

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: P584488

Luminaire Tested: **HC835D010-HM82555935-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584488  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC835D010-HM82555935-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3505.4 lumens  
Efficiency: N/A  
Efficacy: 104.0 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.04 / 1.13  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

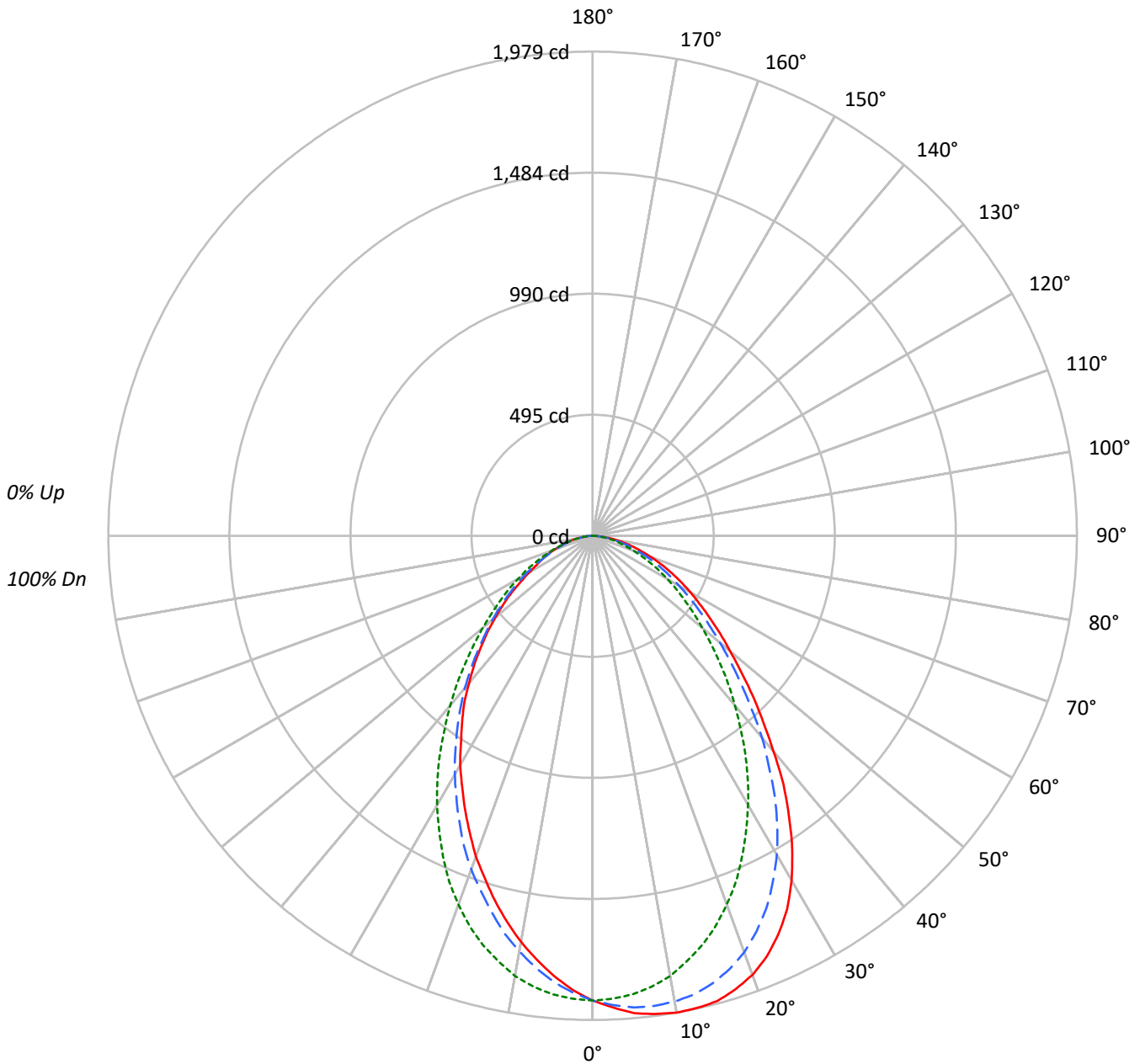
Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
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	93	91	89	87																			
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32																			

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

	0°	90°	180°
0°	58570	58570	58570
5°	60627	58234	55922
10°	61973	57213	52776
15°	62855	55286	49281
20°	62667	52603	45751
25°	61118	49189	41999
30°	57904	45242	38541
35°	52679	40938	35024
40°	46268	36414	31640
45°	40347	32031	28211
50°	35111	28064	24850
55°	31316	24660	21612
60°	28450	21616	18434
65°	25574	18803	16738
70°	22765	16030	15102
75°	19956	13523	12903
80°	16941	10974	11454
85°	12772	8208	9128



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.9	5.1
10°-20°	490.2	14.0
20°-30°	680.4	19.4
30°-40°	703.5	20.1
40°-50°	589.0	16.8
50°-60°	427.6	12.2
60°-70°	269.8	7.7
70°-80°	133.7	3.8
80°-90°	33.2	0.9
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°	1348.5	38.5
0°-40°	2052.0	58.5
0°-60°	3068.6	87.5
0°-90°	3505.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3505.4	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1899	1899	1899	1899	1899	
5°	1959	1936	1881	1830	1807	187
15°	1969	1894	1732	1593	1544	554
25°	1796	1680	1446	1289	1234	823
35°	1399	1296	1088	964	930	871
45°	925	858	734	662	647	716
55°	582	531	459	420	402	526
65°	350	307	258	227	229	349
75°	168	139	114	108	108	180
85°	36	28	23	26	26	44
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°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1930.3	1930.3	1932.9	1930.3	1930.3	1930.3	1927.7	1927.7	1925.2	1925.2	1920.0
5°	1958.6	1953.5	1958.6	1953.5	1953.5	1953.5	1950.9	1945.8	1943.2	1938.0	1935.5
7.5°	1971.5	1968.9	1968.9	1966.4	1966.4	1963.8	1961.2	1958.6	1948.3	1945.8	1938.0
10°	1979.2	1976.7	1976.7	1974.1	1968.9	1968.9	1963.8	1961.2	1948.3	1943.2	1932.9
12.5°	1976.7	1976.7	1976.7	1974.1	1966.4	1963.8	1958.6	1950.9	1940.6	1930.3	1920.0
