

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: P593905

Luminaire Tested: **HC880D010-HM86080850-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593905
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-HM86080850-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7082.4 lumens
Efficiency: N/A
Efficacy: 101.2 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

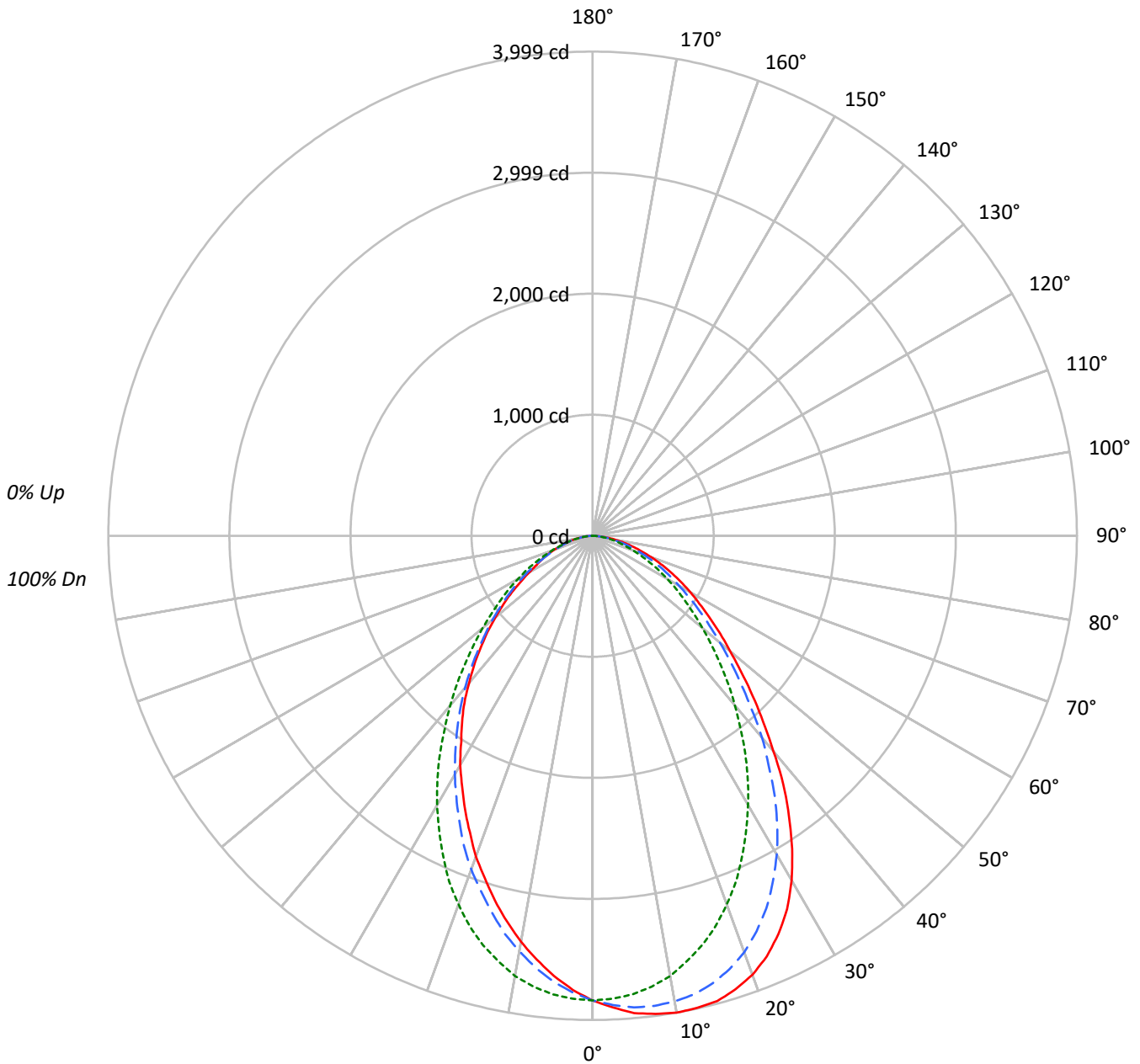
Input Watts (W): 70
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	118337	118337	118337
5°	122495	117660	112986
10°	125217	115595	106630
15°	127000	111706	99571
20°	126615	106279	92441
25°	123484	99388	84863
30°	116989	91406	77868
35°	106435	82719	70760
40°	93486	73568	63927
45°	81519	64716	56993
50°	70942	56704	50208
55°	63267	49826	43670
60°	57485	43677	37250
65°	51674	37993	33819
70°	46008	32394	30519
75°	40330	27296	26056
80°	34202	22197	23121
85°	25793	16558	18433



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	359.4	5.1
10°-20°	990.4	14.0
20°-30°	1374.7	19.4
30°-40°	1421.3	20.1
40°-50°	1190.1	16.8
50°-60°	863.9	12.2
60°-70°	545.2	7.7
70°-80°	270.1	3.8
80°-90°	67.1	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°	2724.6	38.5
0°-40°	4145.9	58.5
0°-60°	6200.0	87.5
0°-90°	7082.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7082.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	3838	3838	3838	3838	3838	
5°	3957	3910	3801	3697	3650	379
15°	3978	3827	3499	3218	3119	1120
25°	3629	3395	2921	2604	2494	1663
35°	2827	2619	2197	1948	1880	1761
45°	1869	1734	1484	1338	1307	1446
55°	1177	1073	927	849	812	1062
65°	708	620	521	458	464	706
75°	338	281	229	219	219	363
85°	73	57	47	52	52	89
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°	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6
2.5°	3900.0	3900.0	3905.3	3900.0	3900.0	3900.0	3894.8	3894.8	3889.6	3889.6	3879.2
5°	3957.3	3946.9	3957.3	3946.9	3946.9	3946.9	3941.7	3931.3	3926.1	3915.6	3910.5
7.5°	3983.4	3978.2	3978.2	3972.9	3972.9	3967.7	3962.6	3957.3	3936.5	3931.3	3915.6
