

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: P584523

Luminaire Tested: **HC840D010-HM82555827-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584523  
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-HM82555827-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4380.7 lumens  
Efficiency: N/A  
Efficacy: 106.8 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

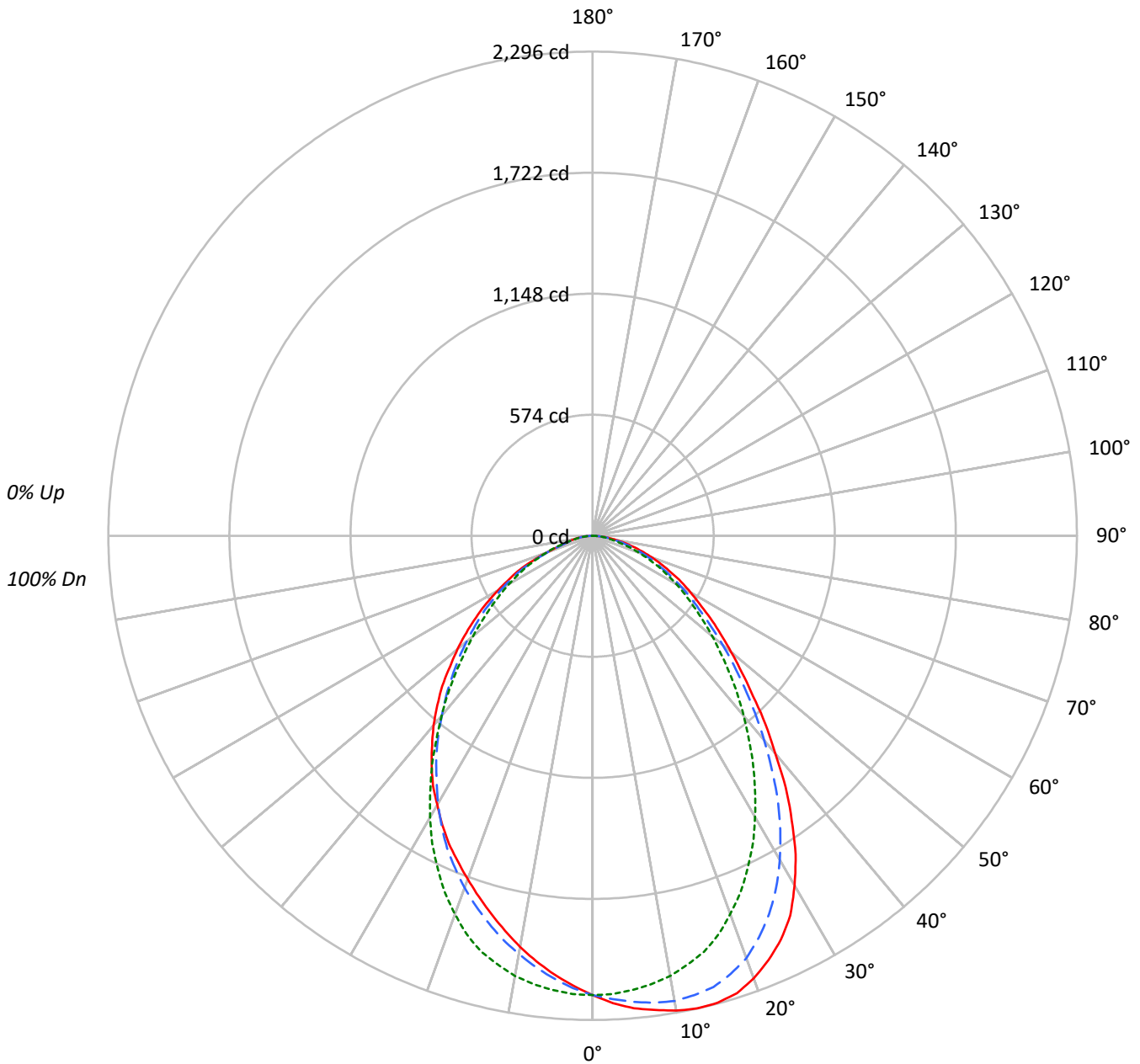
Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	67165	67165	67165
5°	69622	66941	64641
10°	71589	66360	61998
15°	73186	65186	59261
20°	73300	62641	56853
25°	71896	59158	54843
30°	68190	54859	52434
35°	61959	49961	50078
40°	54174	44835	47198
45°	46954	39937	43984
50°	41113	35476	40076
55°	36595	31440	36262
60°	33013	28240	31866
65°	29799	24830	27770
70°	26777	20917	20646
75°	23590	16585	15477
80°	19782	13745	14828
85°	15320	12029	13126



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	205.5	4.7
10°-20°	578.7	13.2
20°-30°	827.1	18.9
30°-40°	878.8	20.1
40°-50°	756.7	17.3
50°-60°	565.7	12.9
60°-70°	360.8	8.2
70°-80°	164.2	3.7
80°-90°	43.1	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°	1611.3	36.8
0°-40°	2490.1	56.8
0°-60°	3812.5	87.0
0°-90°	4380.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4380.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2178	2178	2178	2178	2178	
5°	2249	2218	2163	2107	2088	216
15°	2292	2215	2042	1903	1856	646
25°	2113	1980	1739	1634	1612	967
35°	1646	1531	1327	1293	1330	1025
45°	1077	1018	916	941	1009	837
55°	681	625	585	634	674	612
65°	408	362	340	356	381	407
75°	198	170	139	127	130	210
85°	43	37	34	37	37	52
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°	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1
2.5°	2218.3	2212.1	2215.2	2212.1	2215.2	2215.2	2209.0	2209.0	2209.0	2209.0	2199.7
5°	2249.2	2246.1	2246.1	2243.0	2239.9	2243.0	2239.9	2236.8	2230.7	2227.6	2218.3
7.5°	2267.8	2267.8	2267.8	2267.8	2264.7	2261.6	2258.5	2252.3	2246.1	2239.9	2233.7
10°	2286.3	2289.4	2286.3	2283.3	2280.2	2274.0	2270.9	2264.7	2255.4	2246.1	2239.9
12.5°	2295.6	2295.6	2292.5	2292.5	2286.3	2283.3	2274.0	2264.7	2255.4	2246.1	2230.7
15°	2292.5	2292.5	2289.4	2286.3	2277.1	2274.0	2267.8	2258.5	2243.0	2230.7	2215.2
17.5°	2274.0	2270.9	2264.7	2264.7	2252.3	2249.2	2243.0	2230.7	2215.2	2196.6	2178.1
20°	2233.7	2233.7	2230.7	2227.6	2215.2	2205.9	2199.7	2184.2	2171.9	2150.2	2131.6
