

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: P585133

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

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P585133  
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-HM86080927-81WWBB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3783.7 lumens  
Efficiency: N/A  
Efficacy: 67.6 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

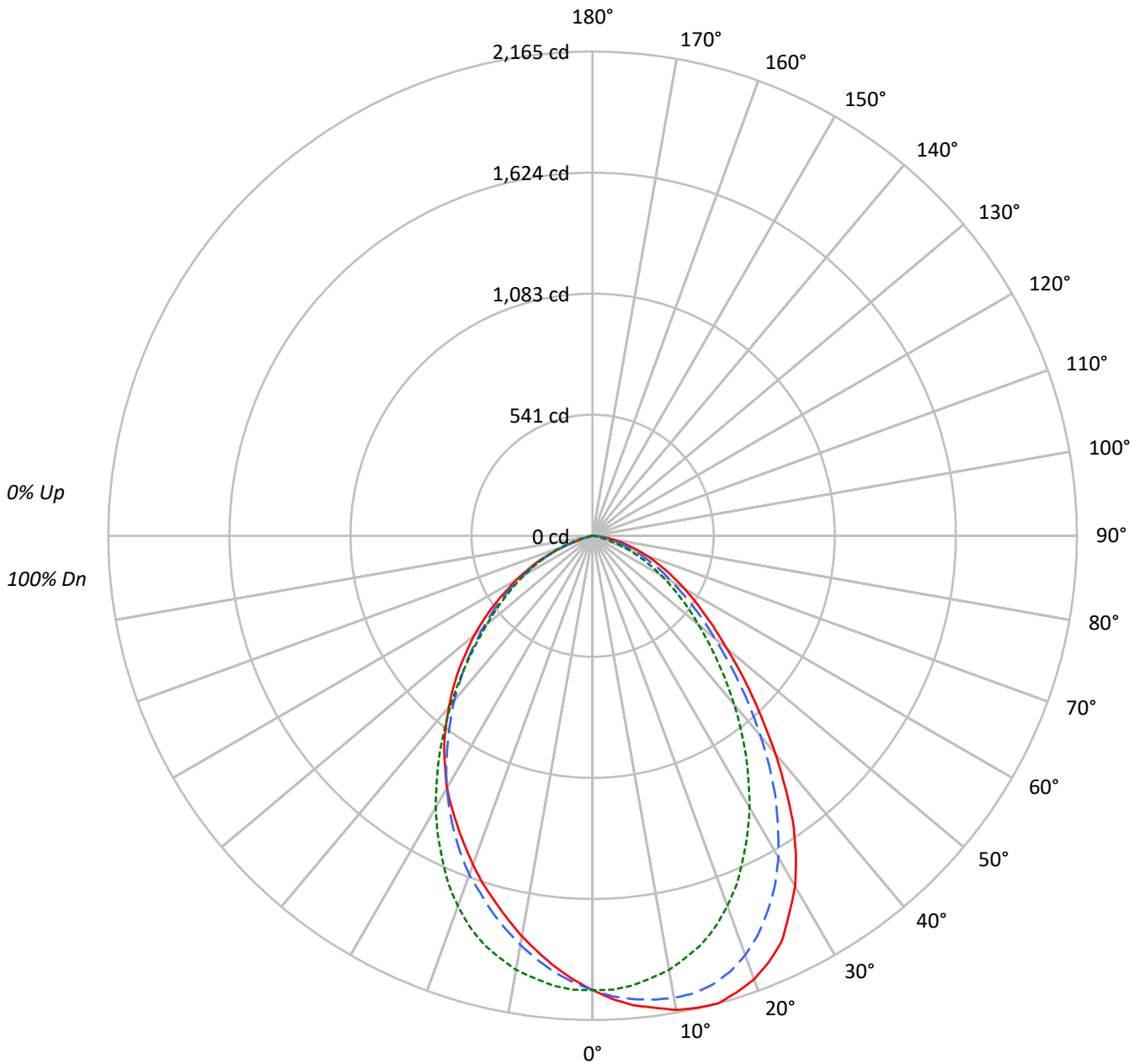
Input Watts (W): 56  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	62641	62641	62641
5°	65230	62499	59868
10°	67409	61703	56950
15°	69112	60292	53990
20°	69250	57791	51317
25°	68079	54136	48658
30°	64437	49949	46381
35°	58751	44921	43551
40°	51090	39598	40214
45°	43832	34294	36810
50°	37438	29570	33068
55°	32811	25467	28730
60°	29214	21721	24157
65°	25917	17723	19270
70°	22991	13145	10954
75°	19170	6875	3253
80°	15094	2149	533
85°	10720	1061	0



