

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: P584854

Luminaire Tested: **HC850D010-HM82555927-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584854  
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: HC850D010-HM82555927-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3982.7 lumens  
Efficiency: N/A  
Efficacy: 83.0 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

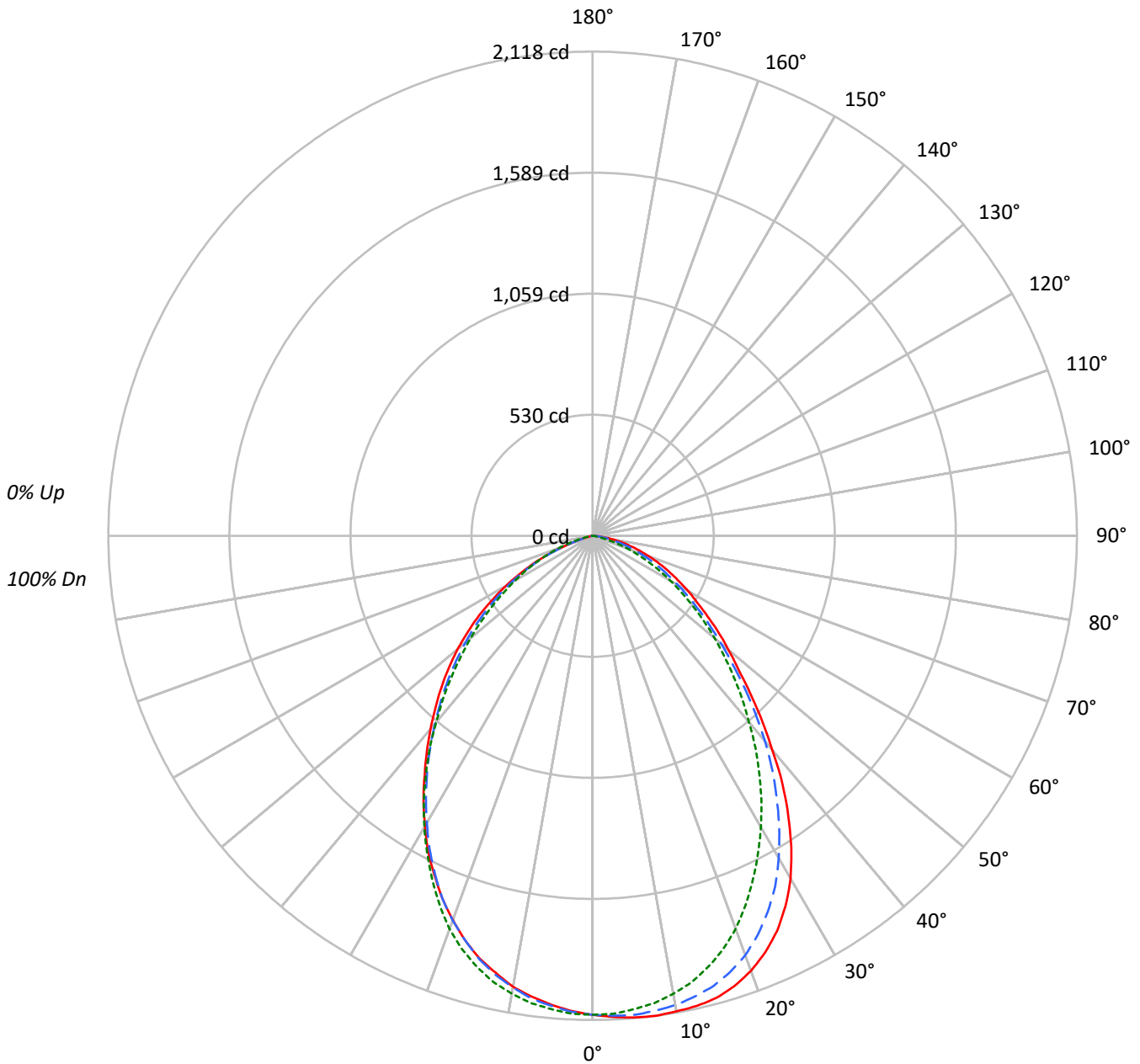
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	85	82	79	77								
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67								
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59								
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47								
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42								
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38								
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35								
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32								

