

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: P593922

Luminaire Tested: **HC880D010-HM86080950-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593922
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: HC880D010-HM86080950-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6189.7 lumens
Efficiency: N/A
Efficacy: 88.4 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

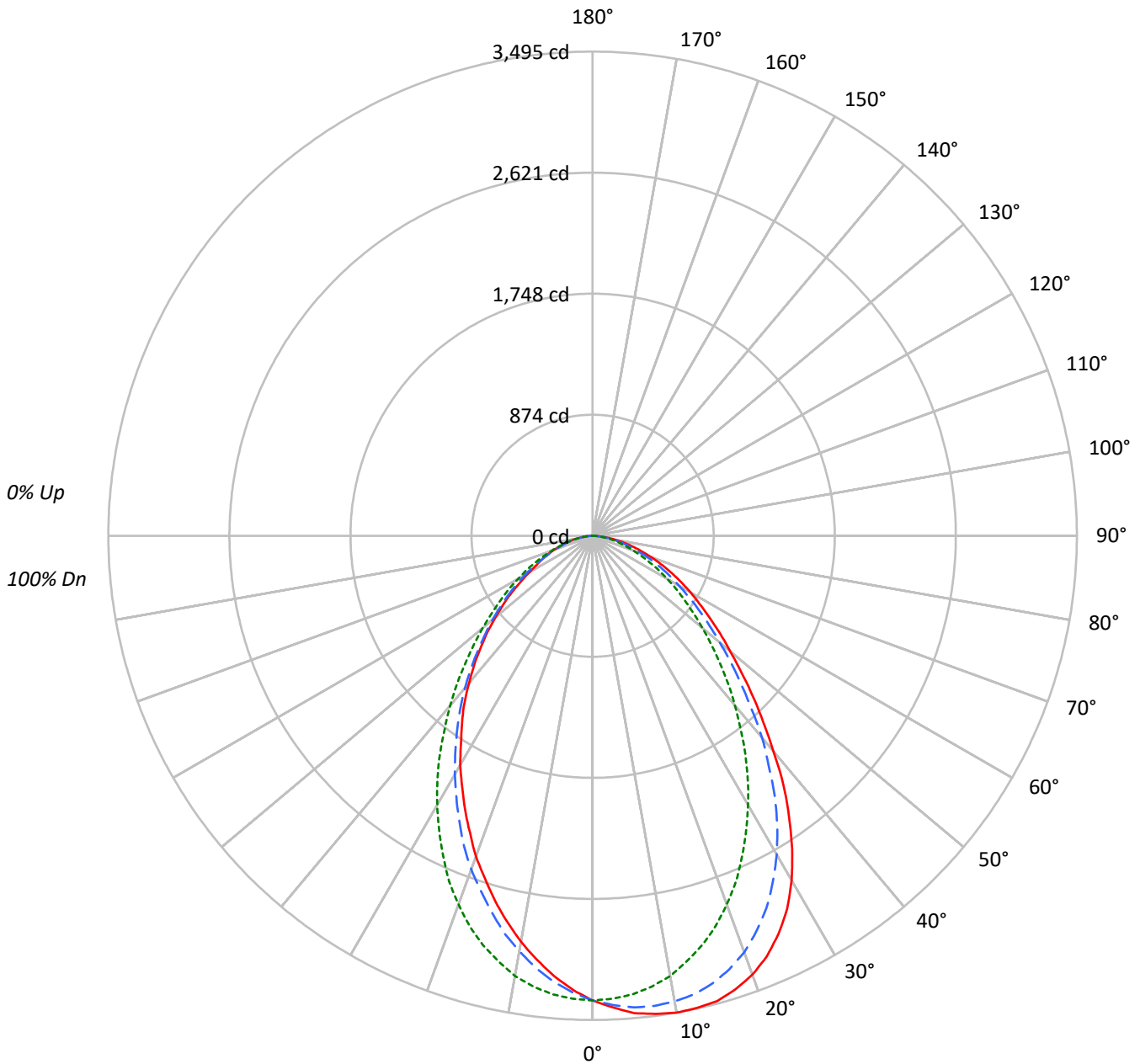
Input Watts (W): 70
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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°	103419	103419	103419
5°	107058	102826	98744
10°	109432	101028	93191
15°	110994	97627	87022
20°	110653	92884	80788
25°	107918	86860	74166
30°	102241	79884	68055
35°	93019	72292	61842
40°	81699	64298	55868
45°	71244	56561	49815
50°	62000	49556	43881
55°	55294	43552	38171
60°	50239	38169	32557
65°	45158	33199	29551
70°	40211	28310	26669
75°	35242	23852	22768
80°	29904	19409	20209
85°	22538	14471	16098



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	314.1	5.1
10°-20°	865.6	14.0
20°-30°	1201.5	19.4
30°-40°	1242.2	20.1
40°-50°	1040.1	16.8
50°-60°	755.0	12.2
60°-70°	476.5	7.7
70°-80°	236.0	3.8
80°-90°	58.7	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°	2381.1	38.5
0°-40°	3623.3	58.5
0°-60°	5418.5	87.5
0°-90°	6189.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6189.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3354	3354	3354	3354	3354	
5°	3459	3418	3322	3231	3190	331
15°	3477	3345	3058	2812	2726	978
25°	3172	2967	2553	2275	2180	1453
35°	2471	2289	1920	1702	1643	1539
45°	1634	1515	1297	1170	1142	1264
55°	1028	937	810	742	710	928
65°	619	542	455	400	405	617
75°	296	246	200	191	191	317
85°	64	50	41	46	46	77
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°	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8
2.5°	3408.5	3408.5	3413.0	3408.5	3408.5	3408.5	3403.9	3403.9	3399.4	3399.4	3390.2
5°	3458.6	3449.4	3458.6	3449.4	3449.4	3449.4	3444.9	3435.7	3431.2	3422.1	3417.5
7.5°	3481.3	3476.8	3476.8	3472.1	3472.1	3467.6	3463.1	3458.6	3440.3	3435.7	3422.1
