

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: P584608

Luminaire Tested: **HC840D010-HM82555930-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584608  
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-HM82555930-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4206.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 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

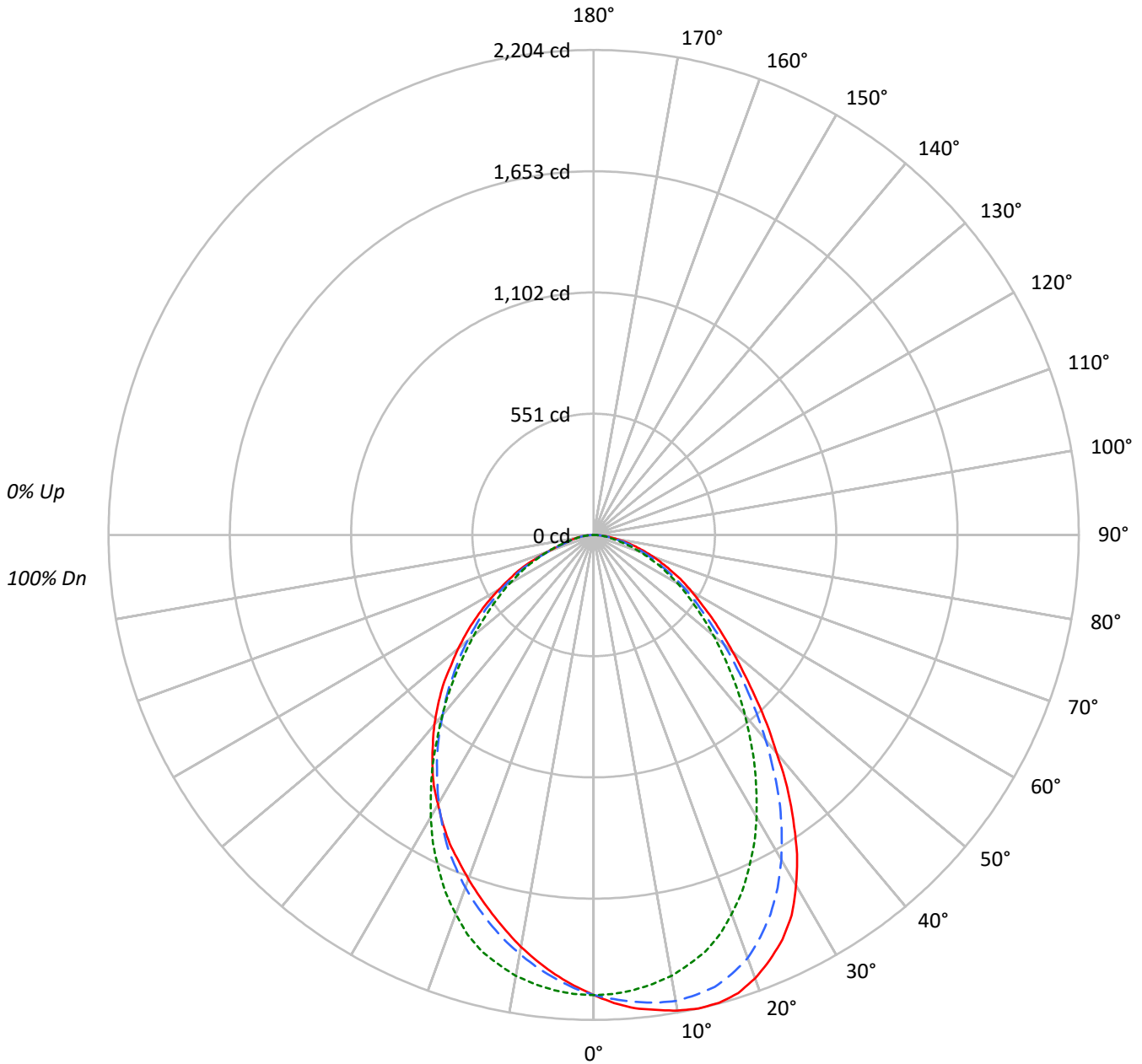
Input Watts (W): 41  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	64485	64485	64485
5°	66848	64273	62069
10°	68736	63714	59527
15°	70268	62587	56898
20°	70379	60144	54588
25°	69028	56803	52656
30°	65474	52673	50348
35°	59489	47974	48083
40°	52016	43044	45322
45°	45083	38346	42231
50°	39477	34061	38479
55°	35133	30182	34816
60°	31687	27111	30596
65°	28610	23845	26654
70°	25704	20088	19817
75°	22661	15917	14857
80°	19001	13194	14242
85°	14683	11569	12631



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	197.3	4.7
10°-20°	555.7	13.2
20°-30°	794.1	18.9
30°-40°	843.8	20.1
40°-50°	726.5	17.3
50°-60°	543.2	12.9
60°-70°	346.4	8.2
70°-80°	157.7	3.7
80°-90°	41.4	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°	1547.1	36.8
0°-40°	2390.9	56.8
0°-60°	3660.5	87.0
0°-90°	4206.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4206.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2091	2091	2091	2091	2091	
5°	2160	2130	2076	2023	2005	207
15°	2201	2127	1960	1827	1782	620
25°	2029	1901	1670	1568	1548	929
35°	1580	1470	1274	1242	1277	984
45°	1034	977	879	903	968	804
55°	654	600	561	609	648	588
65°	392	348	327	342	365	391
75°	190	163	134	122	125	202
85°	42	36	33	36	36	50
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°	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2
2.5°	2129.9	2123.9	2126.9	2123.9	2126.9	2126.9	2120.9	2120.9	2120.9	2120.9	2112.0
5°	2159.6	2156.6	2156.6	2153.7	2150.7	2153.7	2150.7	2147.7	2141.8	2138.8	2129.9
7.5°	2177.3	2177.3	2177.3	2177.3	2174.4	2171.4	2168.4	2162.6	2156.6	2150.7	2144.7
10°	2195.2	2198.2	2195.2	2192.2	2189.2	2183.3	2180.3	2174.4	2165.6	2156.6	2150.7
12.5°	2204.1	2204.1	2201.1	2201.1	2195.2	2192.2	2183.3	2174.4	2165.6	2156.6	2141.8
15°	2201.1	2201.1	2198.2	2195.2	2186.3	2183.3	2177.3	2168.4	2153.7	2141.8	2126.9
17.5°	2183.3	2180.3	2174.4	2174.4	2162.6	2159.6	2153.7	2141.8	2126.9	2109.0	2091.2
20°	2144.7	2144.7	2141.8	2138.8	2126.9	2118.0	2112.0	2097.1	2085.4	2064.5	2046.7
