

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: P585082

Luminaire Tested: **HC860D010-HM86080830-81WWBB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585082  
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-HM86080830-81WWBB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4312.8 lumens  
Efficiency: N/A  
Efficacy: 77.0 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

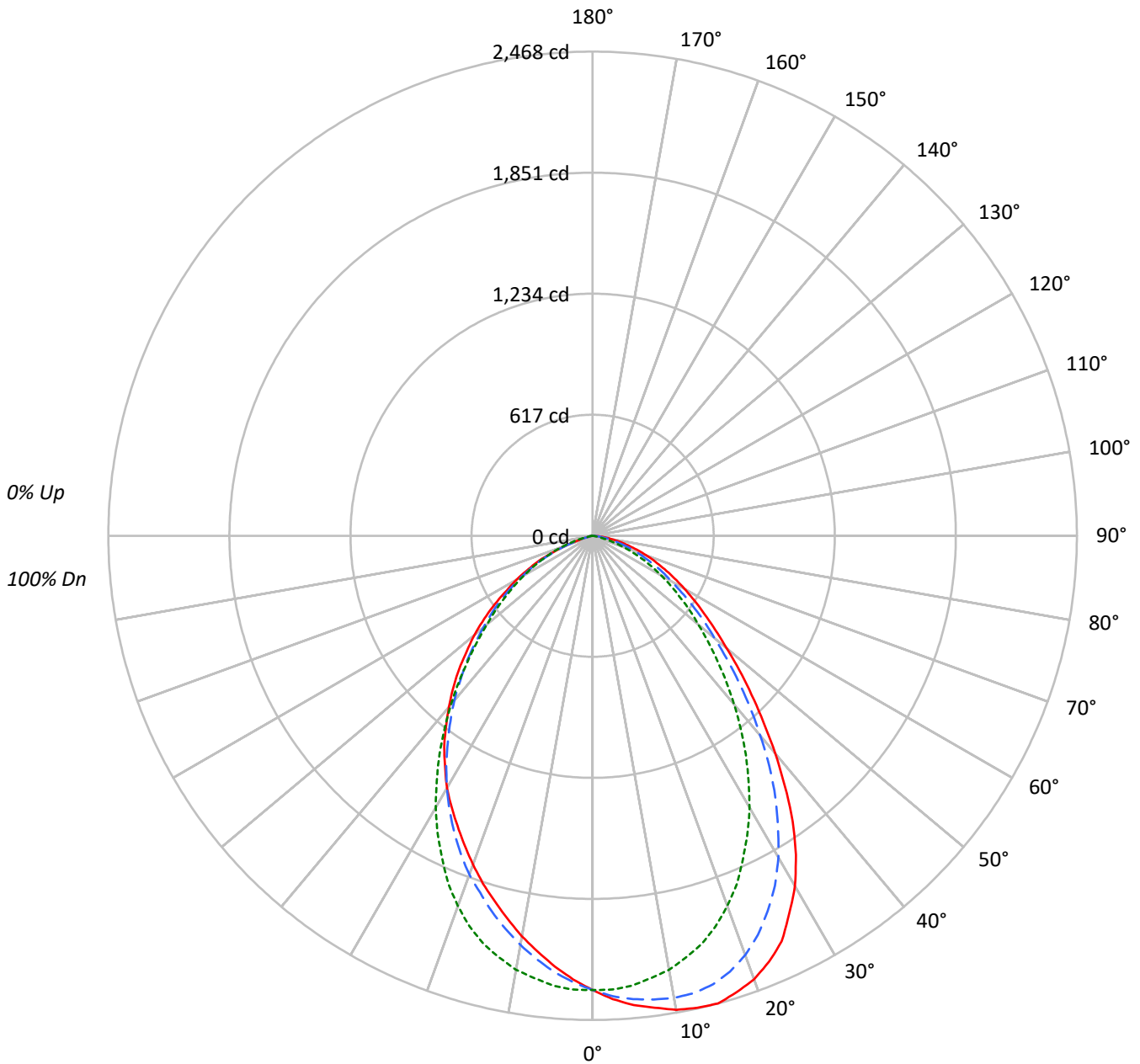
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	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°	71395	71395	71395
5°	74346	71241	68241
10°	76837	70330	64913
15°	78779	68723	61543
20°	78931	65873	58487
25°	77599	61703	55463
30°	73446	56935	52869
35°	66965	51204	49638
40°	58235	45137	45833
45°	49959	39091	41961
50°	42672	33701	37687
55°	37396	29026	32746
60°	33297	24762	27537
65°	29551	20204	21977
70°	26218	14975	12478
75°	21851	7828	3705
80°	17207	2451	622
85°	12242	1238	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	218.2	5.1
10°-20°	611.5	14.2
20°-30°	865.5	20.1
30°-40°	905.5	21.0
40°-50°	755.2	17.5
50°-60°	535.6	12.4
60°-70°	308.5	7.2
70°-80°	99.2	2.3
80°-90°	13.7	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°	1695.1	39.3
0°-40°	2600.6	60.3
0°-60°	3891.4	90.2
0°-90°	4312.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4312.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2315	2315	2315	2315	2315	
5°	2402	2371	2302	2232	2205	231
15°	2468	2367	2153	1983	1928	694
25°	2281	2111	1814	1668	1630	1041
35°	1779	1623	1360	1287	1319	1103
45°	1146	1052	896	907	962	888
55°	696	623	540	568	609	628
65°	405	339	277	277	301	405
75°	183	135	66	31	31	199
85°	35	17	4	0	0	43
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°	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3
2.5°	2363.8	2360.3	2356.9	2360.3	2356.9	2360.3	2356.9	2356.9	2353.4	2349.9	2349.9
5°	2401.8	2398.4	2398.4	2398.4	2394.9	2391.5	2391.5	2388.0	2381.1	2377.6	2370.7
7.5°	2426.2	2429.6	2429.6	2429.6	2422.7	2422.7	2415.7	2408.8	2401.8	2394.9	2384.5
10°	2453.9	2453.9	2450.4	2446.9	2440.0	2436.6	2433.1	2426.2	2415.7	2401.8	2391.5
12.5°	2464.2	2464.2	2460.8	2453.9	2450.4	2446.9	2443.5	2433.1	2419.3	2401.8	2388.0
15°	2467.7	2460.8	2457.3	2453.9	2446.9	2436.6	2436.6	2422.7	2405.3	2384.5	2367.2
17.5°	2440.0	2443.5	2436.6	2429.6	2419.3	2412.2	2401.8	2391.5	2370.7	2346.5	2329.2
