

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: P584531

Luminaire Tested: **HC840D010-HM82555830-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584531
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: HC840D010-HM82555830-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4301.9 lumens
Efficiency: N/A
Efficacy: 104.9 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

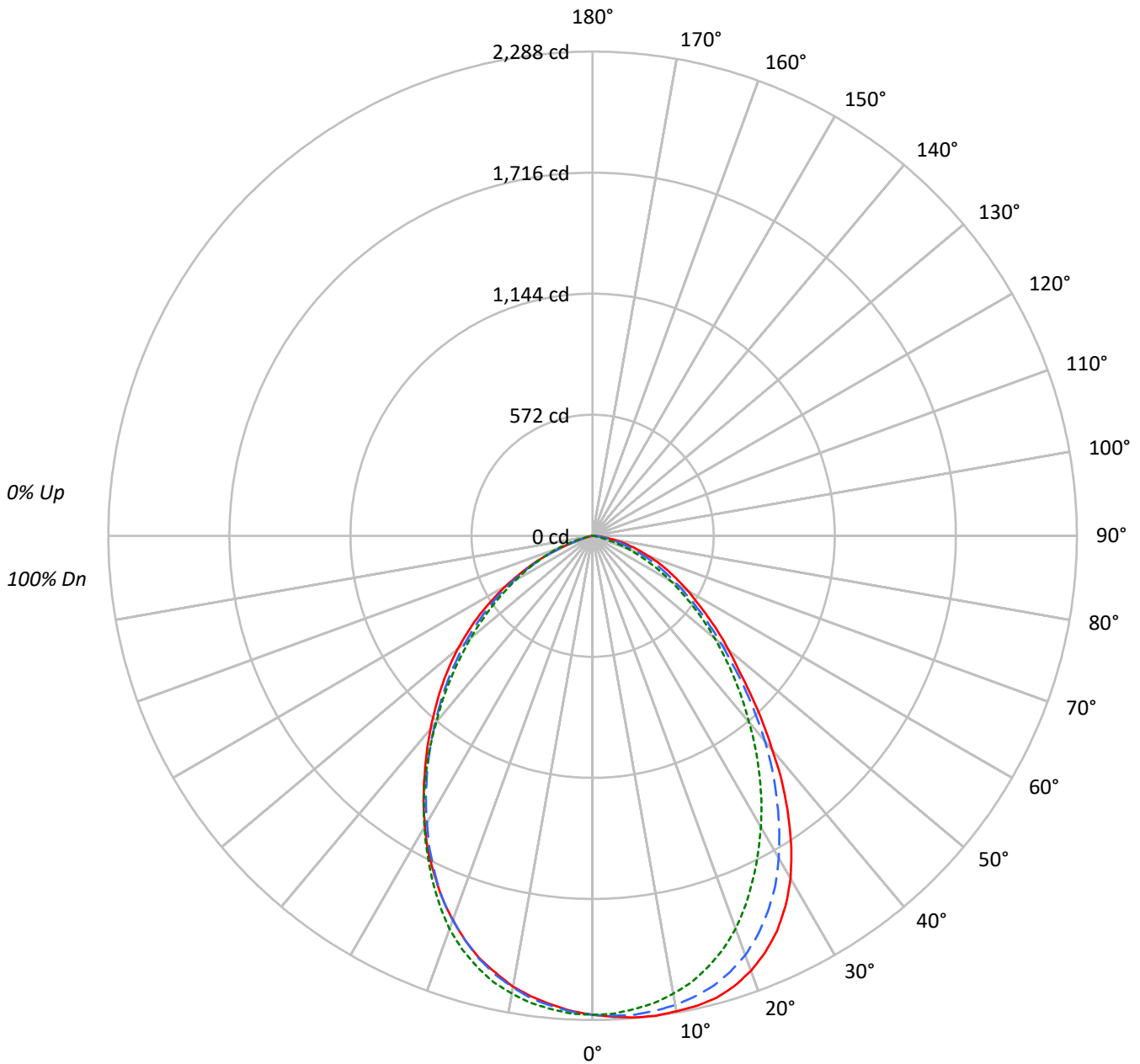
Input Watts (W): 41
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				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			100
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88			88
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	85	82	79	77			77
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67			67
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59			59
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52			52
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47			47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			42
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38			38
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32			32

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	69798	69798	69798
5°	70721	69504	68848
10°	71441	68792	67753
15°	72164	67341	65987
20°	71797	64856	63366
25°	70124	60971	60151
30°	66609	56600	56383
35°	60637	51648	52103
40°	53163	46228	47930
45°	45859	41115	44019
50°	40153	36095	39870
55°	35585	31031	35090
60°	32057	26088	29079
65°	28887	20948	22269
70°	25344	15255	12262
75°	21612	7923	3253
80°	16639	2149	533
85°	10685	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.6	5.0
10°-20°	600.4	14.0
20°-30°	852.1	19.8
30°-40°	897.0	20.9
40°-50°	763.0	17.7
50°-60°	551.4	12.8
60°-70°	313.6	7.3
70°-80°	98.8	2.3
80°-90°	12.0	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°	1666.0	38.7
0°-40°	2563.0	59.6
0°-60°	3877.5	90.1
0°-90°	4301.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4301.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2264	2264	2264	2264	2264	
5°	2285	2272	2245	2230	2224	218
15°	2260	2203	2109	2070	2067	637
25°	2061	1958	1792	1762	1768	944
35°	1611	1517	1372	1363	1384	1002
45°	1052	1012	943	967	1009	817
55°	662	613	577	610	653	597
65°	396	342	287	284	305	393
75°	181	139	66	30	27	195
85°	30	18	0	0	0	39
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°	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5
2.5°	2275.5	2278.6	2272.5	2272.5	2278.6	2272.5	2275.5	2275.5	2272.5	2272.5	2269.6
