

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: P584607

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584607
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: HC840D010-HM82555930-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4039.7 lumens
Efficiency: N/A
Efficacy: 98.5 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

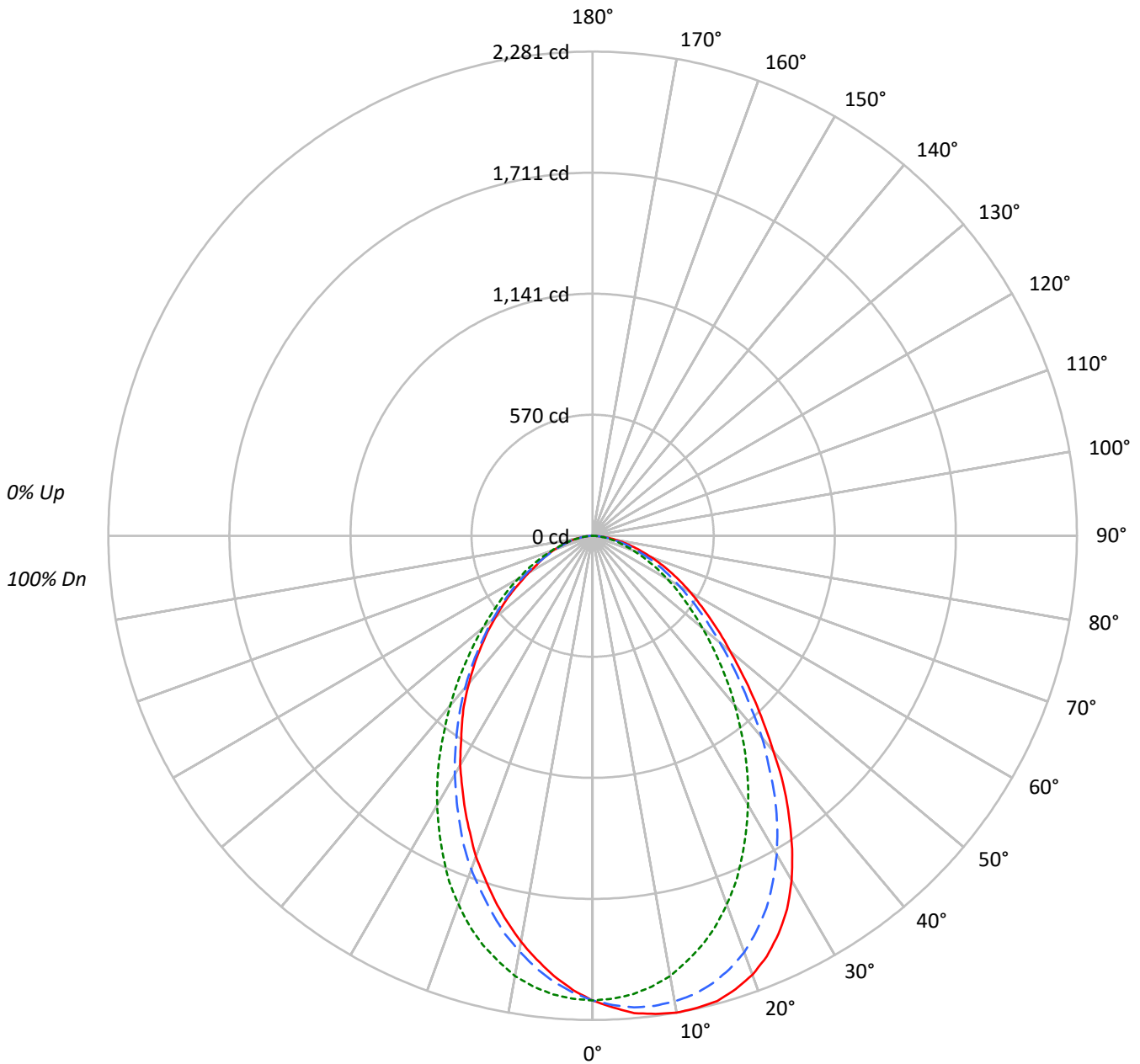
Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	67498	67498	67498
5°	69870	67112	64443
10°	71423	65934	60817
15°	72439	63717	56793
20°	72220	60623	52724
25°	70433	56688	48403
30°	66727	52135	44416
35°	60709	47179	40362
40°	53320	41961	36462
45°	46496	36911	32506
50°	40465	32338	28640
55°	36085	28418	24908
60°	32785	24910	21246
65°	29471	21671	19285
70°	26245	18474	17401
75°	22994	15572	14857
80°	19498	12661	13194
85°	14683	9482	10543



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.0	5.1
10°-20°	564.9	14.0
20°-30°	784.1	19.4
30°-40°	810.7	20.1
40°-50°	678.8	16.8
50°-60°	492.8	12.2
60°-70°	311.0	7.7
70°-80°	154.0	3.8
80°-90°	38.3	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°	1554.1	38.5
0°-40°	2364.8	58.5
0°-60°	3536.3	87.5
0°-90°	4039.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4039.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2189	2189	2189	2189	2189	
5°	2257	2230	2168	2109	2082	216
15°	2269	2183	1996	1836	1779	639
25°	2070	1936	1666	1485	1423	949
35°	1613	1494	1253	1111	1072	1004
45°	1066	989	846	763	745	825
55°	671	612	529	484	463	606
65°	404	353	297	261	264	403
75°	193	160	131	125	125	207
85°	42	33	27	30	30	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°	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9
2.5°	2224.5	2224.5	2227.4	2224.5	2224.5	2224.5	2221.5	2221.5	2218.6	2218.6	2212.7
5°	2257.2	2251.2	2257.2	2251.2	2251.2	2251.2	2248.3	2242.3	2239.3	2233.4	2230.4
7.5°	2272.1	2269.1	2269.1	2266.1	2266.1	2263.1	2260.2	2257.2	2245.3	2242.3	2233.4
10°	2281.0	2278.0	2278.0	2275.0	2269.1	2269.1	2263.1	2260.2	2245.3	2239.3	2227.4
12.5°	2278.0	2278.0	2278.0	2275.0	2266.1	2263.1	2257.2	2248.3	2236.4	2224.5	2212.7
15°	2269.1	2269.1	2263.1	2260.2	2251.2	2245.3	2242.3	2227.4	2215.7	2200.8	2182.9
17.5°	2239.3	2239.3	2236.4	2230.4	2221.5	2215.7	2209.7	2194.8	2182.9	2159.1	2141.4
20°	2200.8	2197.8	2194.8	2185.9	2177.0	2174.0	2165.1	2144.4	2129.5	2111.7	2087.9