22.5°	2178.1	2184.2	2178.1	2171.9	2156.4	2153.3	2144.0	2125.5	2106.9	2082.1	2060.5
25°	2113.1	2110.0	2106.9	2100.7	2088.3	2082.1	2069.8	2051.2	2032.6	2004.8	1980.0
27.5°	2029.5	2017.2	2017.2	2004.8	1995.5	1986.2	1980.0	1961.5	1936.7	1915.1	1884.1
30°	1915.1	1918.2	1902.7	1899.6	1884.1	1877.9	1865.6	1847.0	1825.3	1800.6	1775.8
32.5°	1791.3	1782.0	1782.0	1769.6	1757.3	1748.0	1744.9	1723.2	1704.7	1679.9	1655.2
35°	1645.9	1645.9	1636.6	1633.5	1621.1	1614.9	1605.7	1593.3	1571.6	1550.0	1531.4
37.5°	1503.6	1497.4	1494.3	1488.1	1478.8	1469.5	1469.5	1447.9	1444.8	1420.0	1395.3
40°	1345.8	1352.0	1345.8	1336.5	1333.4	1327.2	1324.1	1311.7	1302.5	1280.8	1265.3
42.5°	1212.7	1206.5	1206.5	1203.4	1191.1	1191.1	1184.9	1178.7	1163.2	1157.0	1138.6
45°	1076.7	1082.9	1073.6	1076.7	1064.3	1064.3	1064.3	1052.0	1039.6	1030.3	1017.9
47.5°	959.1	962.2	962.2	953.0	949.9	949.9	943.7	937.5	928.2	915.8	906.5
50°	857.0	860.1	853.9	850.8	844.7	841.6	841.6	829.2	823.0	810.6	804.4
52.5°	764.2	764.2	761.1	761.1	751.8	751.8	745.7	736.4	730.2	724.0	708.5
55°	680.7	680.7	677.6	674.5	674.5	665.2	662.1	652.8	646.6	634.3	625.0
57.5°	600.2	603.3	600.2	597.1	594.0	591.0	584.8	575.5	569.3	560.0	553.8
60°	535.3	535.3	532.2	529.1	522.9	519.8	516.7	510.5	501.2	495.0	485.8
62.5°	473.4	470.3	467.2	464.1	457.9	457.9	451.7	445.5	436.3	430.1	423.9
65°	408.4	408.4	405.3	405.3	402.2	396.0	392.9	389.8	377.5	374.4	362.0
67.5°	349.6	352.7	346.5	346.5	340.3	340.3	337.2	328.0	324.9	318.7	312.5
70°	297.0	297.0	297.0	293.9	287.7	284.6	281.6	275.4	272.3	266.1	259.9
72.5°	244.4	244.4	241.3	241.3	238.2	235.1	232.0	225.9	225.9	219.7	213.5
75°	198.0	198.0	194.9	191.8	188.7	188.7	185.6	182.5	176.4	173.3	170.2
77.5°	151.6	151.6	151.6	148.5	145.4	145.4	145.4	139.2	133.0	133.0	129.9
80°	111.4	111.4	108.3	108.3	105.2	105.2	105.2	102.1	99.0	95.9	92.8
82.5°	74.3	74.3	74.3	74.3	71.2	71.2	71.2	68.1	65.0	65.0	65.0
85°	43.3	43.3	43.3	43.3	40.2	40.2	40.2	40.2	40.2	37.1	37.1
87.5°	18.6	15.5	18.6	15.5	18.6	15.5	18.6	15.5	15.5	15.5	15.5
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°	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1
2.5°	2202.8	2199.7	2196.6	2193.5	2193.5	2190.4	2184.2	2181.2	2178.1	2175.0	2175.0
5°	2215.2	2212.1	2205.9	2199.7	2196.6	2190.4	2184.2	2178.1	2171.9	2162.6	2159.5
7.5°	2224.5	2215.2	2209.0	2196.6	2193.5	2187.3	2178.1	2168.8	2156.4	2144.0	2134.7
10°	2224.5	2212.1	2202.8	2187.3	2181.2	2175.0	2162.6	2147.1	2131.6	2119.3	2103.8
