

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: P585126

Luminaire Tested: **HC860D010-HM86080927-81RWWC**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585126  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC860D010-HM86080927-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4324.3 lumens  
Efficiency: N/A  
Efficacy: 77.2 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

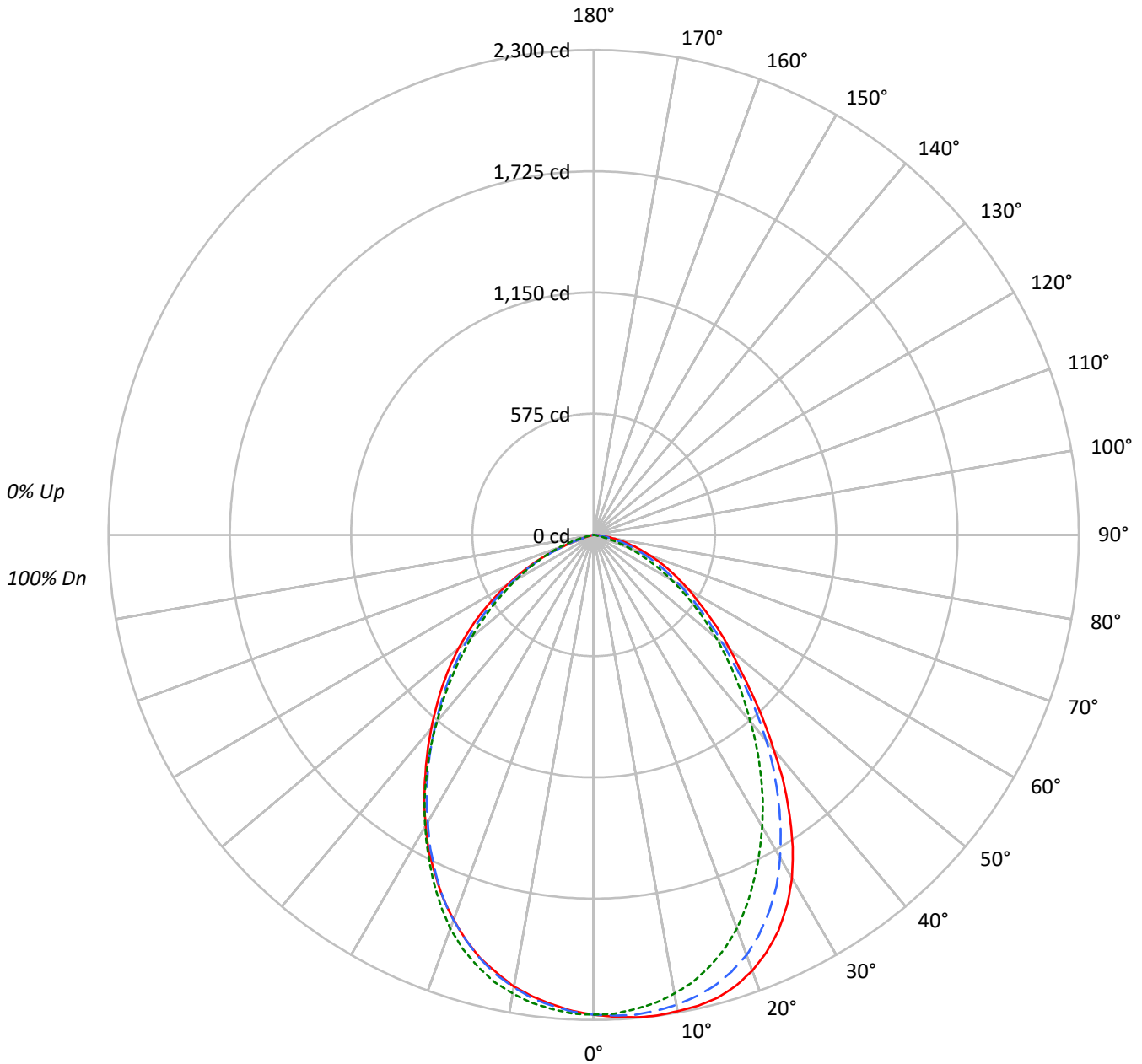
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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			
1	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88			
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	85	82	79	77			
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67			
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59			
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52			
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47			
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42			
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38			
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35			
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32			

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

	0°	90°	180°
0°	70162	70162	70162
5°	71086	69867	69207
10°	71814	69149	68104
15°	72538	67689	66335
20°	72171	65194	63701
25°	70488	61291	60461
30°	66955	56892	56679
35°	60950	51915	52371
40°	53433	46465	48180
45°	46099	41328	44246
50°	40364	36287	40076
55°	35768	31192	35278
60°	32224	26229	29227
65°	29033	21058	22386
70°	25470	15336	12325
75°	21708	7959	3253
80°	16710	2149	533
85°	10720	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	214.7	5.0
10°-20°	603.5	14.0
20°-30°	856.6	19.8
30°-40°	901.6	20.9
40°-50°	767.0	17.7
50°-60°	554.3	12.8
60°-70°	315.3	7.3
70°-80°	99.3	2.3
80°-90°	12.1	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°	1674.7	38.7
0°-40°	2576.3	59.6
0°-60°	3897.6	90.1
0°-90°	4324.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4324.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2275	2275	2275	2275	2275	
5°	2296	2284	2257	2242	2236	219
15°	2272	2214	2120	2081	2078	640
25°	2072	1968	1801	1771	1777	949
35°	1619	1525	1379	1370	1391	1007
45°	1057	1018	948	972	1015	822
55°	665	617	580	614	656	600
65°	398	343	289	286	307	395
75°	182	140	67	30	27	196
85°	30	18	0	0	0	39
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°	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3