20°	2405.3	2401.8	2398.4	2388.0	2374.2	2370.7	2360.3	2343.0	2325.7	2298.0	2273.8
22.5°	2349.9	2346.5	2339.6	2332.6	2318.8	2311.9	2301.5	2280.7	2256.5	2228.8	2201.1
25°	2280.7	2273.8	2263.4	2249.6	2239.2	2232.3	2218.4	2197.7	2170.0	2138.9	2111.2
27.5°	2170.0	2180.4	2173.5	2152.7	2142.3	2128.5	2125.0	2097.3	2073.1	2042.0	2010.8
30°	2062.7	2062.7	2052.4	2042.0	2024.7	2014.3	2000.5	1979.7	1955.5	1917.4	1893.2
32.5°	1927.8	1924.3	1910.5	1907.0	1893.2	1872.3	1868.9	1841.2	1817.0	1789.3	1758.1
35°	1778.9	1772.0	1758.1	1747.7	1740.8	1730.4	1720.1	1695.8	1671.6	1643.9	1623.2
37.5°	1609.3	1609.3	1605.9	1588.6	1581.7	1574.7	1564.4	1540.1	1526.3	1498.6	1477.9
40°	1446.7	1443.2	1432.9	1429.4	1422.5	1412.1	1405.2	1391.3	1370.6	1349.8	1328.9
42.5°	1287.4	1290.9	1277.0	1280.5	1266.7	1259.7	1256.3	1235.5	1225.1	1204.4	1187.1
45°	1145.6	1142.1	1135.2	1131.7	1124.8	1117.9	1111.0	1100.6	1083.3	1062.5	1052.1
47.5°	1014.1	1003.7	1003.7	1000.2	996.8	982.9	979.5	969.1	958.7	937.9	924.1
50°	889.5	889.5	889.5	886.0	875.7	872.2	865.3	854.9	844.5	830.7	809.9
52.5°	789.0	789.0	789.0	785.6	771.7	768.3	764.8	751.0	737.1	726.8	712.9
55°	695.6	699.1	695.6	688.7	678.3	678.3	667.9	661.0	647.2	636.8	623.0
57.5°	616.0	616.0	609.1	605.7	598.7	595.3	588.3	581.4	564.1	553.7	536.4
60°	539.9	536.4	536.4	529.5	522.6	515.7	512.2	501.8	494.9	477.6	463.8
62.5°	470.7	470.7	463.8	463.8	449.9	449.9	446.5	436.1	425.7	408.4	401.5
65°	405.0	405.0	401.5	398.0	387.7	384.2	380.7	370.4	360.0	349.6	339.2
67.5°	346.1	346.1	339.2	335.8	328.8	325.4	318.5	311.5	301.2	290.8	280.4
70°	290.8	287.3	283.9	280.4	273.5	270.0	263.0	256.1	245.7	238.8	228.4
72.5°	235.3	235.3	231.8	224.9	221.5	218.0	214.5	207.6	197.2	186.9	179.9
75°	183.4	183.4	183.4	176.5	169.5	166.1	166.1	159.2	152.2	141.9	134.9
77.5°	141.9	138.4	134.9	134.9	128.0	124.6	121.1	117.6	107.3	103.8	96.9
80°	96.9	100.3	96.9	93.4	90.0	86.5	86.5	79.6	76.1	69.2	62.3
82.5°	65.7	62.3	62.3	58.8	58.8	55.4	55.4	48.4	45.0	41.5	38.1
85°	34.6	34.6	31.1	31.1	31.1	27.7	27.7	24.2	24.2	20.8	17.3
87.5°	10.4	10.4	10.4	10.4	10.4	10.4	10.4	10.4	6.9	6.9	6.9
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°	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3
2.5°	2346.5	2339.6	2336.1	2336.1	2332.6	2329.2	2325.7	2322.3	2315.3	2315.3	2308.4
5°	2363.8	2356.9	2353.4	2343.0	2336.1	2336.1	2322.3	2318.8	2308.4	2301.5	2294.6
7.5°	2377.6	2363.8	2353.4	2343.0	2336.1	2329.2	2315.3	2301.5	2287.7	2273.8	2266.9