10°	3494.9	3490.3	3490.3	3485.8	3476.8	3476.8	3467.6	3463.1	3440.3	3431.2	3413.0
12.5°	3490.3	3490.3	3490.3	3485.8	3472.1	3467.6	3458.6	3444.9	3426.7	3408.5	3390.2
15°	3476.8	3476.8	3467.6	3463.1	3449.4	3440.3	3435.7	3413.0	3394.8	3372.0	3344.8
17.5°	3431.2	3431.2	3426.7	3417.5	3403.9	3394.8	3385.7	3363.0	3344.8	3308.4	3281.0
20°	3372.0	3367.5	3363.0	3349.3	3335.6	3331.1	3317.4	3285.6	3262.9	3235.5	3199.1
22.5°	3285.6	3281.0	3276.5	3267.4	3244.7	3235.5	3226.5	3203.6	3162.7	3135.4	3089.9
25°	3171.8	3171.8	3162.7	3149.1	3126.4	3117.2	3103.5	3080.8	3044.4	3003.4	2967.0
27.5°	3039.8	3035.3	3021.6	3012.6	2994.4	2980.7	2958.0	2930.6	2894.3	2862.4	2816.9
30°	2871.4	2871.4	2862.4	2848.7	2826.0	2816.9	2798.7	2766.8	2730.4	2689.4	2657.5
32.5°	2680.4	2680.4	2666.7	2657.5	2644.0	2621.2	2616.6	2580.2	2548.4	2516.5	2480.1
35°	2471.0	2475.6	2466.5	2448.3	2425.6	2425.6	2416.4	2384.5	2348.2	2316.3	2288.9
37.5°	2261.7	2248.0	2243.5	2234.4	2220.7	2202.5	2193.5	2179.8	2147.9	2125.2	2084.2
40°	2029.6	2034.1	2025.1	2015.9	2011.4	1997.8	1993.2	1970.4	1947.7	1920.4	1902.2
42.5°	1820.2	1820.2	1820.2	1811.2	1802.0	1788.4	1783.9	1770.2	1743.0	1724.8	1697.4
45°	1633.7	1620.0	1620.0	1615.5	1611.0	1601.8	1588.1	1579.1	1560.9	1547.2	1515.4
47.5°	1451.7	1456.2	1451.7	1447.1	1433.5	1428.9	1424.3	1406.1	1387.9	1374.2	1351.5
50°	1292.4	1301.5	1292.4	1292.4	1283.3	1278.8	1269.6	1255.9	1242.4	1219.6	1196.8
52.5°	1160.5	1160.5	1155.8	1151.3	1137.6	1128.6	1124.0	1119.4	1096.7	1078.5	1060.4
55°	1028.5	1033.0	1033.0	1019.3	1014.8	1005.7	1001.1	987.5	978.4	951.1	937.4
57.5°	914.7	910.2	914.7	905.5	896.5	887.4	882.8	873.7	860.1	841.9	823.6
60°	814.6	805.4	805.4	800.9	791.9	787.2	778.2	764.5	750.9	732.7	719.0
62.5°	714.5	710.0	705.3	700.8	691.8	687.1	682.6	668.9	655.3	641.7	628.0
65°	618.9	618.9	614.4	605.2	600.7	596.2	591.6	582.5	564.3	555.1	541.6
67.5°	532.4	527.9	527.9	518.8	509.7	505.1	505.1	496.1	482.4	468.7	459.7
70°	446.0	450.5	446.0	441.4	432.3	432.3	423.2	418.6	400.5	395.9	382.3
72.5°	368.6	368.6	364.1	364.1	354.9	350.4	350.4	341.2	332.2	323.1	314.0
