

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: P593904

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

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593904  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-17)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC880D010-HM86080850-81WWBB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6488.7 lumens  
Efficiency: N/A  
Efficacy: 92.7 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.07 / 1.16  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

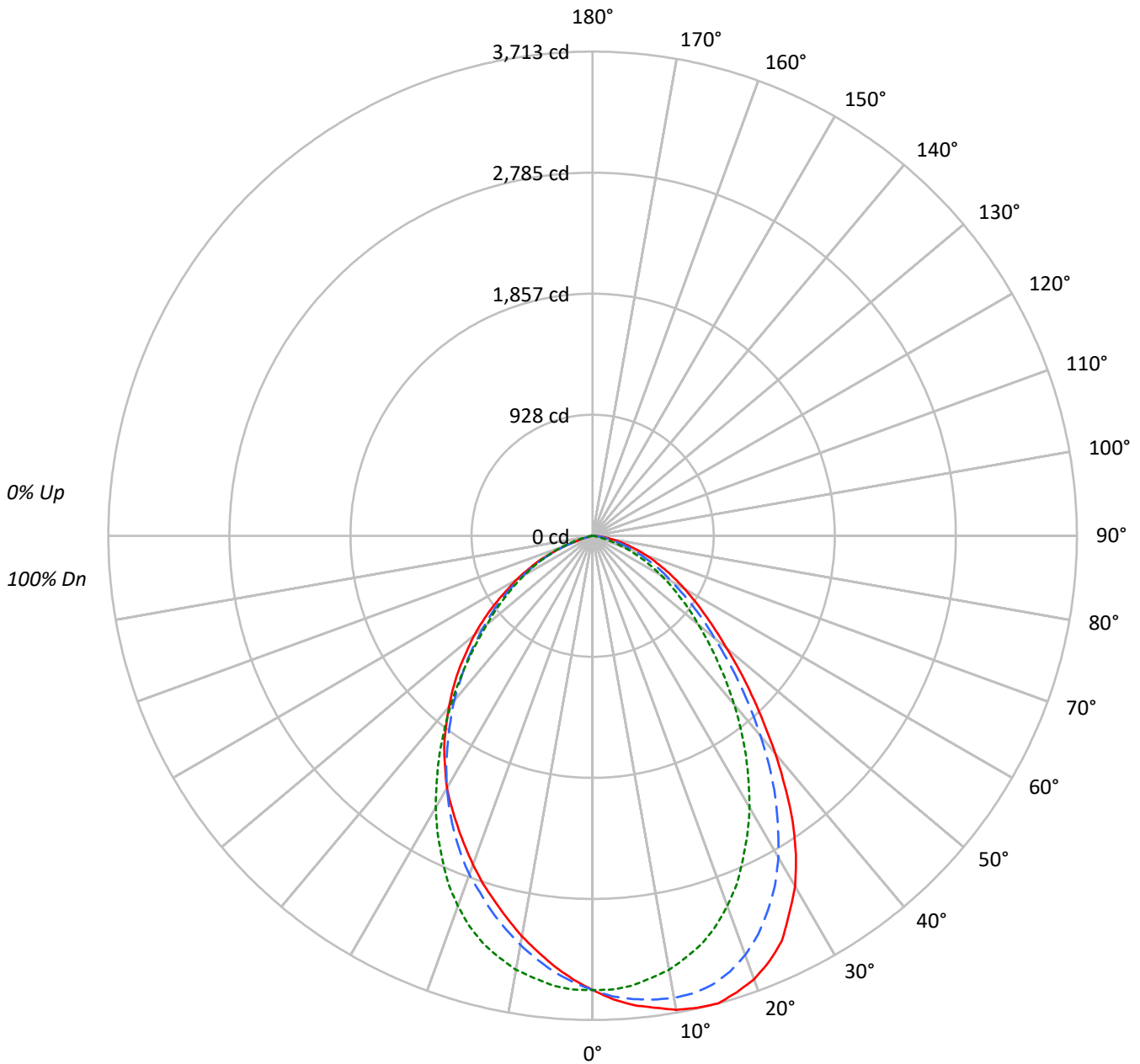
Input Watts (W): 70  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77			77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67			67
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59			59
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53			53
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47			47
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43			43
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39			39
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35			35
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32			32

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	107418	107418	107418
5°	111859	107185	102669
10°	115598	105816	97662
15°	118525	103396	92589
20°	118752	99106	88001
25°	116754	92835	83448
30°	110502	85659	79538
35°	100751	77035	74679
40°	87617	67912	68959
45°	75165	58816	63129
50°	64197	50707	56704
55°	56267	43670	49272
60°	50097	37250	41426
65°	44450	30390	33053
70°	39436	22531	18780
75°	32883	11783	5576
80°	25891	3694	923
85°	18433	1840	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	328.2	5.1
10°-20°	920.0	14.2
20°-30°	1302.2	20.1
30°-40°	1362.3	21.0
40°-50°	1136.3	17.5
50°-60°	805.8	12.4
60°-70°	464.1	7.2
70°-80°	149.3	2.3
80°-90°	20.5	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°	2550.4	39.3
0°-40°	3912.7	60.3
0°-60°	5854.7	90.2
0°-90°	6488.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6488.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	3484	3484	3484	3484	3484	
5°	3614	3567	3463	3359	3317	347
15°	3713	3562	3239	2984	2900	1044
25°	3432	3176	2728	2510	2453	1566
35°	2676	2442	2046	1937	1984	1659
45°	1724	1583	1349	1364	1448	1336
55°	1047	937	812	854	916	946
65°	609	510	416	416	453	609
75°	276	203	99	47	47	299
85°	52	26	5	0	0	65
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°	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5
2.5°	3556.4	3551.2	3546.0	3551.2	3546.0	3551.2	3546.0	3546.0	3540.8	3535.6	3535.6