TEST NUMBER: P585133

CATALOG NUMBER: HC860D010-HM86080927-81WWBB

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.4	5.1
10°-20°	536.5	14.2
20°-30°	759.3	20.1
30°-40°	794.4	21.0
40°-50°	662.6	17.5
50°-60°	469.9	12.4
60°-70°	270.6	7.2
70°-80°	87.1	2.3
80°-90°	12.0	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°	1487.2	39.3
0°-40°	2281.6	60.3
0°-60°	3414.1	90.2
0°-90°	3783.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3783.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2031	2031	2031	2031	2031	
5°	2107	2080	2019	1958	1934	202
15°	2165	2077	1889	1740	1691	609
25°	2001	1852	1591	1464	1430	913
35°	1561	1424	1193	1130	1157	968
45°	1005	923	786	796	844	779
55°	610	547	474	498	534	551
65°	355	298	243	243	264	355
75°	161	118	58	27	27	174
85°	30	15	3	0	0	38
90°	0	0	0	0	0	



TEST NUMBER: P585133

CATALOG NUMBER: HC860D010-HM86080927-81WWBB

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4
2.5°	2073.8	2070.8	2067.8	2070.8	2067.8	2070.8	2067.8	2067.8	2064.7	2061.7	2061.7
5°	2107.3	2104.3	2104.3	2104.3	2101.1	2098.1	2098.1	2095.2	2089.0	2086.0	2079.9
7.5°	2128.5	2131.5	2131.5	2131.5	2125.5	2125.5	2119.4	2113.4	2107.3	2101.1	2092.0
10°	2152.8	2152.8	2149.7	2146.7	2140.6	2137.6	2134.6	2128.5	2119.4	2107.3	2098.1
12.5°	2161.9	2161.9	2158.8	2152.8	2149.7	2146.7	2143.7	2134.6	2122.5	2107.3	2095.2
15°	2164.9	2158.8	2155.8	2152.8	2146.7	2137.6	2137.6	2125.5	2110.3	2092.0	2076.9
17.5°	2140.6	2143.7	2137.6	2131.5	2122.5	2116.4	2107.3	2098.1	2079.9	2058.7	2043.5
20°	2110.3	2107.3	2104.3	2095.2	2082.9	2079.9	2070.8	2055.6	2040.5	2016.1	1994.9
22.5°	2061.7	2058.7	2052.6	2046.5	2034.4	2028.3	2019.1	2000.9	1979.7	1955.5	1931.1
25°	2000.9	1994.9	1985.8	1973.7	1964.6	1958.5	1946.4	1928.1	1903.8	1876.5	1852.2
27.5°	1903.8	1912.9	1906.8	1888.6	1879.5	1867.4	1864.4	1840.0	1818.8	1791.5	1764.1
30°	1809.7	1809.7	1800.6	1791.5	1776.2	1767.1	1755.0	1736.8	1715.6	1682.1	1660.9
32.5°	1691.2	1688.2	1676.1	1673.0	1660.9	1642.7	1639.7	1615.3	1594.1	1569.8	1542.4
35°	1560.7	1554.7	1542.4	1533.3	1527.3	1518.2	1509.1	1487.8	1466.5	1442.3	1424.1
37.5°	1411.9	1411.9	1408.9	1393.7	1387.7	1381.5	1372.4	1351.2	1339.1	1314.8	1296.5
40°	1269.2	1266.2	1257.1	1254.0	1248.0	1238.9	1232.8	1220.6	1202.4	1184.2	1166.0
42.5°	1129.5	1132.5	1120.4	1123.4	1111.3	1105.2	1102.2	1084.0	1074.9	1056.6	1041.5
45°	1005.1	1002.0	996.0	992.8	986.8	980.7	974.6	965.6	950.4	932.2	923.1
47.5°	889.6	880.5	880.5	877.5	874.5	862.3	859.3	850.2	841.1	822.8	810.7
50°	780.4	780.4	780.4	777.3	768.2	765.2	759.1	749.9	740.8	728.7	710.5
52.5°	692.3	692.3	692.3	689.3	677.2	674.0	671.0	658.9	646.7	637.6	625.5
55°	610.3	613.4	610.3	604.3	595.2	595.2	586.0	579.9	567.8	558.7	546.6
57.5°	540.5	540.5	534.4	531.4	525.3	522.3	516.1	510.1	494.9	485.8	470.6
60°	473.7	470.6	470.6	464.6	458.5	452.4	449.4	440.3	434.3	419.0	406.9
62.5°	412.9	412.9	406.9	406.9	394.7	394.7	391.7	382.6	373.5	358.2	352.2
65°	355.2	355.2	352.2	349.1	340.0	337.0	334.0	324.9	315.8	306.7	297.6
67.5°	303.7	303.7	297.6	294.6	288.5	285.5	279.4	273.2	264.1	255.0	245.9
70°	255.0	252.0	249.0	245.9	239.9	236.8	230.8	224.7	215.6	209.5	200.3
72.5°	206.5	206.5	203.5	197.3	194.3	191.3	188.2	182.2	173.1	164.0	157.9
75°	160.9	160.9	160.9	154.9	148.8	145.8	145.8	139.7	133.6	124.5	118.5
77.5°	124.5	121.5	118.5	118.5	112.3	109.3	106.2	103.2	94.1	91.1	85.0
80°	85.0	88.0	85.0	82.0	78.9	75.9	75.9	69.8	66.8	60.8	54.7
82.5°	57.7	54.7	54.7	51.7	51.7	48.6	48.6	42.6	39.4	36.4	33.4
85°	30.3	30.3	27.3	27.3	27.3	24.3	24.3	21.2	21.2	18.2	15.2
87.5°	9.1	9.1	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