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

	0°	90°	180°
0°	64617	64617	64617
5°	65474	64344	63741
10°	66143	63686	62724
15°	66808	62341	61093
20°	66471	60042	58667
25°	64918	56446	55687
30°	61667	52402	52199
35°	56135	47816	48233
40°	49219	42798	44376
45°	42462	38066	40753
50°	37179	33418	36910
55°	32940	28725	32493
60°	29683	24157	26920
65°	26742	19394	20613
70°	23459	14119	11351
75°	20004	7339	2990
80°	15396	1989	497
85°	9871	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	197.7	5.0
10°-20°	555.8	14.0
20°-30°	788.9	19.8
30°-40°	830.4	20.9
40°-50°	706.4	17.7
50°-60°	510.5	12.8
60°-70°	290.4	7.3
70°-80°	91.5	2.3
80°-90°	11.1	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°	1542.4	38.7
0°-40°	2372.8	59.6
0°-60°	3589.8	90.1
0°-90°	3982.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3982.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2096	2096	2096	2096	2096	
5°	2115	2104	2079	2065	2059	202
15°	2093	2040	1953	1916	1914	589
25°	1908	1813	1659	1631	1637	874
35°	1491	1404	1270	1262	1281	928
45°	974	937	873	895	934	757
55°	613	568	534	565	604	552
65°	366	316	266	263	282	363
75°	168	129	62	28	25	181
85°	28	17	0	0	0	36
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°	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5
2.5°	2106.8	2109.6	2104.0	2104.0	2109.6	2104.0	2106.8	2106.8	2104.0	2104.0	2101.2
5°	2115.2	2112.4	2112.4	2112.4	2115.2	2109.6	2106.8	2109.6	2104.0	2104.0	2104.0
7.5°	2117.9	2117.9	2115.2	2112.4	2112.4	2112.4	2109.6	2106.8	2104.0	2098.4	2095.5
10°	2112.4	2112.4	2115.2	2109.6	2109.6	2104.0	2104.0	2098.4	2098.4	2092.7	2084.3
12.5°	2106.8	2104.0	2104.0	2098.4	2098.4	2092.7	2092.7	2084.3	2081.5	2073.2	2064.8
15°	2092.7	2089.9	2084.3	2081.5	2078.7	2075.9	2070.4	2067.6	2059.2	2048.0	2039.6
17.5°	2064.8	2062.0	2059.2	2053.6	2048.0	2045.2	2042.4	2033.9	2022.8	2014.4	2000.4
20°	2025.6	2022.8	2022.8	2014.4	2011.6	2003.2	2000.4	1989.3	1980.9	1964.0	1952.8
22.5°	1972.5	1975.3	1969.6	1964.0	1958.4	1950.0	1944.5	1933.3	1919.3	1902.5	1888.5
25°	1908.0	1910.8	1905.4	1899.7	1891.3	1885.7	1880.1	1863.4	1849.4	1829.7	1813.0
27.5°	1826.9	1826.9	1826.9	1821.4	1807.4	1804.6	1799.0	1782.1	1762.6	1745.8	1729.1
30°	1731.9	1729.1	1729.1	1720.7	1715.0	1703.8	1695.5	1681.5	1667.5	1647.9	1628.3
32.5°	1617.1	1619.9	1611.6	1606.0	1597.6	1597.6	1586.3	1575.1	1558.4	1538.8	1519.2
35°	1491.2	1494.0	1488.4	1485.7	1471.7	1468.8	1466.0	1452.0	1440.9	1426.9	1404.4
37.5°	1362.5	1359.8	1357.0	1357.0	1348.6	1342.9	1337.3	1328.9	1312.2	1301.0	1289.8
40°	1222.7	1222.7	1222.7	1219.9	1217.0	1211.4	1208.6	1203.0	1191.9	1180.7	1172.3
42.5°	1096.8	1096.8	1094.0	1091.1	1085.5	1088.3	1082.7	1077.1	1066.0	1057.6	1052.0
45°	973.7	973.7	973.7	976.5	970.9	962.4	962.4	956.8	951.2	945.6	937.3
47.5°	864.5	872.9	867.3	864.5	867.3	856.2	856.2	850.6	845.0	839.3	828.1
50°	775.0	775.0	775.0	769.4	766.6	766.6	758.2	752.6	749.8	744.2	733.1
52.5°	693.8	688.3	688.3	685.5	682.7	677.1	677.1	671.5	660.3	654.6	646.3
55°	612.7	612.7	609.9	607.2	604.4	601.6	598.8	590.3	584.7	576.3	567.9