22.5°	2144.4	2141.4	2138.4	2132.5	2117.6	2111.7	2105.7	2090.8	2064.2	2046.3	2016.6
25°	2070.1	2070.1	2064.2	2055.2	2040.4	2034.4	2025.5	2010.6	1986.9	1960.2	1936.5
27.5°	1984.0	1981.0	1972.1	1966.1	1954.2	1945.3	1930.5	1912.7	1888.9	1868.1	1838.4
30°	1874.0	1874.0	1868.1	1859.3	1844.4	1838.4	1826.5	1805.7	1782.0	1755.2	1734.4
32.5°	1749.3	1749.3	1740.4	1734.4	1725.6	1710.7	1707.8	1684.0	1663.1	1642.4	1618.6
35°	1612.7	1615.7	1609.7	1597.8	1583.1	1583.1	1577.1	1556.3	1532.5	1511.8	1493.9
37.5°	1476.1	1467.2	1464.2	1458.2	1449.3	1437.5	1431.6	1422.6	1401.8	1386.9	1360.3
40°	1324.6	1327.6	1321.6	1315.7	1312.7	1303.8	1300.9	1286.0	1271.2	1253.3	1241.4
42.5°	1188.0	1188.0	1188.0	1182.0	1176.1	1167.2	1164.2	1155.4	1137.5	1125.6	1107.8
45°	1066.2	1057.3	1057.3	1054.3	1051.4	1045.4	1036.5	1030.5	1018.8	1009.8	989.0
47.5°	947.5	950.5	947.5	944.5	935.6	932.6	929.6	917.7	905.8	896.9	882.0
50°	843.5	849.4	843.5	843.5	837.5	834.5	828.6	819.7	810.7	796.0	781.1
52.5°	757.3	757.3	754.3	751.4	742.4	736.6	733.6	730.7	715.8	703.9	692.0
55°	671.2	674.1	674.1	665.3	662.4	656.4	653.4	644.5	638.6	620.7	611.8
57.5°	597.0	594.0	597.0	591.1	585.1	579.2	576.2	570.2	561.3	549.4	537.5
60°	531.6	525.7	525.7	522.8	516.8	513.8	507.9	499.0	490.0	478.1	469.2
62.5°	466.2	463.3	460.3	457.4	451.5	448.5	445.5	436.6	427.7	418.8	409.8
65°	403.9	403.9	400.9	395.0	392.0	389.0	386.2	380.2	368.3	362.4	353.4
67.5°	347.5	344.5	344.5	338.6	332.6	329.6	329.6	323.7	314.9	305.9	300.0
70°	291.1	294.0	291.1	288.1	282.1	282.1	276.2	273.2	261.3	258.3	249.4
72.5°	240.6	240.6	237.6	237.6	231.7	228.7	228.7	222.8	216.8	210.9	204.9
75°	193.0	193.0	193.0	190.0	187.1	181.1	181.1	178.1	172.3	166.4	160.4
77.5°	151.5	148.5	148.5	145.5	142.6	139.6	139.6	136.6	130.7	127.7	121.7
80°	109.8	106.9	106.9	106.9	101.0	104.0	101.0	98.1	95.1	92.1	89.1
82.5°	71.3	74.3	74.3	71.3	68.3	68.3	68.3	65.3	65.3	62.4	59.4
85°	41.5	41.5	41.5	41.5	38.6	38.6	38.6	35.6	35.6	35.6	32.7
87.5°	17.8	17.8	17.8	17.8	17.8	17.8	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9
2.5°	2212.7	2206.7	2203.8	2200.8	2200.8	2197.8	2194.8	2188.9	2188.9	2182.9	2180.0
5°	2224.5	2215.7	2209.7	2203.8	2200.8	2194.8	2188.9	2180.0	2177.0	2168.1	2159.1
7.5°	2227.4	2212.7	2206.7	2194.8	2188.9	2182.9	2171.0	2162.1	2150.2	2141.4	2129.5
10°	2215.7	2203.8	2188.9	2174.0	2171.0	2162.1	2144.4	2132.5	2117.6	2105.7	2087.9
12.5°	2197.8	2180.0	2165.1	2147.4	2138.4	2129.5	2111.7	2093.8	2073.1	2052.3	2034.4