2.5°	2287.4	2290.4	2284.4	2284.4	2290.4	2284.4	2287.4	2287.4	2284.4	2284.4	2281.3
5°	2296.5	2293.5	2293.5	2293.5	2296.5	2290.4	2287.4	2290.4	2284.4	2284.4	2284.4
7.5°	2299.5	2299.5	2296.5	2293.5	2293.5	2293.5	2290.4	2287.4	2284.4	2278.3	2275.3
10°	2293.5	2293.5	2296.5	2290.4	2290.4	2284.4	2284.4	2278.3	2278.3	2272.2	2263.1
12.5°	2287.4	2284.4	2284.4	2278.3	2278.3	2272.2	2272.2	2263.1	2260.1	2251.0	2241.9
15°	2272.2	2269.2	2263.1	2260.1	2257.1	2254.0	2248.0	2244.9	2235.8	2223.6	2214.5
17.5°	2241.9	2238.9	2235.8	2229.8	2223.6	2220.6	2217.5	2208.4	2196.3	2187.2	2172.0
20°	2199.3	2196.3	2196.3	2187.2	2184.1	2175.0	2172.0	2159.9	2150.7	2132.5	2120.3
22.5°	2141.6	2144.6	2138.5	2132.5	2126.4	2117.3	2111.2	2099.1	2083.8	2065.6	2050.5
25°	2071.7	2074.7	2068.7	2062.6	2053.5	2047.4	2041.4	2023.2	2008.0	1986.7	1968.5
27.5°	1983.6	1983.6	1983.6	1977.6	1962.4	1959.4	1953.3	1935.1	1913.7	1895.5	1877.3
30°	1880.4	1877.3	1877.3	1868.2	1862.2	1849.9	1840.8	1825.7	1810.5	1789.3	1767.9
32.5°	1755.8	1758.8	1749.7	1743.7	1734.6	1734.6	1722.4	1710.3	1692.0	1670.7	1649.5
35°	1619.1	1622.1	1616.0	1613.0	1597.8	1594.8	1591.8	1576.6	1564.5	1549.2	1524.9
37.5°	1479.4	1476.4	1473.4	1473.4	1464.2	1458.1	1452.0	1442.9	1424.7	1412.6	1400.3
40°	1327.4	1327.4	1327.4	1324.4	1321.5	1315.3	1312.3	1306.2	1294.1	1281.9	1272.8
42.5°	1190.8	1190.8	1187.8	1184.8	1178.7	1181.7	1175.7	1169.5	1157.3	1148.2	1142.2
45°	1057.1	1057.1	1057.1	1060.2	1054.1	1045.0	1045.0	1038.9	1032.9	1026.8	1017.6
47.5°	938.6	947.7	941.8	938.6	941.8	929.5	929.5	923.5	917.4	911.3	899.2
50°	841.4	841.4	841.4	835.4	832.3	832.3	823.2	817.2	814.1	808.1	795.8
52.5°	753.4	747.3	747.3	744.3	741.2	735.2	735.2	729.1	717.0	710.8	701.7
55°	665.3	665.3	662.3	659.2	656.2	653.2	650.1	640.9	634.8	625.7	616.6
57.5°	586.3	592.4	589.3	583.3	577.2	577.2	571.0	565.1	555.9	546.8	537.7
60°	522.5	519.5	519.5	516.4	510.4	507.3	504.3	495.2	486.0	476.9	467.8
62.5°	455.7	455.7	455.7	449.6	443.5	440.5	437.5	431.4	419.3	410.1	404.0
65°	397.9	394.9	391.9	388.8	385.8	379.7	376.7	370.6	361.5	352.4	343.3
67.5°	340.3	337.1	337.1	334.1	325.0	322.0	322.0	312.9	303.8	294.7	285.6
70°	282.5	282.5	282.5	276.5	273.4	270.4	267.4	261.2	252.1	243.0	233.9
72.5°	233.9	230.9	230.9	227.8	218.7	215.7	212.7	206.6	197.5	191.3	185.4
75°	182.2	182.2	179.2	176.2	173.1	170.1	167.1	161.0	151.9	142.8	139.8
77.5°	139.8	136.7	136.7	133.7	127.6	124.6	124.6	118.5	109.3	103.2	97.2
80°	94.1	97.2	94.1	91.1	88.1	85.0	82.0	79.0	72.9	66.8	60.8