5°	3613.7	3608.5	3608.5	3608.5	3603.3	3598.0	3598.0	3592.9	3582.5	3577.2	3566.9
7.5°	3650.1	3655.3	3655.3	3655.3	3644.9	3644.9	3634.5	3624.1	3613.7	3603.3	3587.7
10°	3691.8	3691.8	3686.6	3681.4	3670.9	3665.8	3660.6	3650.1	3634.5	3613.7	3598.0
12.5°	3707.4	3707.4	3702.2	3691.8	3686.6	3681.4	3676.2	3660.6	3639.8	3613.7	3592.9
15°	3712.7	3702.2	3697.0	3691.8	3681.4	3665.8	3665.8	3644.9	3618.8	3587.7	3561.6
17.5°	3670.9	3676.2	3665.8	3655.3	3639.8	3629.3	3613.7	3598.0	3566.9	3530.4	3504.3
20°	3618.8	3613.7	3608.5	3592.9	3572.0	3566.9	3551.2	3525.1	3499.1	3457.5	3421.0
22.5°	3535.6	3530.4	3519.9	3509.6	3488.8	3478.3	3462.7	3431.5	3395.0	3353.3	3311.7
25°	3431.5	3421.0	3405.4	3384.6	3368.9	3358.6	3337.8	3306.5	3264.9	3217.9	3176.3
27.5°	3264.9	3280.5	3270.0	3238.8	3223.1	3202.3	3197.1	3155.5	3119.0	3072.1	3025.3
30°	3103.4	3103.4	3087.8	3072.1	3046.1	3030.5	3009.7	2978.4	2941.9	2884.8	2848.2
32.5°	2900.3	2895.1	2874.3	2869.1	2848.2	2817.0	2811.7	2770.1	2733.7	2692.0	2645.2
35°	2676.4	2666.0	2645.2	2629.6	2619.1	2603.6	2587.9	2551.5	2515.0	2473.4	2442.1
37.5°	2421.3	2421.3	2416.0	2390.0	2379.7	2369.2	2353.6	2317.1	2296.3	2254.7	2223.4
40°	2176.6	2171.4	2155.8	2150.5	2140.1	2124.5	2114.0	2093.2	2062.0	2030.7	1999.5
42.5°	1937.0	1942.2	1921.4	1926.7	1905.7	1895.4	1890.2	1858.9	1843.3	1812.0	1786.0
45°	1723.6	1718.3	1707.9	1702.6	1692.3	1681.8	1671.5	1655.8	1629.8	1598.6	1582.9
47.5°	1525.6	1510.0	1510.0	1504.8	1499.7	1478.8	1473.6	1458.0	1442.4	1411.1	1390.3
50°	1338.2	1338.2	1338.2	1333.0	1317.4	1312.2	1301.7	1286.1	1270.6	1249.6	1218.5
52.5°	1187.2	1187.2	1187.2	1182.0	1161.2	1155.9	1150.7	1129.9	1109.1	1093.5	1072.6
55°	1046.6	1051.8	1046.6	1036.2	1020.6	1020.6	1004.9	994.6	973.7	958.1	937.3
57.5°	926.8	926.8	916.5	911.2	900.8	895.6	885.2	874.7	848.7	833.1	807.1
60°	812.3	807.1	807.1	796.6	786.3	775.8	770.6	755.0	744.6	718.6	697.7
62.5°	708.2	708.2	697.7	697.7	676.9	676.9	671.7	656.1	640.5	614.5	604.0
65°	609.2	609.2	604.0	598.8	583.2	578.0	572.7	557.2	541.6	525.9	510.3
67.5°	520.7	520.7	510.3	505.1	494.6	489.5	479.0	468.6	453.0	437.4	421.7
70°	437.4	432.2	427.0	421.7	411.4	406.2	395.7	385.4	369.7	359.3	343.6
72.5°	354.1	354.1	348.9	338.5	333.3	328.0	322.8	312.5	296.8	281.2	270.7
75°	276.0	276.0	276.0	265.5	255.2	249.9	249.9	239.6	229.1	213.5	203.1
77.5°	213.5	208.3	203.1	203.1	192.6	187.5	182.3	177.0	161.5	156.2	145.8
80°	145.8	151.0	145.8	140.5	135.4	130.2	130.2	119.7	114.5	104.2	93.7
82.5°	98.9	93.7	93.7	88.5	88.5	83.3	83.3	72.9	67.7	62.5	57.3
85°	52.1	52.1	46.8	46.8	46.8	41.6	41.6	36.5	36.5	31.3	26.0
