

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: P585167

Luminaire Tested: **HC860D010-HM86080935-81WWBB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585167
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: HC860D010-HM86080935-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4602.6 lumens
Efficiency: N/A
Efficacy: 82.2 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

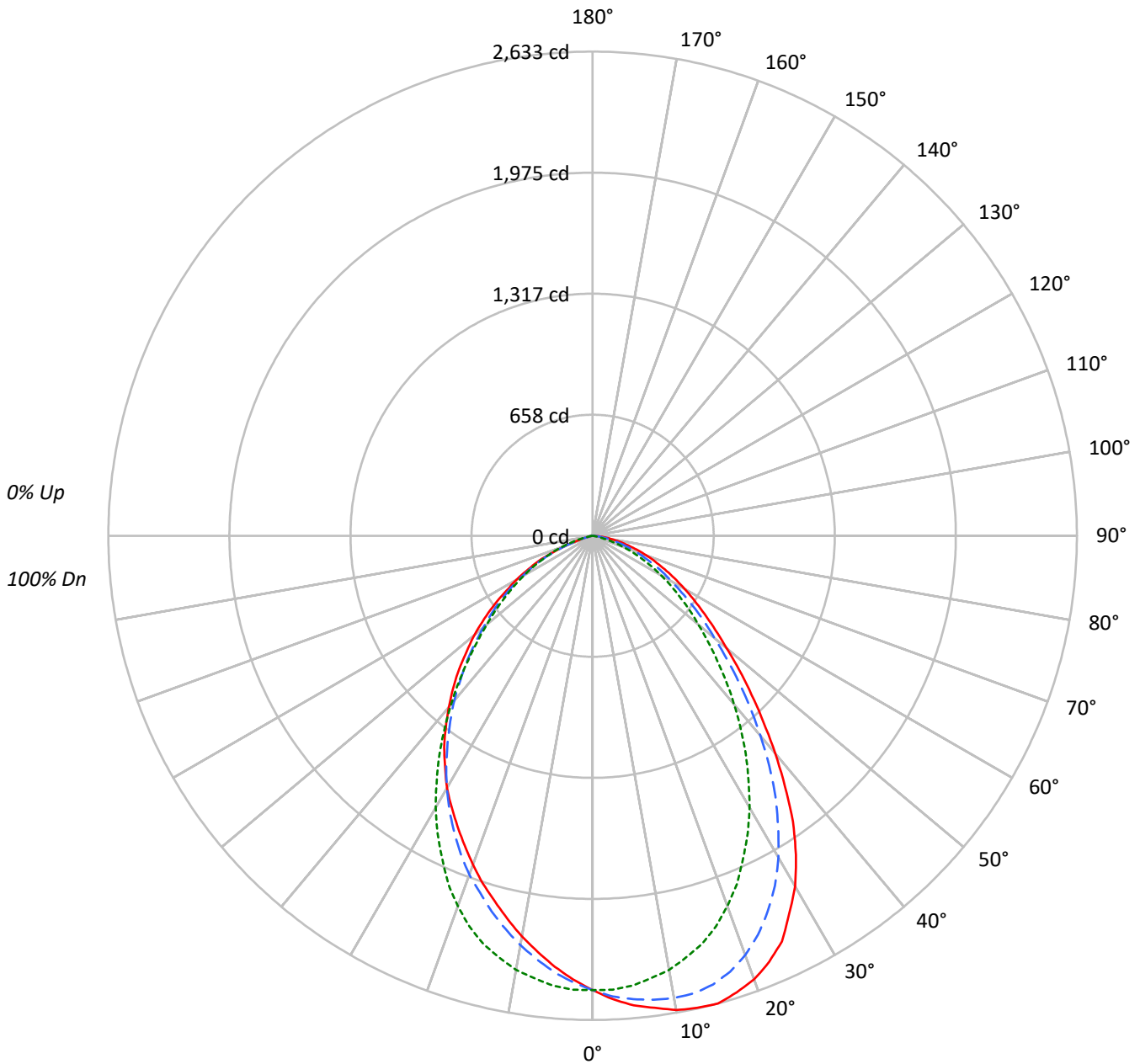
Input Watts (W): 56
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59																			
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53																			
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47																			
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43																			
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39																			
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	76193	76193	76193
5°	79345	76029	72826
10°	81997	75058	69278
15°	84069	73339	65677
20°	84237	70297	62421
25°	82815	65850	59192
30°	78381	60756	56419
35°	71467	54644	52977
40°	62144	48172	48913
45°	53312	41716	44778
50°	45536	35970	40220
55°	39913	30977	34950
60°	35536	26427	29387
65°	31535	21561	23444
70°	27976	15985	13326
75°	23316	8352	3956
80°	18379	2628	657
85°	13055	1309	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.8	5.1
10°-20°	652.6	14.2
20°-30°	923.6	20.1
30°-40°	966.3	21.0
40°-50°	806.0	17.5
50°-60°	571.6	12.4
60°-70°	329.2	7.2
70°-80°	105.9	2.3
80°-90°	14.6	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°	1809.1	39.3
0°-40°	2775.4	60.3
0°-60°	4152.9	90.2
0°-90°	4602.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4602.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2471	2471	2471	2471	2471	
5°	2563	2530	2456	2382	2353	246
15°	2633	2526	2297	2116	2057	741
25°	2434	2253	1935	1780	1740	1111
35°	1898	1732	1452	1374	1407	1177
45°	1222	1123	957	968	1027	947
55°	742	665	576	606	650	671
65°	432	362	296	296	321	432
75°	196	144	70	33	33	212
85°	37	18	4	0	0	46
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°	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9
2.5°	2522.6	2518.9	2515.2	2518.9	2515.2	2518.9	2515.2	2515.2	2511.5	2507.8	2507.8
5°	2563.3	2559.6	2559.6	2559.6	2555.9	2552.2	2552.2	2548.6	2541.2	2537.5	2530.0
7.5°	2589.2	2592.8	2592.8	2592.8	2585.5	2585.5	2578.1	2570.7	2563.3	2555.9	2544.9
10°	2618.7	2618.7	2615.0	2611.3	2603.9	2600.2	2596.5	2589.2	2578.1	2563.3	2552.2