10°	3999.0	3993.7	3993.7	3988.6	3978.2	3978.2	3967.7	3962.6	3936.5	3926.1	3905.3
12.5°	3993.7	3993.7	3993.7	3988.6	3972.9	3967.7	3957.3	3941.7	3920.8	3900.0	3879.2
15°	3978.2	3978.2	3967.7	3962.6	3946.9	3936.5	3931.3	3905.3	3884.5	3858.4	3827.2
17.5°	3926.1	3926.1	3920.8	3910.5	3894.8	3884.5	3874.0	3848.0	3827.2	3785.5	3754.3
20°	3858.4	3853.2	3848.0	3832.4	3816.7	3811.6	3795.9	3759.5	3733.5	3702.2	3660.6
22.5°	3759.5	3754.3	3749.0	3738.6	3712.7	3702.2	3691.7	3665.7	3618.8	3587.6	3535.6
25°	3629.3	3629.3	3618.8	3603.3	3577.2	3566.8	3551.2	3525.1	3483.5	3436.6	3395.0
27.5°	3478.3	3473.1	3457.5	3447.0	3426.2	3410.6	3384.6	3353.3	3311.6	3275.2	3223.1
30°	3285.6	3285.6	3275.2	3259.6	3233.6	3223.1	3202.3	3165.8	3124.2	3077.4	3040.9
32.5°	3066.9	3066.9	3051.3	3040.9	3025.3	2999.3	2994.0	2952.4	2915.9	2879.5	2837.8
35°	2827.4	2832.6	2822.2	2801.4	2775.4	2775.4	2764.9	2728.5	2686.8	2650.4	2619.1
37.5°	2587.9	2572.3	2567.1	2556.6	2541.0	2520.2	2509.7	2494.2	2457.7	2431.6	2384.8
40°	2322.4	2327.6	2317.1	2306.7	2301.5	2285.9	2280.6	2254.6	2228.5	2197.4	2176.6
42.5°	2082.8	2082.8	2082.8	2072.4	2062.0	2046.4	2041.2	2025.6	1994.3	1973.5	1942.2
45°	1869.3	1853.7	1853.7	1848.5	1843.3	1832.8	1817.3	1806.8	1786.0	1770.4	1733.9
47.5°	1661.0	1666.3	1661.0	1655.8	1640.2	1635.0	1629.8	1609.0	1588.1	1572.6	1546.5
50°	1478.8	1489.2	1478.8	1478.8	1468.4	1463.2	1452.7	1437.1	1421.6	1395.5	1369.5
52.5°	1327.8	1327.8	1322.5	1317.4	1301.7	1291.4	1286.1	1280.9	1254.9	1234.1	1213.3
55°	1176.8	1182.0	1182.0	1166.4	1161.2	1150.7	1145.5	1129.9	1119.6	1088.3	1072.6
57.5°	1046.6	1041.4	1046.6	1036.2	1025.8	1015.4	1010.2	999.7	984.1	963.3	942.5
60°	932.1	921.6	921.6	916.5	906.0	900.8	890.4	874.7	859.2	838.4	822.7
62.5°	817.6	812.3	807.1	801.9	791.5	786.3	781.1	765.5	749.8	734.2	718.5
65°	708.2	708.2	702.9	692.5	687.4	682.1	676.9	666.6	645.6	635.3	619.6
67.5°	609.2	604.0	604.0	593.5	583.2	578.0	578.0	567.5	551.9	536.4	525.9
70°	510.3	515.6	510.3	505.1	494.6	494.6	484.3	479.0	458.2	453.0	437.4
72.5°	421.7	421.7	416.5	416.5	406.2	400.9	400.9	390.5	380.1	369.7	359.3