TEST NUMBER: P585133

CATALOG NUMBER: HC860D010-HM86080927-81WWBB

**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4
2.5°	2058.7	2052.6	2049.6	2049.6	2046.5	2043.5	2040.5	2037.4	2031.4	2031.4	2025.3
5°	2073.8	2067.8	2064.7	2055.6	2049.6	2049.6	2037.4	2034.4	2025.3	2019.1	2013.1
7.5°	2086.0	2073.8	2064.7	2055.6	2049.6	2043.5	2031.4	2019.1	2007.0	1994.9	1988.8
10°	2086.0	2073.8	2058.7	2043.5	2037.4	2031.4	2016.1	1997.9	1982.8	1970.6	1955.5
12.5°	2079.9	2061.7	2043.5	2031.4	2019.1	2010.0	1991.9	1973.7	1955.5	1931.1	1919.0
15°	2061.7	2037.4	2019.1	1997.9	1988.8	1973.7	1958.5	1931.1	1909.9	1888.6	1873.5
17.5°	2025.3	1994.9	1973.7	1952.4	1937.3	1928.1	1903.8	1879.5	1855.2	1830.9	1812.7
20°	1970.6	1943.2	1919.0	1891.7	1879.5	1867.4	1837.0	1812.7	1788.5	1761.1	1742.9
22.5°	1903.8	1876.5	1843.1	1821.8	1803.6	1788.5	1761.1	1733.8	1709.5	1685.2	1660.9
25°	1821.8	1794.5	1764.1	1730.8	1718.6	1703.5	1673.0	1645.7	1618.3	1591.1	1569.8
27.5°	1733.8	1697.3	1673.0	1636.6	1624.4	1609.3	1575.9	1545.6	1521.2	1500.0	1475.7
30°	1627.4	1600.2	1566.8	1533.3	1521.2	1506.0	1478.8	1451.4	1427.1	1402.8	1378.5
32.5°	1512.1	1484.8	1451.4	1427.1	1408.9	1396.8	1369.4	1345.1	1320.9	1296.5	1275.3
35°	1390.7	1360.3	1336.0	1311.8	1296.5	1281.3	1254.0	1232.8	1214.5	1193.3	1172.1
37.5°	1266.2	1244.9	1220.6	1193.3	1178.1	1166.0	1144.7	1120.4	1105.2	1087.1	1071.9
40°	1144.7	1120.4	1099.2	1074.9	1062.7	1053.6	1032.4	1014.2	999.0	983.7	974.6
42.5°	1020.2	999.0	977.7	962.5	953.4	944.3	929.2	907.8	898.7	883.6	874.5
45°	904.8	886.6	871.4	850.2	844.1	838.1	819.8	804.6	795.5	786.4	780.4
47.5°	795.5	783.4	765.2	753.1	743.9	737.8	725.7	713.5	704.5	698.4	692.3
50°	701.4	686.3	674.0	661.9	655.8	646.7	634.6	628.5	622.5	616.4	616.4
52.5°	613.4	598.2	586.0	576.9	570.8	564.8	555.7	552.6	546.6	546.6	543.5
55°	531.4	522.3	510.1	497.9	494.9	491.9	485.8	479.7	476.7	473.7	476.7
57.5°	461.5	452.4	440.3	431.1	428.1	425.1	422.0	416.0	412.9	412.9	412.9
60°	397.8	388.7	379.6	370.5	370.5	364.4	361.4	358.2	355.2	352.2	352.2
62.5°	340.0	330.9	321.9	315.8	312.8	309.7	303.7	300.6	297.6	297.6	294.6
65°	288.5	276.4	273.2	264.1	261.1	258.1	255.0	249.0	245.9	242.9	239.9
67.5°	236.8	230.8	221.7	215.6	212.6	209.5	206.5	200.3	197.3	194.3	188.2
70°	191.3	185.2	179.1	173.1	170.0	167.0	160.9	154.9	151.8	145.8	136.7
72.5°	148.8	142.7	136.7	130.6	127.6	124.5	118.5	112.3	106.2	100.2	94.1
75°	112.3	106.2	97.1	91.1	88.0	88.0	78.9	72.9	66.8	57.7	51.7
77.5°	78.9	69.8	66.8	60.8	57.7	51.7	45.6	39.4	33.4	30.3	24.3
80°	51.7	45.6	39.4	36.4	33.4	30.3	27.3	21.2	15.2	12.1	9.1
82.5°	30.3	27.3	24.3	21.2	18.2	15.2	12.1	12.1	9.1	6.1	3.0
85°	15.2	12.1	9.1	9.1	6.1	6.1	6.1	3.0	3.0	3.0	3.0
87.5°	6.1	3.0	3.0	3.0	3.0	3.0	3.0	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: P585133

