2	294.2	294.2	287.9	284.7	281.5	278.4	272.0	262.5	253.0	243.5
72.5°	243.5	240.3	240.3	237.2	227.7	224.6	221.5	215.1	205.6	199.3	193.0
75°	189.8	189.8	186.6	183.5	180.3	177.1	174.0	167.6	158.1	148.6	145.5
77.5°	145.5	142.3	142.3	139.1	132.9	129.7	129.7	123.4	113.9	107.6	101.2
80°	98.1	101.2	98.1	94.9	91.7	88.6	85.4	82.2	75.9	69.6	63.2
82.5°	60.1	63.2	60.1	60.1	56.9	53.7	53.7	47.4	44.3	41.2	38.0
85°	31.7	31.7	31.7	31.7	28.5	28.5	28.5	25.3	22.2	19.0	19.0
87.5°	9.5	12.7	9.5	9.5	9.5	9.5	9.5	9.5	6.3	6.3	6.3
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: P584735

CATALOG NUMBER: HC845D010-HM82555930-81RWWC

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1
2.5°	2378.6	2375.4	2372.3	2372.3	2372.3	2372.3	2372.3	2369.1	2365.9	2365.9	2365.9
5°	2372.3	2372.3	2372.3	2369.1	2365.9	2365.9	2359.6	2356.4	2353.3	2350.1	2346.9
7.5°	2365.9	2359.6	2356.4	2353.3	2350.1	2350.1	2343.8	2337.4	2337.4	2331.1	2324.8
10°	2346.9	2343.8	2337.4	2331.1	2327.9	2324.8	2318.4	2309.1	2305.9	2299.5	2293.2
12.5°	2324.8	2318.4	2312.2	2299.5	2296.4	2293.2	2280.5	2271.0	2264.7	2261.5	2245.7
15°	2296.4	2283.7	2274.2	2258.4	2255.2	2248.9	2239.4	2229.9	2217.3	2207.8	2201.5
17.5°	2245.7	2233.0	2217.3	2201.5	2195.2	2195.2	2179.3	2166.6	2150.8	2144.5	2131.9
20°	2185.7	2169.8	2157.1	2138.1	2128.8	2119.3	2109.8	2090.8	2078.1	2068.6	2052.8
22.5°	2116.1	2093.9	2078.1	2059.1	2043.2	2033.9	2018.0	2002.2	1986.4	1976.9	1964.2
25°	2027.5	2008.5	1983.2	1964.2	1954.7	1942.1	1923.1	1907.3	1891.5	1875.6	1869.3
27.5°	1929.5	1904.1	1882.0	1859.9	1850.4	1840.9	1818.7	1799.7	1787.1	1771.2	1765.0
30°	1821.9	1796.6	1771.2	1752.3	1742.8	1727.0	1714.3	1692.2	1676.5	1663.8	1647.9
32.5°	1698.5	1679.6	1657.4	1628.9	1622.6	1609.9	1590.9	1581.6	1562.6	1553.1	1540.4
35°	1565.7	1553.1	1530.9	1508.7	1499.2	1493.0	1477.2	1458.2	1445.5	1436.0	1429.7
37.5°	1439.2	1423.3	1401.3	1385.4	1379.1	1369.6	1350.6	1341.1	1328.4	1322.1	1309.5
40°	1303.2	1287.4	1271.5	1262.0	1252.5	1246.2	1233.5	1224.1	1211.5	1202.0	1198.8
42.5°	1170.3	1160.8	1148.1	1135.5	1132.4	1122.9	1116.6	1107.1	1097.6	1094.4	1084.9
45°	1050.1	1040.7	1028.0	1015.3	1012.2	1005.8	1002.7	993.2	986.8	986.8	986.8
47.5°	930.0	920.5	907.8	901.5	904.6	891.9	891.9	888.8	882.4	882.4	885.6
50°	822.4	809.7	806.6	800.2	793.9	787.6	790.7	781.2	781.2	787.6	784.4
52.5°	721.2	708.5	705.3	699.0	695.8	695.8	692.7	692.7	689.5	692.7	692.7
55°	629.4	619.9	613.6	607.3	604.1	604.1	604.1	600.9	597.8	604.1	607.3
57.5°	547.2	544.0	537.7	528.2	525.0	521.9	518.7	518.7	518.7	518.7	521.9
60°	474.5	468.1	461.8	452.3	452.3	449.1	446.0	442.8	442.8	442.8	442.8
62.5°	411.1	401.8	392.3	385.9	382.7	379.6	376.4	370.1	370.1	370.1	370.1
65°	347.9	338.4	332.1	325.7	319.4	319.4	313.2	310.0	303.7	300.5	294.2
67.5°	287.9	281.5	275.2	265.7	262.5	259.4	253.0	249.8	240.3	237.2	234.0
70°	234.0	224.6	218.3	212.0	208.8	202.5	196.1	189.8	183.5	177.1	170.8
72.5°	183.5	174.0	167.6	161.3	155.0	155.0	145.5	139.1	129.7	123.4	113.9
75°	136.1	126.6	120.2	110.7	107.6	104.4	94.9	88.6	79.1	69.6	63.2
77.5°	91.7	85.4	79.1	69.6	63.2	63.2	53.7	47.4	41.2	31.7	28.5
80°	56.9	50.6	44.3	38.0	38.0	31.7	28.5	22.2	15.8	12.7	9.5
82.5°	31.7	28.5	25.3	19.0	19.0	15.8	12.7	9.5	6.3	3.2	3.2
85°	15.8	12.7	9.5	9.5	6.3	6.3	6.3	3.2	3.2	0.0	0.0
87.5°	6.3	3.2	3.2	3.2	3.2	3.2	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: P584735