75°	338.5	338.5	338.5	333.3	328.0	317.6	317.6	312.5	302.0	291.5	281.2
77.5°	265.5	260.4	260.4	255.2	249.9	244.7	244.7	239.5	229.1	223.9	213.5
80°	192.6	187.5	187.5	187.5	177.0	182.3	177.0	171.8	166.6	161.5	156.2
82.5°	125.0	130.2	130.2	125.0	119.7	119.7	119.7	114.5	114.5	109.4	104.2
85°	72.9	72.9	72.9	72.9	67.7	67.7	67.7	62.5	62.5	62.5	57.3
87.5°	31.3	31.3	31.3	31.3	31.3	31.3	26.0	26.0	26.0	26.0	26.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6
2.5°	3879.2	3868.8	3863.7	3858.4	3858.4	3853.2	3848.0	3837.6	3837.6	3827.2	3821.9
5°	3900.0	3884.5	3874.0	3863.7	3858.4	3848.0	3837.6	3821.9	3816.7	3801.1	3785.5
7.5°	3905.3	3879.2	3868.8	3848.0	3837.6	3827.2	3806.3	3790.7	3769.8	3754.3	3733.5
10°	3884.5	3863.7	3837.6	3811.6	3806.3	3790.7	3759.5	3738.6	3712.7	3691.7	3660.6
12.5°	3853.2	3821.9	3795.9	3764.6	3749.0	3733.5	3702.2	3670.9	3634.5	3598.0	3566.8
15°	3801.1	3764.6	3728.2	3691.7	3670.9	3655.3	3618.8	3582.5	3546.0	3499.1	3467.8
17.5°	3723.0	3681.4	3644.9	3598.0	3577.2	3561.6	3514.7	3473.1	3426.2	3379.4	3348.1
20°	3624.1	3572.0	3530.4	3478.3	3462.6	3436.6	3389.7	3342.9	3290.8	3238.7	3202.3
22.5°	3493.9	3441.8	3395.0	3342.9	3316.8	3290.8	3243.9	3186.6	3134.6	3092.9	3056.6
25°	3342.9	3296.0	3238.7	3191.9	3160.6	3129.4	3077.4	3030.5	2983.6	2921.1	2884.6
27.5°	3176.3	3119.0	3077.4	3014.8	2983.6	2962.8	2905.6	2843.0	2801.4	2744.1	2702.5
30°	2988.8	2936.7	2889.9	2827.4	2796.2	2775.4	2723.3	2666.0	2624.4	2567.1	2525.4
32.5°	2790.9	2733.6	2676.4	2634.7	2598.3	2577.5	2520.2	2483.7	2431.6	2384.8	2337.9
35°	2577.5	2520.2	2478.6	2421.3	2400.5	2379.5	2332.7	2285.9	2239.0	2197.4	2160.9
37.5°	2348.4	2306.7	2259.8	2218.2	2202.6	2181.7	2124.5	2082.8	2046.4	2004.7	1973.5
40°	2124.5	2088.0	2056.7	2015.1	1989.1	1973.5	1931.8	1895.4	1853.7	1827.6	1796.5
42.5°	1921.4	1879.7	1848.5	1817.3	1791.2	1775.5	1739.2	1713.1	1681.8	1655.8	1619.4
45°	1707.9	1687.1	1650.6	1624.5	1609.0	1588.1	1562.1	1530.8	1504.8	1484.0	1458.0
47.5°	1520.5	1499.6	1473.5	1442.4	1431.9	1416.3	1390.3	1369.5	1348.6	1327.8	1301.7