22.5°	2091.2	2097.1	2091.2	2085.4	2070.5	2067.5	2058.6	2040.7	2022.9	1999.2	1978.4
25°	2028.8	2025.9	2022.9	2016.9	2005.2	1999.2	1987.3	1969.4	1951.6	1924.9	1901.1
27.5°	1948.6	1936.7	1936.7	1924.9	1916.0	1907.1	1901.1	1883.3	1859.5	1838.8	1809.0
30°	1838.8	1841.8	1826.9	1823.9	1809.0	1803.1	1791.2	1773.3	1752.6	1728.8	1705.0
32.5°	1719.9	1711.0	1711.0	1699.1	1687.3	1678.4	1675.4	1654.6	1636.7	1613.0	1589.2
35°	1580.3	1580.3	1571.4	1568.4	1556.5	1550.6	1541.6	1529.9	1509.0	1488.2	1470.4
37.5°	1443.7	1437.8	1434.8	1428.8	1419.9	1411.0	1411.0	1390.2	1387.2	1363.5	1339.7
40°	1292.2	1298.2	1292.2	1283.3	1280.3	1274.4	1271.4	1259.5	1250.6	1229.7	1215.0
42.5°	1164.4	1158.5	1158.5	1155.5	1143.6	1143.6	1137.8	1131.8	1116.9	1111.0	1093.1
45°	1033.8	1039.7	1030.8	1033.8	1021.9	1021.9	1021.9	1010.0	998.1	989.1	977.3
47.5°	920.8	923.8	923.8	914.9	911.9	911.9	905.9	900.1	891.2	879.3	870.4
50°	822.9	825.9	819.9	816.9	811.0	808.0	808.0	796.1	790.2	778.3	772.3
52.5°	733.8	733.8	730.8	730.8	721.9	721.9	715.9	707.0	701.0	695.1	680.2
55°	653.5	653.5	650.6	647.6	647.6	638.7	635.7	626.8	620.8	608.9	600.0
57.5°	576.3	579.3	576.3	573.3	570.4	567.4	561.4	552.5	546.6	537.6	531.7
60°	513.8	513.8	511.0	508.0	502.1	499.1	496.1	490.2	481.2	475.3	466.4
62.5°	454.5	451.5	448.5	445.5	439.6	439.6	433.6	427.8	418.9	412.9	407.0
65°	392.1	392.1	389.1	389.1	386.2	380.2	377.2	374.3	362.4	359.4	347.6
67.5°	335.7	338.7	332.7	332.7	326.8	326.8	323.8	314.9	311.9	305.9	300.0
70°	285.1	285.1	285.1	282.1	276.2	273.3	270.4	264.4	261.4	255.5	249.5
72.5°	234.7	234.7	231.7	231.7	228.7	225.7	222.8	216.8	216.8	210.9	204.9
75°	190.2	190.2	187.2	184.2	181.2	181.2	178.3	175.3	169.3	166.4	163.4
77.5°	145.5	145.5	145.5	142.6	139.6	139.6	139.6	133.6	127.7	127.7	124.7
80°	107.0	107.0	104.0	104.0	101.0	101.0	101.0	98.1	95.1	92.1	89.1
82.5°	71.3	71.3	71.3	71.3	68.3	68.3	68.3	65.3	62.4	62.4	62.4
85°	41.5	41.5	41.5	41.5	38.7	38.7	38.7	38.7	38.7	35.7	35.7
87.5°	17.8	14.9	17.8	14.9	17.8	14.9	17.8	14.9	14.9	14.9	14.9
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°	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2
2.5°	2115.0	2112.0	2109.0	2106.1	2106.1	2103.1	2097.1	2094.2	2091.2	2088.2	2088.2
5°	2126.9	2123.9	2118.0	2112.0	2109.0	2103.1	2097.1	2091.2	2085.4	2076.4	2073.5
7.5°	2135.8	2126.9	2120.9	2109.0	2106.1	2100.1	2091.2	2082.4	2070.5	2058.6	2049.7
10°	2135.8	2123.9	2115.0	2100.1	2094.2	2088.2	2076.4	2061.6	2046.7	2034.8	2019.9