15°	1968.9	1968.9	1963.8	1961.2	1953.5	1948.3	1945.8	1932.9	1922.6	1909.7	1894.2
17.5°	1943.2	1943.2	1940.6	1935.5	1927.7	1922.6	1917.4	1904.6	1894.2	1873.6	1858.1
20°	1909.7	1907.1	1904.6	1896.8	1889.0	1886.5	1878.7	1860.7	1847.8	1832.3	1811.7
22.5°	1860.7	1858.1	1855.6	1850.4	1837.5	1832.3	1827.2	1814.4	1791.1	1775.7	1749.9
25°	1796.3	1796.3	1791.1	1783.3	1770.5	1765.4	1757.6	1744.8	1724.2	1700.9	1680.3
27.5°	1721.5	1719.0	1711.2	1706.1	1695.8	1688.1	1675.2	1659.7	1639.1	1621.0	1595.3
30°	1626.2	1626.2	1621.0	1613.3	1600.4	1595.3	1585.0	1566.9	1546.3	1523.1	1505.0
32.5°	1518.0	1518.0	1510.2	1505.0	1497.4	1484.4	1481.9	1461.2	1443.2	1425.1	1404.5
35°	1399.4	1402.0	1396.9	1386.6	1373.6	1373.6	1368.5	1350.4	1329.8	1311.8	1296.4
37.5°	1280.9	1273.1	1270.6	1265.4	1257.7	1247.4	1242.2	1234.4	1216.4	1203.5	1180.4
40°	1149.4	1152.0	1146.8	1141.7	1139.1	1131.4	1128.8	1115.9	1103.0	1087.5	1077.2
42.5°	1030.9	1030.9	1030.9	1025.7	1020.6	1012.8	1010.3	1002.5	987.0	976.7	961.3
45°	925.2	917.4	917.4	914.9	912.3	907.1	899.5	894.3	884.0	876.2	858.2
47.5°	822.1	824.7	822.1	819.6	811.8	809.2	806.6	796.3	786.0	778.3	765.4
50°	731.9	737.0	731.9	731.9	726.7	724.2	719.0	711.3	703.6	690.6	677.8
52.5°	657.2	657.2	654.6	652.1	644.3	639.1	636.6	634.0	621.0	610.7	600.4
55°	582.5	585.0	585.0	577.3	574.7	569.5	567.0	559.2	554.1	538.6	531.0
57.5°	518.0	515.4	518.0	512.9	507.7	502.6	499.9	494.8	487.1	476.8	466.5
60°	461.3	456.2	456.2	453.6	448.4	445.9	440.7	433.0	425.3	414.9	407.2
62.5°	404.6	402.0	399.4	396.9	391.7	389.1	386.6	378.8	371.1	363.4	355.7
65°	350.5	350.5	347.9	342.7	340.2	337.6	335.1	329.9	319.6	314.4	306.7
67.5°	301.5	298.9	298.9	293.7	288.6	286.1	286.1	280.9	273.1	265.5	260.3
70°	252.5	255.2	252.5	250.0	244.9	244.9	239.7	237.1	226.8	224.3	216.5
72.5°	208.7	208.7	206.2	206.2	201.0	198.4	198.4	193.2	188.1	182.9	177.8
75°	167.5	167.5	167.5	165.0	162.3	157.2	157.2	154.7	149.5	144.4	139.2
77.5°	131.4	128.9	128.9	126.3	123.8	121.1	121.1	118.6	113.5	110.8	105.7
80°	95.4	92.7	92.7	92.7	87.6	90.2	87.6	85.1	82.4	79.9	77.3
82.5°	61.8	64.5	64.5	61.8	59.3	59.3	59.3	56.7	56.7	54.1	51.5
85°	36.1	36.1	36.1	36.1	33.5	33.5	33.5	30.9	30.9	30.9	28.4
87.5°	15.5	15.5	15.5	15.5	15.5	15.5	12.9	12.9	12.9	12.9	12.9
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°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1920.0	1914.9	1912.2	1909.7	1909.7	1907.1	1904.6	1899.4	1899.4	1894.2	1891.6
5°	1930.3	1922.6	1917.4	1912.2	1909.7	1904.6	1899.4	1891.6	1889.0	1881.3	1873.6