50°	1348.6	1322.5	1301.7	1280.9	1270.6	1254.9	1228.8	1218.5	1202.8	1182.0	1166.4
52.5°	1192.4	1171.5	1150.7	1124.7	1119.6	1109.1	1093.5	1072.6	1057.0	1046.6	1036.2
55°	1051.8	1031.0	1015.4	994.5	989.4	978.9	958.1	947.6	937.3	926.8	916.5
57.5°	926.8	906.0	885.2	874.7	864.4	853.9	848.7	833.1	822.7	817.6	807.1
60°	812.3	791.5	775.8	760.2	755.0	749.8	739.4	729.0	718.5	708.2	702.9
62.5°	702.9	682.1	671.7	661.3	650.9	650.9	640.5	630.1	619.6	614.5	604.0
65°	604.0	593.5	578.0	562.4	557.2	557.2	541.5	536.4	531.1	520.7	510.3
67.5°	510.3	499.9	484.3	479.0	473.8	468.6	463.5	453.0	442.5	437.4	427.0
70°	427.0	416.5	406.2	400.9	395.7	390.5	380.1	374.9	364.5	359.3	354.1
72.5°	343.6	338.5	328.0	322.8	317.6	312.5	307.2	302.0	291.5	286.4	281.2
75°	276.0	270.7	260.4	255.2	249.9	249.9	244.7	234.4	229.1	229.1	223.9
77.5°	208.3	203.1	197.8	192.6	187.5	187.5	182.3	177.0	171.8	171.8	166.6
80°	151.0	145.8	140.5	140.5	140.5	135.4	130.2	130.2	125.0	125.0	119.7
82.5°	98.9	98.9	93.7	93.7	93.7	88.5	88.5	83.3	83.3	83.3	83.3
85°	57.3	57.3	57.3	52.1	52.1	52.1	52.1	52.1	52.1	46.8	52.1
87.5°	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	20.8	20.8	20.8
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°	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6
2.5°	3816.7	3811.6	3801.1	3801.1	3790.7	3790.7	3785.5	3780.3	3775.1	3769.8	3764.6
5°	3780.3	3759.5	3749.0	3743.8	3733.5	3728.2	3712.7	3702.2	3697.0	3686.6	3676.2
7.5°	3712.7	3691.7	3670.9	3665.7	3660.6	3639.6	3624.1	3608.5	3598.0	3587.6	3577.2
10°	3634.5	3613.6	3587.6	3577.2	3566.8	3540.7	3519.9	3504.3	3483.5	3462.6	3457.5
12.5°	3540.7	3509.6	3478.3	3467.8	3452.3	3426.2	3405.4	3379.4	3363.7	3337.6	3332.5
15°	3431.5	3395.0	3368.9	3342.9	3332.5	3306.5	3270.0	3249.2	3217.9	3207.6	3181.5
17.5°	3301.3	3264.8	3228.4	3217.9	3202.3	3165.8	3129.4	3103.4	3072.1	3056.6	3040.9
20°	3165.8	3119.0	3082.6	3072.1	3051.3	3020.1	2983.6	2957.6	2931.6	2900.3	2884.6
22.5°	3009.6	2957.6	2926.4	2900.3	2895.1	2858.6	2817.0	2796.2	2775.4	2749.3	2728.5
25°	2837.8	2790.9	2754.6	2733.6	2723.3	2692.0	2660.7	2634.7	2603.6	2587.9	2561.8
