

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: P593821

Luminaire Tested: **HC850D010-HM82555950-81WWWB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593821  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-18)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC850D010-HM82555950-81WWWB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5241.0 lumens  
Efficiency: N/A  
Efficacy: 109.2 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.09 / 1.18  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

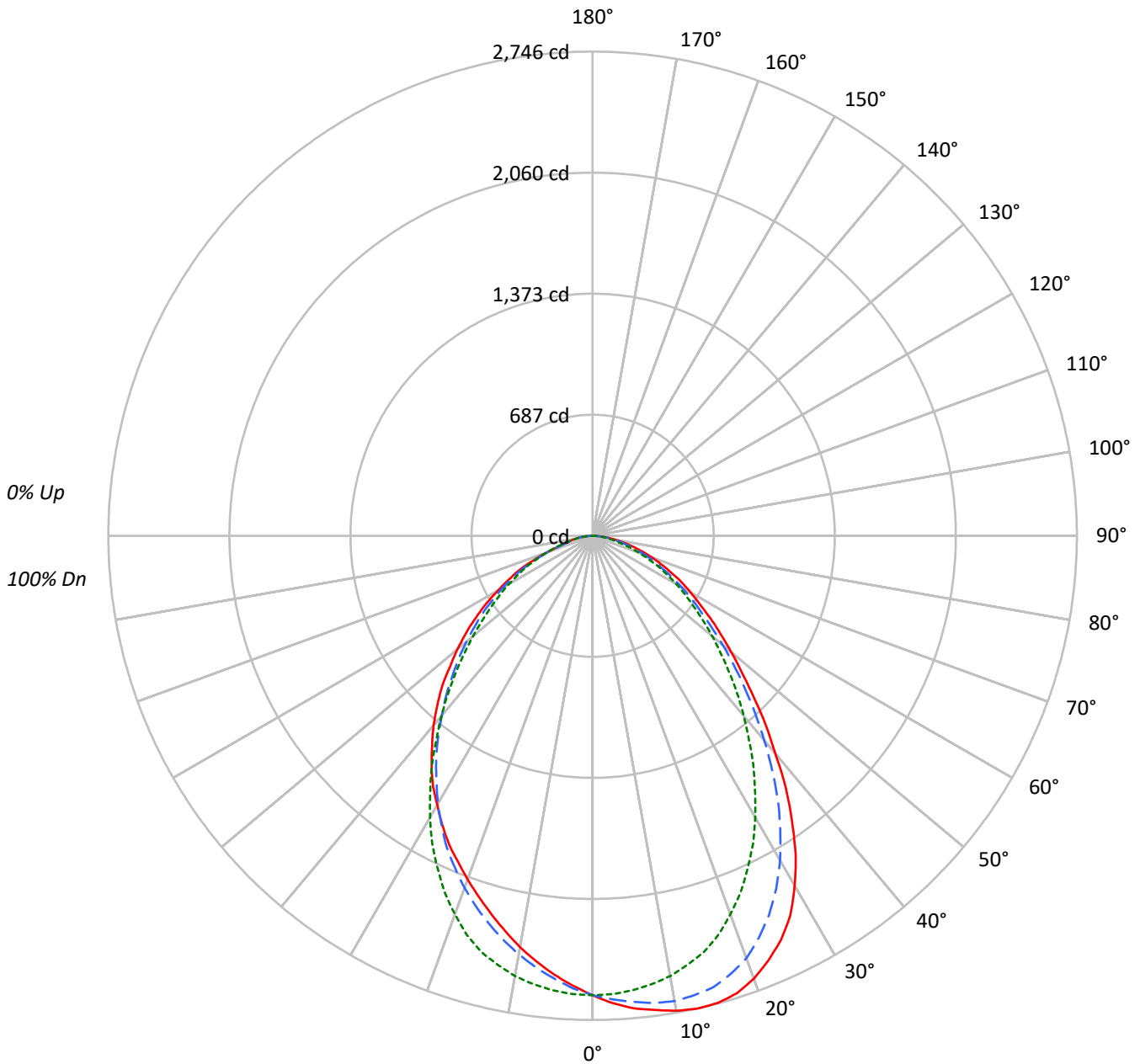
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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								
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87								
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75								
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65								
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57								
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40								
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37								
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

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

	0°	90°	180°
0°	80353	80353	80353
5°	83294	80088	77339
10°	85648	79388	74178
15°	87561	77991	70900
20°	87699	74944	68023
25°	86016	70777	65615
30°	81582	65634	62735
35°	74129	59779	59914
40°	64817	53638	56468
45°	56173	47778	52619
50°	49187	42442	47944
55°	43778	37606	43386
60°	39495	33784	38126
65°	35651	29711	33221
70°	32043	25028	24695
75°	28213	19849	18527
80°	23671	16444	17740
85°	18327	14400	15709



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	245.8	4.7
10°-20°	692.4	13.2
20°-30°	989.5	18.9
30°-40°	1051.4	20.1
40°-50°	905.2	17.3
50°-60°	676.8	12.9
60°-70°	431.7	8.2
70°-80°	196.5	3.7
80°-90°	51.6	1.0
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°	1927.8	36.8
0°-40°	2979.2	56.8
0°-60°	4561.2	87.0
0°-90°	5241.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5241.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2606	2606	2606	2606	2606	
5°	2691	2654	2587	2521	2498	258
15°	2743	2650	2443	2276	2221	773
25°	2528	2369	2080	1954	1928	1157