57.5°	540.0	545.6	542.8	537.2	531.5	531.5	525.9	520.4	512.0	503.6	495.2
60°	481.3	478.5	478.5	475.7	470.1	467.2	464.4	456.0	447.6	439.3	430.9
62.5°	419.7	419.7	419.7	414.1	408.4	405.6	402.8	397.3	386.1	377.7	372.1
65°	366.5	363.7	360.9	358.1	355.4	349.8	347.0	341.3	332.9	324.5	316.1
67.5°	313.4	310.6	310.6	307.8	299.4	296.6	296.6	288.2	279.7	271.4	263.0
70°	260.2	260.2	260.2	254.6	251.8	249.0	246.2	240.6	232.2	223.9	215.4
72.5°	215.4	212.6	212.6	209.8	201.4	198.6	195.8	190.2	181.9	176.3	170.7
75°	167.9	167.9	165.1	162.3	159.5	156.6	153.8	148.2	139.9	131.5	128.7
77.5°	128.7	125.9	125.9	123.1	117.5	114.7	114.7	109.1	100.8	95.2	89.5
80°	86.7	89.5	86.7	83.9	81.1	78.3	75.5	72.7	67.1	61.6	56.0
82.5°	53.2	56.0	53.2	53.2	50.4	47.6	47.6	42.0	39.2	36.4	33.6
85°	27.9	27.9	27.9	27.9	25.1	25.1	25.1	22.3	19.6	16.8	16.8
87.5°	8.4	11.2	8.4	8.4	8.4	8.4	8.4	8.4	5.6	5.6	5.6
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°	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5
2.5°	2104.0	2101.2	2098.4	2098.4	2098.4	2098.4	2098.4	2095.5	2092.7	2092.7	2092.7
5°	2098.4	2098.4	2098.4	2095.5	2092.7	2092.7	2087.1	2084.3	2081.5	2078.7	2075.9
7.5°	2092.7	2087.1	2084.3	2081.5	2078.7	2078.7	2073.2	2067.6	2067.6	2062.0	2056.4
10°	2075.9	2073.2	2067.6	2062.0	2059.2	2056.4	2050.8	2042.4	2039.6	2033.9	2028.4
12.5°	2056.4	2050.8	2045.2	2033.9	2031.3	2028.4	2017.2	2008.8	2003.2	2000.4	1986.5
15°	2031.3	2020.0	2011.6	1997.6	1994.8	1989.3	1980.9	1972.5	1961.2	1952.8	1947.3
17.5°	1986.5	1975.3	1961.2	1947.3	1941.7	1941.7	1927.7	1916.5	1902.5	1896.9	1885.7
20°	1933.3	1919.3	1908.0	1891.3	1882.9	1874.5	1866.1	1849.4	1838.1	1829.7	1815.8
22.5°	1871.7	1852.2	1838.1	1821.4	1807.4	1799.0	1784.9	1771.0	1757.0	1748.6	1737.5
25°	1793.4	1776.6	1754.2	1737.5	1729.1	1717.8	1701.0	1687.1	1673.1	1659.0	1653.6
27.5°	1706.6	1684.3	1664.7	1645.1	1636.7	1628.3	1608.8	1591.9	1580.7	1566.8	1561.2
30°	1611.6	1589.1	1566.8	1550.0	1541.6	1527.6	1516.4	1496.8	1482.9	1471.7	1457.6
32.5°	1502.4	1485.7	1466.0	1440.9	1435.3	1424.1	1407.2	1398.9	1382.1	1373.7	1362.5
35°	1384.9	1373.7	1354.2	1334.5	1326.1	1320.5	1306.6	1289.8	1278.5	1270.2	1264.6
37.5°	1273.0	1259.0	1239.4	1225.5	1219.9	1211.4	1194.7	1186.3	1175.1	1169.5	1158.2
40°	1152.8	1138.7	1124.7	1116.3	1108.0	1102.4	1091.1	1082.7	1071.5	1063.2	1060.4
42.5°	1035.1	1026.8	1015.6	1004.4	1001.6	993.2	987.6	979.3	970.9	968.0	959.6
45°	928.9	920.5	909.2	898.1	895.3	889.7	886.9	878.5	872.9	872.9	872.9
47.5°	822.5	814.2	803.0	797.4	800.2	789.0	789.0	786.2	780.5	780.5	783.3
50°	727.5	716.2	713.4	707.8	702.2	696.6	699.4	691.1	691.1	696.6	693.8
52.5°	637.9	626.7	623.9	618.3	615.5	615.5	612.7	612.7	609.9	612.7	612.7
55°	556.8	548.4	542.8	537.2	534.3	534.3	534.3	531.5	528.7	534.3	537.2
57.5°	484.0	481.3	475.7	467.2	464.4	461.6	458.8	458.8	458.8	458.8	461.6
60°	419.7	414.1	408.4	400.0	400.0	397.3	394.5	391.7	391.7	391.7	391.7
62.5°	363.7	355.4	347.0	341.3	338.5	335.7	332.9	327.3	327.3	327.3	327.3
65°	307.8	299.4	293.8	288.2	282.5	282.5	276.9	274.1	268.6	265.8	260.2