CATALOG NUMBER: HC845D010-HM82555930-81RWWC

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1
2.5°	2362.8	2362.8	2359.6	2359.6	2359.6	2356.4	2359.6	2356.4	2356.4	2356.4	2359.6
5°	2350.1	2343.8	2343.8	2340.6	2340.6	2337.4	2340.6	2337.4	2334.3	2331.1	2334.3
7.5°	2324.8	2318.4	2315.3	2312.2	2312.2	2312.2	2309.1	2305.9	2309.1	2299.5	2305.9
10°	2290.0	2286.9	2280.5	2277.4	2274.2	2277.4	2274.2	2267.9	2267.9	2267.9	2264.7
12.5°	2245.7	2239.4	2236.2	2233.0	2226.7	2226.7	2229.9	2223.7	2223.7	2217.3	2217.3
15°	2192.0	2185.7	2179.3	2179.3	2173.0	2173.0	2169.8	2169.8	2166.6	2163.5	2163.5
17.5°	2125.6	2116.1	2109.8	2112.9	2109.8	2106.6	2106.6	2100.3	2097.1	2100.3	2100.3
20°	2046.4	2040.2	2033.9	2037.0	2030.7	2027.5	2030.7	2021.2	2024.4	2024.4	2024.4
22.5°	1957.9	1954.7	1945.3	1945.3	1939.0	1935.8	1939.0	1939.0	1942.1	1939.0	1939.0
25°	1859.9	1853.6	1847.2	1847.2	1844.1	1840.9	1844.1	1847.2	1844.1	1847.2	1847.2
27.5°	1755.5	1746.0	1746.0	1739.7	1739.7	1742.8	1739.7	1742.8	1746.0	1746.0	1752.3
30°	1641.6	1638.4	1635.3	1632.1	1632.1	1635.3	1635.3	1635.3	1638.4	1644.8	1644.8
32.5°	1534.0	1527.7	1521.4	1521.4	1527.7	1524.5	1527.7	1527.7	1534.0	1534.0	1540.4
35°	1417.0	1417.0	1410.6	1413.8	1413.8	1413.8	1413.8	1420.2	1426.5	1429.7	1436.0
37.5°	1309.5	1300.0	1303.2	1303.2	1306.4	1303.2	1312.7	1312.7	1318.9	1318.9	1325.3
40°	1192.5	1192.5	1195.6	1192.5	1195.6	1195.6	1202.0	1208.3	1211.5	1217.8	1221.0
42.5°	1081.7	1088.1	1081.7	1084.9	1088.1	1091.2	1094.4	1097.6	1110.2	1116.6	1126.1
45°	980.5	983.7	986.8	990.0	986.8	993.2	996.3	1002.7	1012.2	1015.3	1018.5
47.5°	882.4	885.6	888.8	891.9	891.9	898.3	901.5	907.8	914.1	917.3	920.5
50°	787.6	793.9	797.1	797.1	800.2	806.6	812.9	812.9	819.2	828.7	831.9
52.5°	702.2	702.2	708.5	711.7	714.8	714.8	724.3	727.5	730.7	737.0	743.3
55°	607.3	616.8	619.9	619.9	626.3	632.6	635.8	638.9	638.9	651.6	651.6
57.5°	525.0	528.2	534.5	534.5	534.5	544.0	544.0	550.4	553.5	556.7	563.0
60°	442.8	449.1	449.1	452.3	449.1	455.5	458.6	465.0	468.1	471.3	474.5
62.5°	366.9	366.9	370.1	370.1	370.1	370.1	376.4	376.4	382.7	385.9	389.1
65°	294.2	294.2	294.2	294.2	294.2	294.2	294.2	294.2	297.4	297.4	303.7
67.5°	227.7	224.6	218.3	221.5	218.3	218.3	215.1	215.1	218.3	218.3	224.6
70°	164.5	161.3	155.0	155.0	151.8	148.6	145.5	142.3	139.1	139.1	139.1
72.5°	107.6	101.2	91.7	88.6	88.6	82.2	75.9	72.7	72.7	72.7	72.7
75°	53.7	47.4	41.2	38.0	38.0	31.7	34.8	31.7	31.7	31.7	31.7
77.5°	22.2	15.8	12.7	12.7	12.7	9.5	9.5	9.5	9.5	9.5	9.5
80°	6.3	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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	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: P584735