10°	2377.6	2363.8	2346.5	2329.2	2322.3	2315.3	2298.0	2277.3	2260.0	2246.1	2228.8
12.5°	2370.7	2349.9	2329.2	2315.3	2301.5	2291.1	2270.4	2249.6	2228.8	2201.1	2187.3
15°	2349.9	2322.3	2301.5	2277.3	2266.9	2249.6	2232.3	2201.1	2176.9	2152.7	2135.4
17.5°	2308.4	2273.8	2249.6	2225.4	2208.1	2197.7	2170.0	2142.3	2114.6	2087.0	2066.2
20°	2246.1	2215.0	2187.3	2156.2	2142.3	2128.5	2093.9	2066.2	2038.5	2007.4	1986.6
22.5°	2170.0	2138.9	2100.8	2076.6	2055.8	2038.5	2007.4	1976.2	1948.6	1920.9	1893.2
25°	2076.6	2045.4	2010.8	1972.8	1958.9	1941.6	1907.0	1875.8	1844.6	1813.5	1789.3
27.5°	1976.2	1934.7	1907.0	1865.4	1851.6	1834.3	1796.2	1761.6	1733.9	1709.7	1682.0
30°	1855.0	1823.9	1785.8	1747.7	1733.9	1716.6	1685.5	1654.3	1626.6	1599.0	1571.3
32.5°	1723.5	1692.4	1654.3	1626.6	1605.9	1592.0	1560.9	1533.2	1505.5	1477.9	1453.6
35°	1585.1	1550.5	1522.8	1495.2	1477.9	1460.6	1429.4	1405.2	1384.4	1360.2	1335.9
37.5°	1443.2	1419.0	1391.3	1360.2	1342.8	1328.9	1304.7	1277.0	1259.7	1239.0	1221.7
40°	1304.7	1277.0	1252.8	1225.1	1211.3	1200.9	1176.7	1155.9	1138.6	1121.3	1111.0
42.5°	1162.9	1138.6	1114.4	1097.1	1086.7	1076.4	1059.1	1034.8	1024.4	1007.1	996.8
45°	1031.4	1010.6	993.3	969.1	962.2	955.2	934.5	917.2	906.8	896.4	889.5
47.5°	906.8	893.0	872.2	858.4	848.0	841.1	827.2	813.4	802.9	796.0	789.0
50°	799.4	782.1	768.3	754.4	747.5	737.1	723.3	716.4	709.5	702.5	702.5
52.5°	699.1	681.8	667.9	657.6	650.6	643.7	633.3	629.9	623.0	623.0	619.5
55°	605.7	595.3	581.4	567.6	564.1	560.7	553.7	546.8	543.4	539.9	543.4
57.5°	526.1	515.7	501.8	491.5	488.0	484.5	481.1	474.2	470.7	470.7	470.7
60°	453.4	443.0	432.6	422.3	422.3	415.3	411.9	408.4	405.0	401.5	401.5
62.5°	387.7	377.3	366.9	360.0	356.5	353.1	346.1	342.7	339.2	339.2	335.8
65°	328.8	315.0	311.5	301.2	297.7	294.2	290.8	283.9	280.4	276.9	273.5
67.5°	270.0	263.0	252.6	245.7	242.2	238.8	235.3	228.4	224.9	221.5	214.5
70°	218.0	211.1	204.2	197.2	193.8	190.3	183.4	176.5	173.0	166.1	155.7
72.5°	169.5	162.6	155.7	148.8	145.3	141.9	134.9	128.0	121.1	114.2	107.3
75°	128.0	121.1	110.7	103.8	100.3	100.3	90.0	83.0	76.1	65.7	58.8
77.5°	90.0	79.6	76.1	69.2	65.7	58.8	51.9	45.0	38.1	34.6	27.7
80°	58.8	51.9	45.0	41.5	38.1	34.6	31.1	24.2	17.3	13.8	10.4
82.5°	34.6	31.1	27.7	24.2	20.8	17.3	13.8	13.8	10.4	6.9	3.5
85°	17.3	13.8	10.4	10.4	6.9	6.9	6.9	3.5	3.5	3.5	3.5
87.5°	6.9	3.5	3.5	3.5	3.5	3.5	3.5	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°	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3