15°	2168.1	2147.4	2126.5	2105.7	2093.8	2084.9	2064.2	2043.3	2022.5	1995.9	1978.0
17.5°	2123.6	2099.8	2078.9	2052.3	2040.4	2031.4	2004.8	1981.0	1954.2	1927.6	1909.7
20°	2067.1	2037.4	2013.6	1984.0	1975.0	1960.2	1933.5	1906.7	1877.0	1847.4	1826.5
22.5°	1992.9	1963.1	1936.5	1906.7	1891.9	1877.0	1850.3	1817.6	1788.0	1764.2	1743.4
25°	1906.7	1880.0	1847.4	1820.6	1802.7	1785.0	1755.2	1728.5	1701.8	1666.1	1645.4
27.5°	1811.7	1779.0	1755.2	1719.7	1701.8	1689.9	1657.2	1621.6	1597.8	1565.2	1541.4
30°	1704.8	1675.0	1648.4	1612.7	1594.8	1583.1	1553.3	1520.6	1496.9	1464.2	1440.5
32.5°	1591.9	1559.3	1526.5	1502.9	1482.0	1470.1	1437.5	1416.7	1386.9	1360.3	1333.5
35°	1470.1	1437.5	1413.7	1381.0	1369.2	1357.3	1330.5	1303.8	1277.1	1253.3	1232.6
37.5°	1339.5	1315.7	1289.0	1265.2	1256.3	1244.4	1211.8	1188.0	1167.2	1143.5	1125.6
40°	1211.8	1191.0	1173.1	1149.4	1134.5	1125.6	1101.8	1081.1	1057.3	1042.4	1024.6
42.5°	1095.9	1072.2	1054.3	1036.5	1021.7	1012.8	992.0	977.1	959.3	944.5	923.7
45°	974.1	962.2	941.5	926.7	917.7	905.8	891.0	873.2	858.3	846.4	831.6
47.5°	867.3	855.4	840.5	822.6	816.7	807.9	793.0	781.1	769.2	757.3	742.4
50°	769.2	754.3	742.4	730.7	724.7	715.8	700.9	695.0	686.0	674.1	665.3
52.5°	680.1	668.3	656.4	641.5	638.6	632.6	623.7	611.8	602.9	597.0	591.1
55°	599.9	588.1	579.2	567.3	564.3	558.3	546.4	540.5	534.5	528.6	522.8
57.5°	528.6	516.8	504.9	499.0	493.0	487.1	484.1	475.2	469.2	466.2	460.3
60°	463.3	451.5	442.6	433.6	430.7	427.7	421.7	415.8	409.8	403.9	400.9
62.5°	400.9	389.0	383.2	377.2	371.3	371.3	365.3	359.4	353.4	350.5	344.5
65°	344.5	338.6	329.6	320.7	317.7	317.7	308.9	305.9	303.0	297.0	291.1
67.5°	291.1	285.1	276.2	273.2	270.2	267.3	264.3	258.3	252.4	249.4	243.6
70°	243.6	237.6	231.7	228.7	225.7	222.8	216.8	213.8	207.9	204.9	201.9
72.5°	196.0	193.0	187.1	184.1	181.1	178.1	175.3	172.3	166.4	163.4	160.4
75°	157.4	154.5	148.5	145.5	142.6	142.6	139.6	133.6	130.7	130.7	127.7
77.5°	118.8	115.8	112.8	109.8	106.9	106.9	104.0	101.0	98.1	98.1	95.1
80°	86.2	83.2	80.2	80.2	80.2	77.2	74.3	74.3	71.3	71.3	68.3
82.5°	56.4	56.4	53.4	53.4	53.4	50.5	50.5	47.5	47.5	47.5	47.5
85°	32.7	32.7	32.7	29.8	29.8	29.8	29.8	29.8	29.8	26.8	29.8
87.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	11.9	11.9	11.9
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°	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9