7.5°	1932.9	1920.0	1914.9	1904.6	1899.4	1894.2	1883.9	1876.2	1865.9	1858.1	1847.8
10°	1922.6	1912.2	1899.4	1886.5	1883.9	1876.2	1860.7	1850.4	1837.5	1827.2	1811.7
12.5°	1907.1	1891.6	1878.7	1863.2	1855.6	1847.8	1832.3	1816.9	1798.9	1780.8	1765.4
15°	1881.3	1863.2	1845.3	1827.2	1816.9	1809.2	1791.1	1773.0	1755.1	1731.8	1716.4
17.5°	1842.6	1822.0	1804.1	1780.8	1770.5	1762.7	1739.6	1719.0	1695.8	1672.5	1657.1
20°	1793.8	1767.9	1747.3	1721.5	1713.9	1700.9	1677.7	1654.6	1628.8	1603.0	1585.0
22.5°	1729.3	1703.6	1680.3	1654.6	1641.6	1628.8	1605.6	1577.2	1551.4	1530.8	1512.8
25°	1654.6	1631.3	1603.0	1579.8	1564.3	1548.9	1523.1	1499.9	1476.8	1445.7	1427.8
27.5°	1572.0	1543.7	1523.1	1492.2	1476.8	1466.4	1438.1	1407.2	1386.6	1358.2	1337.6
30°	1479.3	1453.5	1430.3	1399.4	1383.9	1373.6	1347.9	1319.5	1298.9	1270.6	1249.9
32.5°	1381.4	1353.0	1324.6	1304.0	1286.1	1275.8	1247.4	1229.3	1203.5	1180.4	1157.1
35°	1275.8	1247.4	1226.8	1198.4	1188.1	1177.8	1154.5	1131.4	1108.1	1087.5	1069.6
37.5°	1162.3	1141.7	1118.5	1097.8	1090.2	1079.9	1051.5	1030.9	1012.8	992.2	976.7
40°	1051.5	1033.4	1017.9	997.3	984.5	976.7	956.1	938.0	917.4	904.6	889.2
42.5°	951.0	930.4	914.9	899.5	886.5	878.9	860.8	847.9	832.4	819.6	801.5
45°	845.3	835.0	816.9	804.1	796.3	786.0	773.2	757.7	744.8	734.5	721.6
47.5°	752.6	742.3	729.3	713.9	708.7	700.9	688.1	677.8	667.5	657.2	644.3
50°	667.5	654.6	644.3	634.0	628.8	621.0	608.2	603.1	595.3	585.0	577.3
52.5°	590.1	579.8	569.5	556.7	554.1	548.9	541.3	531.0	523.2	518.0	512.9
55°	520.5	510.2	502.6	492.3	489.6	484.5	474.2	469.0	463.9	458.7	453.6
57.5°	458.7	448.4	438.1	433.0	427.8	422.7	420.0	412.4	407.2	404.6	399.4
60°	402.0	391.7	384.0	376.3	373.7	371.1	366.0	360.8	355.7	350.5	347.9
62.5°	347.9	337.6	332.4	327.3	322.1	322.1	317.0	311.8	306.7	304.1	298.9
65°	298.9	293.7	286.1	278.3	275.8	275.8	268.0	265.5	262.8	257.7	252.5
67.5°	252.5	247.4	239.7	237.1	234.6	231.9	229.4	224.3	219.1	216.5	211.3
70°	211.3	206.2	201.0	198.4	195.9	193.2	188.1	185.6	180.4	177.8	175.3
72.5°	170.1	167.5	162.3	159.8	157.2	154.7	152.0	149.5	144.4	141.7	139.2
75°	136.6	134.1	128.9	126.3	123.8	123.8	121.1	116.0	113.5	113.5	110.8
77.5°	103.0	100.5	97.9	95.4	92.7	92.7	90.2	87.6	85.1	85.1	82.4
80°	74.8	72.1	69.6	69.6	69.6	67.0	64.5	64.5	61.8	61.8	59.3
82.5°	49.0	49.0	46.4	46.4	46.4	43.8	43.8	41.2	41.2	41.2	41.2
85°	28.4	28.4	28.4	25.8	25.8	25.8	25.8	25.8	25.8	23.2	25.8