2.5°	2305.0	2301.5	2298.0	2294.6	2294.6	2287.7	2287.7	2284.2	2277.3	2273.8	2273.8
5°	2284.2	2273.8	2266.9	2263.4	2260.0	2249.6	2246.1	2239.2	2232.3	2225.4	2221.9
7.5°	2253.1	2235.8	2228.8	2225.4	2215.0	2204.6	2197.7	2187.3	2176.9	2166.5	2163.1
10°	2215.0	2197.7	2180.4	2173.5	2163.1	2156.2	2142.3	2128.5	2118.1	2107.7	2097.3
12.5°	2166.5	2145.8	2128.5	2121.6	2111.2	2097.3	2076.6	2069.7	2052.4	2045.4	2031.6
15°	2111.2	2087.0	2069.7	2059.3	2048.9	2028.1	2014.3	2000.5	1983.2	1976.2	1962.4
17.5°	2042.0	2014.3	1997.0	1986.6	1979.7	1962.4	1941.6	1924.3	1907.0	1900.1	1889.7
20°	1958.9	1941.6	1917.4	1907.0	1900.1	1879.2	1858.5	1851.6	1837.7	1823.9	1813.5
22.5°	1865.4	1848.1	1823.9	1813.5	1810.0	1792.7	1775.4	1765.0	1754.7	1744.3	1733.9
25°	1768.5	1747.7	1727.0	1720.1	1713.1	1699.3	1685.5	1678.5	1668.2	1661.2	1654.3
27.5°	1664.7	1643.9	1626.6	1616.3	1609.3	1599.0	1592.0	1585.1	1578.2	1571.3	1567.8
30°	1554.0	1533.2	1519.4	1512.5	1505.5	1502.1	1491.7	1488.2	1484.8	1477.9	1481.3
32.5°	1443.2	1425.9	1412.1	1401.7	1401.7	1394.8	1391.3	1391.3	1387.9	1387.9	1387.9
35°	1322.0	1311.6	1301.3	1297.8	1294.3	1290.9	1287.4	1290.9	1287.4	1290.9	1294.3
37.5°	1211.3	1200.9	1194.0	1190.5	1187.1	1190.5	1187.1	1187.1	1190.5	1197.5	1200.9
40°	1097.1	1090.2	1083.3	1086.7	1083.3	1083.3	1083.3	1093.7	1097.1	1100.6	1104.0
42.5°	989.8	982.9	979.5	979.5	982.9	979.5	986.4	989.8	996.8	1007.1	1014.1
45°	886.0	882.6	882.6	886.0	882.6	889.5	889.5	896.4	906.8	913.7	920.6
47.5°	789.0	789.0	789.0	792.5	792.5	796.0	802.9	806.5	813.4	820.3	827.2
50°	699.1	702.5	706.0	706.0	706.0	712.9	719.8	723.3	726.8	730.2	740.6
52.5°	619.5	623.0	623.0	626.4	629.9	633.3	636.8	643.7	647.2	654.1	657.6
55°	543.4	543.4	550.3	553.7	553.7	553.7	560.7	560.7	567.6	571.0	578.0
57.5°	470.7	474.2	474.2	477.6	477.6	481.1	484.5	488.0	491.5	494.9	498.4
60°	401.5	401.5	401.5	405.0	408.4	411.9	408.4	415.3	415.3	422.3	425.7
62.5°	335.8	339.2	339.2	339.2	339.2	339.2	339.2	342.7	346.1	349.6	353.1
65°	273.5	273.5	273.5	270.0	273.5	270.0	273.5	276.9	276.9	280.4	283.9
67.5°	211.1	211.1	204.2	204.2	207.6	207.6	207.6	207.6	204.2	211.1	211.1
70°	152.2	148.8	145.3	141.9	141.9	138.4	138.4	134.9	134.9	134.9	134.9
72.5°	100.3	93.4	86.5	83.0	79.6	79.6	72.7	69.2	72.7	72.7	72.7
75°	51.9	45.0	41.5	38.1	34.6	34.6	31.1	31.1	31.1	31.1	31.1
