

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: P584557

Luminaire Tested: **HC840D010-HM82555835-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584557  
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: HC840D010-HM82555835-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4534.5 lumens  
Efficiency: N/A  
Efficacy: 110.6 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

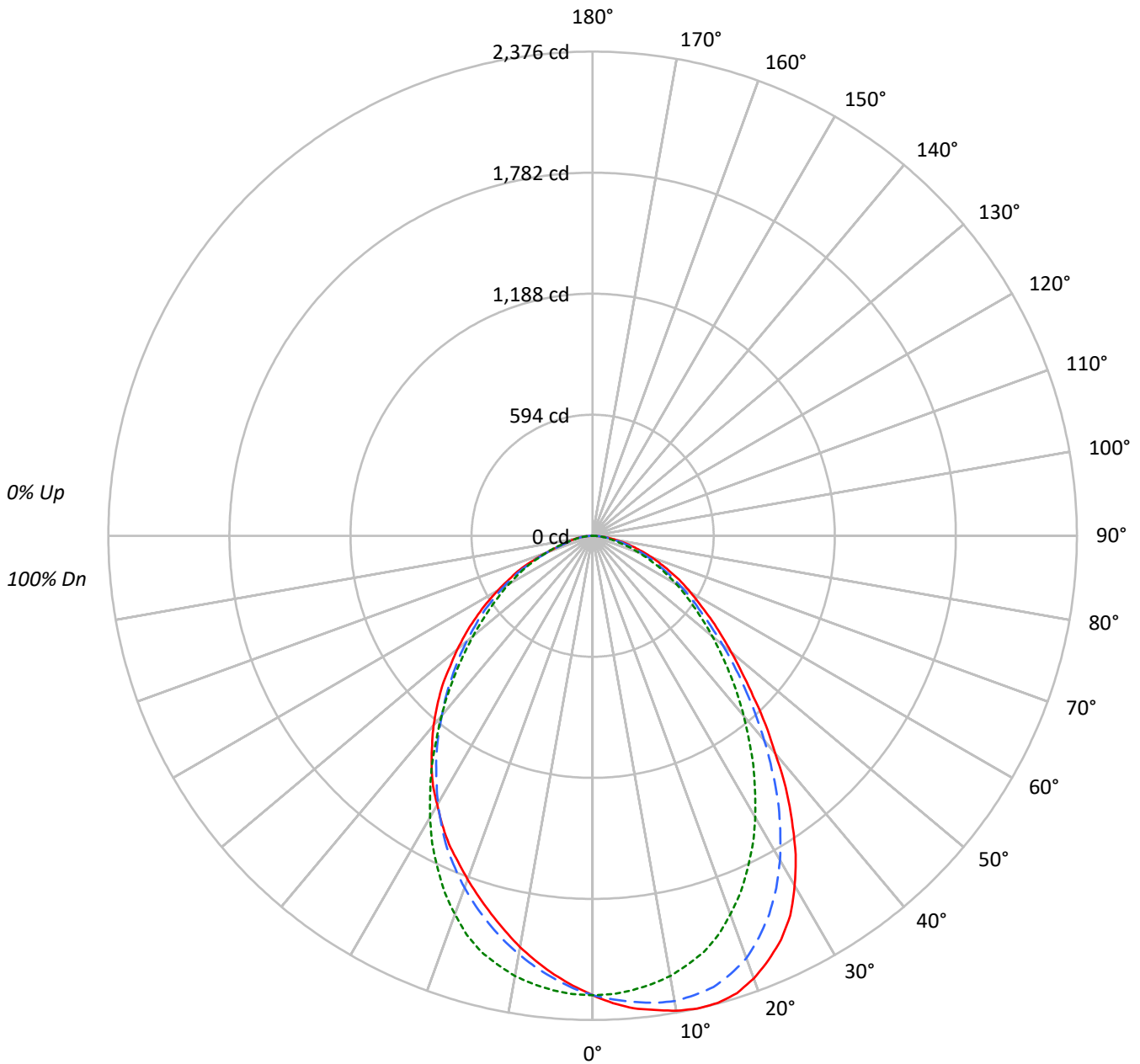
Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
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°	69524	69524	69524
5°	72067	69291	66910
10°	74106	68692	64180
15°	75759	67478	61342
20°	75876	64843	58851
25°	74421	61237	56769
30°	70583	56786	54279
35°	64134	51719	51840
40°	56078	46409	48860
45°	48598	41341	45528
50°	42557	36718	41482
55°	37880	32536	37536
60°	34173	29233	32983
65°	30842	25698	28741
70°	27724	21647	21359
75°	24412	17168	16025
80°	20475	14224	15361
85°	15886	12454	13586



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	212.7	4.7
10°-20°	599.1	13.2
20°-30°	856.1	18.9
30°-40°	909.7	20.1
40°-50°	783.2	17.3
50°-60°	585.6	12.9
60°-70°	373.5	8.2
70°-80°	170.0	3.7
80°-90°	44.6	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°	1667.9	36.8
0°-40°	2577.6	56.8
0°-60°	3946.4	87.0
0°-90°	4534.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4534.5	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2255	2255	2255	2255	2255	
5°	2328	2296	2238	2181	2162	223
15°	2373	2293	2114	1970	1922	668
25°	2187	2050	1800	1691	1668	1001
35°	1704	1585	1374	1339	1377	1061
45°	1114	1054	948	974	1044	866
55°	705	647	605	656	698	634
65°	423	375	352	368	394	422
75°	205	176	144	131	134	218
85°	45	38	35	38	38	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°	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6
2.5°	2296.2	2289.8	2293.0	2289.8	2293.0	2293.0	2286.6	2286.6	2286.6	2286.6	2276.9
5°	2328.2	2325.0	2325.0	2321.8	2318.6	2321.8	2318.6	2315.4	2309.0	2305.7	2296.2
7.5°	2347.4	2347.4	2347.4	2347.4	2344.2	2341.1	2337.9	2331.4	2325.0	2318.6	2312.2
10°	2366.7	2369.9	2366.7	2363.5	2360.2	2353.8	2350.6	2344.2	2334.7	2325.0	2318.6
12.5°	2376.3	2376.3	2373.1	2373.1	2366.7	2363.5	2353.8	2344.2	2334.7	2325.0	2309.0
15°	2373.1	2373.1	2369.9	2366.7	2357.0	2353.8	2347.4	2337.9	2321.8	2309.0	2293.0
17.5°	2353.8	2350.6	2344.2	2344.2	2331.4	2328.2	2321.8	2309.0	2293.0	2273.7	2254.6
20°	2312.2	2312.2	2309.0	2305.7	2293.0	2283.4	2276.9	2261.0	2248.1	2225.8	2206.5