12.5°	2218.3	2202.8	2187.3	2171.9	2162.6	2153.3	2134.7	2119.3	2100.7	2082.1	2069.8
15°	2196.6	2178.1	2159.5	2140.9	2131.6	2119.3	2100.7	2079.0	2060.5	2041.9	2020.3
17.5°	2156.4	2137.8	2116.2	2094.5	2082.1	2072.9	2045.0	2029.5	2001.7	1983.1	1964.6
20°	2103.8	2082.1	2054.3	2032.6	2017.2	2007.9	1986.2	1958.4	1936.7	1908.9	1890.3
22.5°	2035.7	2007.9	1980.0	1958.4	1942.9	1930.5	1902.7	1874.8	1856.3	1831.5	1809.9
25°	1955.3	1927.4	1899.6	1868.7	1853.2	1840.8	1816.1	1791.3	1766.6	1738.7	1720.1
27.5°	1859.4	1828.4	1803.7	1775.8	1760.4	1741.8	1714.0	1689.2	1664.5	1645.9	1621.1
30°	1754.2	1720.1	1695.4	1667.5	1652.1	1636.6	1608.8	1584.0	1562.4	1540.7	1528.3
32.5°	1627.3	1602.6	1577.8	1550.0	1537.6	1528.3	1500.5	1475.7	1451.0	1432.4	1423.1
35°	1506.7	1478.8	1457.2	1432.4	1416.9	1407.7	1382.9	1361.2	1348.9	1327.2	1314.8
37.5°	1379.8	1358.1	1333.4	1308.6	1299.4	1290.1	1271.5	1249.9	1231.3	1215.8	1209.6
40°	1246.8	1228.2	1206.5	1191.1	1181.8	1172.5	1157.0	1141.7	1129.3	1113.8	1107.7
42.5°	1120.0	1107.7	1089.1	1070.5	1061.2	1058.1	1039.6	1027.2	1021.0	1014.8	1008.6
45°	1005.6	987.0	974.6	962.2	953.0	946.8	937.5	928.2	922.0	915.8	909.6
47.5°	894.2	878.7	866.3	857.0	847.8	844.7	838.5	829.2	823.0	823.0	823.0
50°	792.1	779.7	767.3	761.1	758.0	751.8	745.7	742.6	739.5	739.5	739.5
52.5°	702.3	690.0	680.7	674.5	674.5	668.3	662.1	659.0	659.0	659.0	659.0
55°	618.8	609.5	603.3	597.1	591.0	587.9	587.9	587.9	584.8	584.8	587.9
57.5°	544.5	538.4	529.1	522.9	519.8	519.8	516.7	513.6	516.7	519.8	522.9
60°	476.5	470.3	467.2	457.9	457.9	457.9	454.8	454.8	454.8	457.9	461.0
62.5°	414.6	411.5	405.3	402.2	399.1	399.1	396.0	396.0	396.0	396.0	399.1
65°	358.9	352.7	346.5	346.5	346.5	343.4	343.4	337.2	340.3	340.3	337.2
67.5°	306.3	300.1	297.0	293.9	290.8	290.8	287.7	284.6	281.6	281.6	281.6
70°	256.8	250.6	250.6	244.4	244.4	241.3	238.2	238.2	235.1	232.0	229.0
72.5°	207.3	204.2	201.1	198.0	198.0	198.0	194.9	191.8	188.7	185.6	179.5
75°	164.0	164.0	157.8	154.7	154.7	151.6	148.5	145.4	142.3	139.2	136.1
77.5°	126.9	123.8	117.6	114.5	114.5	114.5	111.4	108.3	105.2	102.1	99.0
80°	92.8	89.7	86.6	83.5	83.5	83.5	80.4	80.4	77.4	77.4	77.4
82.5°	61.9	61.9	58.8	58.8	58.8	58.8	55.7	55.7	55.7	55.7	55.7
85°	37.1	37.1	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
87.5°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
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°	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1