CATALOG NUMBER: HC860D010-HM86080927-81WWBB

**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4
2.5°	2022.3	2019.1	2016.1	2013.1	2013.1	2007.0	2007.0	2004.0	1997.9	1994.9	1994.9
5°	2004.0	1994.9	1988.8	1985.8	1982.8	1973.7	1970.6	1964.6	1958.5	1952.4	1949.4
7.5°	1976.7	1961.5	1955.5	1952.4	1943.2	1934.1	1928.1	1919.0	1909.9	1900.8	1897.7
10°	1943.2	1928.1	1912.9	1906.8	1897.7	1891.7	1879.5	1867.4	1858.2	1849.1	1840.0
12.5°	1900.8	1882.6	1867.4	1861.4	1852.2	1840.0	1821.8	1815.8	1800.6	1794.5	1782.3
15°	1852.2	1830.9	1815.8	1806.7	1797.6	1779.4	1767.1	1755.0	1739.9	1733.8	1721.7
17.5°	1791.5	1767.1	1752.0	1742.9	1736.8	1721.7	1703.5	1688.2	1673.0	1667.0	1657.9
20°	1718.6	1703.5	1682.1	1673.0	1667.0	1648.8	1630.6	1624.4	1612.3	1600.2	1591.1
22.5°	1636.6	1621.4	1600.2	1591.1	1588.0	1572.9	1557.7	1548.6	1539.4	1530.3	1521.2
25°	1551.6	1533.3	1515.1	1509.1	1503.0	1490.9	1478.8	1472.7	1463.5	1457.4	1451.4
27.5°	1460.6	1442.3	1427.1	1418.0	1411.9	1402.8	1396.8	1390.7	1384.5	1378.5	1375.4
30°	1363.3	1345.1	1333.0	1326.9	1320.9	1317.8	1308.6	1305.6	1302.6	1296.5	1299.5
32.5°	1266.2	1251.0	1238.9	1229.8	1229.8	1223.6	1220.6	1220.6	1217.6	1217.6	1217.6
35°	1159.9	1150.7	1141.6	1138.6	1135.6	1132.5	1129.5	1132.5	1129.5	1132.5	1135.6
37.5°	1062.7	1053.6	1047.5	1044.5	1041.5	1044.5	1041.5	1041.5	1044.5	1050.6	1053.6
40°	962.5	956.5	950.4	953.4	950.4	950.4	950.4	959.5	962.5	965.6	968.6
42.5°	868.4	862.3	859.3	859.3	862.3	859.3	865.4	868.4	874.5	883.6	889.6
45°	777.3	774.3	774.3	777.3	774.3	780.4	780.4	786.4	795.5	801.6	807.7
47.5°	692.3	692.3	692.3	695.4	695.4	698.4	704.5	707.5	713.5	719.6	725.7
50°	613.4	616.4	619.4	619.4	619.4	625.5	631.6	634.6	637.6	640.7	649.8
52.5°	543.5	546.6	546.6	549.6	552.6	555.7	558.7	564.8	567.8	573.9	576.9
55°	476.7	476.7	482.8	485.8	485.8	485.8	491.9	491.9	497.9	501.0	507.0
57.5°	412.9	416.0	416.0	419.0	419.0	422.0	425.1	428.1	431.1	434.3	437.3
60°	352.2	352.2	352.2	355.2	358.2	361.4	358.2	364.4	364.4	370.5	373.5
62.5°	294.6	297.6	297.6	297.6	297.6	297.6	297.6	300.6	303.7	306.7	309.7
65°	239.9	239.9	239.9	236.8	239.9	236.8	239.9	242.9	242.9	245.9	249.0
67.5°	185.2	185.2	179.1	179.1	182.2	182.2	182.2	182.2	179.1	185.2	185.2
70°	133.6	130.6	127.6	124.5	124.5	121.5	121.5	118.5	118.5	118.5	118.5
72.5°	88.0	82.0	75.9	72.9	69.8	69.8	63.8	60.8	63.8	63.8	63.8
75°	45.6	39.4	36.4	33.4	30.3	30.3	27.3	27.3	27.3	27.3	27.3
77.5°	18.2	15.2	12.1	12.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
80°	6.1	6.1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
82.5°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	3.0	0.0	0.0	3.0	0.0	3.0	3.0	3.0	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: P585133