27.5°	2660.7	2629.6	2582.6	2561.8	2546.2	2520.2	2483.7	2468.1	2436.9	2416.0	2400.5
30°	2488.9	2442.1	2416.0	2390.0	2374.4	2348.4	2317.1	2301.5	2275.5	2254.6	2239.0
32.5°	2301.5	2270.3	2233.8	2223.4	2202.6	2176.6	2155.7	2129.6	2108.8	2088.0	2082.8
35°	2129.6	2088.0	2051.6	2041.2	2025.6	1999.5	1989.1	1973.5	1947.5	1942.2	1921.4
37.5°	1942.2	1921.4	1879.7	1864.1	1858.9	1838.1	1817.3	1806.8	1791.2	1775.5	1770.4
40°	1765.2	1739.2	1718.3	1702.6	1692.3	1676.6	1655.8	1650.6	1640.2	1619.4	1614.2
42.5°	1598.5	1572.6	1551.6	1546.5	1530.8	1515.3	1504.8	1489.2	1484.0	1478.8	1468.4
45°	1437.1	1421.6	1400.6	1395.5	1390.3	1369.5	1359.0	1348.6	1338.2	1333.0	1322.5
47.5°	1291.4	1275.7	1260.1	1254.9	1244.5	1239.3	1223.6	1218.5	1202.8	1197.6	1192.4
50°	1150.7	1140.4	1129.9	1124.7	1114.3	1109.1	1098.6	1088.3	1077.8	1072.6	1067.5
52.5°	1025.8	1015.4	1004.9	999.7	994.5	984.1	973.7	963.3	958.1	952.9	947.6
55°	906.0	895.6	890.4	885.2	880.0	874.7	859.2	853.9	848.7	843.5	833.1
57.5°	796.6	786.3	775.8	775.8	770.6	765.5	755.0	744.6	744.6	734.2	723.7
60°	697.7	687.4	676.9	671.7	666.6	656.1	650.9	645.6	640.5	635.3	624.8
62.5°	593.5	588.4	578.0	578.0	567.5	562.4	557.2	551.9	546.7	536.4	531.1
65°	505.1	499.9	489.5	484.3	484.3	479.0	468.6	463.5	458.2	458.2	453.0
67.5°	421.7	416.5	406.2	400.9	400.9	395.7	390.5	390.5	385.4	380.1	385.4
70°	348.9	338.5	338.5	333.3	333.3	328.0	322.8	322.8	322.8	328.0	328.0
72.5°	276.0	270.7	265.5	265.5	265.5	265.5	260.4	260.4	265.5	270.7	270.7
75°	218.7	213.5	213.5	213.5	208.3	208.3	213.5	213.5	218.7	218.7	218.7
77.5°	161.5	161.5	161.5	161.5	161.5	161.5	166.6	166.6	171.8	171.8	171.8
80°	119.7	119.7	119.7	119.7	119.7	125.0	125.0	125.0	125.0	125.0	130.2
82.5°	83.3	83.3	83.3	83.3	83.3	83.3	83.3	88.5	88.5	88.5	88.5
85°	46.8	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1
87.5°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
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: P593905

CATALOG NUMBER: HC880D010-HM86080850-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6	3837.6