5°	2284.7	2281.6	2281.6	2281.6	2284.7	2278.6	2275.5	2278.6	2272.5	2272.5	2272.5
7.5°	2287.7	2287.7	2284.7	2281.6	2281.6	2281.6	2278.6	2275.5	2272.5	2266.5	2263.5
10°	2281.6	2281.6	2284.7	2278.6	2278.6	2272.5	2272.5	2266.5	2266.5	2260.5	2251.4
12.5°	2275.5	2272.5	2272.5	2266.5	2266.5	2260.5	2260.5	2251.4	2248.4	2239.3	2230.3
15°	2260.5	2257.4	2251.4	2248.4	2245.4	2242.3	2236.2	2233.3	2224.2	2212.1	2203.0
17.5°	2230.3	2227.2	2224.2	2218.2	2212.1	2209.1	2206.0	2197.0	2185.0	2175.8	2160.7
20°	2187.9	2185.0	2185.0	2175.8	2172.8	2163.8	2160.7	2148.7	2139.6	2121.4	2109.4
22.5°	2130.6	2133.6	2127.5	2121.4	2115.5	2106.3	2100.4	2088.2	2073.1	2055.0	2039.9
25°	2061.0	2064.1	2058.0	2051.9	2042.9	2036.8	2030.7	2012.6	1997.5	1976.4	1958.3
27.5°	1973.4	1973.4	1973.4	1967.3	1952.2	1949.2	1943.2	1925.1	1903.9	1885.8	1867.6
30°	1870.7	1867.6	1867.6	1858.5	1852.5	1840.5	1831.3	1816.2	1801.1	1780.0	1758.8
32.5°	1746.7	1749.8	1740.7	1734.7	1725.6	1725.6	1713.5	1701.3	1683.3	1662.1	1641.0
35°	1610.8	1613.8	1607.7	1604.7	1589.6	1586.5	1583.5	1568.4	1556.3	1541.2	1517.0
37.5°	1471.7	1468.7	1465.7	1465.7	1456.6	1450.6	1444.5	1435.5	1417.3	1405.3	1393.1
40°	1320.7	1320.7	1320.7	1317.6	1314.6	1308.5	1305.5	1299.5	1287.3	1275.3	1266.3
42.5°	1184.6	1184.6	1181.6	1178.6	1172.5	1175.6	1169.5	1163.5	1151.4	1142.3	1136.3
45°	1051.6	1051.6	1051.6	1054.7	1048.6	1039.6	1039.6	1033.5	1027.4	1021.5	1012.3
47.5°	933.8	942.8	936.8	933.8	936.8	924.7	924.7	918.7	912.6	906.7	894.5
50°	837.0	837.0	837.0	831.1	828.0	828.0	819.0	812.9	809.9	803.8	791.8
52.5°	749.5	743.4	743.4	740.4	737.3	731.4	731.4	725.3	713.2	707.1	698.1
55°	661.9	661.9	658.8	655.8	652.7	649.7	646.8	637.6	631.7	622.5	613.4
57.5°	583.2	589.3	586.3	580.2	574.2	574.2	568.1	562.0	553.0	543.9	534.9
60°	519.8	516.8	516.8	513.7	507.7	504.7	501.7	492.5	483.5	474.5	465.4
62.5°	453.3	453.3	453.3	447.2	441.3	438.2	435.2	429.1	417.1	407.9	402.0
65°	395.9	392.8	389.8	386.9	383.8	377.7	374.7	368.7	359.6	350.6	341.5
67.5°	338.4	335.5	335.5	332.4	323.3	320.3	320.3	311.3	302.3	293.1	284.1
70°	281.1	281.1	281.1	275.0	272.0	268.9	266.0	259.9	250.9	241.8	232.6
72.5°	232.6	229.7	229.7	226.7	217.5	214.6	211.6	205.5	196.5	190.4	184.3
75°	181.4	181.4	178.3	175.3	172.3	169.2	166.2	160.2	151.1	142.1	139.0
77.5°	139.0	136.0	136.0	132.9	127.0	123.9	123.9	117.8	108.8	102.7	96.7
80°	93.7	96.7	93.7	90.7	87.6	84.6	81.6	78.5	72.5	66.5	60.5
82.5°	57.5	60.5	57.5	57.5	54.4	51.4	51.4	45.3	42.4	39.3	36.3