CATALOG NUMBER: HC860D010-HM86080927-81WWBB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4	2031.4
2.5°	1991.9	1991.9	1988.8	1991.9	1985.8	1988.8	1985.8	1985.8
5°	1946.4	1940.2	1940.2	1940.2	1937.3	1937.3	1934.1	1934.1
7.5°	1891.7	1888.6	1885.6	1882.6	1879.5	1876.5	1876.5	1876.5
10°	1837.0	1830.9	1830.9	1827.9	1821.8	1818.8	1818.8	1818.8
12.5°	1773.2	1770.2	1767.1	1767.1	1755.0	1758.0	1755.0	1755.0
15°	1712.6	1709.5	1709.5	1700.3	1694.3	1694.3	1694.3	1691.2
17.5°	1648.8	1645.7	1642.7	1636.6	1630.6	1630.6	1627.4	1630.6
20°	1582.0	1578.9	1572.9	1572.9	1569.8	1566.8	1560.7	1563.8
22.5°	1515.1	1509.1	1506.0	1506.0	1503.0	1503.0	1496.9	1496.9
25°	1445.3	1442.3	1439.2	1442.3	1436.2	1436.2	1430.1	1430.1
27.5°	1372.4	1369.4	1369.4	1369.4	1366.3	1369.4	1366.3	1366.3
30°	1299.5	1299.5	1296.5	1296.5	1299.5	1296.5	1299.5	1302.6
32.5°	1220.6	1220.6	1223.6	1223.6	1226.6	1226.6	1226.6	1226.6
35°	1138.6	1144.7	1144.7	1147.7	1150.7	1153.9	1153.9	1156.9
37.5°	1062.7	1065.7	1068.9	1071.9	1078.0	1078.0	1078.0	1078.0
40°	980.7	983.7	989.8	986.8	999.0	1002.0	999.0	999.0
42.5°	895.7	901.8	904.8	911.0	914.0	920.1	923.1	923.1
45°	816.8	819.8	825.9	831.9	835.1	844.1	844.1	844.1
47.5°	734.8	740.8	743.9	749.9	753.1	762.2	765.2	762.2
50°	655.8	661.9	668.0	668.0	677.2	680.2	686.3	689.3
52.5°	579.9	582.9	589.0	592.0	598.2	604.3	607.3	610.3
55°	507.0	510.1	516.1	516.1	525.3	528.4	534.4	534.4
57.5°	440.3	443.4	449.4	446.4	452.4	458.5	458.5	455.5
60°	376.5	376.5	376.5	382.6	385.6	388.7	391.7	391.7
62.5°	309.7	315.8	318.8	318.8	321.9	324.9	324.9	321.9
65°	249.0	255.0	258.1	258.1	261.1	261.1	261.1	264.1
67.5°	188.2	188.2	188.2	191.3	188.2	188.2	188.2	188.2
70°	118.5	118.5	118.5	118.5	115.3	118.5	118.5	121.5
72.5°	63.8	63.8	63.8	63.8	63.8	63.8	63.8	63.8
75°	27.3	27.3	27.3	30.3	27.3	27.3	27.3	27.3
77.5°	12.1	9.1	12.1	12.1	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°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
85°	0.0	3.0	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



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















(END OF REPORT)