2.5°	3759.5	3759.5	3759.5	3764.6	3754.3	3754.3	3754.3	3754.3
5°	3670.9	3665.7	3660.6	3665.7	3655.3	3655.3	3650.1	3650.1
7.5°	3561.6	3556.4	3551.2	3551.2	3540.7	3540.7	3535.6	3530.4
10°	3441.8	3431.5	3436.6	3426.2	3421.0	3415.8	3410.6	3405.4
12.5°	3311.6	3301.3	3296.0	3285.6	3275.2	3270.0	3275.2	3264.8
15°	3171.1	3155.5	3150.3	3139.8	3129.4	3124.2	3124.2	3119.0
17.5°	3014.8	3004.5	2999.3	2988.8	2983.6	2973.2	2968.0	2962.8
20°	2869.1	2843.0	2848.2	2837.8	2832.6	2811.7	2811.7	2817.0
22.5°	2707.6	2692.0	2681.6	2671.2	2666.0	2655.6	2655.6	2650.4
25°	2546.2	2530.5	2525.4	2515.0	2509.7	2499.4	2494.2	2494.2
27.5°	2390.0	2369.2	2369.2	2358.7	2348.4	2343.2	2337.9	2332.7
30°	2223.4	2207.7	2202.6	2202.6	2197.4	2197.4	2181.7	2186.9
32.5°	2067.2	2056.7	2051.6	2041.2	2041.2	2035.9	2035.9	2020.3
35°	1911.0	1895.4	1900.5	1890.2	1884.9	1879.7	1884.9	1879.7
37.5°	1760.0	1749.5	1749.5	1739.2	1739.2	1733.9	1728.7	1739.2
40°	1609.0	1603.7	1598.5	1593.4	1598.5	1593.4	1582.9	1588.1
42.5°	1458.0	1458.0	1452.7	1452.7	1447.5	1447.5	1447.5	1447.5
45°	1322.5	1317.4	1317.4	1312.2	1312.2	1312.2	1312.2	1306.9
47.5°	1187.2	1182.0	1182.0	1182.0	1176.8	1176.8	1171.5	1176.8
50°	1057.0	1057.0	1051.8	1051.8	1057.0	1051.8	1046.6	1046.6
52.5°	937.3	937.3	932.1	932.1	926.8	921.6	926.8	926.8
55°	827.9	822.7	817.6	817.6	812.3	807.1	807.1	812.3
57.5°	723.7	718.5	713.4	713.4	702.9	697.7	697.7	697.7
60°	624.8	614.5	614.5	609.2	609.2	604.0	604.0	604.0
62.5°	531.1	525.9	525.9	525.9	525.9	520.7	520.7	520.7
65°	453.0	453.0	453.0	458.2	458.2	463.5	463.5	463.5
67.5°	390.5	395.7	395.7	395.7	400.9	400.9	400.9	395.7
70°	333.3	333.3	333.3	338.5	338.5	338.5	338.5	338.5
72.5°	276.0	276.0	276.0	276.0	276.0	276.0	276.0	276.0
75°	218.7	223.9	223.9	223.9	218.7	223.9	223.9	218.7
77.5°	171.8	171.8	171.8	171.8	171.8	171.8	171.8	171.8
80°	130.2	130.2	130.2	130.2	130.2	130.2	130.2	130.2
82.5°	88.5	88.5	88.5	88.5	88.5	88.5	88.5	88.5
85°	52.1	52.1	52.1	52.1	52.1	52.1	52.1	52.1
87.5°	20.8	20.8	20.8	20.8	20.8	20.8	20.8	20.8
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)