87.5°	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	10.5	10.5	10.5
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°	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5
2.5°	3530.4	3519.9	3514.8	3514.8	3509.6	3504.3	3499.1	3493.9	3483.5	3483.5	3473.1
5°	3556.4	3546.0	3540.8	3525.1	3514.8	3514.8	3493.9	3488.8	3473.1	3462.7	3452.3
7.5°	3577.2	3556.4	3540.8	3525.1	3514.8	3504.3	3483.5	3462.7	3441.8	3421.0	3410.6
10°	3577.2	3556.4	3530.4	3504.3	3493.9	3483.5	3457.5	3426.2	3400.2	3379.4	3353.3
12.5°	3566.9	3535.6	3504.3	3483.5	3462.7	3447.0	3415.9	3384.6	3353.3	3311.7	3290.8
15°	3535.6	3493.9	3462.7	3426.2	3410.6	3384.6	3358.6	3311.7	3275.2	3238.8	3212.8
17.5°	3473.1	3421.0	3384.6	3348.1	3322.1	3306.5	3264.9	3223.1	3181.5	3139.8	3108.6
20°	3379.4	3332.5	3290.8	3243.9	3223.1	3202.3	3150.3	3108.6	3066.9	3020.1	2988.8
22.5°	3264.9	3217.9	3160.7	3124.2	3092.9	3066.9	3020.1	2973.2	2931.6	2889.9	2848.2
25°	3124.2	3077.4	3025.3	2968.0	2947.2	2921.1	2869.1	2822.2	2775.4	2728.5	2692.0
27.5°	2973.2	2910.8	2869.1	2806.6	2785.8	2759.8	2702.5	2650.4	2608.8	2572.3	2530.7
30°	2790.9	2744.1	2686.8	2629.6	2608.8	2582.7	2535.8	2488.9	2447.3	2405.7	2364.0
32.5°	2593.1	2546.2	2488.9	2447.3	2416.0	2395.2	2348.4	2306.8	2265.0	2223.4	2186.9
35°	2384.8	2332.7	2291.1	2249.5	2223.4	2197.4	2150.5	2114.0	2082.8	2046.4	2009.9
37.5°	2171.4	2134.8	2093.2	2046.4	2020.3	1999.5	1963.0	1921.4	1895.4	1864.1	1838.1
40°	1963.0	1921.4	1884.9	1843.3	1822.5	1806.8	1770.4	1739.2	1713.1	1687.1	1671.5
42.5°	1749.6	1713.1	1676.7	1650.7	1635.0	1619.4	1593.4	1556.9	1541.3	1515.3	1499.7
45°	1551.6	1520.5	1494.5	1458.0	1447.6	1437.1	1405.9	1379.8	1364.3	1348.7	1338.2
47.5°	1364.3	1343.5	1312.2	1291.4	1275.7	1265.3	1244.5	1223.6	1208.0	1197.7	1187.2
50°	1202.8	1176.8	1155.9	1135.1	1124.7	1109.1	1088.3	1077.8	1067.5	1057.0	1057.0
52.5°	1051.8	1025.8	1004.9	989.4	978.9	968.6	952.9	947.6	937.3	937.3	932.1
55°	911.2	895.6	874.7	853.9	848.7	843.6	833.1	822.7	817.6	812.3	817.6
57.5°	791.5	775.8	755.0	739.4	734.2	729.0	723.7	713.4	708.2	708.2	708.2
60°	682.1	666.6	650.9	635.3	635.3	624.8	619.6	614.5	609.2	604.0	604.0
62.5°	583.2	567.5	551.9	541.6	536.4	531.1	520.7	515.6	510.3	510.3	505.1
65°	494.6	473.8	468.6	453.0	447.8	442.5	437.4	427.0	421.7	416.5	411.4
67.5°	406.2	395.7	380.1	369.7	364.5	359.3	354.1	343.6	338.5	333.3	322.8
70°	328.0	317.6	307.2	296.8	291.5	286.4	276.0	265.5	260.4	249.9	234.4
72.5°	255.2	244.7	234.4	223.9	218.7	213.5	203.1	192.6	182.3	171.8	161.5
75°	192.6	182.3	166.6	156.2	151.0	151.0	135.4	125.0	114.5	98.9	88.5