22.5°	2254.6	2261.0	2254.6	2248.1	2232.2	2229.0	2219.4	2200.1	2180.9	2155.3	2132.8
25°	2187.3	2184.1	2180.9	2174.5	2161.6	2155.3	2142.5	2123.3	2104.0	2075.2	2049.7
27.5°	2100.8	2088.0	2088.0	2075.2	2065.6	2056.0	2049.7	2030.4	2004.8	1982.3	1950.3
30°	1982.3	1985.5	1969.6	1966.4	1950.3	1943.9	1931.1	1911.9	1889.5	1863.9	1838.2
32.5°	1854.3	1844.6	1844.6	1831.9	1819.0	1809.4	1806.2	1783.8	1764.5	1738.9	1713.4
35°	1703.7	1703.7	1694.1	1690.9	1678.1	1671.7	1662.1	1649.3	1626.8	1604.5	1585.2
37.5°	1556.4	1550.0	1546.8	1540.5	1530.8	1521.2	1521.2	1498.8	1495.6	1470.0	1444.3
40°	1393.1	1399.4	1393.1	1383.5	1380.3	1373.9	1370.6	1357.9	1348.3	1325.8	1309.8
42.5°	1255.3	1249.0	1249.0	1245.8	1233.0	1233.0	1226.5	1220.1	1204.2	1197.7	1178.6
45°	1114.4	1120.9	1111.2	1114.4	1101.7	1101.7	1101.7	1088.8	1076.0	1066.5	1053.6
47.5°	992.8	996.0	996.0	986.4	983.2	983.2	976.8	970.3	960.8	948.0	938.3
50°	887.1	890.2	883.9	880.7	874.3	871.1	871.1	858.2	851.9	839.1	832.6
52.5°	791.0	791.0	787.8	787.8	778.3	778.3	771.8	762.2	755.8	749.3	733.4
55°	704.6	704.6	701.4	698.2	698.2	688.5	685.3	675.7	669.4	656.5	646.9
57.5°	621.3	624.5	621.3	618.1	614.9	611.7	605.2	595.7	589.3	579.6	573.2
60°	554.1	554.1	550.9	547.6	541.2	538.0	534.8	528.4	518.8	512.4	502.8
62.5°	490.0	486.8	483.6	480.4	474.0	474.0	467.6	461.1	451.6	445.2	438.8
65°	422.7	422.7	419.5	419.5	416.4	410.0	406.7	403.5	390.7	387.5	374.7
67.5°	361.9	365.1	358.7	358.7	352.2	352.2	349.0	339.5	336.3	329.9	323.4
70°	307.5	307.5	307.5	304.3	297.9	294.6	291.4	285.0	281.8	275.4	269.1
72.5°	253.0	253.0	249.8	249.8	246.6	243.4	240.1	233.8	233.8	227.4	221.0
75°	204.9	204.9	201.7	198.6	195.4	195.4	192.2	189.0	182.5	179.3	176.1
77.5°	157.0	157.0	157.0	153.7	150.5	150.5	150.5	144.1	137.7	137.7	134.5
80°	115.3	115.3	112.1	112.1	108.9	108.9	108.9	105.7	102.5	99.2	96.0
82.5°	76.9	76.9	76.9	76.9	73.7	73.7	73.7	70.4	67.2	67.2	67.2
85°	44.9	44.9	44.9	44.9	41.6	41.6	41.6	41.6	41.6	38.4	38.4
87.5°	19.2	16.1	19.2	16.1	19.2	16.1	19.2	16.1	16.1	16.1	16.1
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6
2.5°	2280.2	2276.9	2273.7	2270.5	2270.5	2267.4	2261.0	2257.8	2254.6	2251.4	2251.4
5°	2293.0	2289.8	2283.4	2276.9	2273.7	2267.4	2261.0	2254.6	2248.1	2238.5	2235.3
7.5°	2302.6	2293.0	2286.6	2273.7	2270.5	2264.2	2254.6	2244.9	2232.2	2219.4	2209.7
10°	2302.6	2289.8	2280.2	2264.2	2257.8	2251.4	2238.5	2222.6	2206.5	2193.8	2177.7