85°	30.2	30.2	30.2	30.2	27.3	27.3	27.3	24.2	21.2	18.1	18.1
87.5°	9.0	12.1	9.0	9.0	9.0	9.0	9.0	9.0	6.1	6.1	6.1
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°	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5
2.5°	2272.5	2269.6	2266.5	2266.5	2266.5	2266.5	2266.5	2263.5	2260.5	2260.5	2260.5
5°	2266.5	2266.5	2266.5	2263.5	2260.5	2260.5	2254.5	2251.4	2248.4	2245.4	2242.3
7.5°	2260.5	2254.5	2251.4	2248.4	2245.4	2245.4	2239.3	2233.3	2233.3	2227.2	2221.1
10°	2242.3	2239.3	2233.3	2227.2	2224.2	2221.1	2215.2	2206.0	2203.0	2197.0	2190.9
12.5°	2221.1	2215.2	2209.1	2197.0	2194.0	2190.9	2178.9	2169.8	2163.8	2160.7	2145.7
15°	2194.0	2181.9	2172.8	2157.7	2154.7	2148.7	2139.6	2130.6	2118.4	2109.4	2103.3
17.5°	2145.7	2133.6	2118.4	2103.3	2097.3	2097.3	2082.1	2070.1	2055.0	2048.9	2036.8
20°	2088.2	2073.1	2061.0	2042.9	2033.8	2024.8	2015.7	1997.5	1985.5	1976.4	1961.2
22.5°	2021.7	2000.6	1985.5	1967.3	1952.2	1943.2	1928.0	1912.9	1897.8	1888.8	1876.6
25°	1937.1	1919.0	1894.8	1876.6	1867.6	1855.6	1837.4	1822.2	1807.1	1792.0	1786.0
27.5°	1843.4	1819.3	1798.1	1776.9	1767.9	1758.8	1737.6	1719.6	1707.4	1692.3	1686.2
30°	1740.7	1716.5	1692.3	1674.2	1665.2	1650.1	1637.9	1616.7	1601.6	1589.6	1574.5
32.5°	1622.8	1604.7	1583.5	1556.3	1550.3	1538.2	1520.1	1511.1	1492.9	1483.8	1471.7
35°	1495.9	1483.8	1462.6	1441.4	1432.4	1426.3	1411.3	1393.1	1381.1	1372.0	1366.0
37.5°	1375.0	1359.9	1338.8	1323.6	1317.6	1308.5	1290.4	1281.4	1269.3	1263.2	1251.2
40°	1245.1	1230.0	1214.9	1205.8	1196.7	1190.7	1178.6	1169.5	1157.4	1148.4	1145.4
42.5°	1118.1	1109.1	1096.9	1084.9	1081.8	1072.8	1066.7	1057.7	1048.6	1045.7	1036.6
45°	1003.3	994.2	982.1	970.1	967.0	961.0	958.0	948.9	942.8	942.8	942.8
47.5°	888.5	879.4	867.3	861.3	864.3	852.2	852.2	849.2	843.1	843.1	846.2
50°	785.8	773.6	770.6	764.6	758.5	752.4	755.5	746.5	746.5	752.4	749.5
52.5°	689.0	676.9	673.9	667.8	664.9	664.9	661.9	661.9	658.8	661.9	661.9
55°	601.4	592.3	586.3	580.2	577.2	577.2	577.2	574.2	571.2	577.2	580.2
57.5°	522.8	519.8	513.7	504.7	501.7	498.6	495.6	495.6	495.6	495.6	498.6
60°	453.3	447.2	441.3	432.1	432.1	429.1	426.1	423.0	423.0	423.0	423.0
62.5°	392.8	383.8	374.7	368.7	365.7	362.6	359.6	353.5	353.5	353.5	353.5
65°	332.4	323.3	317.3	311.3	305.2	305.2	299.2	296.2	290.1	287.1	281.1
67.5°	275.0	268.9	262.9	253.8	250.9	247.8	241.8	238.7	229.7	226.7	223.6
70°	223.6	214.6	208.5	202.4	199.4	193.4	187.3	181.4	175.3	169.2	163.1
