

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: P585050

Luminaire Tested: **HC855D010-HM82555940-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585050
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: HC855D010-HM82555940-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5486.1 lumens
Efficiency: N/A
Efficacy: 105.5 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

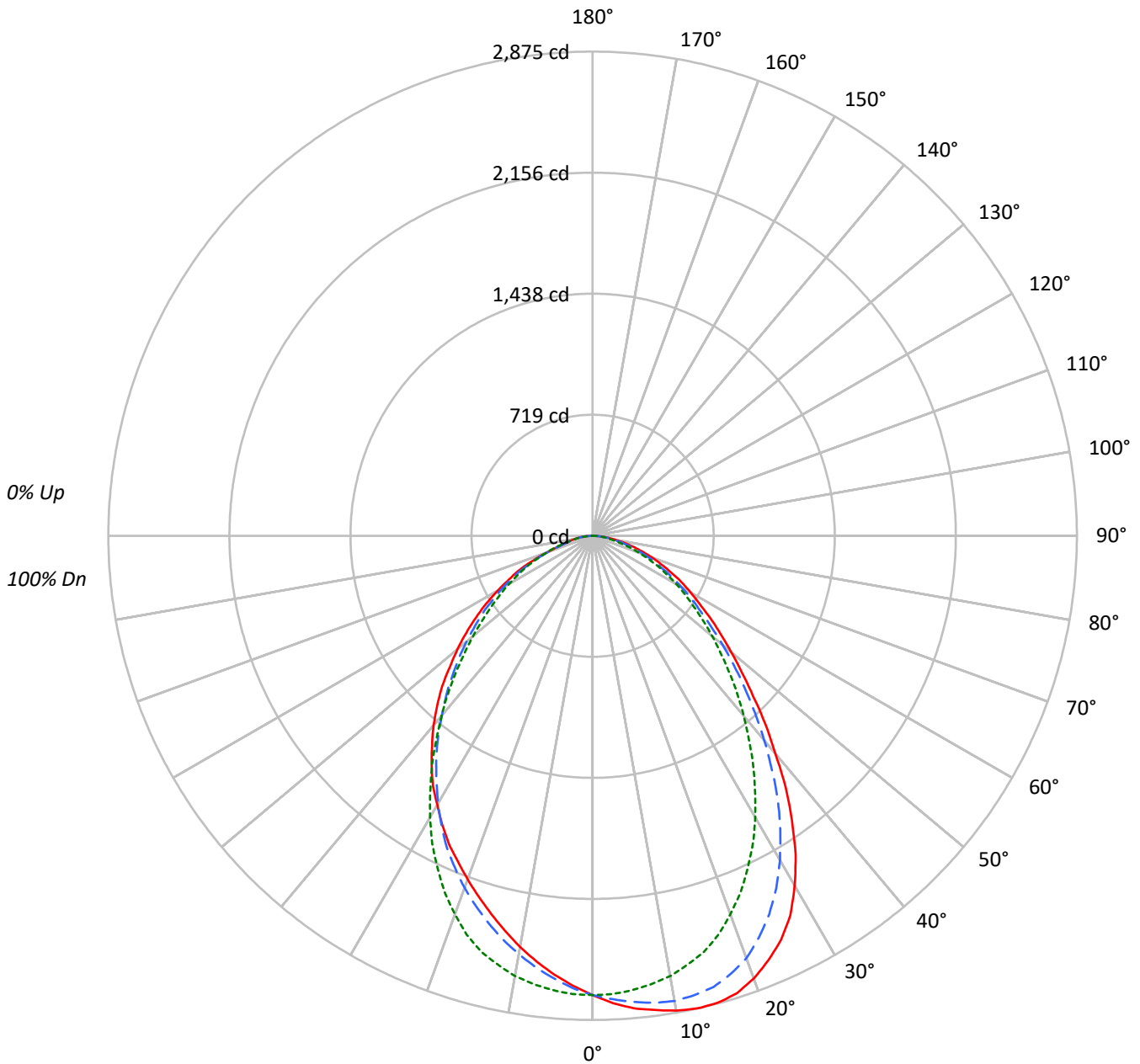
Input Watts (W): 52
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

Luminous Intensity Polar Plot





TEST NUMBER: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

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°	84112	84112	84112
5°	87192	83833	80954
10°	89656	83105	77644
15°	91654	81636	74217
20°	91798	78448	71199
25°	90041	74087	68684
30°	85399	68707	65669
35°	77596	62568	62719
40°	67848	56146	59109
45°	58803	50015	55083
50°	51484	44423	50184
55°	45826	39370	45412
60°	41339	35369	39908
65°	37322	31105	34768
70°	33539	26191	25849
75°	29547	20778	19384
80°	24772	17190	18593
85°	19212	15108	16452



TEST NUMBER: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	257.3	4.7
10°-20°	724.8	13.2
20°-30°	1035.8	18.9
30°-40°	1100.6	20.1
40°-50°	947.6	17.3
50°-60°	708.5	12.9
60°-70°	451.9	8.2
70°-80°	205.7	3.7
80°-90°	54.0	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°	2017.9	36.8
0°-40°	3118.5	56.8
0°-60°	4774.6	87.0
0°-90°	5486.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5486.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2728	2728	2728	2728	2728	
5°	2817	2778	2708	2638	2615	270
15°	2871	2774	2557	2383	2325	809
25°	2646	2480	2178	2046	2019	1211
35°	2061	1918	1662	1620	1666	1284
45°	1348	1275	1147	1178	1263	1048
55°	852	783	732	794	845	766
65°	512	453	426	446	476	510
75°	248	213	174	159	163	264
85°	54	46	43	46	46	65
90°	0	0	0	0	0	



TEST NUMBER: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7
2.5°	2778.1	2770.3	2774.1	2770.3	2774.1	2774.1	2766.4	2766.4	2766.4	2766.4	2754.8
5°	2816.8	2812.9	2812.9	2809.0	2805.2	2809.0	2805.2	2801.3	2793.6	2789.7	2778.1