12.5°	2129.9	2115.0	2100.1	2085.4	2076.4	2067.5	2049.7	2034.8	2016.9	1999.2	1987.3
15°	2109.0	2091.2	2073.5	2055.6	2046.7	2034.8	2016.9	1996.2	1978.4	1960.5	1939.7
17.5°	2070.5	2052.6	2031.8	2011.0	1999.2	1990.3	1963.5	1948.6	1922.0	1904.1	1886.3
20°	2019.9	1999.2	1972.4	1951.6	1936.7	1927.9	1907.1	1880.3	1859.5	1832.8	1815.0
22.5°	1954.6	1927.9	1901.1	1880.3	1865.4	1853.5	1826.9	1800.1	1782.3	1758.6	1737.8
25°	1877.3	1850.7	1823.9	1794.2	1779.3	1767.5	1743.7	1719.9	1696.1	1669.5	1651.6
27.5°	1785.2	1755.6	1731.8	1705.0	1690.3	1672.4	1645.7	1621.9	1598.2	1580.3	1556.5
30°	1684.3	1651.6	1627.8	1601.1	1586.3	1571.4	1544.6	1520.9	1500.1	1479.3	1467.4
32.5°	1562.5	1538.7	1515.0	1488.2	1476.3	1467.4	1440.7	1416.9	1393.1	1375.4	1366.5
35°	1446.7	1419.9	1399.1	1375.4	1360.5	1351.6	1327.8	1307.0	1295.2	1274.4	1262.5
37.5°	1324.8	1304.0	1280.3	1256.5	1247.6	1238.7	1220.9	1200.1	1182.3	1167.4	1161.4
40°	1197.1	1179.3	1158.5	1143.6	1134.8	1125.9	1111.0	1096.1	1084.2	1069.3	1063.4
42.5°	1075.3	1063.4	1045.7	1027.8	1018.9	1015.9	998.1	986.2	980.3	974.4	968.4
45°	965.4	947.6	935.7	923.8	914.9	908.9	900.1	891.2	885.2	879.3	873.3
47.5°	858.5	843.6	831.7	822.9	814.0	811.0	805.0	796.1	790.2	790.2	790.2
50°	760.4	748.5	736.7	730.8	727.8	721.9	715.9	712.9	710.0	710.0	710.0
52.5°	674.3	662.5	653.5	647.6	647.6	641.6	635.7	632.7	632.7	632.7	632.7
55°	594.0	585.2	579.3	573.3	567.4	564.4	564.4	564.4	561.4	561.4	564.4
57.5°	522.8	516.8	508.0	502.1	499.1	499.1	496.1	493.1	496.1	499.1	502.1
60°	457.4	451.5	448.5	439.6	439.6	439.6	436.6	436.6	436.6	439.6	442.6
62.5°	398.1	395.1	389.1	386.2	383.2	383.2	380.2	380.2	380.2	380.2	383.2
65°	344.6	338.7	332.7	332.7	332.7	329.7	329.7	323.8	326.8	326.8	323.8
67.5°	294.0	288.1	285.1	282.1	279.2	279.2	276.2	273.3	270.4	270.4	270.4
70°	246.6	240.6	240.6	234.7	234.7	231.7	228.7	228.7	225.7	222.8	219.8
72.5°	199.0	196.1	193.1	190.2	190.2	190.2	187.2	184.2	181.2	178.3	172.3
75°	157.4	157.4	151.5	148.5	148.5	145.5	142.6	139.6	136.6	133.6	130.7
77.5°	121.7	118.8	112.9	110.0	110.0	110.0	107.0	104.0	101.0	98.1	95.1
80°	89.1	86.2	83.2	80.2	80.2	80.2	77.2	77.2	74.3	74.3	74.3
82.5°	59.4	59.4	56.4	56.4	56.4	56.4	53.4	53.4	53.4	53.4	53.4
85°	35.7	35.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.7
87.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
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°	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2