67.5°	254.6	249.0	243.4	235.0	232.2	229.5	223.9	221.1	212.6	209.8	207.0
70°	207.0	198.6	193.0	187.5	184.7	179.1	173.5	167.9	162.3	156.6	151.0
72.5°	162.3	153.8	148.2	142.7	137.1	137.1	128.7	123.1	114.7	109.1	100.8
75°	120.3	111.9	106.3	98.0	95.2	92.4	83.9	78.3	69.9	61.6	56.0
77.5°	81.1	75.5	69.9	61.6	56.0	56.0	47.6	42.0	36.4	27.9	25.1
80°	50.4	44.8	39.2	33.6	33.6	27.9	25.1	19.6	14.0	11.2	8.4
82.5°	27.9	25.1	22.3	16.8	16.8	14.0	11.2	8.4	5.6	2.8	2.8
85°	14.0	11.2	8.4	8.4	5.6	5.6	5.6	2.8	2.8	0.0	0.0
87.5°	5.6	2.8	2.8	2.8	2.8	2.8	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5
2.5°	2089.9	2089.9	2087.1	2087.1	2087.1	2084.3	2087.1	2084.3	2084.3	2084.3	2087.1
5°	2078.7	2073.2	2073.2	2070.4	2070.4	2067.6	2070.4	2067.6	2064.8	2062.0	2064.8
7.5°	2056.4	2050.8	2048.0	2045.2	2045.2	2045.2	2042.4	2039.6	2042.4	2033.9	2039.6
10°	2025.6	2022.8	2017.2	2014.4	2011.6	2014.4	2011.6	2006.0	2006.0	2006.0	2003.2
12.5°	1986.5	1980.9	1978.1	1975.3	1969.6	1969.6	1972.5	1966.8	1966.8	1961.2	1961.2
15°	1938.9	1933.3	1927.7	1927.7	1922.1	1922.1	1919.3	1919.3	1916.5	1913.7	1913.7
17.5°	1880.1	1871.7	1866.1	1868.9	1866.1	1863.4	1863.4	1857.8	1855.0	1857.8	1857.8
20°	1810.2	1804.6	1799.0	1801.8	1796.2	1793.4	1796.2	1787.8	1790.6	1790.6	1790.6
22.5°	1731.9	1729.1	1720.7	1720.7	1715.0	1712.2	1715.0	1715.0	1717.8	1715.0	1715.0
25°	1645.1	1639.5	1633.9	1633.9	1631.1	1628.3	1631.1	1633.9	1631.1	1633.9	1633.9
27.5°	1552.8	1544.4	1544.4	1538.8	1538.8	1541.6	1538.8	1541.6	1544.4	1544.4	1550.0
30°	1452.0	1449.2	1446.4	1443.7	1443.7	1446.4	1446.4	1446.4	1449.2	1454.8	1454.8
32.5°	1357.0	1351.4	1345.8	1345.8	1351.4	1348.6	1351.4	1351.4	1357.0	1357.0	1362.5
35°	1253.4	1253.4	1247.8	1250.6	1250.6	1250.6	1250.6	1256.2	1261.8	1264.6	1270.2
37.5°	1158.2	1149.9	1152.8	1152.8	1155.4	1152.8	1161.1	1161.1	1166.7	1166.7	1172.3
40°	1054.8	1054.8	1057.6	1054.8	1057.6	1057.6	1063.2	1068.8	1071.5	1077.1	1079.9
42.5°	956.8	962.4	956.8	959.6	962.4	965.2	968.0	970.9	982.1	987.6	996.0
45°	867.3	870.1	872.9	875.7	872.9	878.5	881.3	886.9	895.3	898.1	900.9
47.5°	780.5	783.3	786.2	789.0	789.0	794.6	797.4	803.0	808.6	811.4	814.2
50°	696.6	702.2	705.0	705.0	707.8	713.4	719.1	719.1	724.7	733.1	735.8
52.5°	621.1	621.1	626.7	629.5	632.3	632.3	640.7	643.5	646.3	651.8	657.4
55°	537.2	545.6	548.4	548.4	554.0	559.6	562.4	565.2	565.2	576.3	576.3
57.5°	464.4	467.2	472.9	472.9	472.9	481.3	481.3	486.8	489.6	492.4	498.0
60°	391.7	397.3	397.3	400.0	397.3	402.8	405.6	411.3	414.1	416.9	419.7
62.5°	324.5	324.5	327.3	327.3	327.3	327.3	332.9	332.9	338.5	341.3	344.2
65°	260.2	260.2	260.2	260.2	260.2	260.2	260.2	260.2	263.0	263.0	268.6
67.5°	201.4	198.6	193.0	195.8	193.0	193.0	190.2	190.2	193.0	193.0	198.6
70°	145.5	142.7	137.1	137.1	134.3	131.5	128.7	125.9	123.1	123.1	123.1
72.5°	95.2	89.5	81.1	78.3	78.3	72.7	67.1	64.3	64.3	64.3	64.3
75°	47.6	42.0	36.4	33.6	33.6	27.9	30.7	27.9	27.9	27.9	27.9
77.5°	19.6	14.0	11.2	11.2	11.2	8.4	8.4	8.4	8.4	8.4	8.4
80°	5.6	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	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: P584854