75°	295.8	295.8	295.8	291.2	286.7	277.6	277.6	273.0	264.0	254.8	245.8
77.5°	232.1	227.6	227.6	222.9	218.4	213.9	213.9	209.4	200.2	195.7	186.6
80°	168.4	163.8	163.8	163.8	154.7	159.3	154.7	150.2	145.7	141.0	136.5
82.5°	109.3	113.8	113.8	109.3	104.6	104.6	104.6	100.1	100.1	95.6	91.0
85°	63.7	63.7	63.7	63.7	59.2	59.2	59.2	54.6	54.6	54.6	50.1
87.5°	27.3	27.3	27.3	27.3	27.3	27.3	22.7	22.7	22.7	22.7	22.7
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°	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8
2.5°	3390.2	3381.2	3376.6	3372.0	3372.0	3367.5	3363.0	3353.8	3353.8	3344.8	3340.1
5°	3408.5	3394.8	3385.7	3376.6	3372.0	3363.0	3353.8	3340.1	3335.6	3321.9	3308.4
7.5°	3413.0	3390.2	3381.2	3363.0	3353.8	3344.8	3326.6	3312.9	3294.7	3281.0	3262.9
10°	3394.8	3376.6	3353.8	3331.1	3326.6	3312.9	3285.6	3267.4	3244.7	3226.5	3199.1
12.5°	3367.5	3340.1	3317.4	3290.1	3276.5	3262.9	3235.5	3208.3	3176.4	3144.5	3117.2
15°	3321.9	3290.1	3258.3	3226.5	3208.3	3194.6	3162.7	3130.9	3099.0	3058.1	3030.8
17.5°	3253.7	3217.3	3185.4	3144.5	3126.4	3112.7	3071.7	3035.3	2994.4	2953.4	2926.1
20°	3167.3	3121.7	3085.3	3039.8	3026.2	3003.4	2962.5	2921.5	2876.1	2830.5	2798.7
22.5°	3053.5	3008.1	2967.0	2921.5	2898.8	2876.1	2835.1	2785.0	2739.5	2703.1	2671.2
25°	2921.5	2880.6	2830.5	2789.5	2762.3	2734.9	2689.4	2648.5	2607.5	2552.9	2521.0
27.5°	2776.0	2725.9	2689.4	2634.8	2607.5	2589.3	2539.2	2484.7	2448.3	2398.2	2361.8
30°	2612.1	2566.6	2525.7	2471.0	2443.8	2425.6	2380.0	2330.0	2293.6	2243.5	2207.0
32.5°	2439.1	2389.1	2339.0	2302.6	2270.8	2252.6	2202.5	2170.6	2125.2	2084.2	2043.3
35°	2252.6	2202.5	2166.1	2116.1	2097.9	2079.7	2038.7	1997.8	1956.7	1920.4	1888.5
37.5°	2052.3	2015.9	1975.0	1938.5	1925.0	1906.7	1856.6	1820.2	1788.4	1752.0	1724.8
40°	1856.6	1824.9	1797.5	1761.1	1738.3	1724.8	1688.3	1656.4	1620.0	1597.3	1570.0
42.5°	1679.2	1642.8	1615.5	1588.1	1565.4	1551.8	1519.9	1497.2	1469.8	1447.1	1415.3
45°	1492.7	1474.4	1442.6	1419.8	1406.1	1387.9	1365.2	1337.9	1315.2	1297.0	1274.1
47.5°	1328.8	1310.6	1287.8	1260.6	1251.4	1237.7	1215.0	1196.8	1178.7	1160.5	1137.6