82.5°	57.7	60.8	57.7	57.7	54.7	51.7	51.7	45.6	42.6	39.4	36.4
85°	30.3	30.3	30.3	30.3	27.3	27.3	27.3	24.3	21.2	18.2	18.2
87.5°	9.1	12.1	9.1	9.1	9.1	9.1	9.1	9.1	6.1	6.1	6.1
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°	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3
2.5°	2284.4	2281.3	2278.3	2278.3	2278.3	2278.3	2278.3	2275.3	2272.2	2272.2	2272.2
5°	2278.3	2278.3	2278.3	2275.3	2272.2	2272.2	2266.2	2263.1	2260.1	2257.1	2254.0
7.5°	2272.2	2266.2	2263.1	2260.1	2257.1	2257.1	2251.0	2244.9	2244.9	2238.9	2232.8
10°	2254.0	2251.0	2244.9	2238.9	2235.8	2232.8	2226.6	2217.5	2214.5	2208.4	2202.4
12.5°	2232.8	2226.6	2220.6	2208.4	2205.4	2202.4	2190.2	2181.1	2175.0	2172.0	2156.7
15°	2205.4	2193.3	2184.1	2169.0	2165.9	2159.9	2150.7	2141.6	2129.4	2120.3	2114.3
17.5°	2156.7	2144.6	2129.4	2114.3	2108.2	2108.2	2093.0	2080.8	2065.6	2059.6	2047.4
20°	2099.1	2083.8	2071.7	2053.5	2044.4	2035.3	2026.2	2008.0	1995.8	1986.7	1971.5
22.5°	2032.3	2011.0	1995.8	1977.6	1962.4	1953.3	1938.1	1922.8	1907.7	1898.6	1886.4
25°	1947.2	1928.9	1904.6	1886.4	1877.3	1865.2	1846.9	1831.7	1816.6	1801.4	1795.3
27.5°	1853.1	1828.7	1807.5	1786.2	1777.0	1767.9	1746.7	1728.5	1716.4	1701.1	1695.0
30°	1749.7	1725.5	1701.1	1682.9	1673.8	1658.6	1646.5	1625.1	1610.0	1597.8	1582.7
32.5°	1631.3	1613.0	1591.8	1564.5	1558.4	1546.2	1528.0	1518.9	1500.7	1491.6	1479.4
35°	1503.7	1491.6	1470.2	1449.0	1439.9	1433.8	1418.7	1400.3	1388.2	1379.1	1373.0
37.5°	1382.1	1367.0	1345.7	1330.6	1324.4	1315.3	1297.1	1288.0	1275.9	1269.8	1257.7
40°	1251.6	1236.3	1221.2	1212.1	1203.0	1196.9	1184.8	1175.7	1163.4	1154.3	1151.3
42.5°	1124.0	1114.9	1102.7	1090.5	1087.5	1078.4	1072.3	1063.2	1054.1	1051.1	1042.0
45°	1008.5	999.4	987.3	975.1	972.1	966.0	963.0	953.9	947.7	947.7	947.7
47.5°	893.1	884.0	871.9	865.7	868.7	856.6	856.6	853.6	847.5	847.5	850.5
50°	789.8	777.6	774.6	768.5	762.5	756.4	759.4	750.3	750.3	756.4	753.4
52.5°	692.6	680.5	677.4	671.4	668.3	668.3	665.3	665.3	662.3	665.3	665.3
55°	604.5	595.4	589.3	583.3	580.2	580.2	580.2	577.2	574.2	580.2	583.3
57.5°	525.5	522.5	516.4	507.3	504.3	501.3	498.2	498.2	498.2	498.2	501.3
60°	455.7	449.6	443.5	434.4	434.4	431.4	428.4	425.3	425.3	425.3	425.3
62.5°	394.9	385.8	376.7	370.6	367.6	364.5	361.5	355.4	355.4	355.4	355.4
65°	334.1	325.0	318.9	312.9	306.8	306.8	300.7	297.7	291.6	288.6	282.5
67.5°	276.5	270.4	264.2	255.1	252.1	249.1	243.0	240.0	230.9	227.8	224.8
70°	224.8	215.7	209.6	203.6	200.5	194.5	188.4	182.2	176.2	170.1	164.0