12.5°	2296.2	2280.2	2264.2	2248.1	2238.5	2229.0	2209.7	2193.8	2174.5	2155.3	2142.5
15°	2273.7	2254.6	2235.3	2216.1	2206.5	2193.8	2174.5	2152.1	2132.8	2113.7	2091.2
17.5°	2232.2	2212.9	2190.6	2168.1	2155.3	2145.7	2116.9	2100.8	2072.0	2052.8	2033.6
20°	2177.7	2155.3	2126.4	2104.0	2088.0	2078.5	2056.0	2027.2	2004.8	1976.0	1956.7
22.5°	2107.3	2078.5	2049.7	2027.2	2011.2	1998.4	1969.6	1940.8	1921.5	1895.9	1873.4
25°	2024.0	1995.2	1966.4	1934.3	1918.3	1905.5	1879.8	1854.3	1828.7	1799.8	1780.6
27.5°	1924.7	1892.7	1867.1	1838.2	1822.2	1803.0	1774.2	1748.6	1723.0	1703.7	1678.1
30°	1815.8	1780.6	1755.0	1726.1	1710.1	1694.1	1665.3	1639.7	1617.2	1594.8	1582.0
32.5°	1684.6	1658.9	1633.3	1604.5	1591.6	1582.0	1553.2	1527.6	1502.0	1482.7	1473.1
35°	1559.6	1530.8	1508.3	1482.7	1466.8	1457.2	1431.6	1409.1	1396.3	1373.9	1361.1
37.5°	1428.4	1405.9	1380.3	1354.7	1345.1	1335.4	1316.3	1293.8	1274.6	1258.5	1252.2
40°	1290.6	1271.4	1249.0	1233.0	1223.3	1213.8	1197.7	1181.7	1168.9	1152.9	1146.4
42.5°	1159.3	1146.4	1127.3	1108.0	1098.5	1095.3	1076.0	1063.3	1056.8	1050.4	1044.0
45°	1040.8	1021.6	1008.8	996.0	986.4	980.0	970.3	960.8	954.4	948.0	941.5
47.5°	925.6	909.5	896.7	887.1	877.5	874.3	867.9	858.2	851.9	851.9	851.9
50°	819.8	807.1	794.2	787.8	784.6	778.3	771.8	768.6	765.4	765.4	765.4
52.5°	727.0	714.1	704.6	698.2	698.2	691.7	685.3	682.1	682.1	682.1	682.1
55°	640.5	630.9	624.5	618.1	611.7	608.4	608.4	608.4	605.2	605.2	608.4
57.5°	563.6	557.3	547.6	541.2	538.0	538.0	534.8	531.6	534.8	538.0	541.2
60°	493.1	486.8	483.6	474.0	474.0	474.0	470.8	470.8	470.8	474.0	477.2
62.5°	429.1	425.9	419.5	416.4	413.2	413.2	410.0	410.0	410.0	410.0	413.2
65°	371.5	365.1	358.7	358.7	358.7	355.5	355.5	349.0	352.2	352.2	349.0
67.5°	317.0	310.6	307.5	304.3	301.1	301.1	297.9	294.6	291.4	291.4	291.4
70°	265.8	259.4	259.4	253.0	253.0	249.8	246.6	246.6	243.4	240.1	236.9
72.5°	214.6	211.3	208.1	204.9	204.9	204.9	201.7	198.6	195.4	192.2	185.8
75°	169.7	169.7	163.4	160.2	160.2	157.0	153.7	150.5	147.3	144.1	140.9
77.5°	131.3	128.0	121.7	118.5	118.5	118.5	115.3	112.1	108.9	105.7	102.5
80°	96.0	92.8	89.7	86.5	86.5	86.5	83.3	83.3	80.1	80.1	80.1
82.5°	64.0	64.0	60.8	60.8	60.8	60.8	57.6	57.6	57.6	57.6	57.6
85°	38.4	38.4	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2
87.5°	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
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°	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6