35°	1969	1832	1588	1547	1592	1226
45°	1288	1218	1096	1125	1207	1001
55°	814	748	700	759	807	732
65°	489	433	407	426	455	487
75°	237	204	167	152	156	252
85°	52	44	41	44	44	62
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°	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8
2.5°	2654.0	2646.5	2650.2	2646.5	2650.2	2650.2	2642.9	2642.9	2642.9	2642.9	2631.8
5°	2690.9	2687.3	2687.3	2683.6	2679.8	2683.6	2679.8	2676.2	2668.7	2665.1	2654.0
7.5°	2713.1	2713.1	2713.1	2713.1	2709.5	2705.8	2702.0	2694.7	2687.3	2679.8	2672.5
10°	2735.3	2739.1	2735.3	2731.7	2728.0	2720.6	2716.9	2709.5	2698.4	2687.3	2679.8
12.5°	2746.4	2746.4	2742.8	2742.8	2735.3	2731.7	2720.6	2709.5	2698.4	2687.3	2668.7
15°	2742.8	2742.8	2739.1	2735.3	2724.2	2720.6	2713.1	2702.0	2683.6	2668.7	2650.2
17.5°	2720.6	2716.9	2709.5	2709.5	2694.7	2690.9	2683.6	2668.7	2650.2	2628.0	2605.8
20°	2672.5	2672.5	2668.7	2665.1	2650.2	2639.1	2631.8	2613.2	2598.5	2572.5	2550.3
22.5°	2605.8	2613.2	2605.8	2598.5	2579.9	2576.2	2565.1	2542.9	2520.7	2491.1	2465.2
25°	2528.1	2524.3	2520.7	2513.2	2498.5	2491.1	2476.3	2454.1	2431.9	2398.6	2369.0
27.5°	2428.1	2413.4	2413.4	2398.6	2387.4	2376.3	2369.0	2346.8	2317.1	2291.2	2254.2
30°	2291.2	2294.9	2276.4	2272.7	2254.2	2246.8	2232.0	2209.8	2183.8	2154.2	2124.7
32.5°	2143.1	2132.0	2132.0	2117.2	2102.4	2091.3	2087.6	2061.8	2039.6	2009.9	1980.3
35°	1969.2	1969.2	1958.1	1954.3	1939.6	1932.1	1921.0	1906.3	1880.3	1854.4	1832.2
37.5°	1798.9	1791.5	1787.8	1780.4	1769.3	1758.2	1758.2	1732.2	1728.6	1699.0	1669.3
40°	1610.2	1617.5	1610.2	1599.1	1595.3	1588.0	1584.2	1569.4	1558.3	1532.4	1513.9
42.5°	1451.0	1443.6	1443.6	1439.9	1425.0	1425.0	1417.6	1410.3	1391.7	1384.3	1362.1
45°	1288.1	1295.5	1284.4	1288.1	1273.3	1273.3	1273.3	1258.5	1243.7	1232.6	1217.7
47.5°	1147.5	1151.1	1151.1	1140.0	1136.4	1136.4	1128.9	1121.5	1110.4	1095.6	1084.5
50°	1025.3	1029.0	1021.6	1017.8	1010.5	1006.7	1006.7	992.0	984.5	969.8	962.3
52.5°	914.3	914.3	910.5	910.5	899.4	899.4	892.1	881.0	873.6	866.1	847.6
55°	814.3	814.3	810.6	807.0	807.0	795.9	792.1	781.0	773.6	758.8	747.7
57.5°	718.1	721.7	718.1	714.4	710.6	707.0	699.5	688.4	681.1	670.0	662.6