CATALOG NUMBER: HC845D010-HM82555930-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1	2369.1
2.5°	2356.4	2356.4	2350.1	2353.3	2353.3	2353.3	2353.3	2353.3
5°	2327.9	2331.1	2327.9	2331.1	2331.1	2327.9	2327.9	2327.9
7.5°	2299.5	2302.7	2299.5	2302.7	2302.7	2302.7	2299.5	2299.5
10°	2264.7	2264.7	2264.7	2264.7	2264.7	2261.5	2264.7	2264.7
12.5°	2217.3	2217.3	2217.3	2220.5	2220.5	2217.3	2217.3	2214.2
15°	2166.6	2160.3	2163.5	2166.6	2163.5	2163.5	2163.5	2163.5
17.5°	2097.1	2100.3	2097.1	2097.1	2097.1	2097.1	2100.3	2097.1
20°	2024.4	2024.4	2027.5	2024.4	2024.4	2024.4	2024.4	2021.2
22.5°	1942.1	1939.0	1939.0	1942.1	1942.1	1939.0	1942.1	1942.1
25°	1850.4	1853.6	1850.4	1850.4	1853.6	1853.6	1853.6	1850.4
27.5°	1752.3	1755.5	1758.7	1755.5	1755.5	1755.5	1758.7	1761.8
30°	1651.1	1657.4	1651.1	1651.1	1657.4	1654.3	1657.4	1657.4
32.5°	1543.6	1553.1	1546.7	1553.1	1553.1	1556.2	1553.1	1556.2
35°	1436.0	1445.5	1445.5	1445.5	1448.7	1451.8	1451.8	1448.7
37.5°	1334.8	1337.9	1337.9	1344.3	1347.4	1350.6	1350.6	1347.4
40°	1230.4	1236.7	1239.9	1239.9	1239.9	1246.2	1252.5	1246.2
42.5°	1129.2	1132.4	1135.5	1135.5	1141.8	1145.0	1148.1	1148.1
45°	1031.2	1037.5	1040.7	1043.9	1046.9	1053.2	1050.1	1056.4
47.5°	930.0	939.5	942.6	945.8	952.1	955.2	958.3	961.5
50°	838.2	844.6	844.6	850.9	860.4	860.4	866.6	869.8
52.5°	746.5	749.7	752.8	756.0	762.3	768.7	768.7	774.9
55°	657.9	661.1	661.1	664.3	667.4	680.1	683.2	683.2
57.5°	566.2	566.2	572.5	575.7	578.9	585.2	585.2	585.2
60°	477.6	480.8	480.8	484.0	487.1	493.5	496.6	493.5
62.5°	389.1	392.3	392.3	395.4	401.8	404.9	401.8	401.8
65°	306.9	310.0	310.0	313.2	319.4	319.4	316.4	319.4
67.5°	224.6	224.6	224.6	224.6	224.6	224.6	224.6	224.6
70°	142.3	139.1	136.1	139.1	139.1	139.1	136.1	142.3
72.5°	69.6	72.7	72.7	72.7	72.7	72.7	72.7	69.6
75°	31.7	31.7	28.5	28.5	28.5	31.7	31.7	28.5
77.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	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)