12.5°	2629.8	2629.8	2626.1	2618.7	2615.0	2611.3	2607.6	2596.5	2581.8	2563.3	2548.6
15°	2633.4	2626.1	2622.4	2618.7	2611.3	2600.2	2600.2	2585.5	2567.0	2544.9	2526.3
17.5°	2603.9	2607.6	2600.2	2592.8	2581.8	2574.4	2563.3	2552.2	2530.0	2504.1	2485.7
20°	2567.0	2563.3	2559.6	2548.6	2533.8	2530.0	2518.9	2500.5	2482.0	2452.5	2426.6
22.5°	2507.8	2504.1	2496.8	2489.4	2474.6	2467.2	2456.2	2434.0	2408.2	2378.7	2349.0
25°	2434.0	2426.6	2415.6	2400.8	2389.7	2382.3	2367.5	2345.3	2315.8	2282.6	2253.1
27.5°	2315.8	2326.9	2319.5	2297.3	2286.3	2271.5	2267.8	2238.3	2212.5	2179.1	2145.9
30°	2201.3	2201.3	2190.2	2179.1	2160.7	2149.6	2134.8	2112.7	2086.8	2046.2	2020.3
32.5°	2057.3	2053.6	2038.7	2035.1	2020.3	1998.2	1994.5	1964.9	1939.1	1909.6	1876.2
35°	1898.5	1891.1	1876.2	1865.2	1857.8	1846.7	1835.6	1809.8	1784.0	1754.4	1732.3
37.5°	1717.5	1717.5	1713.7	1695.3	1687.9	1680.5	1669.4	1643.6	1628.8	1599.3	1577.2
40°	1543.8	1540.1	1529.1	1525.4	1518.0	1506.9	1499.5	1484.8	1462.6	1440.5	1418.3
42.5°	1373.9	1377.6	1362.9	1366.5	1351.8	1344.4	1340.7	1318.6	1307.5	1285.3	1266.9
45°	1222.5	1218.8	1211.4	1207.7	1200.3	1193.0	1185.6	1174.5	1156.1	1133.9	1122.8
47.5°	1082.2	1071.2	1071.2	1067.5	1063.8	1048.9	1045.2	1034.1	1023.1	1000.9	986.2
50°	949.2	949.2	949.2	945.6	934.5	930.8	923.4	912.3	901.3	886.4	864.2
52.5°	842.1	842.1	842.1	838.4	823.6	820.0	816.3	801.5	786.7	775.7	760.9
55°	742.4	746.1	742.4	735.1	723.9	723.9	712.8	705.4	690.7	679.6	664.8
57.5°	657.4	657.4	650.1	646.4	639.0	635.3	627.9	620.5	602.1	591.0	572.5
60°	576.2	572.5	572.5	565.1	557.7	550.3	546.6	535.5	528.1	509.7	494.9
62.5°	502.3	502.3	494.9	494.9	480.2	480.2	476.5	465.4	454.3	435.9	428.5
65°	432.2	432.2	428.5	424.8	413.7	410.0	406.2	395.2	384.1	373.0	361.9
67.5°	369.3	369.3	361.9	358.2	350.9	347.2	339.8	332.4	321.3	310.3	299.2
70°	310.3	306.6	302.9	299.2	291.8	288.1	280.7	273.4	262.3	254.9	243.7
72.5°	251.2	251.2	247.5	240.0	236.3	232.6	228.9	221.6	210.5	199.4	192.0
75°	195.7	195.7	195.7	188.4	181.0	177.3	177.3	169.9	162.5	151.4	144.1
77.5°	151.4	147.8	144.1	144.1	136.7	133.0	129.3	125.6	114.5	110.8	103.5
80°	103.5	107.2	103.5	99.8	96.1	92.4	92.4	85.0	81.2	73.8	66.4
82.5°	70.1	66.4	66.4	62.7	62.7	59.1	59.1	51.7	48.0	44.3	40.6
85°	36.9	36.9	33.2	33.2	33.2	29.5	29.5	25.8	25.8	22.1	18.5
87.5°	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	7.4	7.4	7.4
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°	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9