87.5°	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9	10.3	10.3	10.3
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°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1889.0	1886.5	1881.3	1881.3	1876.2	1876.2	1873.6	1871.0	1868.4	1865.9	1863.2
5°	1871.0	1860.7	1855.6	1852.9	1847.8	1845.3	1837.5	1832.3	1829.8	1824.7	1819.5
7.5°	1837.5	1827.2	1816.9	1814.4	1811.7	1801.4	1793.8	1786.0	1780.8	1775.7	1770.5
10°	1798.9	1788.5	1775.7	1770.5	1765.4	1752.4	1742.1	1734.5	1724.2	1713.9	1711.2
12.5°	1752.4	1737.0	1721.5	1716.4	1708.7	1695.8	1685.5	1672.5	1664.9	1651.9	1649.4
15°	1698.4	1680.3	1667.4	1654.6	1649.4	1636.5	1618.5	1608.2	1592.7	1587.6	1574.7
17.5°	1634.0	1615.9	1597.9	1592.7	1585.0	1566.9	1548.9	1536.0	1520.5	1512.8	1505.0
20°	1566.9	1543.7	1525.7	1520.5	1510.2	1494.7	1476.8	1463.8	1450.9	1435.4	1427.8
22.5°	1489.6	1463.8	1448.4	1435.4	1432.9	1414.8	1394.2	1383.9	1373.6	1360.7	1350.4
25°	1404.5	1381.4	1363.3	1353.0	1347.9	1332.4	1317.0	1304.0	1288.6	1280.9	1268.0
27.5°	1317.0	1301.5	1278.3	1268.0	1260.2	1247.4	1229.3	1221.6	1206.1	1195.8	1188.1
30°	1231.9	1208.7	1195.8	1182.9	1175.2	1162.3	1146.8	1139.1	1126.2	1115.9	1108.1
32.5°	1139.1	1123.6	1105.6	1100.5	1090.2	1077.2	1066.9	1054.1	1043.7	1033.4	1030.9
35°	1054.1	1033.4	1015.4	1010.3	1002.5	989.7	984.5	976.7	963.9	961.3	951.0
37.5°	961.3	951.0	930.4	922.6	920.1	909.8	899.5	894.3	886.5	878.9	876.2
40°	873.7	860.8	850.5	842.7	837.5	829.9	819.6	816.9	811.8	801.5	798.9
42.5°	791.2	778.3	768.0	765.4	757.7	749.9	744.8	737.0	734.5	731.9	726.7
45°	711.3	703.6	693.3	690.6	688.1	677.8	672.7	667.5	662.4	659.7	654.6
47.5°	639.1	631.3	623.7	621.0	615.9	613.4	605.6	603.1	595.3	592.8	590.1
50°	569.5	564.4	559.2	556.7	551.6	548.9	543.8	538.6	533.5	531.0	528.3
52.5°	507.7	502.6	497.4	494.8	492.3	487.1	482.0	476.8	474.2	471.7	469.0
55°	448.4	443.3	440.7	438.1	435.6	433.0	425.3	422.7	420.0	417.5	412.4
57.5°	394.3	389.1	384.0	384.0	381.4	378.8	373.7	368.5	368.5	363.4	358.2
60°	345.4	340.2	335.1	332.4	329.9	324.8	322.1	319.6	317.0	314.4	309.2
62.5°	293.7	291.2	286.1	286.1	280.9	278.3	275.8	273.1	270.6	265.5	262.8
65°	250.0	247.4	242.2	239.7	239.7	237.1	231.9	229.4	226.8	226.8	224.3
67.5°	208.7	206.2	201.0	198.4	198.4	195.9	193.2	193.2	190.7	188.1	190.7
70°	172.6	167.5	167.5	165.0	165.0	162.3	159.8	159.8	159.8	162.3	162.3
72.5°	136.6	134.1	131.4	131.4	131.4	131.4	128.9	128.9	131.4	134.1	134.1
75°	108.3	105.7	105.7	105.7	103.0	103.0	105.7	105.7	108.3	108.3	108.3