2.5°	2244.9	2244.9	2238.5	2235.3	2232.2	2235.3	2229.0	2225.8	2222.6	2222.6	2219.4
5°	2225.8	2222.6	2209.7	2206.5	2203.3	2200.1	2193.8	2187.3	2180.9	2177.7	2174.5
7.5°	2200.1	2190.6	2177.7	2174.5	2171.3	2161.6	2152.1	2145.7	2136.0	2132.8	2126.4
10°	2164.8	2152.1	2142.5	2132.8	2126.4	2116.9	2107.3	2097.6	2084.9	2081.7	2072.0
12.5°	2123.3	2107.3	2088.0	2084.9	2075.2	2062.4	2049.7	2040.0	2030.4	2024.0	2014.4
15°	2072.0	2056.0	2036.8	2027.2	2017.5	2008.0	1991.9	1979.1	1969.6	1959.9	1950.3
17.5°	2011.2	1991.9	1976.0	1966.4	1959.9	1943.9	1931.1	1915.1	1905.5	1895.9	1886.3
20°	1937.6	1921.5	1899.1	1889.5	1886.3	1873.4	1857.5	1851.0	1838.2	1828.7	1822.2
22.5°	1854.3	1838.2	1819.0	1812.6	1799.8	1793.4	1777.4	1771.0	1764.5	1755.0	1751.8
25°	1761.3	1745.4	1729.3	1726.1	1716.6	1710.1	1700.5	1690.9	1690.9	1681.4	1681.4
27.5°	1665.3	1649.3	1636.5	1630.1	1626.8	1620.4	1610.9	1607.7	1604.5	1601.3	1601.3
30°	1562.8	1543.5	1537.2	1534.0	1530.8	1524.4	1521.2	1514.8	1518.0	1521.2	1518.0
32.5°	1453.9	1447.5	1434.7	1428.4	1431.6	1428.4	1421.9	1428.4	1425.1	1431.6	1434.7
35°	1348.3	1341.8	1335.4	1335.4	1329.0	1329.0	1329.0	1332.2	1338.6	1341.8	1348.3
37.5°	1245.8	1236.2	1233.0	1229.7	1233.0	1233.0	1233.0	1239.4	1245.8	1252.2	1261.8
40°	1136.9	1130.5	1130.5	1130.5	1130.5	1140.1	1136.9	1143.4	1149.7	1159.3	1168.9
42.5°	1034.5	1034.5	1037.6	1037.6	1037.6	1037.6	1044.0	1053.6	1063.3	1072.8	1082.4
45°	938.3	938.3	938.3	944.7	944.7	948.0	960.8	967.1	973.5	983.2	992.8
47.5°	848.7	848.7	851.9	855.0	858.2	864.7	871.1	880.7	890.2	896.7	906.3
50°	765.4	768.6	775.0	781.4	781.4	784.6	794.2	800.6	807.1	816.7	819.8
52.5°	685.3	691.7	698.2	701.4	704.6	710.9	714.1	723.8	727.0	736.6	739.8
55°	611.7	614.9	624.5	627.7	627.7	634.2	640.5	646.9	656.5	656.5	662.9
57.5°	544.4	547.6	554.1	557.3	554.1	563.6	566.8	573.2	576.4	582.9	586.1
60°	477.2	483.6	486.8	486.8	490.0	493.1	499.6	499.6	506.0	512.4	512.4
62.5°	413.2	416.4	419.5	422.7	425.9	422.7	432.3	432.3	438.8	442.0	448.4
65°	352.2	355.5	355.5	358.7	358.7	361.9	361.9	365.1	368.3	374.7	377.9
67.5°	291.4	291.4	291.4	294.6	291.4	294.6	294.6	297.9	297.9	304.3	307.5
70°	236.9	233.8	230.6	230.6	230.6	230.6	227.4	230.6	230.6	233.8	233.8
72.5°	182.5	179.3	176.1	172.9	172.9	169.7	166.5	169.7	169.7	172.9	172.9
75°	137.7	131.3	131.3	131.3	128.0	128.0	128.0	131.3	131.3	131.3	134.5
77.5°	102.5	102.5	99.2	99.2	99.2	102.5	102.5	105.7	105.7	105.7	105.7
