

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: P584896

Luminaire Tested: **HC850D010-HM82555935-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584896
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: HC850D010-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: 4553.9 lumens
Efficiency: N/A
Efficacy: 94.9 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

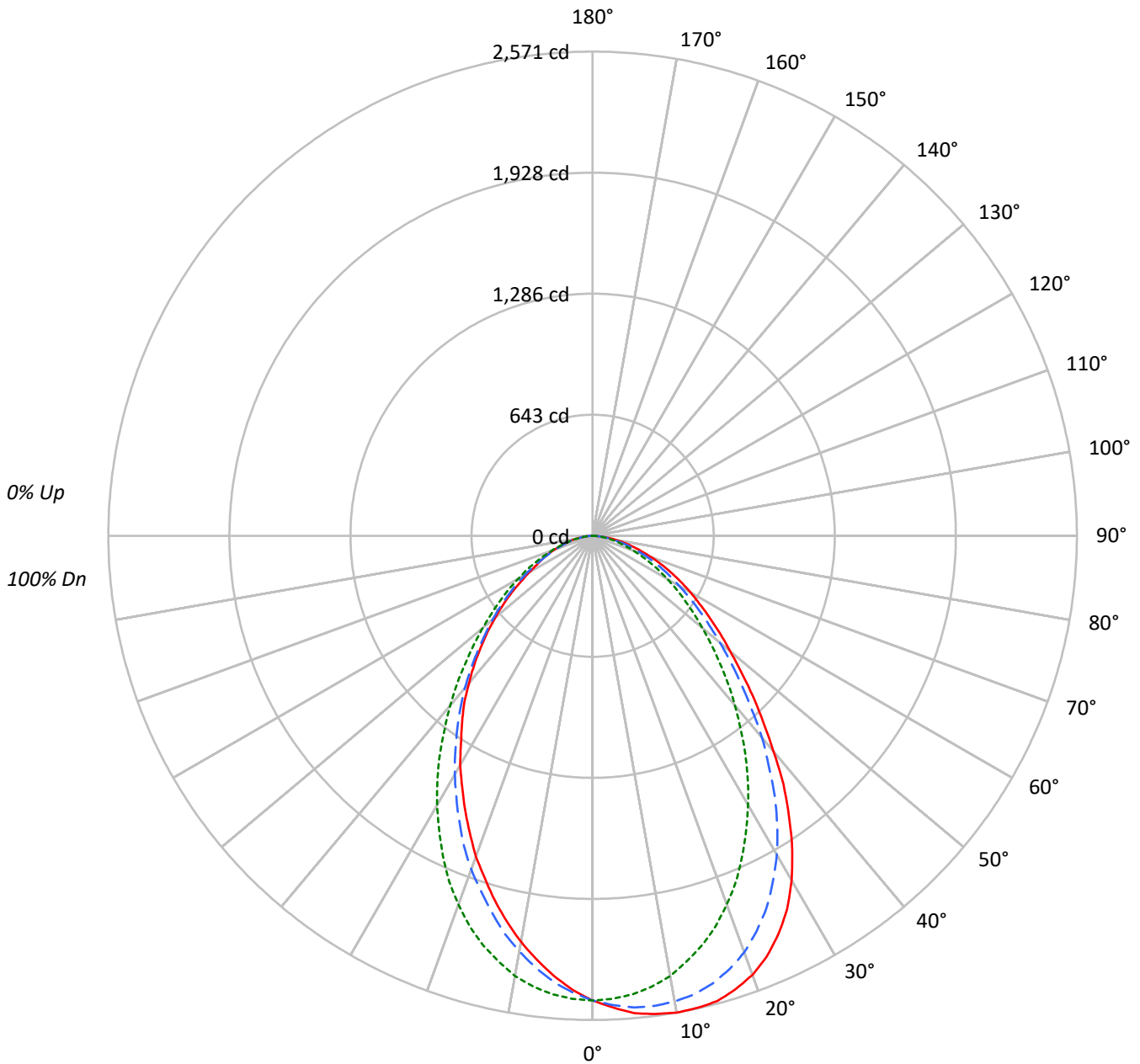
Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	76089	76089	76089
5°	78766	75652	72649
10°	80513	74328	68564
15°	81659	71826	64024
20°	81415	68338	59435
25°	79399	63904	54568
30°	75223	58772	50070
35°	68437	53187	45497
40°	60111	47306	41103
45°	52418	41616	36649
50°	45617	36459	32286
55°	40681	32042	28080
60°	36960	28080	23947
65°	33221	24429	21744
70°	29581	20827	19628
75°	25937	17550	16751
80°	22002	14260	14863
85°	16594	10685	11817