2.5°	2504.1	2496.8	2493.1	2493.1	2489.4	2485.7	2482.0	2478.3	2470.9	2470.9	2463.5
5°	2522.6	2515.2	2511.5	2500.5	2493.1	2493.1	2478.3	2474.6	2463.5	2456.2	2448.8
7.5°	2537.5	2522.6	2511.5	2500.5	2493.1	2485.7	2470.9	2456.2	2441.4	2426.6	2419.3
10°	2537.5	2522.6	2504.1	2485.7	2478.3	2470.9	2452.5	2430.3	2411.9	2397.1	2378.7
12.5°	2530.0	2507.8	2485.7	2470.9	2456.2	2445.1	2422.9	2400.8	2378.7	2349.0	2334.3
15°	2507.8	2478.3	2456.2	2430.3	2419.3	2400.8	2382.3	2349.0	2323.2	2297.3	2278.9
17.5°	2463.5	2426.6	2400.8	2375.0	2356.4	2345.3	2315.8	2286.3	2256.7	2227.2	2205.1
20°	2397.1	2363.8	2334.3	2301.0	2286.3	2271.5	2234.6	2205.1	2175.4	2142.2	2120.1
22.5°	2315.8	2282.6	2242.0	2216.1	2193.9	2175.4	2142.2	2109.0	2079.5	2049.9	2020.3
25°	2216.1	2182.8	2145.9	2105.3	2090.5	2072.1	2035.1	2001.8	1968.6	1935.4	1909.6
27.5°	2109.0	2064.7	2035.1	1990.8	1976.0	1957.6	1917.0	1880.0	1850.4	1824.6	1795.0
30°	1979.7	1946.5	1905.9	1865.2	1850.4	1831.9	1798.7	1765.5	1736.0	1706.3	1676.8
32.5°	1839.3	1806.1	1765.5	1736.0	1713.7	1699.0	1665.7	1636.2	1606.7	1577.2	1551.2
35°	1691.6	1654.7	1625.1	1595.6	1577.2	1558.7	1525.4	1499.5	1477.4	1451.6	1425.7
37.5°	1540.1	1514.3	1484.8	1451.6	1433.1	1418.3	1392.5	1362.9	1344.4	1322.3	1303.8
40°	1392.5	1362.9	1337.0	1307.5	1292.7	1281.7	1255.8	1233.7	1215.1	1196.7	1185.6
42.5°	1241.1	1215.1	1189.3	1170.8	1159.7	1148.7	1130.2	1104.4	1093.3	1074.9	1063.8
45°	1100.7	1078.5	1060.0	1034.1	1026.8	1019.4	997.2	978.8	967.7	956.6	949.2
47.5°	967.7	952.9	930.8	916.0	905.0	897.5	882.7	867.9	856.9	849.5	842.1
50°	853.2	834.7	820.0	805.2	797.8	786.7	772.0	764.6	757.2	749.8	749.8
52.5°	746.1	727.6	712.8	701.7	694.3	687.0	675.9	672.2	664.8	664.8	661.1
55°	646.4	635.3	620.5	605.8	602.1	598.4	591.0	583.6	579.9	576.2	579.9
57.5°	561.4	550.3	535.5	524.5	520.8	517.1	513.4	506.0	502.3	502.3	502.3
60°	483.9	472.8	461.7	450.6	450.6	443.3	439.6	435.9	432.2	428.5	428.5
62.5°	413.7	402.5	391.5	384.1	380.4	376.7	369.3	365.6	361.9	361.9	358.2
65°	350.9	336.1	332.4	321.3	317.6	314.0	310.3	302.9	299.2	295.5	291.8
67.5°	288.1	280.7	269.7	262.3	258.6	254.9	251.2	243.7	240.0	236.3	228.9
70°	232.6	225.3	217.9	210.5	206.8	203.1	195.7	188.4	184.7	177.3	166.2
72.5°	181.0	173.6	166.2	158.8	155.1	151.4	144.1	136.7	129.3	121.9	114.5
75°	136.7	129.3	118.2	110.8	107.2	107.2	96.1	88.7	81.2	70.1	62.7
77.5°	96.1	85.0	81.2	73.8	70.1	62.7	55.4	48.0	40.6	36.9	29.5
80°	62.7	55.4	48.0	44.3	40.6	36.9	33.2	25.8	18.5	14.8	11.1