50°	1178.7	1155.8	1137.6	1119.4	1110.4	1096.7	1073.9	1064.9	1051.2	1033.0	1019.3
52.5°	1042.2	1023.8	1005.7	982.9	978.4	969.3	955.6	937.4	923.7	914.7	905.5
55°	919.2	901.0	887.4	869.2	864.6	855.5	837.3	828.3	819.1	810.1	800.9
57.5°	810.1	791.9	773.6	764.5	755.4	746.3	741.8	728.1	719.0	714.5	705.3
60°	710.0	691.8	678.1	664.4	659.9	655.3	646.2	637.1	628.0	618.9	614.4
62.5°	614.4	596.2	587.0	578.0	568.8	568.8	559.8	550.6	541.6	537.0	527.9
65°	527.9	518.8	505.1	491.4	486.9	486.9	473.2	468.7	464.2	455.0	446.0
67.5°	446.0	436.8	423.2	418.6	414.1	409.6	405.0	395.9	386.8	382.3	373.1
70°	373.1	364.1	354.9	350.4	345.9	341.2	332.2	327.7	318.5	314.0	309.5
72.5°	300.3	295.8	286.7	282.1	277.6	273.0	268.5	264.0	254.8	250.3	245.8
75°	241.1	236.6	227.6	222.9	218.4	218.4	213.9	204.7	200.2	200.2	195.7
77.5°	182.0	177.5	172.9	168.4	163.8	163.8	159.3	154.7	150.2	150.2	145.7
80°	132.0	127.5	122.8	122.8	122.8	118.3	113.8	113.8	109.3	109.3	104.6
82.5°	86.4	86.4	81.9	81.9	81.9	77.4	77.4	72.8	72.8	72.8	72.8
85°	50.1	50.1	50.1	45.5	45.5	45.5	45.5	45.5	45.5	40.9	45.5
87.5°	22.7	22.7	22.7	22.7	22.7	22.7	22.7	22.7	18.2	18.2	18.2
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°	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8
2.5°	3335.6	3331.1	3321.9	3321.9	3312.9	3312.9	3308.4	3303.8	3299.2	3294.7	3290.1
5°	3303.8	3285.6	3276.5	3271.9	3262.9	3258.3	3244.7	3235.5	3231.0	3221.8	3212.8
7.5°	3244.7	3226.5	3208.3	3203.6	3199.1	3180.9	3167.3	3153.6	3144.5	3135.4	3126.4
10°	3176.4	3158.2	3135.4	3126.4	3117.2	3094.5	3076.3	3062.6	3044.4	3026.2	3021.6
12.5°	3094.5	3067.1	3039.8	3030.8	3017.1	2994.4	2976.2	2953.4	2939.7	2917.0	2912.5
15°	2998.9	2967.0	2944.3	2921.5	2912.5	2889.6	2857.9	2839.6	2812.3	2803.2	2780.5
17.5°	2885.1	2853.2	2821.4	2812.3	2798.7	2766.8	2734.9	2712.2	2684.9	2671.2	2657.5
20°	2766.8	2725.9	2694.0	2684.9	2666.7	2639.3	2607.5	2584.8	2562.1	2534.7	2521.0
22.5°	2630.3	2584.8	2557.4	2534.7	2530.2	2498.3	2461.9	2443.8	2425.6	2402.7	2384.5
25°	2480.1	2439.1	2407.2	2389.1	2380.0	2352.7	2325.4	2302.6	2275.4	2261.7	2238.9