77.5°	79.9	79.9	79.9	79.9	79.9	79.9	82.4	82.4	85.1	85.1	85.1
80°	59.3	59.3	59.3	59.3	59.3	61.8	61.8	61.8	61.8	61.8	64.5
82.5°	41.2	41.2	41.2	41.2	41.2	41.2	41.2	43.8	43.8	43.8	43.8
85°	23.2	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
87.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
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: P584488

CATALOG NUMBER: HC835D010-HM82555935-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4	1899.4
2.5°	1860.7	1860.7	1860.7	1863.2	1858.1	1858.1	1858.1	1858.1
5°	1816.9	1814.4	1811.7	1814.4	1809.2	1809.2	1806.6	1806.6
7.5°	1762.7	1760.2	1757.6	1757.6	1752.4	1752.4	1749.9	1747.3
10°	1703.6	1698.4	1700.9	1695.8	1693.3	1690.6	1688.1	1685.5
12.5°	1639.1	1634.0	1631.3	1626.2	1621.0	1618.5	1621.0	1615.9
15°	1569.5	1561.7	1559.2	1554.0	1548.9	1546.3	1546.3	1543.7
17.5°	1492.2	1487.1	1484.4	1479.3	1476.8	1471.5	1469.0	1466.4
20°	1420.0	1407.2	1409.7	1404.5	1402.0	1391.7	1391.7	1394.2
22.5°	1340.1	1332.4	1327.3	1322.1	1319.5	1314.3	1314.3	1311.8
25°	1260.2	1252.5	1249.9	1244.7	1242.2	1237.1	1234.4	1234.4
27.5°	1182.9	1172.6	1172.6	1167.5	1162.3	1159.8	1157.1	1154.5
30°	1100.5	1092.7	1090.2	1090.2	1087.5	1087.5	1079.9	1082.4
32.5°	1023.1	1017.9	1015.4	1010.3	1010.3	1007.6	1007.6	1000.0
35°	945.8	938.0	940.7	935.5	932.9	930.4	932.9	930.4
37.5°	871.1	865.9	865.9	860.8	860.8	858.2	855.6	860.8
40°	796.3	793.8	791.2	788.6	791.2	788.6	783.5	786.0
42.5°	721.6	721.6	719.0	719.0	716.4	716.4	716.4	716.4
45°	654.6	652.1	652.1	649.4	649.4	649.4	649.4	646.9
47.5°	587.6	585.0	585.0	585.0	582.5	582.5	579.8	582.5
50°	523.2	523.2	520.5	520.5	523.2	520.5	518.0	518.0
52.5°	463.9	463.9	461.3	461.3	458.7	456.2	458.7	458.7
55°	409.7	407.2	404.6	404.6	402.0	399.4	399.4	402.0
57.5°	358.2	355.7	353.1	353.1	347.9	345.4	345.4	345.4
60°	309.2	304.1	304.1	301.5	301.5	298.9	298.9	298.9
62.5°	262.8	260.3	260.3	260.3	260.3	257.7	257.7	257.7
65°	224.3	224.3	224.3	226.8	226.8	229.4	229.4	229.4
67.5°	193.2	195.9	195.9	195.9	198.4	198.4	198.4	195.9
70°	165.0	165.0	165.0	167.5	167.5	167.5	167.5	167.5
72.5°	136.6	136.6	136.6	136.6	136.6	136.6	136.6	136.6
75°	108.3	110.8	110.8	110.8	108.3	110.8	110.8	108.3
77.5°	85.1	85.1	85.1	85.1	85.1	85.1	85.1	85.1
80°	64.5	64.5	64.5	64.5	64.5	64.5	64.5	64.5
82.5°	43.8	43.8	43.8	43.8	43.8	43.8	43.8	43.8
85°	25.8	25.8	25.8	25.8	25.8	25.8	25.8	25.8
87.5°	10.3	10.3	10.3	10.3	10.3	10.3	10.3	10.3
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)