72.5°	176.2	167.1	161.0	154.9	148.9	148.9	139.8	133.7	124.6	118.5	109.3
75°	130.7	121.5	115.5	106.3	103.2	100.2	91.1	85.0	75.9	66.8	60.8
77.5°	88.1	82.0	75.9	66.8	60.8	60.8	51.7	45.6	39.4	30.3	27.3
80°	54.7	48.6	42.6	36.4	36.4	30.3	27.3	21.2	15.2	12.1	9.1
82.5°	30.3	27.3	24.3	18.2	18.2	15.2	12.1	9.1	6.1	3.0	3.0
85°	15.2	12.1	9.1	9.1	6.1	6.1	6.1	3.0	3.0	0.0	0.0
87.5°	6.1	3.0	3.0	3.0	3.0	3.0	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3
2.5°	2269.2	2269.2	2266.2	2266.2	2266.2	2263.1	2266.2	2263.1	2263.1	2263.1	2266.2
5°	2257.1	2251.0	2251.0	2248.0	2248.0	2244.9	2248.0	2244.9	2241.9	2238.9	2241.9
7.5°	2232.8	2226.6	2223.6	2220.6	2220.6	2220.6	2217.5	2214.5	2217.5	2208.4	2214.5
10°	2199.3	2196.3	2190.2	2187.2	2184.1	2187.2	2184.1	2178.1	2178.1	2178.1	2175.0
12.5°	2156.7	2150.7	2147.6	2144.6	2138.5	2138.5	2141.6	2135.5	2135.5	2129.4	2129.4
15°	2105.2	2099.1	2093.0	2093.0	2087.0	2087.0	2083.8	2083.8	2080.8	2077.9	2077.9
17.5°	2041.4	2032.3	2026.2	2029.2	2026.2	2023.2	2023.2	2017.1	2014.1	2017.1	2017.1
20°	1965.4	1959.4	1953.3	1956.3	1950.3	1947.2	1950.3	1941.2	1944.2	1944.2	1944.2
22.5°	1880.4	1877.3	1868.2	1868.2	1862.2	1859.1	1862.2	1862.2	1865.2	1862.2	1862.2
25°	1786.2	1780.2	1774.0	1774.0	1771.0	1767.9	1771.0	1774.0	1771.0	1774.0	1774.0
27.5°	1685.9	1676.8	1676.8	1670.7	1670.7	1673.8	1670.7	1673.8	1676.8	1676.8	1682.9
30°	1576.6	1573.6	1570.5	1567.5	1567.5	1570.5	1570.5	1570.5	1573.6	1579.6	1579.6
32.5°	1473.4	1467.2	1461.1	1461.1	1467.2	1464.2	1467.2	1467.2	1473.4	1473.4	1479.4
35°	1360.9	1360.9	1354.8	1357.9	1357.9	1357.9	1357.9	1363.9	1370.0	1373.0	1379.1
37.5°	1257.7	1248.6	1251.6	1251.6	1254.6	1251.6	1260.7	1260.7	1266.8	1266.8	1272.8
40°	1145.2	1145.2	1148.2	1145.2	1148.2	1148.2	1154.3	1160.4	1163.4	1169.5	1172.5
42.5°	1038.9	1045.0	1038.9	1042.0	1045.0	1048.0	1051.1	1054.1	1066.2	1072.3	1081.4
45°	941.8	944.7	947.7	950.9	947.7	953.9	956.9	963.0	972.1	975.1	978.2
47.5°	847.5	850.5	853.6	856.6	856.6	862.7	865.7	871.9	877.9	881.0	884.0
50°	756.4	762.5	765.5	765.5	768.5	774.6	780.7	780.7	786.7	795.8	799.0
52.5°	674.4	674.4	680.5	683.5	686.5	686.5	695.6	698.7	701.7	707.8	713.8
55°	583.3	592.4	595.4	595.4	601.5	607.5	610.6	613.6	613.6	625.7	625.7
57.5°	504.3	507.3	513.4	513.4	513.4	522.5	522.5	528.6	531.6	534.6	540.7
60°	425.3	431.4	431.4	434.4	431.4	437.5	440.5	446.6	449.6	452.6	455.7
62.5°	352.4	352.4	355.4	355.4	355.4	355.4	361.5	361.5	367.6	370.6	373.6
65°	282.5	282.5	282.5	282.5	282.5	282.5	282.5	282.5	285.6	285.6	291.6