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	231.1	5.1
10°-20°	636.8	14.0
20°-30°	883.9	19.4
30°-40°	913.9	20.1
40°-50°	765.2	16.8
50°-60°	555.5	12.2
60°-70°	350.6	7.7
70°-80°	173.7	3.8
80°-90°	43.1	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°	1751.9	38.5
0°-40°	2665.8	58.5
0°-60°	3986.5	87.5
0°-90°	4553.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4553.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2468	2468	2468	2468	2468	
5°	2545	2514	2444	2377	2347	243
15°	2558	2461	2250	2069	2006	720
25°	2334	2183	1878	1674	1604	1069
35°	1818	1684	1413	1252	1209	1132
45°	1202	1115	954	860	840	930
55°	757	690	596	546	522	683
65°	455	398	335	295	298	454
75°	218	181	147	141	141	233
85°	47	37	30	33	33	57
90°	0	0	0	0	0	



TEST NUMBER: P584896

CATALOG NUMBER: HC850D010-HM82555935-81WWW

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5
2.5°	2507.7	2507.7	2511.0	2507.7	2507.7	2507.7	2504.3	2504.3	2501.0	2501.0	2494.3
5°	2544.6	2537.8	2544.6	2537.8	2537.8	2537.8	2534.5	2527.7	2524.5	2517.8	2514.4
7.5°	2561.3	2557.9	2557.9	2554.6	2554.6	2551.2	2547.8	2544.6	2531.1	2527.7	2517.8
10°	2571.3	2567.9	2567.9	2564.7	2557.9	2557.9	2551.2	2547.8	2531.1	2524.5	2511.0
12.5°	2567.9	2567.9	2567.9	2564.7	2554.6	2551.2	2544.6	2534.5	2521.1	2507.7	2494.3
15°	2557.9	2557.9	2551.2	2547.8	2537.8	2531.1	2527.7	2511.0	2497.7	2481.0	2460.9
17.5°	2524.5	2524.5	2521.1	2514.4	2504.3	2497.7	2490.9	2474.2	2460.9	2434.1	2414.0
20°	2481.0	2477.6	2474.2	2464.1	2454.1	2450.8	2440.8	2417.3	2400.5	2380.4	2353.7
22.5°	2417.3	2414.0	2410.6	2403.9	2387.2	2380.4	2373.8	2357.1	2326.9	2306.8	2273.4
25°	2333.6	2333.6	2326.9	2316.8	2300.1	2293.5	2283.4	2266.7	2239.8	2209.8	2183.0
27.5°	2236.5	2233.1	2223.1	2216.4	2203.0	2192.9	2176.2	2156.1	2129.3	2106.0	2072.4