2.5°	2177.0	2174.0	2168.1	2168.1	2162.1	2162.1	2159.1	2156.2	2153.2	2150.2	2147.4
5°	2156.2	2144.4	2138.4	2135.5	2129.5	2126.5	2117.6	2111.7	2108.7	2102.7	2096.8
7.5°	2117.6	2105.7	2093.8	2090.8	2087.9	2076.1	2067.1	2058.2	2052.3	2046.3	2040.4
10°	2073.1	2061.2	2046.3	2040.4	2034.4	2019.5	2007.8	1998.8	1986.9	1975.0	1972.1
12.5°	2019.5	2001.8	1984.0	1978.0	1969.1	1954.2	1942.3	1927.6	1918.6	1903.8	1900.8
15°	1957.2	1936.5	1921.6	1906.7	1900.8	1885.9	1865.2	1853.3	1835.5	1829.5	1814.6
17.5°	1882.9	1862.2	1841.4	1835.5	1826.5	1805.7	1785.0	1770.1	1752.3	1743.4	1734.4
20°	1805.7	1779.0	1758.2	1752.3	1740.4	1722.6	1701.8	1686.9	1672.1	1654.3	1645.4
22.5°	1716.7	1686.9	1669.1	1654.3	1651.4	1630.5	1606.7	1594.8	1583.1	1568.2	1556.3
25°	1618.6	1591.9	1571.2	1559.3	1553.3	1535.5	1517.6	1502.9	1485.0	1476.1	1461.2
27.5°	1517.6	1499.9	1473.1	1461.2	1452.3	1437.5	1416.7	1407.8	1389.9	1378.0	1369.2
30°	1419.7	1392.9	1378.0	1363.3	1354.3	1339.5	1321.6	1312.7	1297.9	1286.0	1277.1
32.5°	1312.7	1295.0	1274.1	1268.2	1256.3	1241.4	1229.6	1214.8	1202.9	1191.0	1188.0
35°	1214.8	1191.0	1170.1	1164.2	1155.4	1140.5	1134.5	1125.6	1110.7	1107.8	1095.9
37.5°	1107.8	1095.9	1072.2	1063.3	1060.3	1048.4	1036.5	1030.5	1021.7	1012.8	1009.8
40°	1006.9	992.0	980.1	971.2	965.2	956.3	944.5	941.5	935.6	923.7	920.7
42.5°	911.8	896.9	885.0	882.0	873.2	864.3	858.3	849.4	846.4	843.5	837.5
45°	819.7	810.7	799.0	796.0	793.0	781.1	775.2	769.2	763.3	760.3	754.3
47.5°	736.6	727.7	718.8	715.8	709.8	706.9	697.9	695.0	686.0	683.1	680.1
50°	656.4	650.5	644.5	641.5	635.6	632.6	626.7	620.7	614.8	611.8	608.8
52.5°	585.1	579.2	573.2	570.2	567.3	561.3	555.4	549.4	546.4	543.5	540.5
55°	516.8	510.9	507.9	504.9	501.9	499.0	490.0	487.1	484.1	481.1	475.2
57.5°	454.5	448.5	442.6	442.6	439.6	436.6	430.7	424.7	424.7	418.8	412.8
60°	397.9	392.0	386.2	383.2	380.2	374.3	371.3	368.3	365.3	362.4	356.4
62.5°	338.6	335.6	329.6	329.6	323.7	320.7	317.7	314.9	311.9	305.9	303.0
65°	288.1	285.1	279.2	276.2	276.2	273.2	267.3	264.3	261.3	261.3	258.3
67.5°	240.6	237.6	231.7	228.7	228.7	225.7	222.8	222.8	219.8	216.8	219.8
70°	199.0	193.0	193.0	190.0	190.0	187.1	184.1	184.1	184.1	187.1	187.1
72.5°	157.4	154.5	151.5	151.5	151.5	151.5	148.5	148.5	151.5	154.5	154.5
75°	124.7	121.7	121.7	121.7	118.8	118.8	121.7	121.7	124.7	124.7	124.7
77.5°	92.1	92.1	92.1	92.1	92.1	92.1	95.1	95.1	98.1	98.1	98.1
