

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: P584437

Luminaire Tested: **HC835D010-HM82555840-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584437  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-16)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC835D010-HM82555840-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4071.1 lumens  
Efficiency: N/A  
Efficacy: 120.8 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 1.04 / 1.13  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

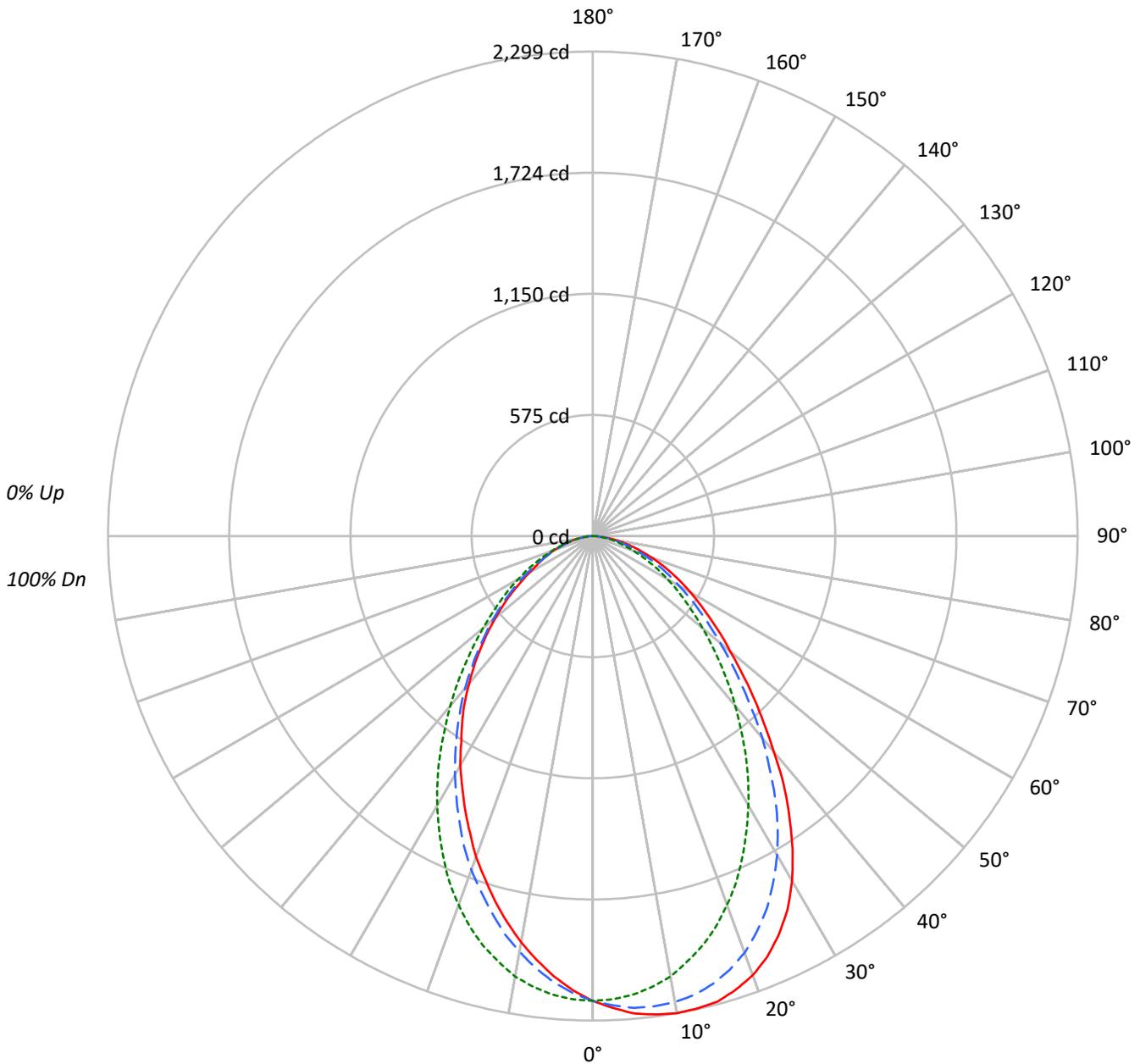
Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	69	63	85	75	68	62	73	67	62	71	65	61	68	64	60	58																			
5	81	69	61	55	79	68	61	55	66	60	54	64	59	54	63	57	53	51																			
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46																			
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	41																			
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38																			
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34																			
10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32																			