7.5°	2840.0	2840.0	2840.0	2840.0	2836.1	2832.3	2828.4	2820.7	2812.9	2805.2	2797.4
10°	2863.3	2867.2	2863.3	2859.4	2855.6	2847.8	2844.0	2836.1	2824.5	2812.9	2805.2
12.5°	2874.9	2874.9	2871.0	2871.0	2863.3	2859.4	2847.8	2836.1	2824.5	2812.9	2793.6
15°	2871.0	2871.0	2867.2	2863.3	2851.7	2847.8	2840.0	2828.4	2809.0	2793.6	2774.1
17.5°	2847.8	2844.0	2836.1	2836.1	2820.7	2816.8	2809.0	2793.6	2774.1	2750.9	2727.7
20°	2797.4	2797.4	2793.6	2789.7	2774.1	2762.5	2754.8	2735.4	2720.0	2692.8	2669.6
22.5°	2727.7	2735.4	2727.7	2720.0	2700.5	2696.7	2685.1	2661.8	2638.5	2607.6	2580.5
25°	2646.4	2642.4	2638.5	2630.8	2615.3	2607.6	2592.1	2568.8	2545.6	2510.7	2479.7
27.5°	2541.7	2526.2	2526.2	2510.7	2499.1	2487.5	2479.7	2456.5	2425.5	2398.4	2359.6
30°	2398.4	2402.2	2382.8	2378.9	2359.6	2351.9	2336.4	2313.1	2286.0	2255.0	2224.0
32.5°	2243.3	2231.7	2231.7	2216.3	2200.8	2189.2	2185.2	2158.1	2134.9	2103.9	2072.9
35°	2061.3	2061.3	2049.6	2045.7	2030.3	2022.5	2010.9	1995.4	1968.3	1941.2	1917.9
37.5°	1883.1	1875.3	1871.4	1863.7	1852.0	1840.4	1840.4	1813.3	1809.5	1778.4	1747.5
40°	1685.5	1693.2	1685.5	1673.9	1670.0	1662.1	1658.3	1642.8	1631.2	1604.1	1584.7
42.5°	1518.8	1511.1	1511.1	1507.2	1491.7	1491.7	1484.0	1476.3	1456.8	1449.1	1425.9
45°	1348.4	1356.1	1344.5	1348.4	1332.8	1332.8	1332.8	1317.3	1301.9	1290.3	1274.8
47.5°	1201.1	1204.9	1204.9	1193.3	1189.5	1189.5	1181.7	1174.0	1162.4	1146.9	1135.2
50°	1073.2	1077.1	1069.3	1065.5	1057.7	1053.9	1053.9	1038.4	1030.7	1015.2	1007.3
52.5°	957.1	957.1	953.2	953.2	941.5	941.5	933.7	922.1	914.4	906.7	887.3
55°	852.4	852.4	848.5	844.7	844.7	833.1	829.2	817.6	809.7	794.3	782.7
57.5°	751.7	755.6	751.7	747.7	743.9	740.0	732.3	720.7	712.9	701.3	693.6
60°	670.3	670.3	666.4	662.5	654.8	650.9	647.1	639.3	627.7	619.9	608.3
62.5°	592.8	588.9	585.1	581.2	573.5	573.5	565.7	558.0	546.3	538.5	530.8
65°	511.5	511.5	507.6	507.6	503.7	496.0	492.1	488.1	472.7	468.8	453.3
67.5°	437.9	441.7	434.0	434.0	426.3	426.3	422.3	410.7	406.8	399.1	391.3
70°	372.0	372.0	372.0	368.1	360.4	356.4	352.5	344.8	340.9	333.2	325.5