30°	2112.6	2112.6	2106.0	2095.9	2079.2	2072.4	2059.1	2035.6	2008.8	1978.6	1955.3
32.5°	1972.0	1972.0	1961.9	1955.3	1945.2	1928.5	1925.1	1898.3	1875.0	1851.5	1824.7
35°	1818.0	1821.3	1814.6	1801.3	1784.5	1784.5	1777.8	1754.4	1727.5	1704.2	1684.1
37.5°	1664.0	1653.9	1650.6	1643.8	1633.8	1620.5	1613.8	1603.8	1580.3	1563.5	1533.4
40°	1493.3	1496.6	1489.9	1483.2	1479.8	1469.8	1466.4	1449.7	1433.0	1412.9	1399.5
42.5°	1339.2	1339.2	1339.2	1332.5	1325.9	1315.8	1312.4	1302.4	1282.3	1268.9	1248.8
45°	1202.0	1191.9	1191.9	1188.5	1185.2	1178.5	1168.4	1161.8	1148.4	1138.4	1114.9
47.5°	1068.0	1071.4	1068.0	1064.7	1054.7	1051.3	1047.9	1034.6	1021.1	1011.1	994.4
50°	950.9	957.5	950.9	950.9	944.2	940.8	934.1	924.1	914.0	897.3	880.5
52.5°	853.7	853.7	850.4	847.1	837.0	830.3	827.0	823.7	806.8	793.5	780.1
55°	756.7	760.0	760.0	749.9	746.6	740.0	736.6	726.5	719.9	699.8	689.7
57.5°	673.0	669.6	673.0	666.2	659.5	652.9	649.5	642.8	632.8	619.3	606.0
60°	599.3	592.6	592.6	589.3	582.5	579.2	572.6	562.5	552.5	539.0	529.0
62.5°	525.7	522.3	518.9	515.6	508.9	505.6	502.2	492.1	482.1	472.0	462.0
65°	455.3	455.3	451.9	445.3	442.0	438.6	435.2	428.6	415.1	408.4	398.4
67.5°	391.7	388.3	388.3	381.7	375.0	371.6	371.6	365.0	354.9	344.9	338.2
70°	328.1	331.4	328.1	324.7	318.1	318.1	311.4	308.0	294.6	291.3	281.3
72.5°	271.2	271.2	267.8	267.8	261.2	257.8	257.8	251.1	244.4	237.7	231.0
75°	217.7	217.7	217.7	214.3	210.9	204.2	204.2	200.8	194.2	187.5	180.8
77.5°	170.8	167.4	167.4	164.0	160.7	157.3	157.3	154.0	147.3	144.0	137.2
80°	123.9	120.5	120.5	120.5	113.9	117.1	113.9	110.5	107.1	103.8	100.4
82.5°	80.3	83.7	83.7	80.3	77.0	77.0	77.0	73.6	73.6	70.3	67.0
85°	46.9	46.9	46.9	46.9	43.5	43.5	43.5	40.2	40.2	40.2	36.8
87.5°	20.1	20.1	20.1	20.1	20.1	20.1	16.7	16.7	16.7	16.7	16.7
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: P584896