77.5°	20.8	17.3	13.8	13.8	10.4	10.4	10.4	10.4	10.4	10.4	10.4
80°	6.9	6.9	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	3.5	0.0	0.0	3.5	0.0	3.5	3.5	3.5	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: P585082

CATALOG NUMBER: HC860D010-HM86080830-81WWBB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3	2315.3
2.5°	2270.4	2270.4	2266.9	2270.4	2263.4	2266.9	2263.4	2263.4
5°	2218.4	2211.5	2211.5	2211.5	2208.1	2208.1	2204.6	2204.6
7.5°	2156.2	2152.7	2149.2	2145.8	2142.3	2138.9	2138.9	2138.9
10°	2093.9	2087.0	2087.0	2083.5	2076.6	2073.1	2073.1	2073.1
12.5°	2021.2	2017.8	2014.3	2014.3	2000.5	2003.9	2000.5	2000.5
15°	1952.0	1948.6	1948.6	1938.2	1931.3	1931.3	1931.3	1927.8
17.5°	1879.2	1875.8	1872.3	1865.4	1858.5	1858.5	1855.0	1858.5
20°	1803.1	1799.7	1792.7	1792.7	1789.3	1785.8	1778.9	1782.3
22.5°	1727.0	1720.1	1716.6	1716.6	1713.1	1713.1	1706.2	1706.2
25°	1647.4	1643.9	1640.5	1643.9	1637.0	1637.0	1630.1	1630.1
27.5°	1564.4	1560.9	1560.9	1560.9	1557.4	1560.9	1557.4	1557.4
30°	1481.3	1481.3	1477.9	1477.9	1481.3	1477.9	1481.3	1484.8
32.5°	1391.3	1391.3	1394.8	1394.8	1398.3	1398.3	1398.3	1398.3
35°	1297.8	1304.7	1304.7	1308.2	1311.6	1315.1	1315.1	1318.6
37.5°	1211.3	1214.8	1218.2	1221.7	1228.6	1228.6	1228.6	1228.6
40°	1117.9	1121.3	1128.3	1124.8	1138.6	1142.1	1138.6	1138.6
42.5°	1021.0	1027.9	1031.4	1038.3	1041.8	1048.7	1052.1	1052.1
45°	931.0	934.5	941.4	948.3	951.8	962.2	962.2	962.2
47.5°	837.6	844.5	848.0	854.9	858.4	868.7	872.2	868.7
50°	747.5	754.4	761.4	761.4	771.7	775.2	782.1	785.6
52.5°	661.0	664.5	671.4	674.9	681.8	688.7	692.2	695.6
55°	578.0	581.4	588.3	588.3	598.7	602.2	609.1	609.1
57.5°	501.8	505.3	512.2	508.8	515.7	522.6	522.6	519.1
60°	429.2	429.2	429.2	436.1	439.6	443.0	446.5	446.5
62.5°	353.1	360.0	363.4	363.4	366.9	370.4	370.4	366.9
65°	283.9	290.8	294.2	294.2	297.7	297.7	297.7	301.2
67.5°	214.5	214.5	214.5	218.0	214.5	214.5	214.5	214.5
70°	134.9	134.9	134.9	134.9	131.5	134.9	134.9	138.4
72.5°	72.7	72.7	72.7	72.7	72.7	72.7	72.7	72.7
75°	31.1	31.1	31.1	34.6	31.1	31.1	31.1	31.1
77.5°	13.8	10.4	13.8	13.8	10.4	10.4	10.4	10.4
80°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
82.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
85°	0.0	3.5	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



Report Generated By 670245859 / DESKTOP-HRDQ47P





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















(END OF REPORT)