77.5°	135.4	119.7	114.5	104.2	98.9	88.5	78.1	67.7	57.3	52.1	41.6
80°	88.5	78.1	67.7	62.5	57.3	52.1	46.8	36.5	26.0	20.8	15.6
82.5°	52.1	46.8	41.6	36.5	31.3	26.0	20.8	20.8	15.6	10.5	5.2
85°	26.0	20.8	15.6	15.6	10.5	10.5	10.5	5.2	5.2	5.2	5.2
87.5°	10.5	5.2	5.2	5.2	5.2	5.2	5.2	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°	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5
2.5°	3467.8	3462.7	3457.5	3452.3	3452.3	3441.8	3441.8	3436.7	3426.2	3421.0	3421.0
5°	3436.7	3421.0	3410.6	3405.4	3400.2	3384.6	3379.4	3368.9	3358.6	3348.1	3342.9
7.5°	3389.8	3363.8	3353.3	3348.1	3332.5	3316.8	3306.5	3290.8	3275.2	3259.6	3254.4
10°	3332.5	3306.5	3280.5	3270.0	3254.4	3243.9	3223.1	3202.3	3186.8	3171.1	3155.5
12.5°	3259.6	3228.4	3202.3	3191.9	3176.3	3155.5	3124.2	3113.9	3087.8	3077.4	3056.6
15°	3176.3	3139.8	3113.9	3098.2	3082.6	3051.3	3030.5	3009.7	2983.7	2973.2	2952.4
17.5°	3072.1	3030.5	3004.5	2988.8	2978.4	2952.4	2921.1	2895.1	2869.1	2858.7	2843.0
20°	2947.2	2921.1	2884.8	2869.1	2858.7	2827.4	2796.2	2785.8	2764.9	2744.1	2728.5
22.5°	2806.6	2780.6	2744.1	2728.5	2723.3	2697.2	2671.2	2655.6	2639.9	2624.4	2608.8
25°	2660.7	2629.6	2598.3	2587.9	2577.5	2556.7	2535.8	2525.4	2509.7	2499.4	2488.9
27.5°	2504.6	2473.4	2447.3	2431.7	2421.3	2405.7	2395.2	2384.8	2374.4	2364.0	2358.7
30°	2337.9	2306.8	2285.9	2275.5	2265.0	2259.8	2244.2	2239.0	2233.8	2223.4	2228.7
32.5°	2171.4	2145.3	2124.5	2108.8	2108.8	2098.5	2093.2	2093.2	2088.0	2088.0	2088.0
35°	1989.1	1973.5	1957.8	1952.7	1947.5	1942.2	1937.0	1942.2	1937.0	1942.2	1947.5
37.5°	1822.5	1806.8	1796.5	1791.2	1786.0	1791.2	1786.0	1786.0	1791.2	1801.7	1806.8
40°	1650.7	1640.2	1629.8	1635.0	1629.8	1629.8	1629.8	1645.5	1650.7	1655.8	1661.0
42.5°	1489.2	1478.8	1473.6	1473.6	1478.8	1473.6	1484.0	1489.2	1499.7	1515.3	1525.6
45°	1333.0	1327.8	1327.8	1333.0	1327.8	1338.2	1338.2	1348.7	1364.3	1374.6	1385.1
47.5°	1187.2	1187.2	1187.2	1192.4	1192.4	1197.7	1208.0	1213.3	1223.6	1234.1	1244.5
50°	1051.8	1057.0	1062.3	1062.3	1062.3	1072.6	1083.1	1088.3	1093.5	1098.6	1114.3
52.5°	932.1	937.3	937.3	942.5	947.6	952.9	958.1	968.6	973.7	984.1	989.4
55°	817.6	817.6	827.9	833.1	833.1	833.1	843.6	843.6	853.9	859.2	869.6
57.5°	708.2	713.4	713.4	718.6	718.6	723.7	729.0	734.2	739.4	744.6	749.8
60°	604.0	604.0	604.0	609.2	614.5	619.6	614.5	624.8	624.8	635.3	640.5
62.5°	505.1	510.3	510.3	510.3	510.3	510.3	510.3	515.6	520.7	525.9	531.1
65°	411.4	411.4	411.4	406.2	411.4	406.2	411.4	416.5	416.5	421.7	427.0
67.5°	317.6	317.6	307.2	307.2	312.5	312.5	312.5	312.5	307.2	317.6	317.6