80°	68.3	68.3	68.3	68.3	68.3	71.3	71.3	71.3	71.3	71.3	74.3
82.5°	47.5	47.5	47.5	47.5	47.5	47.5	47.5	50.5	50.5	50.5	50.5
85°	26.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
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: P584607

CATALOG NUMBER: HC840D010-HM82555930-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9	2188.9
2.5°	2144.4	2144.4	2144.4	2147.4	2141.4	2141.4	2141.4	2141.4
5°	2093.8	2090.8	2087.9	2090.8	2084.9	2084.9	2081.9	2081.9
7.5°	2031.4	2028.5	2025.5	2025.5	2019.5	2019.5	2016.6	2013.6
10°	1963.1	1957.2	1960.2	1954.2	1951.2	1948.3	1945.3	1942.3
12.5°	1888.9	1882.9	1880.0	1874.0	1868.1	1865.2	1868.1	1862.2
15°	1808.7	1799.8	1796.8	1791.0	1785.0	1782.0	1782.0	1779.0
17.5°	1719.7	1713.7	1710.7	1704.8	1701.8	1695.9	1692.9	1689.9
20°	1636.5	1621.6	1624.6	1618.6	1615.7	1603.8	1603.8	1606.7
22.5°	1544.4	1535.5	1529.5	1523.6	1520.6	1514.8	1514.8	1511.8
25°	1452.3	1443.5	1440.5	1434.5	1431.6	1425.6	1422.6	1422.6
27.5°	1363.3	1351.4	1351.4	1345.4	1339.5	1336.5	1333.5	1330.5
30°	1268.2	1259.3	1256.3	1256.3	1253.3	1253.3	1244.4	1247.4
32.5°	1179.1	1173.1	1170.1	1164.2	1164.2	1161.3	1161.3	1152.4
35°	1090.0	1081.1	1084.1	1078.1	1075.2	1072.2	1075.2	1072.2
37.5°	1003.9	997.9	997.9	992.0	992.0	989.0	986.0	992.0
40°	917.7	914.8	911.8	908.8	911.8	908.8	902.9	905.8
42.5°	831.6	831.6	828.6	828.6	825.6	825.6	825.6	825.6
45°	754.3	751.4	751.4	748.4	748.4	748.4	748.4	745.4
47.5°	677.1	674.1	674.1	674.1	671.2	671.2	668.3	671.2
50°	602.9	602.9	599.9	599.9	602.9	599.9	597.0	597.0
52.5°	534.5	534.5	531.6	531.6	528.6	525.7	528.6	528.6
55°	472.2	469.2	466.2	466.2	463.3	460.3	460.3	463.3
57.5°	412.8	409.8	406.9	406.9	400.9	397.9	397.9	397.9
60°	356.4	350.5	350.5	347.5	347.5	344.5	344.5	344.5
62.5°	303.0	300.0	300.0	300.0	300.0	297.0	297.0	297.0
65°	258.3	258.3	258.3	261.3	261.3	264.3	264.3	264.3
67.5°	222.8	225.7	225.7	225.7	228.7	228.7	228.7	225.7
70°	190.0	190.0	190.0	193.0	193.0	193.0	193.0	193.0
72.5°	157.4	157.4	157.4	157.4	157.4	157.4	157.4	157.4
75°	124.7	127.7	127.7	127.7	124.7	127.7	127.7	124.7
77.5°	98.1	98.1	98.1	98.1	98.1	98.1	98.1	98.1
80°	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3
82.5°	50.5	50.5	50.5	50.5	50.5	50.5	50.5	50.5
85°	29.8	29.8	29.8	29.8	29.8	29.8	29.8	29.8
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
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)