CATALOG NUMBER: HC850D010-HM82555935-81WWW

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5
2.5°	2494.3	2487.6	2484.2	2481.0	2481.0	2477.6	2474.2	2467.5	2467.5	2460.9	2457.5
5°	2507.7	2497.7	2490.9	2484.2	2481.0	2474.2	2467.5	2457.5	2454.1	2444.0	2434.1
7.5°	2511.0	2494.3	2487.6	2474.2	2467.5	2460.9	2447.4	2437.4	2424.0	2414.0	2400.5
10°	2497.7	2484.2	2467.5	2450.8	2447.4	2437.4	2417.3	2403.9	2387.2	2373.8	2353.7
12.5°	2477.6	2457.5	2440.8	2420.6	2410.6	2400.5	2380.4	2360.3	2336.9	2313.5	2293.5
15°	2444.0	2420.6	2397.2	2373.8	2360.3	2350.4	2326.9	2303.5	2280.0	2249.9	2229.8
17.5°	2393.9	2367.1	2343.6	2313.5	2300.1	2290.1	2259.9	2233.1	2203.0	2172.9	2152.8
20°	2330.3	2296.7	2270.0	2236.5	2226.5	2209.8	2179.6	2149.4	2116.0	2082.5	2059.1
22.5°	2246.6	2213.0	2183.0	2149.4	2132.7	2116.0	2085.8	2049.0	2015.5	1988.7	1965.3
25°	2149.4	2119.3	2082.5	2052.4	2032.3	2012.2	1978.6	1948.6	1918.4	1878.2	1854.9
27.5°	2042.4	2005.5	1978.6	1938.6	1918.4	1905.0	1868.2	1828.1	1801.3	1764.4	1737.6
30°	1921.8	1888.3	1858.1	1818.0	1797.9	1784.5	1751.0	1714.2	1687.5	1650.6	1623.9
32.5°	1794.5	1757.7	1720.9	1694.1	1670.7	1657.3	1620.5	1597.0	1563.5	1533.4	1503.3
35°	1657.3	1620.5	1593.7	1556.9	1543.4	1530.1	1499.9	1469.8	1439.6	1412.9	1389.5
37.5°	1510.0	1483.2	1453.1	1426.3	1416.2	1402.8	1366.0	1339.2	1315.8	1289.1	1268.9
40°	1366.0	1342.6	1322.5	1295.7	1279.0	1268.9	1242.2	1218.7	1191.9	1175.2	1155.1
42.5°	1235.4	1208.6	1188.5	1168.4	1151.7	1141.6	1118.3	1101.5	1081.4	1064.7	1041.2
45°	1098.2	1084.7	1061.3	1044.6	1034.6	1021.1	1004.4	984.3	967.6	954.3	937.4
47.5°	977.6	964.2	947.5	927.4	920.7	910.7	893.9	880.5	867.2	853.7	837.0
50°	867.2	850.4	837.0	823.7	816.9	806.8	790.1	783.5	773.4	760.0	749.9
52.5°	766.7	753.3	740.0	723.1	719.9	713.1	703.0	689.7	679.7	673.0	666.2
55°	676.3	662.9	652.9	639.4	636.2	629.4	616.1	609.4	602.6	596.0	589.3
57.5°	596.0	582.5	569.2	562.5	555.7	549.1	545.7	535.6	529.0	525.7	518.9
60°	522.3	508.9	498.8	488.8	485.5	482.1	475.4	468.8	462.0	455.3	451.9
62.5°	451.9	438.6	431.9	425.2	418.5	418.5	411.8	405.1	398.4	395.1	388.3
65°	388.3	381.7	371.6	361.6	358.3	358.3	348.2	344.9	341.5	334.8	328.1
67.5°	328.1	321.4	311.4	308.0	304.6	301.4	298.0	291.3	284.5	281.3	274.6
70°	274.6	267.8	261.2	257.8	254.5	251.1	244.4	241.0	234.4	231.0	227.7
72.5°	220.9	217.7	210.9	207.6	204.2	200.8	197.6	194.2	187.5	184.1	180.8
75°	177.5	174.1	167.4	164.0	160.7	160.7	157.3	150.7	147.3	147.3	144.0
77.5°	134.0	130.6	127.2	123.9	120.5	120.5	117.1	113.9	110.5	110.5	107.1
80°	97.1	93.8	90.4	90.4	90.4	87.1	83.7	83.7	80.3	80.3	77.0
82.5°	63.6	63.6	60.3	60.3	60.3	56.9	56.9	53.5	53.5	53.5	53.5
85°	36.8	36.8	36.8	33.4	33.4	33.4	33.4	33.4	33.4	30.2	33.4
87.5°	16.7	16.7	16.7	16.7	16.7	16.7	16.7	16.7	13.4	13.4	13.4
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: P584896