60°	640.4	640.4	636.6	632.9	625.5	621.8	618.2	610.7	599.6	592.2	581.1
62.5°	566.4	562.6	558.9	555.3	547.8	547.8	540.4	533.1	522.0	514.5	507.1
65°	488.6	488.6	484.9	484.9	481.2	473.8	470.1	466.4	451.6	447.8	433.1
67.5°	418.3	422.0	414.5	414.5	407.2	407.2	403.4	392.3	388.7	381.2	373.8
70°	355.4	355.4	355.4	351.6	344.3	340.5	336.8	329.4	325.7	318.3	311.0
72.5°	292.4	292.4	288.7	288.7	285.0	281.3	277.6	270.2	270.2	262.8	255.4
75°	236.8	236.8	233.2	229.5	225.7	225.7	222.1	218.4	211.0	207.3	203.5
77.5°	181.4	181.4	181.4	177.7	173.9	173.9	173.9	166.6	159.2	159.2	155.5
80°	133.3	133.3	129.5	129.5	125.9	125.9	125.9	122.2	118.4	114.8	111.1
82.5°	88.8	88.8	88.8	88.8	85.1	85.1	85.1	81.5	77.7	77.7	77.7
85°	51.8	51.8	51.8	51.8	48.2	48.2	48.2	48.2	48.2	44.4	44.4
87.5°	22.2	18.5	22.2	18.5	22.2	18.5	22.2	18.5	18.5	18.5	18.5
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°	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8
2.5°	2635.4	2631.8	2628.0	2624.3	2624.3	2620.7	2613.2	2609.6	2605.8	2602.1	2602.1
5°	2650.2	2646.5	2639.1	2631.8	2628.0	2620.7	2613.2	2605.8	2598.5	2587.3	2583.6
7.5°	2661.3	2650.2	2642.9	2628.0	2624.3	2616.9	2605.8	2594.7	2579.9	2565.1	2554.0
10°	2661.3	2646.5	2635.4	2616.9	2609.6	2602.1	2587.3	2568.8	2550.3	2535.4	2517.0
12.5°	2654.0	2635.4	2616.9	2598.5	2587.3	2576.2	2554.0	2535.4	2513.2	2491.1	2476.3
15°	2628.0	2605.8	2583.6	2561.4	2550.3	2535.4	2513.2	2487.4	2465.2	2443.0	2417.0
17.5°	2579.9	2557.7	2531.8	2505.9	2491.1	2480.0	2446.7	2428.1	2394.8	2372.6	2350.4
20°	2517.0	2491.1	2457.8	2431.9	2413.4	2402.3	2376.3	2343.0	2317.1	2283.8	2261.5
22.5°	2435.6	2402.3	2369.0	2343.0	2324.6	2309.7	2276.4	2243.1	2220.9	2191.3	2165.3
25°	2339.3	2306.0	2272.7	2235.7	2217.1	2202.4	2172.7	2143.1	2113.6	2080.2	2058.0
27.5°	2224.6	2187.5	2158.0	2124.7	2106.2	2084.0	2050.7	2021.0	1991.4	1969.2	1939.6
30°	2098.7	2058.0	2028.4	1995.1	1976.5	1958.1	1924.8	1895.2	1869.2	1843.3	1828.5
32.5°	1947.0	1917.4	1887.7	1854.4	1839.7	1828.5	1795.2	1765.5	1736.0	1713.8	1702.6
35°	1802.6	1769.3	1743.3	1713.8	1695.3	1684.2	1654.6	1628.7	1613.8	1588.0	1573.1
37.5°	1650.9	1624.9	1595.3	1565.8	1554.7	1543.5	1521.3	1495.4	1473.2	1454.7	1447.2