27.5°	2325.4	2298.1	2257.1	2238.9	2225.3	2202.5	2170.6	2157.0	2129.7	2111.5	2097.9
30°	2175.3	2134.3	2111.5	2088.7	2075.2	2052.3	2025.1	2011.4	1988.6	1970.4	1956.7
32.5°	2011.4	1984.1	1952.2	1943.2	1925.0	1902.2	1884.0	1861.3	1843.1	1824.9	1820.2
35°	1861.3	1824.9	1793.0	1783.9	1770.2	1747.5	1738.3	1724.8	1701.9	1697.4	1679.2
37.5°	1697.4	1679.2	1642.8	1629.2	1624.6	1606.3	1588.1	1579.1	1565.4	1551.8	1547.2
40°	1542.7	1519.9	1501.7	1488.0	1479.0	1465.3	1447.1	1442.6	1433.5	1415.3	1410.7
42.5°	1397.1	1374.2	1356.1	1351.5	1337.9	1324.2	1315.2	1301.5	1297.0	1292.4	1283.3
45°	1255.9	1242.4	1224.1	1219.6	1215.0	1196.8	1187.7	1178.7	1169.5	1165.0	1155.8
47.5°	1128.6	1114.9	1101.3	1096.7	1087.6	1083.1	1069.4	1064.9	1051.2	1046.7	1042.2
50°	1005.7	996.6	987.5	982.9	973.8	969.3	960.2	951.1	942.0	937.4	932.9
52.5°	896.5	887.4	878.3	873.7	869.2	860.1	851.0	841.9	837.3	832.8	828.3
55°	791.9	782.7	778.2	773.6	769.0	764.5	750.9	746.3	741.8	737.2	728.1
57.5°	696.3	687.1	678.1	678.1	673.4	668.9	659.9	650.7	650.7	641.7	632.5
60°	609.8	600.7	591.6	587.0	582.5	573.3	568.8	564.3	559.8	555.1	546.1
62.5°	518.8	514.2	505.1	505.1	496.1	491.4	486.9	482.4	477.9	468.7	464.2
65°	441.4	436.8	427.8	423.2	423.2	418.6	409.6	405.0	400.5	400.5	395.9
67.5°	368.6	364.1	354.9	350.4	350.4	345.9	341.2	341.2	336.7	332.2	336.7
70°	304.9	295.8	295.8	291.2	291.2	286.7	282.1	282.1	282.1	286.7	286.7
72.5°	241.1	236.6	232.1	232.1	232.1	232.1	227.6	227.6	232.1	236.6	236.6
75°	191.1	186.6	186.6	186.6	182.0	182.0	186.6	186.6	191.1	191.1	191.1
77.5°	141.0	141.0	141.0	141.0	141.0	141.0	145.7	145.7	150.2	150.2	150.2
80°	104.6	104.6	104.6	104.6	104.6	109.3	109.3	109.3	109.3	109.3	113.8
82.5°	72.8	72.8	72.8	72.8	72.8	72.8	72.8	77.4	77.4	77.4	77.4
85°	40.9	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5
87.5°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
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: P593922

CATALOG NUMBER: HC880D010-HM86080950-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8	3353.8