2.5°	2168.8	2168.8	2162.6	2159.5	2156.4	2159.5	2153.3	2150.2	2147.1	2147.1	2144.0
5°	2150.2	2147.1	2134.7	2131.6	2128.6	2125.5	2119.3	2113.1	2106.9	2103.8	2100.7
7.5°	2125.5	2116.2	2103.8	2100.7	2097.6	2088.3	2079.0	2072.9	2063.6	2060.5	2054.3
10°	2091.4	2079.0	2069.8	2060.5	2054.3	2045.0	2035.7	2026.5	2014.1	2011.0	2001.7
12.5°	2051.2	2035.7	2017.2	2014.1	2004.8	1992.4	1980.0	1970.8	1961.5	1955.3	1946.0
15°	2001.7	1986.2	1967.7	1958.4	1949.1	1939.8	1924.3	1912.0	1902.7	1893.4	1884.1
17.5°	1942.9	1924.3	1908.9	1899.6	1893.4	1877.9	1865.6	1850.1	1840.8	1831.5	1822.2
20°	1871.8	1856.3	1834.6	1825.3	1822.2	1809.9	1794.4	1788.2	1775.8	1766.6	1760.4
22.5°	1791.3	1775.8	1757.3	1751.1	1738.7	1732.5	1717.1	1710.9	1704.7	1695.4	1692.3
25°	1701.6	1686.1	1670.6	1667.5	1658.3	1652.1	1642.8	1633.5	1633.5	1624.2	1624.2
27.5°	1608.8	1593.3	1580.9	1574.7	1571.6	1565.4	1556.2	1553.1	1550.0	1546.9	1546.9
30°	1509.8	1491.2	1485.0	1481.9	1478.8	1472.6	1469.5	1463.3	1466.4	1469.5	1466.4
32.5°	1404.6	1398.4	1386.0	1379.8	1382.9	1379.8	1373.6	1379.8	1376.7	1382.9	1386.0
35°	1302.5	1296.3	1290.1	1290.1	1283.9	1283.9	1283.9	1287.0	1293.2	1296.3	1302.5
37.5°	1203.4	1194.2	1191.1	1188.0	1191.1	1191.1	1191.1	1197.3	1203.4	1209.6	1218.9
40°	1098.4	1092.2	1092.2	1092.2	1092.2	1101.5	1098.4	1104.6	1110.7	1120.0	1129.3
42.5°	999.4	999.4	1002.5	1002.5	1002.5	1002.5	1008.6	1017.9	1027.2	1036.5	1045.8
45°	906.5	906.5	906.5	912.7	912.7	915.8	928.2	934.4	940.6	949.9	959.1
47.5°	819.9	819.9	823.0	826.1	829.2	835.4	841.6	850.8	860.1	866.3	875.6
50°	739.5	742.6	748.7	754.9	754.9	758.0	767.3	773.5	779.7	789.0	792.1
52.5°	662.1	668.3	674.5	677.6	680.7	686.9	690.0	699.2	702.3	711.6	714.7
55°	591.0	594.0	603.3	606.4	606.4	612.6	618.8	625.0	634.3	634.3	640.5
57.5°	526.0	529.1	535.3	538.4	535.3	544.5	547.6	553.8	556.9	563.1	566.2
60°	461.0	467.2	470.3	470.3	473.4	476.5	482.7	482.7	488.9	495.0	495.0
62.5°	399.1	402.2	405.3	408.4	411.5	408.4	417.7	417.7	423.9	427.0	433.2
65°	340.3	343.4	343.4	346.5	346.5	349.6	349.6	352.7	355.8	362.0	365.1
67.5°	281.6	281.6	281.6	284.6	281.6	284.6	284.6	287.7	287.7	293.9	297.0
70°	229.0	225.9	222.8	222.8	222.8	222.8	219.7	222.8	222.8	225.9	225.9
72.5°	176.4	173.3	170.2	167.1	167.1	164.0	160.9	164.0	164.0	167.1	167.1
75°	133.0	126.9	126.9	126.9	123.8	123.8	123.8	126.9	126.9	126.9	129.9
77.5°	99.0	99.0	95.9	95.9	95.9	99.0	99.0	102.1	102.1	102.1	102.1