80°	76.9	80.1	80.1	80.1	80.1	83.3	83.3	83.3	83.3	86.5	86.5
82.5°	57.6	57.6	57.6	57.6	60.8	60.8	60.8	60.8	60.8	60.8	60.8
85°	35.2	38.4	38.4	35.2	38.4	38.4	38.4	38.4	38.4	38.4	38.4
87.5°	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
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: P584557

CATALOG NUMBER: HC840D010-HM82555835-81WWWB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6	2254.6
2.5°	2216.1	2216.1	2216.1	2216.1	2212.9	2212.9	2212.9	2209.7
5°	2168.1	2168.1	2168.1	2161.6	2164.8	2164.8	2158.5	2161.6
7.5°	2120.1	2116.9	2113.7	2113.7	2110.5	2107.3	2104.0	2107.3
10°	2065.6	2056.0	2056.0	2052.8	2052.8	2046.4	2046.4	2049.7
12.5°	2004.8	1998.4	1998.4	1995.2	1991.9	1988.7	1985.5	1985.5
15°	1943.9	1937.6	1934.3	1931.1	1927.9	1921.5	1924.7	1921.5
17.5°	1883.1	1873.4	1873.4	1870.2	1867.1	1860.7	1860.7	1857.5
20°	1812.6	1809.4	1803.0	1806.2	1803.0	1796.7	1793.4	1793.4
22.5°	1742.2	1742.2	1738.9	1738.9	1735.7	1732.5	1729.3	1729.3
25°	1674.9	1671.7	1674.9	1674.9	1665.3	1665.3	1665.3	1668.5
27.5°	1598.1	1601.3	1598.1	1598.1	1598.1	1598.1	1601.3	1598.1
30°	1521.2	1521.2	1521.2	1524.4	1530.8	1527.6	1527.6	1524.4
32.5°	1437.9	1441.1	1441.1	1444.3	1447.5	1453.9	1453.9	1457.2
35°	1354.7	1361.1	1364.2	1361.1	1370.6	1370.6	1377.1	1377.1
37.5°	1268.2	1271.4	1277.8	1281.0	1287.5	1290.6	1293.8	1293.8
40°	1175.4	1188.1	1191.3	1194.5	1204.2	1204.2	1207.4	1213.8
42.5°	1088.8	1101.7	1104.9	1108.0	1114.4	1124.1	1120.9	1127.3
45°	1005.6	1015.2	1018.4	1021.6	1031.3	1034.5	1034.5	1044.0
47.5°	915.9	922.4	925.6	931.9	938.3	944.7	951.2	948.0
50°	826.2	835.9	842.3	845.5	855.0	858.2	861.4	864.7
52.5°	746.1	752.6	755.8	759.0	768.6	771.8	775.0	781.4
55°	669.4	672.5	678.9	675.7	685.3	688.5	691.7	698.2
57.5°	592.5	595.7	598.9	598.9	605.2	611.7	614.9	618.1
60°	518.8	525.3	528.4	528.4	528.4	534.8	534.8	534.8
62.5°	451.6	451.6	454.7	454.7	461.1	461.1	461.1	461.1
65°	381.2	384.3	387.5	387.5	393.9	390.7	397.1	393.9
67.5°	307.5	307.5	313.8	313.8	310.6	313.8	313.8	313.8
70°	233.8	233.8	236.9	236.9	236.9	236.9	236.9	236.9
72.5°	172.9	172.9	172.9	176.1	172.9	172.9	176.1	172.9
75°	134.5	134.5	134.5	134.5	134.5	134.5	134.5	134.5
77.5°	105.7	105.7	108.9	108.9	108.9	108.9	108.9	108.9
80°	86.5	86.5	86.5	86.5	89.7	86.5	86.5	86.5
82.5°	64.0	60.8	64.0	60.8	64.0	64.0	64.0	64.0
85°	38.4	38.4	38.4	38.4	38.4	38.4	38.4	38.4
87.5°	16.1	16.1	16.1	16.1	16.1	16.1	16.1	16.1
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)