CATALOG NUMBER: HC850D010-HM82555935-81WWW

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5
2.5°	2454.1	2450.8	2444.0	2444.0	2437.4	2437.4	2434.1	2430.7	2427.3	2424.0	2420.6
5°	2430.7	2417.3	2410.6	2407.2	2400.5	2397.2	2387.2	2380.4	2377.2	2370.4	2363.7
7.5°	2387.2	2373.8	2360.3	2357.1	2353.7	2340.3	2330.3	2320.2	2313.5	2306.8	2300.1
10°	2336.9	2323.5	2306.8	2300.1	2293.5	2276.6	2263.3	2253.2	2239.8	2226.5	2223.1
12.5°	2276.6	2256.6	2236.5	2229.8	2219.8	2203.0	2189.7	2172.9	2162.9	2146.1	2142.8
15°	2206.4	2183.0	2166.2	2149.4	2142.8	2126.1	2102.6	2089.2	2069.1	2062.3	2045.6
17.5°	2122.7	2099.3	2075.8	2069.1	2059.1	2035.6	2012.2	1995.5	1975.4	1965.3	1955.3
20°	2035.6	2005.5	1982.0	1975.4	1961.9	1941.8	1918.4	1901.7	1885.0	1864.9	1854.9
22.5°	1935.2	1901.7	1881.6	1864.9	1861.5	1838.1	1811.2	1797.9	1784.5	1767.8	1754.4
25°	1824.7	1794.5	1771.2	1757.7	1751.0	1730.9	1710.8	1694.1	1674.0	1664.0	1647.2
27.5°	1710.8	1690.7	1660.7	1647.2	1637.2	1620.5	1597.0	1587.0	1566.9	1553.5	1543.4
30°	1600.4	1570.2	1553.5	1536.8	1526.7	1510.0	1489.9	1479.8	1463.1	1449.7	1439.6
32.5°	1479.8	1459.7	1436.4	1429.6	1416.2	1399.5	1386.1	1369.4	1355.9	1342.6	1339.2
35°	1369.4	1342.6	1319.1	1312.4	1302.4	1285.7	1279.0	1268.9	1252.1	1248.8	1235.4
37.5°	1248.8	1235.4	1208.6	1198.6	1195.3	1181.9	1168.4	1161.8	1151.7	1141.6	1138.4
40°	1135.0	1118.3	1104.8	1094.8	1088.1	1078.1	1064.7	1061.3	1054.7	1041.2	1038.0
42.5°	1027.9	1011.1	997.7	994.4	984.3	974.2	967.6	957.5	954.3	950.9	944.2
45°	924.1	914.0	900.6	897.3	893.9	880.5	873.8	867.2	860.5	857.1	850.4
47.5°	830.3	820.3	810.2	806.8	800.2	796.8	786.7	783.5	773.4	770.0	766.7
50°	740.0	733.2	726.5	723.1	716.5	713.1	706.4	699.8	693.1	689.7	686.3
52.5°	659.5	652.9	646.2	642.8	639.4	632.8	626.1	619.3	616.1	612.7	609.4
55°	582.5	575.8	572.6	569.2	565.8	562.5	552.5	549.1	545.7	542.4	535.6
57.5°	512.3	505.6	498.8	498.8	495.5	492.1	485.5	478.8	478.8	472.0	465.4
60°	448.7	442.0	435.2	431.9	428.6	421.9	418.5	415.1	411.8	408.4	401.8
62.5°	381.7	378.3	371.6	371.6	365.0	361.6	358.3	354.9	351.5	344.9	341.5
65°	324.7	321.4	314.7	311.4	311.4	308.0	301.4	298.0	294.6	294.6	291.3
67.5°	271.2	267.8	261.2	257.8	257.8	254.5	251.1	251.1	247.7	244.4	247.7
70°	224.3	217.7	217.7	214.3	214.3	210.9	207.6	207.6	207.6	210.9	210.9
72.5°	177.5	174.1	170.8	170.8	170.8	170.8	167.4	167.4	170.8	174.1	174.1
75°	140.6	137.2	137.2	137.2	134.0	134.0	137.2	137.2	140.6	140.6	140.6
77.5°	103.8	103.8	103.8	103.8	103.8	103.8	107.1	107.1	110.5	110.5	110.5
80°	77.0	77.0	77.0	77.0	77.0	80.3	80.3	80.3	80.3	80.3	83.7
82.5°	53.5	53.5	53.5	53.5	53.5	53.5	53.5	56.9	56.9	56.9	56.9
85°	30.2	33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4
87.5°	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
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: P584896