72.5°	175.3	166.2	160.2	154.1	148.0	148.0	139.0	132.9	123.9	117.8	108.8
75°	129.9	120.9	114.8	105.8	102.7	99.7	90.7	84.6	75.6	66.5	60.5
77.5°	87.6	81.6	75.6	66.5	60.5	60.5	51.4	45.3	39.3	30.2	27.3
80°	54.4	48.3	42.4	36.3	36.3	30.2	27.3	21.2	15.1	12.1	9.0
82.5°	30.2	27.3	24.2	18.1	18.1	15.1	12.1	9.0	6.1	3.0	3.0
85°	15.1	12.1	9.0	9.0	6.1	6.1	6.1	3.0	3.0	0.0	0.0
87.5°	6.1	3.0	3.0	3.0	3.0	3.0	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5
2.5°	2257.4	2257.4	2254.5	2254.5	2254.5	2251.4	2254.5	2251.4	2251.4	2251.4	2254.5
5°	2245.4	2239.3	2239.3	2236.2	2236.2	2233.3	2236.2	2233.3	2230.3	2227.2	2230.3
7.5°	2221.1	2215.2	2212.1	2209.1	2209.1	2209.1	2206.0	2203.0	2206.0	2197.0	2203.0
10°	2187.9	2185.0	2178.9	2175.8	2172.8	2175.8	2172.8	2166.8	2166.8	2166.8	2163.8
12.5°	2145.7	2139.6	2136.5	2133.6	2127.5	2127.5	2130.6	2124.5	2124.5	2118.4	2118.4
15°	2094.3	2088.2	2082.1	2082.1	2076.1	2076.1	2073.1	2073.1	2070.1	2067.0	2067.0
17.5°	2030.7	2021.7	2015.7	2018.7	2015.7	2012.6	2012.6	2006.6	2003.6	2006.6	2006.6
20°	1955.3	1949.2	1943.2	1946.1	1940.2	1937.1	1940.2	1931.0	1934.1	1934.1	1934.1
22.5°	1870.7	1867.6	1858.5	1858.5	1852.5	1849.5	1852.5	1852.5	1855.6	1852.5	1852.5
25°	1776.9	1771.0	1764.9	1764.9	1761.8	1758.8	1761.8	1764.9	1761.8	1764.9	1764.9
27.5°	1677.2	1668.1	1668.1	1662.1	1662.1	1665.2	1662.1	1665.2	1668.1	1668.1	1674.2
30°	1568.4	1565.4	1562.4	1559.4	1559.4	1562.4	1562.4	1562.4	1565.4	1571.4	1571.4
32.5°	1465.7	1459.7	1453.6	1453.6	1459.7	1456.6	1459.7	1459.7	1465.7	1465.7	1471.7
35°	1353.9	1353.9	1347.8	1350.9	1350.9	1350.9	1350.9	1356.8	1362.9	1366.0	1372.0
37.5°	1251.2	1242.0	1245.1	1245.1	1248.1	1245.1	1254.1	1254.1	1260.2	1260.2	1266.3
40°	1139.3	1139.3	1142.3	1139.3	1142.3	1142.3	1148.4	1154.4	1157.4	1163.5	1166.6
42.5°	1033.5	1039.6	1033.5	1036.6	1039.6	1042.6	1045.7	1048.6	1060.8	1066.7	1075.9
45°	936.8	939.9	942.8	945.9	942.8	948.9	951.9	958.0	967.0	970.1	973.1
47.5°	843.1	846.2	849.2	852.2	852.2	858.2	861.3	867.3	873.3	876.4	879.4
50°	752.4	758.5	761.6	761.6	764.6	770.6	776.7	776.7	782.7	791.8	794.8
52.5°	670.9	670.9	676.9	680.0	682.9	682.9	692.0	695.1	698.1	704.1	710.2
55°	580.2	589.3	592.3	592.3	598.3	604.4	607.4	610.5	610.5	622.5	622.5
57.5°	501.7	504.7	510.7	510.7	510.7	519.8	519.8	525.9	528.8	531.9	537.9
60°	423.0	429.1	429.1	432.1	429.1	435.2	438.2	444.2	447.2	450.3	453.3
62.5°	350.6	350.6	353.5	353.5	353.5	353.5	359.6	359.6	365.7	368.7	371.8
65°	281.1	281.1	281.1	281.1	281.1	281.1	281.1	281.1	284.1	284.1	290.1