82.5°	36.9	33.2	29.5	25.8	22.1	18.5	14.8	14.8	11.1	7.4	3.7
85°	18.5	14.8	11.1	11.1	7.4	7.4	7.4	3.7	3.7	3.7	3.7
87.5°	7.4	3.7	3.7	3.7	3.7	3.7	3.7	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°	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9
2.5°	2459.9	2456.2	2452.5	2448.8	2448.8	2441.4	2441.4	2437.7	2430.3	2426.6	2426.6
5°	2437.7	2426.6	2419.3	2415.6	2411.9	2400.8	2397.1	2389.7	2382.3	2375.0	2371.3
7.5°	2404.5	2386.0	2378.7	2375.0	2363.8	2352.7	2345.3	2334.3	2323.2	2312.1	2308.4
10°	2363.8	2345.3	2326.9	2319.5	2308.4	2301.0	2286.3	2271.5	2260.4	2249.4	2238.3
12.5°	2312.1	2290.0	2271.5	2264.1	2253.1	2238.3	2216.1	2208.8	2190.2	2182.8	2168.0
15°	2253.1	2227.2	2208.8	2197.6	2186.5	2164.4	2149.6	2134.8	2116.4	2109.0	2094.2
17.5°	2179.1	2149.6	2131.1	2120.1	2112.7	2094.2	2072.1	2053.6	2035.1	2027.7	2016.6
20°	2090.5	2072.1	2046.2	2035.1	2027.7	2005.5	1983.4	1976.0	1961.2	1946.5	1935.4
22.5°	1990.8	1972.3	1946.5	1935.4	1931.7	1913.3	1894.8	1883.7	1872.5	1861.5	1850.4
25°	1887.4	1865.2	1843.0	1835.6	1828.3	1813.5	1798.7	1791.3	1780.3	1772.9	1765.5
27.5°	1776.6	1754.4	1736.0	1724.9	1717.5	1706.3	1699.0	1691.6	1684.2	1676.8	1673.1
30°	1658.4	1636.2	1621.4	1614.1	1606.7	1603.0	1591.9	1588.2	1584.5	1577.2	1580.9
32.5°	1540.1	1521.7	1506.9	1495.8	1495.8	1488.5	1484.8	1484.8	1481.1	1481.1	1481.1
35°	1411.0	1399.9	1388.8	1385.0	1381.3	1377.6	1373.9	1377.6	1373.9	1377.6	1381.3
37.5°	1292.7	1281.7	1274.3	1270.6	1266.9	1270.6	1266.9	1266.9	1270.6	1278.0	1281.7
40°	1170.8	1163.4	1156.1	1159.7	1156.1	1156.1	1156.1	1167.1	1170.8	1174.5	1178.2
42.5°	1056.3	1048.9	1045.2	1045.2	1048.9	1045.2	1052.6	1056.3	1063.8	1074.9	1082.2
45°	945.6	941.9	941.9	945.6	941.9	949.2	949.2	956.6	967.7	975.1	982.5
47.5°	842.1	842.1	842.1	845.8	845.8	849.5	856.9	860.6	867.9	875.3	882.7
50°	746.1	749.8	753.5	753.5	753.5	760.9	768.3	772.0	775.7	779.4	790.4
52.5°	661.1	664.8	664.8	668.5	672.2	675.9	679.6	687.0	690.7	698.0	701.7
55°	579.9	579.9	587.3	591.0	591.0	591.0	598.4	598.4	605.8	609.5	616.8
57.5°	502.3	506.0	506.0	509.7	509.7	513.4	517.1	520.8	524.5	528.1	531.8
60°	428.5	428.5	428.5	432.2	435.9	439.6	435.9	443.3	443.3	450.6	454.3
62.5°	358.2	361.9	361.9	361.9	361.9	361.9	361.9	365.6	369.3	373.0	376.7
65°	291.8	291.8	291.8	288.1	291.8	288.1	291.8	295.5	295.5	299.2	302.9
67.5°	225.3	225.3	217.9	217.9	221.6	221.6	221.6	221.6	217.9	225.3	225.3
70°	162.5	158.8	155.1	151.4	151.4	147.8	147.8	144.1	144.1	144.1	144.1