72.5°	306.1	306.1	302.3	302.3	298.4	294.5	290.5	282.8	282.8	275.1	267.3
75°	248.0	248.0	244.1	240.3	236.4	236.4	232.5	228.7	220.8	216.9	213.1
77.5°	189.9	189.9	189.9	186.0	182.1	182.1	182.1	174.4	166.7	166.7	162.7
80°	139.5	139.5	135.6	135.6	131.7	131.7	131.7	127.9	124.0	120.1	116.3
82.5°	92.9	92.9	92.9	92.9	89.1	89.1	89.1	85.2	81.3	81.3	81.3
85°	54.3	54.3	54.3	54.3	50.4	50.4	50.4	50.4	50.4	46.5	46.5
87.5°	23.2	19.3	23.2	19.3	23.2	19.3	23.2	19.3	19.3	19.3	19.3
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: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7
2.5°	2758.7	2754.8	2750.9	2747.1	2747.1	2743.2	2735.4	2731.6	2727.7	2723.8	2723.8
5°	2774.1	2770.3	2762.5	2754.8	2750.9	2743.2	2735.4	2727.7	2720.0	2708.3	2704.4
7.5°	2785.8	2774.1	2766.4	2750.9	2747.1	2739.3	2727.7	2716.1	2700.5	2685.1	2673.4
10°	2785.8	2770.3	2758.7	2739.3	2731.6	2723.8	2708.3	2688.9	2669.6	2654.1	2634.7
12.5°	2778.1	2758.7	2739.3	2720.0	2708.3	2696.7	2673.4	2654.1	2630.8	2607.6	2592.1
15°	2750.9	2727.7	2704.4	2681.2	2669.6	2654.1	2630.8	2603.7	2580.5	2557.2	2530.1
17.5°	2700.5	2677.3	2650.2	2623.1	2607.6	2596.0	2561.1	2541.7	2506.8	2483.6	2460.4
20°	2634.7	2607.6	2572.7	2545.6	2526.2	2514.6	2487.5	2452.6	2425.5	2390.6	2367.3
22.5°	2549.5	2514.6	2479.7	2452.6	2433.2	2417.7	2382.8	2348.0	2324.8	2293.7	2266.6
25°	2448.7	2413.9	2378.9	2340.2	2320.9	2305.3	2274.4	2243.3	2212.4	2177.5	2154.3
27.5°	2328.6	2289.9	2258.9	2224.0	2204.6	2181.3	2146.5	2115.5	2084.5	2061.3	2030.3
30°	2196.9	2154.3	2123.3	2088.4	2069.0	2049.6	2014.8	1983.7	1956.7	1929.6	1914.0
32.5°	2038.0	2007.0	1976.0	1941.2	1925.6	1914.0	1879.2	1848.1	1817.2	1793.9	1782.3
35°	1886.9	1852.0	1824.9	1793.9	1774.5	1762.9	1732.0	1704.8	1689.3	1662.1	1646.7
37.5°	1728.0	1700.9	1670.0	1638.9	1627.3	1615.7	1592.4	1565.3	1542.1	1522.7	1514.9
40°	1561.5	1538.2	1511.1	1491.7	1480.1	1468.4	1449.1	1429.7	1414.3	1394.8	1387.1
42.5°	1402.5	1387.1	1363.9	1340.7	1328.9	1325.1	1301.9	1286.4	1278.7	1270.8	1263.1
45°	1259.2	1236.0	1220.5	1204.9	1193.3	1185.6	1174.0	1162.4	1154.7	1146.9	1139.1