67.5°	217.5	214.6	208.5	211.6	208.5	208.5	205.5	205.5	208.5	208.5	214.6
70°	157.2	154.1	148.0	148.0	145.1	142.1	139.0	136.0	132.9	132.9	132.9
72.5°	102.7	96.7	87.6	84.6	84.6	78.5	72.5	69.5	69.5	69.5	69.5
75°	51.4	45.3	39.3	36.3	36.3	30.2	33.2	30.2	30.2	30.2	30.2
77.5°	21.2	15.1	12.1	12.1	12.1	9.0	9.0	9.0	9.0	9.0	9.0
80°	6.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	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: P584531

CATALOG NUMBER: HC840D010-HM82555830-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5	2263.5
2.5°	2251.4	2251.4	2245.4	2248.4	2248.4	2248.4	2248.4	2248.4
5°	2224.2	2227.2	2224.2	2227.2	2227.2	2224.2	2224.2	2224.2
7.5°	2197.0	2200.1	2197.0	2200.1	2200.1	2200.1	2197.0	2197.0
10°	2163.8	2163.8	2163.8	2163.8	2163.8	2160.7	2163.8	2163.8
12.5°	2118.4	2118.4	2118.4	2121.4	2121.4	2118.4	2118.4	2115.5
15°	2070.1	2064.1	2067.0	2070.1	2067.0	2067.0	2067.0	2067.0
17.5°	2003.6	2006.6	2003.6	2003.6	2003.6	2003.6	2006.6	2003.6
20°	1934.1	1934.1	1937.1	1934.1	1934.1	1934.1	1934.1	1931.0
22.5°	1855.6	1852.5	1852.5	1855.6	1855.6	1852.5	1855.6	1855.6
25°	1767.9	1771.0	1767.9	1767.9	1771.0	1771.0	1771.0	1767.9
27.5°	1674.2	1677.2	1680.3	1677.2	1677.2	1677.2	1680.3	1683.3
30°	1577.5	1583.5	1577.5	1577.5	1583.5	1580.6	1583.5	1583.5
32.5°	1474.8	1483.8	1477.7	1483.8	1483.8	1486.8	1483.8	1486.8
35°	1372.0	1381.1	1381.1	1381.1	1384.1	1387.1	1387.1	1384.1
37.5°	1275.3	1278.3	1278.3	1284.4	1287.3	1290.4	1290.4	1287.3
40°	1175.6	1181.6	1184.6	1184.6	1184.6	1190.7	1196.7	1190.7
42.5°	1078.9	1081.8	1084.9	1084.9	1091.0	1094.0	1096.9	1096.9
45°	985.2	991.3	994.2	997.2	1000.3	1006.4	1003.3	1009.4
47.5°	888.5	897.5	900.6	903.6	909.6	912.6	915.7	918.7
50°	800.9	806.8	806.8	812.9	821.9	821.9	828.0	831.1
52.5°	713.2	716.3	719.2	722.2	728.3	734.3	734.3	740.4
55°	628.6	631.7	631.7	634.6	637.6	649.7	652.7	652.7
57.5°	541.0	541.0	547.0	550.0	553.0	559.1	559.1	559.1
60°	456.4	459.3	459.3	462.3	465.4	471.5	474.5	471.5
62.5°	371.8	374.7	374.7	377.7	383.8	386.9	383.8	383.8
65°	293.1	296.2	296.2	299.2	305.2	305.2	302.3	305.2
67.5°	214.6	214.6	214.6	214.6	214.6	214.6	214.6	214.6
70°	136.0	132.9	129.9	132.9	132.9	132.9	129.9	136.0
72.5°	66.5	69.5	69.5	69.5	69.5	69.5	69.5	66.5
75°	30.2	30.2	27.3	27.3	27.3	30.2	30.2	27.3
77.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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



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













(END OF REPORT)