2.5°	3285.6	3285.6	3285.6	3290.1	3281.0	3281.0	3281.0	3281.0
5°	3208.3	3203.6	3199.1	3203.6	3194.6	3194.6	3190.0	3190.0
7.5°	3112.7	3108.2	3103.5	3103.5	3094.5	3094.5	3089.9	3085.3
10°	3008.1	2998.9	3003.4	2994.4	2989.7	2985.2	2980.7	2976.2
12.5°	2894.3	2885.1	2880.6	2871.4	2862.4	2857.9	2862.4	2853.2
15°	2771.3	2757.8	2753.1	2744.1	2734.9	2730.4	2730.4	2725.9
17.5°	2634.8	2625.8	2621.2	2612.1	2607.5	2598.4	2593.9	2589.3
20°	2507.4	2484.7	2489.2	2480.1	2475.6	2457.3	2457.3	2461.9
22.5°	2366.3	2352.7	2343.6	2334.5	2330.0	2320.8	2320.8	2316.3
25°	2225.3	2211.7	2207.0	2198.0	2193.5	2184.3	2179.8	2179.8
27.5°	2088.7	2070.5	2070.5	2061.5	2052.3	2047.8	2043.3	2038.7
30°	1943.2	1929.5	1925.0	1925.0	1920.4	1920.4	1906.7	1911.3
32.5°	1806.6	1797.5	1793.0	1783.9	1783.9	1779.3	1779.3	1765.7
35°	1670.1	1656.4	1661.0	1651.9	1647.4	1642.8	1647.4	1642.8
37.5°	1538.1	1529.1	1529.1	1519.9	1519.9	1515.4	1510.9	1519.9
40°	1406.1	1401.6	1397.1	1392.6	1397.1	1392.6	1383.4	1387.9
42.5°	1274.1	1274.1	1269.6	1269.6	1265.1	1265.1	1265.1	1265.1
45°	1155.8	1151.3	1151.3	1146.8	1146.8	1146.8	1146.8	1142.3
47.5°	1037.5	1033.0	1033.0	1033.0	1028.5	1028.5	1023.8	1028.5
50°	923.7	923.7	919.2	919.2	923.7	919.2	914.7	914.7
52.5°	819.1	819.1	814.6	814.6	810.1	805.4	810.1	810.1
55°	723.5	719.0	714.5	714.5	710.0	705.3	705.3	710.0
57.5°	632.5	628.0	623.4	623.4	614.4	609.8	609.8	609.8
60°	546.1	537.0	537.0	532.4	532.4	527.9	527.9	527.9
62.5°	464.2	459.7	459.7	459.7	459.7	455.0	455.0	455.0
65°	395.9	395.9	395.9	400.5	400.5	405.0	405.0	405.0
67.5°	341.2	345.9	345.9	345.9	350.4	350.4	350.4	345.9
70°	291.2	291.2	291.2	295.8	295.8	295.8	295.8	295.8
72.5°	241.1	241.1	241.1	241.1	241.1	241.1	241.1	241.1
75°	191.1	195.7	195.7	195.7	191.1	195.7	195.7	191.1
77.5°	150.2	150.2	150.2	150.2	150.2	150.2	150.2	150.2
80°	113.8	113.8	113.8	113.8	113.8	113.8	113.8	113.8
82.5°	77.4	77.4	77.4	77.4	77.4	77.4	77.4	77.4
85°	45.5	45.5	45.5	45.5	45.5	45.5	45.5	45.5
87.5°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
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)