47.5°	1119.7	1100.4	1084.9	1073.2	1061.6	1057.7	1050.0	1038.4	1030.7	1030.7	1030.7
50°	991.9	976.4	960.9	953.2	949.3	941.5	933.7	929.9	926.0	926.0	926.0
52.5°	879.5	864.0	852.4	844.7	844.7	836.9	829.2	825.3	825.3	825.3	825.3
55°	774.9	763.3	755.6	747.7	740.0	736.1	736.1	736.1	732.3	732.3	736.1
57.5°	681.9	674.1	662.5	654.8	650.9	650.9	647.1	643.2	647.1	650.9	654.8
60°	596.7	588.9	585.1	573.5	573.5	573.5	569.6	569.6	569.6	573.5	577.3
62.5°	519.2	515.3	507.6	503.7	499.9	499.9	496.0	496.0	496.0	496.0	499.9
65°	449.5	441.7	434.0	434.0	434.0	430.1	430.1	422.3	426.3	426.3	422.3
67.5°	383.6	375.9	372.0	368.1	364.3	364.3	360.4	356.4	352.5	352.5	352.5
70°	321.6	313.9	313.9	306.1	306.1	302.3	298.4	298.4	294.5	290.5	286.7
72.5°	259.6	255.7	251.9	248.0	248.0	248.0	244.1	240.3	236.4	232.5	224.7
75°	205.3	205.3	197.6	193.7	193.7	189.9	186.0	182.1	178.3	174.4	170.5
77.5°	158.8	154.9	147.2	143.3	143.3	143.3	139.5	135.6	131.7	127.9	124.0
80°	116.3	112.4	108.5	104.7	104.7	104.7	100.8	100.8	96.8	96.8	96.8
82.5°	77.5	77.5	73.6	73.6	73.6	73.6	69.7	69.7	69.7	69.7	69.7
85°	46.5	46.5	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7	42.7
87.5°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
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: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7
2.5°	2716.1	2716.1	2708.3	2704.4	2700.5	2704.4	2696.7	2692.8	2688.9	2688.9	2685.1
5°	2692.8	2688.9	2673.4	2669.6	2665.7	2661.8	2654.1	2646.4	2638.5	2634.7	2630.8
7.5°	2661.8	2650.2	2634.7	2630.8	2626.9	2615.3	2603.7	2596.0	2584.4	2580.5	2572.7
10°	2619.2	2603.7	2592.1	2580.5	2572.7	2561.1	2549.5	2537.8	2522.4	2518.5	2506.8
12.5°	2568.8	2549.5	2526.2	2522.4	2510.7	2495.2	2479.7	2468.1	2456.5	2448.7	2437.1
15°	2506.8	2487.5	2464.2	2452.6	2440.9	2429.3	2410.0	2394.5	2382.8	2371.2	2359.6
17.5°	2433.2	2410.0	2390.6	2378.9	2371.2	2351.9	2336.4	2316.9	2305.3	2293.7	2282.1
20°	2344.1	2324.8	2297.6	2286.0	2282.1	2266.6	2247.2	2239.5	2224.0	2212.4	2204.6
22.5°	2243.3	2224.0	2200.8	2193.0	2177.5	2169.7	2150.4	2142.7	2134.9	2123.3	2119.3