2.5°	2082.4	2082.4	2076.4	2073.5	2070.5	2073.5	2067.5	2064.5	2061.6	2061.6	2058.6
5°	2064.5	2061.6	2049.7	2046.7	2043.7	2040.7	2034.8	2028.8	2022.9	2019.9	2016.9
7.5°	2040.7	2031.8	2019.9	2016.9	2014.0	2005.2	1996.2	1990.3	1981.4	1978.4	1972.4
10°	2008.1	1996.2	1987.3	1978.4	1972.4	1963.5	1954.6	1945.6	1933.8	1930.8	1922.0
12.5°	1969.4	1954.6	1936.7	1933.8	1924.9	1913.0	1901.1	1892.2	1883.3	1877.3	1868.4
15°	1922.0	1907.1	1889.2	1880.3	1871.4	1862.5	1847.7	1835.8	1826.9	1818.0	1809.0
17.5°	1865.4	1847.7	1832.8	1823.9	1818.0	1803.1	1791.2	1776.3	1767.5	1758.6	1749.7
20°	1797.1	1782.3	1761.6	1752.6	1749.7	1737.8	1722.9	1716.9	1705.0	1696.1	1690.3
22.5°	1719.9	1705.0	1687.3	1681.4	1669.5	1663.5	1648.6	1642.7	1636.7	1627.8	1624.8
25°	1633.8	1618.9	1604.1	1601.1	1592.2	1586.3	1577.3	1568.4	1568.4	1559.5	1559.5
27.5°	1544.6	1529.9	1518.0	1512.0	1509.0	1503.1	1494.2	1491.2	1488.2	1485.2	1485.2
30°	1449.7	1431.8	1425.9	1422.9	1419.9	1414.0	1411.0	1405.0	1408.0	1411.0	1408.0
32.5°	1348.6	1342.7	1330.8	1324.8	1327.8	1324.8	1318.9	1324.8	1321.9	1327.8	1330.8
35°	1250.6	1244.6	1238.7	1238.7	1232.7	1232.7	1232.7	1235.7	1241.6	1244.6	1250.6
37.5°	1155.5	1146.6	1143.6	1140.7	1143.6	1143.6	1143.6	1149.5	1155.5	1161.4	1170.4
40°	1054.6	1048.6	1048.6	1048.6	1048.6	1057.6	1054.6	1060.5	1066.4	1075.3	1084.2
42.5°	959.5	959.5	962.5	962.5	962.5	962.5	968.4	977.3	986.2	995.1	1004.0
45°	870.4	870.4	870.4	876.3	876.3	879.3	891.2	897.1	903.1	911.9	920.8
47.5°	787.2	787.2	790.2	793.1	796.1	802.1	808.0	816.9	825.9	831.7	840.6
50°	710.0	712.9	718.9	724.8	724.8	727.8	736.7	742.7	748.5	757.4	760.4
52.5°	635.7	641.6	647.6	650.6	653.5	659.5	662.5	671.3	674.3	683.2	686.2
55°	567.4	570.4	579.3	582.3	582.3	588.2	594.0	600.0	608.9	608.9	614.9
57.5°	505.0	508.0	513.8	516.8	513.8	522.8	525.7	531.7	534.7	540.6	543.6
60°	442.6	448.5	451.5	451.5	454.5	457.4	463.4	463.4	469.3	475.3	475.3
62.5°	383.2	386.2	389.1	392.1	395.1	392.1	401.0	401.0	407.0	410.0	415.9
65°	326.8	329.7	329.7	332.7	332.7	335.7	335.7	338.7	341.6	347.6	350.6
67.5°	270.4	270.4	270.4	273.3	270.4	273.3	273.3	276.2	276.2	282.1	285.1
70°	219.8	216.8	213.8	213.8	213.8	213.8	210.9	213.8	213.8	216.8	216.8
72.5°	169.3	166.4	163.4	160.4	160.4	157.4	154.5	157.4	157.4	160.4	160.4
75°	127.7	121.7	121.7	121.7	118.8	118.8	118.8	121.7	121.7	121.7	124.7
77.5°	95.1	95.1	92.1	92.1	92.1	95.1	95.1	98.1	98.1	98.1	98.1
80°	71.3	74.3	74.3	74.3	74.3	77.2	77.2	77.2	77.2	80.2	80.2
82.5°	53.4	53.4	53.4	53.4	56.4	56.4	56.4	56.4	56.4	56.4	56.4