40°	1491.6	1469.4	1443.6	1425.0	1413.9	1402.8	1384.3	1365.9	1351.0	1332.5	1325.2
42.5°	1339.9	1325.2	1303.0	1280.8	1269.7	1265.9	1243.7	1228.9	1221.5	1214.1	1206.6
45°	1203.0	1180.8	1166.0	1151.1	1140.0	1132.6	1121.5	1110.4	1103.1	1095.6	1088.2
47.5°	1069.8	1051.2	1036.4	1025.3	1014.2	1010.5	1003.1	992.0	984.5	984.5	984.5
50°	947.6	932.7	918.0	910.5	906.9	899.4	892.1	888.3	884.7	884.7	884.7
52.5°	840.3	825.4	814.3	807.0	807.0	799.5	792.1	788.4	788.4	788.4	788.4
55°	740.3	729.2	721.7	714.4	707.0	703.3	703.3	703.3	699.5	699.5	703.3
57.5°	651.5	644.0	632.9	625.5	621.8	621.8	618.2	614.4	618.2	621.8	625.5
60°	570.0	562.6	558.9	547.8	547.8	547.8	544.2	544.2	544.2	547.8	551.5
62.5°	496.0	492.3	484.9	481.2	477.5	477.5	473.8	473.8	473.8	473.8	477.5
65°	429.4	422.0	414.5	414.5	414.5	410.9	410.9	403.4	407.2	407.2	403.4
67.5°	366.5	359.0	355.4	351.6	347.9	347.9	344.3	340.5	336.8	336.8	336.8
70°	307.2	299.8	299.8	292.4	292.4	288.7	285.0	285.0	281.3	277.6	273.9
72.5°	247.9	244.3	240.6	236.8	236.8	236.8	233.2	229.5	225.7	222.1	214.6
75°	196.2	196.2	188.8	185.1	185.1	181.4	177.7	173.9	170.3	166.6	162.8
77.5°	151.7	148.1	140.6	137.0	137.0	137.0	133.3	129.5	125.9	122.2	118.4
80°	111.1	107.3	103.7	99.9	99.9	99.9	96.2	96.2	92.6	92.6	92.6
82.5°	74.0	74.0	70.4	70.4	70.4	70.4	66.6	66.6	66.6	66.6	66.6
85°	44.4	44.4	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
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):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8
2.5°	2594.7	2594.7	2587.3	2583.6	2579.9	2583.6	2576.2	2572.5	2568.8	2568.8	2565.1
5°	2572.5	2568.8	2554.0	2550.3	2546.5	2542.9	2535.4	2528.1	2520.7	2517.0	2513.2
7.5°	2542.9	2531.8	2517.0	2513.2	2509.6	2498.5	2487.4	2480.0	2468.9	2465.2	2457.8
10°	2502.1	2487.4	2476.3	2465.2	2457.8	2446.7	2435.6	2424.5	2409.7	2405.9	2394.8
12.5°	2454.1	2435.6	2413.4	2409.7	2398.6	2383.7	2369.0	2357.9	2346.8	2339.3	2328.2
15°	2394.8	2376.3	2354.1	2343.0	2331.9	2320.8	2302.3	2287.5	2276.4	2265.3	2254.2
17.5°	2324.6	2302.3	2283.8	2272.7	2265.3	2246.8	2232.0	2213.5	2202.4	2191.3	2180.2
20°	2239.3	2220.9	2194.9	2183.8	2180.2	2165.3	2146.9	2139.4	2124.7	2113.6	2106.2