25°	2131.0	2111.6	2092.3	2088.4	2076.8	2069.0	2057.4	2045.7	2045.7	2034.1	2034.1
27.5°	2014.8	1995.4	1979.9	1972.1	1968.3	1960.5	1948.9	1945.1	1941.2	1937.3	1937.3
30°	1890.8	1867.6	1859.7	1855.9	1852.0	1844.3	1840.4	1832.7	1836.5	1840.4	1836.5
32.5°	1759.1	1751.3	1735.8	1728.0	1732.0	1728.0	1720.3	1728.0	1724.1	1732.0	1735.8
35°	1631.2	1623.5	1615.7	1615.7	1608.0	1608.0	1608.0	1611.9	1619.6	1623.5	1631.2
37.5°	1507.2	1495.6	1491.7	1487.9	1491.7	1491.7	1491.7	1499.5	1507.2	1514.9	1526.5
40°	1375.5	1367.7	1367.7	1367.7	1367.7	1379.3	1375.5	1383.2	1390.9	1402.5	1414.3
42.5°	1251.5	1251.5	1255.3	1255.3	1255.3	1255.3	1263.1	1274.8	1286.4	1298.0	1309.6
45°	1135.2	1135.2	1135.2	1143.1	1143.1	1146.9	1162.4	1170.1	1177.9	1189.5	1201.1
47.5°	1026.8	1026.8	1030.7	1034.5	1038.4	1046.1	1053.9	1065.5	1077.1	1084.9	1096.5
50°	926.0	929.9	937.6	945.3	945.3	949.3	960.9	968.7	976.4	988.0	991.9
52.5°	829.2	836.9	844.7	848.5	852.4	860.1	864.0	875.6	879.5	891.2	895.1
55°	740.0	743.9	755.6	759.5	759.5	767.2	774.9	782.7	794.3	794.3	802.0
57.5°	658.7	662.5	670.3	674.1	670.3	681.9	685.9	693.6	697.5	705.2	709.1
60°	577.3	585.1	588.9	588.9	592.8	596.7	604.4	604.4	612.1	619.9	619.9
62.5°	499.9	503.7	507.6	511.5	515.3	511.5	523.1	523.1	530.8	534.7	542.4
65°	426.3	430.1	430.1	434.0	434.0	437.9	437.9	441.7	445.6	453.3	457.2
67.5°	352.5	352.5	352.5	356.4	352.5	356.4	356.4	360.4	360.4	368.1	372.0
70°	286.7	282.8	278.9	278.9	278.9	278.9	275.1	278.9	278.9	282.8	282.8
72.5°	220.8	216.9	213.1	209.2	209.2	205.3	201.5	205.3	205.3	209.2	209.2
75°	166.7	158.8	158.8	158.8	154.9	154.9	154.9	158.8	158.8	158.8	162.7
77.5°	124.0	124.0	120.1	120.1	120.1	124.0	124.0	127.9	127.9	127.9	127.9
80°	92.9	96.8	96.8	96.8	96.8	100.8	100.8	100.8	100.8	104.7	104.7
82.5°	69.7	69.7	69.7	69.7	73.6	73.6	73.6	73.6	73.6	73.6	73.6
85°	42.7	46.5	46.5	42.7	46.5	46.5	46.5	46.5	46.5	46.5	46.5
87.5°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
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: P585050

CATALOG NUMBER: HC855D010-HM82555940-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7	2727.7