85°	32.7	35.7	35.7	32.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7
87.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
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: P584608

CATALOG NUMBER: HC840D010-HM82555930-81WWWB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2	2091.2
2.5°	2055.6	2055.6	2055.6	2055.6	2052.6	2052.6	2052.6	2049.7
5°	2011.0	2011.0	2011.0	2005.2	2008.1	2008.1	2002.2	2005.2
7.5°	1966.5	1963.5	1960.5	1960.5	1957.6	1954.6	1951.6	1954.6
10°	1916.0	1907.1	1907.1	1904.1	1904.1	1898.2	1898.2	1901.1
12.5°	1859.5	1853.5	1853.5	1850.7	1847.7	1844.7	1841.8	1841.8
15°	1803.1	1797.1	1794.2	1791.2	1788.2	1782.3	1785.2	1782.3
17.5°	1746.7	1737.8	1737.8	1734.8	1731.8	1725.9	1725.9	1722.9
20°	1681.4	1678.4	1672.4	1675.4	1672.4	1666.5	1663.5	1663.5
22.5°	1615.9	1615.9	1613.0	1613.0	1610.1	1607.1	1604.1	1604.1
25°	1553.5	1550.6	1553.5	1553.5	1544.6	1544.6	1544.6	1547.6
27.5°	1482.3	1485.2	1482.3	1482.3	1482.3	1482.3	1485.2	1482.3
30°	1411.0	1411.0	1411.0	1414.0	1419.9	1416.9	1416.9	1414.0
32.5°	1333.8	1336.7	1336.7	1339.7	1342.7	1348.6	1348.6	1351.6
35°	1256.5	1262.5	1265.4	1262.5	1271.4	1271.4	1277.3	1277.3
37.5°	1176.3	1179.3	1185.2	1188.2	1194.2	1197.1	1200.1	1200.1
40°	1090.2	1102.1	1105.0	1108.0	1116.9	1116.9	1119.9	1125.9
42.5°	1010.0	1021.9	1024.8	1027.8	1033.8	1042.7	1039.7	1045.7
45°	932.7	941.6	944.6	947.6	956.5	959.5	959.5	968.4
47.5°	849.5	855.5	858.5	864.4	870.4	876.3	882.3	879.3
50°	766.4	775.3	781.2	784.2	793.1	796.1	799.1	802.1
52.5°	692.1	698.1	701.0	704.0	712.9	715.9	718.9	724.8
55°	620.8	623.8	629.7	626.8	635.7	638.7	641.6	647.6
57.5°	549.5	552.5	555.5	555.5	561.4	567.4	570.4	573.3
60°	481.2	487.2	490.2	490.2	490.2	496.1	496.1	496.1
62.5°	418.9	418.9	421.9	421.9	427.8	427.8	427.8	427.8
65°	353.5	356.4	359.4	359.4	365.3	362.4	368.3	365.3
67.5°	285.1	285.1	291.1	291.1	288.1	291.1	291.1	291.1
70°	216.8	216.8	219.8	219.8	219.8	219.8	219.8	219.8
72.5°	160.4	160.4	160.4	163.4	160.4	160.4	163.4	160.4
75°	124.7	124.7	124.7	124.7	124.7	124.7	124.7	124.7
77.5°	98.1	98.1	101.0	101.0	101.0	101.0	101.0	101.0
80°	80.2	80.2	80.2	80.2	83.2	80.2	80.2	80.2
82.5°	59.4	56.4	59.4	56.4	59.4	59.4	59.4	59.4
85°	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7
87.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By 670245859 / DESKTOP-HRDQ47P





— 0°-180°    - - 45°-225°    - - - - 90°-270°















(END OF REPORT)