70°	229.1	223.9	218.7	213.5	213.5	208.3	208.3	203.1	203.1	203.1	203.1
72.5°	151.0	140.5	130.2	125.0	119.7	119.7	109.4	104.2	109.4	109.4	109.4
75°	78.1	67.7	62.5	57.3	52.1	52.1	46.8	46.8	46.8	46.8	46.8
77.5°	31.3	26.0	20.8	20.8	15.6	15.6	15.6	15.6	15.6	15.6	15.6
80°	10.5	10.5	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
82.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
85°	5.2	0.0	0.0	5.2	0.0	5.2	5.2	5.2	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: P593904

CATALOG NUMBER: HC880D010-HM86080850-81WWBB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5	3483.5
2.5°	3415.9	3415.9	3410.6	3415.9	3405.4	3410.6	3405.4	3405.4
5°	3337.8	3327.3	3327.3	3327.3	3322.1	3322.1	3316.8	3316.8
7.5°	3243.9	3238.8	3233.6	3228.4	3223.1	3217.9	3217.9	3217.9
10°	3150.3	3139.8	3139.8	3134.7	3124.2	3119.0	3119.0	3119.0
12.5°	3040.9	3035.8	3030.5	3030.5	3009.7	3014.8	3009.7	3009.7
15°	2936.8	2931.6	2931.6	2915.9	2905.6	2905.6	2905.6	2900.3
17.5°	2827.4	2822.2	2817.0	2806.6	2796.2	2796.2	2790.9	2796.2
20°	2712.8	2707.7	2697.2	2697.2	2692.0	2686.8	2676.4	2681.7
22.5°	2598.3	2587.9	2582.7	2582.7	2577.5	2577.5	2567.1	2567.1
25°	2478.6	2473.4	2468.1	2473.4	2462.9	2462.9	2452.6	2452.6
27.5°	2353.6	2348.4	2348.4	2348.4	2343.2	2348.4	2343.2	2343.2
30°	2228.7	2228.7	2223.4	2223.4	2228.7	2223.4	2228.7	2233.8
32.5°	2093.2	2093.2	2098.5	2098.5	2103.7	2103.7	2103.7	2103.7
35°	1952.7	1963.0	1963.0	1968.3	1973.5	1978.7	1978.7	1983.8
37.5°	1822.5	1827.7	1832.8	1838.1	1848.5	1848.5	1848.5	1848.5
40°	1681.8	1687.1	1697.5	1692.3	1713.1	1718.3	1713.1	1713.1
42.5°	1536.1	1546.5	1551.6	1562.1	1567.3	1577.7	1582.9	1582.9
45°	1400.6	1405.9	1416.3	1426.7	1431.9	1447.6	1447.6	1447.6
47.5°	1260.1	1270.6	1275.7	1286.1	1291.4	1306.9	1312.2	1306.9
50°	1124.7	1135.1	1145.6	1145.6	1161.2	1166.4	1176.8	1182.0
52.5°	994.6	999.7	1010.2	1015.4	1025.8	1036.2	1041.4	1046.6
55°	869.6	874.7	885.2	885.2	900.8	906.0	916.5	916.5
57.5°	755.0	760.2	770.6	765.5	775.8	786.3	786.3	781.1
60°	645.6	645.6	645.6	656.1	661.3	666.6	671.7	671.7
62.5°	531.1	541.6	546.7	546.7	551.9	557.2	557.2	551.9
65°	427.0	437.4	442.5	442.5	447.8	447.8	447.8	453.0
67.5°	322.8	322.8	322.8	328.0	322.8	322.8	322.8	322.8
70°	203.1	203.1	203.1	203.1	197.8	203.1	203.1	208.3
72.5°	109.4	109.4	109.4	109.4	109.4	109.4	109.4	109.4
75°	46.8	46.8	46.8	52.1	46.8	46.8	46.8	46.8
77.5°	20.8	15.6	20.8	20.8	15.6	15.6	15.6	15.6
80°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
82.5°	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
85°	0.0	5.2	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)