2.5°	2681.2	2681.2	2681.2	2681.2	2677.3	2677.3	2677.3	2673.4
5°	2623.1	2623.1	2623.1	2615.3	2619.2	2619.2	2611.5	2615.3
7.5°	2564.9	2561.1	2557.2	2557.2	2553.3	2549.5	2545.6	2549.5
10°	2499.1	2487.5	2487.5	2483.6	2483.6	2475.8	2475.8	2479.7
12.5°	2425.5	2417.7	2417.7	2413.9	2410.0	2406.1	2402.2	2402.2
15°	2351.9	2344.1	2340.2	2336.4	2332.5	2324.8	2328.6	2324.8
17.5°	2278.3	2266.6	2266.6	2262.8	2258.9	2251.1	2251.1	2247.2
20°	2193.0	2189.2	2181.3	2185.2	2181.3	2173.6	2169.7	2169.7
22.5°	2107.7	2107.7	2103.9	2103.9	2100.0	2096.1	2092.3	2092.3
25°	2026.4	2022.5	2026.4	2026.4	2014.8	2014.8	2014.8	2018.7
27.5°	1933.4	1937.3	1933.4	1933.4	1933.4	1933.4	1937.3	1933.4
30°	1840.4	1840.4	1840.4	1844.3	1852.0	1848.1	1848.1	1844.3
32.5°	1739.7	1743.6	1743.6	1747.5	1751.3	1759.1	1759.1	1762.9
35°	1638.9	1646.7	1650.5	1646.7	1658.3	1658.3	1666.1	1666.1
37.5°	1534.3	1538.2	1546.0	1549.9	1557.6	1561.5	1565.3	1565.3
40°	1422.0	1437.5	1441.3	1445.2	1456.8	1456.8	1460.7	1468.4
42.5°	1317.3	1332.8	1336.7	1340.7	1348.4	1360.0	1356.1	1363.9
45°	1216.7	1228.3	1232.1	1236.0	1247.6	1251.5	1251.5	1263.1
47.5°	1108.1	1115.9	1119.7	1127.5	1135.2	1143.1	1150.8	1146.9
50°	999.6	1011.2	1019.1	1022.9	1034.5	1038.4	1042.3	1046.1
52.5°	902.8	910.5	914.4	918.3	929.9	933.7	937.6	945.3
55°	809.7	813.6	821.5	817.6	829.2	833.1	836.9	844.7
57.5°	716.8	720.7	724.5	724.5	732.3	740.0	743.9	747.7
60°	627.7	635.5	639.3	639.3	639.3	647.1	647.1	647.1
62.5°	546.3	546.3	550.1	550.1	558.0	558.0	558.0	558.0
65°	461.1	464.9	468.8	468.8	476.5	472.7	480.4	476.5
67.5°	372.0	372.0	379.7	379.7	375.9	379.7	379.7	379.7
70°	282.8	282.8	286.7	286.7	286.7	286.7	286.7	286.7
72.5°	209.2	209.2	209.2	213.1	209.2	209.2	213.1	209.2
75°	162.7	162.7	162.7	162.7	162.7	162.7	162.7	162.7
77.5°	127.9	127.9	131.7	131.7	131.7	131.7	131.7	131.7
80°	104.7	104.7	104.7	104.7	108.5	104.7	104.7	104.7
82.5°	77.5	73.6	77.5	73.6	77.5	77.5	77.5	77.5
85°	46.5	46.5	46.5	46.5	46.5	46.5	46.5	46.5
87.5°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3
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)