CATALOG NUMBER: HC850D010-HM82555935-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5	2467.5
2.5°	2417.3	2417.3	2417.3	2420.6	2414.0	2414.0	2414.0	2414.0
5°	2360.3	2357.1	2353.7	2357.1	2350.4	2350.4	2347.0	2347.0
7.5°	2290.1	2286.7	2283.4	2283.4	2276.6	2276.6	2273.4	2270.0
10°	2213.0	2206.4	2209.8	2203.0	2199.7	2196.3	2192.9	2189.7
12.5°	2129.3	2122.7	2119.3	2112.6	2106.0	2102.6	2106.0	2099.3
15°	2039.0	2028.9	2025.5	2018.9	2012.2	2008.8	2008.8	2005.5
17.5°	1938.6	1931.8	1928.5	1921.8	1918.4	1911.8	1908.4	1905.0
20°	1844.8	1828.1	1831.4	1824.7	1821.3	1808.0	1808.0	1811.2
22.5°	1741.0	1730.9	1724.3	1717.6	1714.2	1707.6	1707.6	1704.2
25°	1637.2	1627.1	1623.9	1617.1	1613.8	1607.0	1603.8	1603.8
27.5°	1536.8	1523.3	1523.3	1516.7	1510.0	1506.6	1503.3	1499.9
30°	1429.6	1419.6	1416.2	1416.2	1412.9	1412.9	1402.8	1406.2
32.5°	1329.2	1322.5	1319.1	1312.4	1312.4	1309.0	1309.0	1299.0
35°	1228.7	1218.7	1222.1	1215.3	1212.0	1208.6	1212.0	1208.6
37.5°	1131.6	1124.9	1124.9	1118.3	1118.3	1114.9	1111.6	1118.3
40°	1034.6	1031.2	1027.9	1024.5	1027.9	1024.5	1017.8	1021.1
42.5°	937.4	937.4	934.1	934.1	930.8	930.8	930.8	930.8
45°	850.4	847.1	847.1	843.7	843.7	843.7	843.7	840.4
47.5°	763.4	760.0	760.0	760.0	756.7	756.7	753.3	756.7
50°	679.7	679.7	676.3	676.3	679.7	676.3	673.0	673.0
52.5°	602.6	602.6	599.3	599.3	596.0	592.6	596.0	596.0
55°	532.4	529.0	525.7	525.7	522.3	518.9	518.9	522.3
57.5°	465.4	462.0	458.7	458.7	451.9	448.7	448.7	448.7
60°	401.8	395.1	395.1	391.7	391.7	388.3	388.3	388.3
62.5°	341.5	338.2	338.2	338.2	338.2	334.8	334.8	334.8
65°	291.3	291.3	291.3	294.6	294.6	298.0	298.0	298.0
67.5°	251.1	254.5	254.5	254.5	257.8	257.8	257.8	254.5
70°	214.3	214.3	214.3	217.7	217.7	217.7	217.7	217.7
72.5°	177.5	177.5	177.5	177.5	177.5	177.5	177.5	177.5
75°	140.6	144.0	144.0	144.0	140.6	144.0	144.0	140.6
77.5°	110.5	110.5	110.5	110.5	110.5	110.5	110.5	110.5
80°	83.7	83.7	83.7	83.7	83.7	83.7	83.7	83.7
82.5°	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9
85°	33.4	33.4	33.4	33.4	33.4	33.4	33.4	33.4
87.5°	13.4	13.4	13.4	13.4	13.4	13.4	13.4	13.4
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)