22.5°	2143.1	2124.7	2102.4	2095.1	2080.2	2072.9	2054.3	2046.9	2039.6	2028.4	2024.7
25°	2035.8	2017.3	1998.8	1995.1	1984.0	1976.5	1965.4	1954.3	1954.3	1943.2	1943.2
27.5°	1924.8	1906.3	1891.4	1884.1	1880.3	1873.0	1861.9	1858.1	1854.4	1850.8	1850.8
30°	1806.3	1784.1	1776.6	1773.0	1769.3	1761.9	1758.2	1750.8	1754.4	1758.2	1754.4
32.5°	1680.4	1673.1	1658.2	1650.9	1654.6	1650.9	1643.5	1650.9	1647.1	1654.6	1658.2
35°	1558.3	1550.9	1543.5	1543.5	1536.1	1536.1	1536.1	1539.8	1547.2	1550.9	1558.3
37.5°	1439.9	1428.8	1425.0	1421.4	1425.0	1425.0	1425.0	1432.5	1439.9	1447.2	1458.3
40°	1314.1	1306.6	1306.6	1306.6	1306.6	1317.7	1314.1	1321.4	1328.8	1339.9	1351.0
42.5°	1195.5	1195.5	1199.3	1199.3	1199.3	1199.3	1206.6	1217.7	1228.9	1240.0	1251.1
45°	1084.5	1084.5	1084.5	1092.0	1092.0	1095.6	1110.4	1117.8	1125.3	1136.4	1147.5
47.5°	980.9	980.9	984.5	988.3	992.0	999.4	1006.7	1017.8	1029.0	1036.4	1047.5
50°	884.7	888.3	895.8	903.2	903.2	906.9	918.0	925.4	932.7	943.9	947.6
52.5°	792.1	799.5	807.0	810.6	814.3	821.7	825.4	836.5	840.3	851.4	855.0
55°	707.0	710.6	721.7	725.5	725.5	732.8	740.3	747.7	758.8	758.8	766.2
57.5°	629.3	632.9	640.4	644.0	640.4	651.5	655.1	662.6	666.2	673.7	677.3
60°	551.5	558.9	562.6	562.6	566.4	570.0	577.4	577.4	584.9	592.2	592.2
62.5°	477.5	481.2	484.9	488.6	492.3	488.6	499.7	499.7	507.1	510.9	518.2
65°	407.2	410.9	410.9	414.5	414.5	418.3	418.3	422.0	425.6	433.1	436.7
67.5°	336.8	336.8	336.8	340.5	336.8	340.5	340.5	344.3	344.3	351.6	355.4
70°	273.9	270.2	266.5	266.5	266.5	266.5	262.8	266.5	266.5	270.2	270.2
72.5°	211.0	207.3	203.5	199.9	199.9	196.2	192.4	196.2	196.2	199.9	199.9
75°	159.2	151.7	151.7	151.7	148.1	148.1	148.1	151.7	151.7	151.7	155.5
77.5°	118.4	118.4	114.8	114.8	114.8	118.4	118.4	122.2	122.2	122.2	122.2
80°	88.8	92.6	92.6	92.6	92.6	96.2	96.2	96.2	96.2	99.9	99.9
82.5°	66.6	66.6	66.6	66.6	70.4	70.4	70.4	70.4	70.4	70.4	70.4
85°	40.7	44.4	44.4	40.7	44.4	44.4	44.4	44.4	44.4	44.4	44.4
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
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: P593821

CATALOG NUMBER: HC850D010-HM82555950-81WWWB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8	2605.8