67.5°	218.7	215.7	209.6	212.7	209.6	209.6	206.6	206.6	209.6	209.6	215.7
70°	158.0	154.9	148.9	148.9	145.8	142.8	139.8	136.7	133.7	133.7	133.7
72.5°	103.2	97.2	88.1	85.0	85.0	79.0	72.9	69.9	69.9	69.9	69.9
75°	51.7	45.6	39.4	36.4	36.4	30.3	33.4	30.3	30.3	30.3	30.3
77.5°	21.2	15.2	12.1	12.1	12.1	9.1	9.1	9.1	9.1	9.1	9.1
80°	6.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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	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: P585126

CATALOG NUMBER: HC860D010-HM86080927-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3	2275.3
2.5°	2263.1	2263.1	2257.1	2260.1	2260.1	2260.1	2260.1	2260.1
5°	2235.8	2238.9	2235.8	2238.9	2238.9	2235.8	2235.8	2235.8
7.5°	2208.4	2211.5	2208.4	2211.5	2211.5	2211.5	2208.4	2208.4
10°	2175.0	2175.0	2175.0	2175.0	2175.0	2172.0	2175.0	2175.0
12.5°	2129.4	2129.4	2129.4	2132.5	2132.5	2129.4	2129.4	2126.4
15°	2080.8	2074.7	2077.9	2080.8	2077.9	2077.9	2077.9	2077.9
17.5°	2014.1	2017.1	2014.1	2014.1	2014.1	2014.1	2017.1	2014.1
20°	1944.2	1944.2	1947.2	1944.2	1944.2	1944.2	1944.2	1941.2
22.5°	1865.2	1862.2	1862.2	1865.2	1865.2	1862.2	1865.2	1865.2
25°	1777.0	1780.2	1777.0	1777.0	1780.2	1780.2	1780.2	1777.0
27.5°	1682.9	1685.9	1689.0	1685.9	1685.9	1685.9	1689.0	1692.0
30°	1585.7	1591.8	1585.7	1585.7	1591.8	1588.7	1591.8	1591.8
32.5°	1482.5	1491.6	1485.5	1491.6	1491.6	1494.6	1491.6	1494.6
35°	1379.1	1388.2	1388.2	1388.2	1391.2	1394.3	1394.3	1391.2
37.5°	1281.9	1285.0	1285.0	1291.0	1294.1	1297.1	1297.1	1294.1
40°	1181.7	1187.8	1190.8	1190.8	1190.8	1196.9	1203.0	1196.9
42.5°	1084.4	1087.5	1090.5	1090.5	1096.7	1099.7	1102.7	1102.7
45°	990.3	996.4	999.4	1002.4	1005.5	1011.5	1008.5	1014.6
47.5°	893.1	902.2	905.3	908.3	914.4	917.4	920.4	923.5
50°	805.0	811.1	811.1	817.2	826.3	826.3	832.3	835.4
52.5°	717.0	720.0	723.0	726.1	732.1	738.2	738.2	744.3
55°	631.8	634.8	634.8	637.9	640.9	653.2	656.2	656.2
57.5°	543.7	543.7	549.8	552.8	555.9	561.9	561.9	561.9
60°	458.7	461.7	461.7	464.8	467.8	473.9	476.9	473.9
62.5°	373.6	376.7	376.7	379.7	385.8	388.8	385.8	385.8
65°	294.7	297.7	297.7	300.7	306.8	306.8	303.8	306.8
67.5°	215.7	215.7	215.7	215.7	215.7	215.7	215.7	215.7
70°	136.7	133.7	130.7	133.7	133.7	133.7	130.7	136.7
72.5°	66.8	69.9	69.9	69.9	69.9	69.9	69.9	66.8
75°	30.3	30.3	27.3	27.3	27.3	30.3	30.3	27.3
77.5°	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
80°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	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)