72.5°	107.2	99.8	92.4	88.7	85.0	85.0	77.5	73.8	77.5	77.5	77.5
75°	55.4	48.0	44.3	40.6	36.9	36.9	33.2	33.2	33.2	33.2	33.2
77.5°	22.1	18.5	14.8	14.8	11.1	11.1	11.1	11.1	11.1	11.1	11.1
80°	7.4	7.4	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
82.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
85°	3.7	0.0	0.0	3.7	0.0	3.7	3.7	3.7	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: P585167

CATALOG NUMBER: HC860D010-HM86080935-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9	2470.9
2.5°	2422.9	2422.9	2419.3	2422.9	2415.6	2419.3	2415.6	2415.6
5°	2367.5	2360.1	2360.1	2360.1	2356.4	2356.4	2352.7	2352.7
7.5°	2301.0	2297.3	2293.7	2290.0	2286.3	2282.6	2282.6	2282.6
10°	2234.6	2227.2	2227.2	2223.5	2216.1	2212.5	2212.5	2212.5
12.5°	2157.0	2153.3	2149.6	2149.6	2134.8	2138.5	2134.8	2134.8
15°	2083.2	2079.5	2079.5	2068.4	2061.0	2061.0	2061.0	2057.3
17.5°	2005.5	2001.8	1998.2	1990.8	1983.4	1983.4	1979.7	1983.4
20°	1924.3	1920.6	1913.3	1913.3	1909.6	1905.9	1898.5	1902.2
22.5°	1843.0	1835.6	1831.9	1831.9	1828.3	1828.3	1820.9	1820.9
25°	1758.1	1754.4	1750.7	1754.4	1747.1	1747.1	1739.7	1739.7
27.5°	1669.4	1665.7	1665.7	1665.7	1662.0	1665.7	1662.0	1662.0
30°	1580.9	1580.9	1577.2	1577.2	1580.9	1577.2	1580.9	1584.5
32.5°	1484.8	1484.8	1488.5	1488.5	1492.2	1492.2	1492.2	1492.2
35°	1385.0	1392.5	1392.5	1396.2	1399.9	1403.6	1403.6	1407.3
37.5°	1292.7	1296.4	1300.1	1303.8	1311.2	1311.2	1311.2	1311.2
40°	1193.0	1196.7	1204.0	1200.3	1215.1	1218.8	1215.1	1215.1
42.5°	1089.6	1097.0	1100.7	1108.1	1111.8	1119.1	1122.8	1122.8
45°	993.5	997.2	1004.6	1012.0	1015.7	1026.8	1026.8	1026.8
47.5°	893.8	901.3	905.0	912.3	916.0	927.1	930.8	927.1
50°	797.8	805.2	812.6	812.6	823.6	827.3	834.7	838.4
52.5°	705.4	709.1	716.5	720.2	727.6	735.1	738.8	742.4
55°	616.8	620.5	627.9	627.9	639.0	642.7	650.1	650.1
57.5°	535.5	539.2	546.6	542.9	550.3	557.7	557.7	554.0
60°	458.0	458.0	458.0	465.4	469.1	472.8	476.5	476.5
62.5°	376.7	384.1	387.8	387.8	391.5	395.2	395.2	391.5
65°	302.9	310.3	314.0	314.0	317.6	317.6	317.6	321.3
67.5°	228.9	228.9	228.9	232.6	228.9	228.9	228.9	228.9
70°	144.1	144.1	144.1	144.1	140.4	144.1	144.1	147.8
72.5°	77.5	77.5	77.5	77.5	77.5	77.5	77.5	77.5
75°	33.2	33.2	33.2	36.9	33.2	33.2	33.2	33.2
77.5°	14.8	11.1	14.8	14.8	11.1	11.1	11.1	11.1
80°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
82.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
85°	0.0	3.7	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)