2.5°	2561.4	2561.4	2561.4	2561.4	2557.7	2557.7	2557.7	2554.0
5°	2505.9	2505.9	2505.9	2498.5	2502.1	2502.1	2494.8	2498.5
7.5°	2450.3	2446.7	2443.0	2443.0	2439.2	2435.6	2431.9	2435.6
10°	2387.4	2376.3	2376.3	2372.6	2372.6	2365.2	2365.2	2369.0
12.5°	2317.1	2309.7	2309.7	2306.0	2302.3	2298.6	2294.9	2294.9
15°	2246.8	2239.3	2235.7	2232.0	2228.2	2220.9	2224.6	2220.9
17.5°	2176.4	2165.3	2165.3	2161.6	2158.0	2150.5	2150.5	2146.9
20°	2095.1	2091.3	2084.0	2087.6	2084.0	2076.5	2072.9	2072.9
22.5°	2013.6	2013.6	2009.9	2009.9	2006.2	2002.5	1998.8	1998.8
25°	1935.9	1932.1	1935.9	1935.9	1924.8	1924.8	1924.8	1928.5
27.5°	1847.0	1850.8	1847.0	1847.0	1847.0	1847.0	1850.8	1847.0
30°	1758.2	1758.2	1758.2	1761.9	1769.3	1765.5	1765.5	1761.9
32.5°	1662.0	1665.7	1665.7	1669.3	1673.1	1680.4	1680.4	1684.2
35°	1565.8	1573.1	1576.9	1573.1	1584.2	1584.2	1591.6	1591.6
37.5°	1465.8	1469.4	1476.9	1480.5	1488.0	1491.6	1495.4	1495.4
40°	1358.4	1373.2	1377.0	1380.6	1391.7	1391.7	1395.4	1402.8
42.5°	1258.5	1273.3	1277.0	1280.8	1288.1	1299.2	1295.5	1303.0
45°	1162.2	1173.3	1177.1	1180.8	1191.9	1195.5	1195.5	1206.6
47.5°	1058.6	1066.0	1069.8	1077.1	1084.5	1092.0	1099.3	1095.6
50°	955.0	966.1	973.4	977.2	988.3	992.0	995.6	999.4
52.5°	862.5	869.9	873.6	877.2	888.3	892.1	895.8	903.2
55°	773.6	777.3	784.7	781.0	792.1	795.9	799.5	807.0
57.5°	684.8	688.4	692.2	692.2	699.5	707.0	710.6	714.4
60°	599.6	607.1	610.7	610.7	610.7	618.2	618.2	618.2
62.5°	522.0	522.0	525.6	525.6	533.1	533.1	533.1	533.1
65°	440.5	444.2	447.8	447.8	455.3	451.6	458.9	455.3
67.5°	355.4	355.4	362.7	362.7	359.0	362.7	362.7	362.7
70°	270.2	270.2	273.9	273.9	273.9	273.9	273.9	273.9
72.5°	199.9	199.9	199.9	203.5	199.9	199.9	203.5	199.9
75°	155.5	155.5	155.5	155.5	155.5	155.5	155.5	155.5
77.5°	122.2	122.2	125.9	125.9	125.9	125.9	125.9	125.9
80°	99.9	99.9	99.9	99.9	103.7	99.9	99.9	99.9
82.5°	74.0	70.4	74.0	70.4	74.0	74.0	74.0	74.0
85°	44.4	44.4	44.4	44.4	44.4	44.4	44.4	44.4
87.5°	18.5	18.5	18.5	18.5	18.5	18.5	18.5	18.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By 670245859 / DESKTOP-HRDQ47P





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















(END OF REPORT)