80°	74.3	77.4	77.4	77.4	77.4	80.4	80.4	80.4	80.4	83.5	83.5
82.5°	55.7	55.7	55.7	55.7	58.8	58.8	58.8	58.8	58.8	58.8	58.8
85°	34.0	37.1	37.1	34.0	37.1	37.1	37.1	37.1	37.1	37.1	37.1
87.5°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
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: P584523

CATALOG NUMBER: HC840D010-HM82555827-81WWWB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1	2178.1
2.5°	2140.9	2140.9	2140.9	2140.9	2137.8	2137.8	2137.8	2134.7
5°	2094.5	2094.5	2094.5	2088.3	2091.4	2091.4	2085.2	2088.3
7.5°	2048.1	2045.0	2041.9	2041.9	2038.8	2035.7	2032.6	2035.7
10°	1995.5	1986.2	1986.2	1983.1	1983.1	1976.9	1976.9	1980.0
12.5°	1936.7	1930.5	1930.5	1927.4	1924.3	1921.3	1918.2	1918.2
15°	1877.9	1871.8	1868.7	1865.6	1862.5	1856.3	1859.4	1856.3
17.5°	1819.2	1809.9	1809.9	1806.8	1803.7	1797.5	1797.5	1794.4
20°	1751.1	1748.0	1741.8	1744.9	1741.8	1735.6	1732.5	1732.5
22.5°	1683.0	1683.0	1679.9	1679.9	1676.8	1673.7	1670.6	1670.6
25°	1618.0	1614.9	1618.0	1618.0	1608.8	1608.8	1608.8	1611.9
27.5°	1543.8	1546.9	1543.8	1543.8	1543.8	1543.8	1546.9	1543.8
30°	1469.5	1469.5	1469.5	1472.6	1478.8	1475.7	1475.7	1472.6
32.5°	1389.1	1392.2	1392.2	1395.3	1398.4	1404.6	1404.6	1407.7
35°	1308.6	1314.8	1317.9	1314.8	1324.1	1324.1	1330.3	1330.3
37.5°	1225.1	1228.2	1234.4	1237.5	1243.7	1246.8	1249.9	1249.9
40°	1135.5	1147.8	1150.8	1153.9	1163.2	1163.2	1166.3	1172.5
42.5°	1052.0	1064.3	1067.4	1070.5	1076.7	1086.0	1082.9	1089.1
45°	971.5	980.8	983.9	987.0	996.3	999.4	999.4	1008.6
47.5°	884.9	891.1	894.2	900.4	906.5	912.7	918.9	915.8
50°	798.3	807.5	813.7	816.8	826.1	829.2	832.3	835.4
52.5°	720.9	727.1	730.2	733.3	742.6	745.7	748.7	754.9
55°	646.6	649.7	655.9	652.8	662.1	665.2	668.3	674.5
57.5°	572.4	575.5	578.6	578.6	584.8	591.0	594.0	597.1
60°	501.2	507.4	510.5	510.5	510.5	516.7	516.7	516.7
62.5°	436.3	436.3	439.3	439.3	445.5	445.5	445.5	445.5
65°	368.2	371.3	374.4	374.4	380.6	377.5	383.7	380.6
67.5°	297.0	297.0	303.2	303.2	300.1	303.2	303.2	303.2
70°	225.9	225.9	229.0	229.0	229.0	229.0	229.0	229.0
72.5°	167.1	167.1	167.1	170.2	167.1	167.1	170.2	167.1
75°	129.9	129.9	129.9	129.9	129.9	129.9	129.9	129.9
77.5°	102.1	102.1	105.2	105.2	105.2	105.2	105.2	105.2
80°	83.5	83.5	83.5	83.5	86.6	83.5	83.5	83.5
82.5°	61.9	58.8	61.9	58.8	61.9	61.9	61.9	61.9
85°	37.1	37.1	37.1	37.1	37.1	37.1	37.1	37.1
87.5°	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
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)