CATALOG NUMBER: HC850D010-HM82555927-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5	2095.5
2.5°	2084.3	2084.3	2078.7	2081.5	2081.5	2081.5	2081.5	2081.5
5°	2059.2	2062.0	2059.2	2062.0	2062.0	2059.2	2059.2	2059.2
7.5°	2033.9	2036.7	2033.9	2036.7	2036.7	2036.7	2033.9	2033.9
10°	2003.2	2003.2	2003.2	2003.2	2003.2	2000.4	2003.2	2003.2
12.5°	1961.2	1961.2	1961.2	1964.0	1964.0	1961.2	1961.2	1958.4
15°	1916.5	1910.8	1913.7	1916.5	1913.7	1913.7	1913.7	1913.7
17.5°	1855.0	1857.8	1855.0	1855.0	1855.0	1855.0	1857.8	1855.0
20°	1790.6	1790.6	1793.4	1790.6	1790.6	1790.6	1790.6	1787.8
22.5°	1717.8	1715.0	1715.0	1717.8	1717.8	1715.0	1717.8	1717.8
25°	1636.7	1639.5	1636.7	1636.7	1639.5	1639.5	1639.5	1636.7
27.5°	1550.0	1552.8	1555.6	1552.8	1552.8	1552.8	1555.6	1558.4
30°	1460.4	1466.0	1460.4	1460.4	1466.0	1463.2	1466.0	1466.0
32.5°	1365.3	1373.7	1368.1	1373.7	1373.7	1376.5	1373.7	1376.5
35°	1270.2	1278.5	1278.5	1278.5	1281.3	1284.1	1284.1	1281.3
37.5°	1180.7	1183.5	1183.5	1189.1	1191.9	1194.7	1194.7	1191.9
40°	1088.3	1094.0	1096.8	1096.8	1096.8	1102.4	1108.0	1102.4
42.5°	998.8	1001.6	1004.4	1004.4	1010.0	1012.8	1015.6	1015.6
45°	912.1	917.7	920.5	923.3	926.1	931.7	928.9	934.5
47.5°	822.5	830.9	833.7	836.5	842.1	845.0	847.8	850.6
50°	741.4	747.0	747.0	752.6	761.0	761.0	766.6	769.4
52.5°	660.3	663.1	665.9	668.7	674.3	679.9	679.9	685.5
55°	581.9	584.7	584.7	587.5	590.3	601.6	604.4	604.4
57.5°	500.8	500.8	506.4	509.2	512.0	517.6	517.6	517.6
60°	422.5	425.3	425.3	428.1	430.9	436.5	439.3	436.5
62.5°	344.2	347.0	347.0	349.8	355.4	358.1	355.4	355.4
65°	271.4	274.1	274.1	276.9	282.5	282.5	279.7	282.5
67.5°	198.6	198.6	198.6	198.6	198.6	198.6	198.6	198.6
70°	125.9	123.1	120.3	123.1	123.1	123.1	120.3	125.9
72.5°	61.6	64.3	64.3	64.3	64.3	64.3	64.3	61.6
75°	27.9	27.9	25.1	25.1	25.1	27.9	27.9	25.1
77.5°	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
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



Report Generated By 670245859 / DESKTOP-HRDQ47P





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















(END OF REPORT)