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

	0°	90°	180°
0°	68022	68022	68022
5°	70414	67632	64948
10°	71977	66447	61293
15°	73001	64209	57234
20°	72781	61092	53135
25°	70981	57130	48777
30°	67247	52541	44761
35°	61179	47548	40675
40°	53735	42287	36748
45°	46858	37199	32764
50°	40777	32593	28860
55°	36364	28644	25101
60°	33038	25107	21413
65°	29704	21838	19438
70°	26444	18618	17545
75°	23185	15691	14976
80°	19658	12768	13301
85°	14825	9553	10614



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	206.6	5.1
10°-20°	569.3	14.0
20°-30°	790.2	19.4
30°-40°	817.0	20.1
40°-50°	684.1	16.8
50°-60°	496.6	12.2
60°-70°	313.4	7.7
70°-80°	155.2	3.8
80°-90°	38.6	0.9
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°	1566.1	38.5
0°-40°	2383.1	58.5
0°-60°	3563.9	87.5
0°-90°	4071.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4071.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	2206	2206	2206	2206	2206	
5°	2275	2248	2185	2125	2098	218
15°	2287	2200	2011	1850	1793	644
25°	2086	1952	1679	1496	1434	956
35°	1625	1506	1263	1119	1080	1012
45°	1074	997	853	769	751	831
55°	676	617	533	488	467	610
65°	407	356	299	263	266	406
75°	195	162	132	126	126	209
85°	42	33	27	30	30	51
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°	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9
2.5°	2241.8	2241.8	2244.8	2241.8	2241.8	2241.8	2238.8	2238.8	2235.8	2235.8	2229.8
5°	2274.8	2268.8	2274.8	2268.8	2268.8	2268.8	2265.8	2259.8	2256.8	2250.8	2247.8
7.5°	2289.7	2286.7	2286.7	2283.7	2283.7	2280.8	2277.8	2274.8	2262.8	2259.8	2250.8
10°	2298.7	2295.7	2295.7	2292.7	2286.7	2286.7	2280.8	2277.8	2262.8	2256.8	2244.8
12.5°	2295.7	2295.7	2295.7	2292.7	2283.7	2280.8	2274.8	2265.8	2253.8	2241.8	2229.8
15°	2286.7	2286.7	2280.8	2277.8	2268.8	2262.8	2259.8	2244.8	2232.8	2217.9	2199.9
17.5°	2256.8	2256.8	2253.8	2247.8	2238.8	2232.8	2226.8	2211.9	2199.9	2175.9	2158.0
20°	2217.9	2214.9	2211.9	2202.9	2193.9	2190.9	2181.9	2161.0	2146.0	2128.1	2104.2
22.5°	2161.0	2158.0	2155.0	2149.0	2134.1	2128.1	2122.1	2107.2	2080.2	2062.2	2032.3
25°	2086.2	2086.2	2080.2	2071.2	2056.2	2050.3	2041.3	2026.3	2002.3	1975.4	1951.5
27.5°	1999.3	1996.3	1987.4	1981.4	1969.4	1960.4	1945.6	1927.6	1903.6	1882.7	1852.7
30°	1888.6	1888.6	1882.7	1873.7	1858.7	1852.7	1840.7	1819.8	1795.8	1769.0	1748.0
32.5°	1763.0	1763.0	1754.0	1748.0	1739.0	1724.0	1721.0	1697.1	1676.1	1655.2	1631.2
35°	1625.2	1628.2	1622.2	1610.2	1595.3	1595.3	1589.3	1568.4	1544.5	1523.5	1505.5
37.5°	1487.6	1478.6	1475.6	1469.6	1460.6	1448.6	1442.6	1433.6	1412.7	1397.8	1370.9
40°	1334.9	1337.9	1331.9	1325.9	1323.0	1314.0	1311.0	1296.0	1281.0	1263.1	1251.1
42.5°	1197.3	1197.3	1197.3	1191.3	1185.3	1176.3	1173.3	1164.3	1146.4	1134.4	1116.4
45°	1074.5	1065.5	1065.5	1062.5	1059.5	1053.5	1044.5	1038.5	1026.6	1017.7	996.7
47.5°	954.8	957.8	954.8	951.8	942.8	939.8	936.8	924.9	912.9	903.9	888.9
50°	850.0	856.0	850.0	850.0	844.0	841.0	835.1	826.1	817.2	802.2	787.2
52.5°	763.2	763.2	760.3	757.3	748.3	742.3	739.3	736.3	721.3	709.3	697.4
55°	676.4	679.4	679.4	670.4	667.4	661.4	658.4	649.6	643.6	625.6	616.6
57.5°	601.6	598.6	601.6	595.6	589.7	583.7	580.7	574.7	565.7	553.7	541.7
60°	535.7	529.8	529.8	526.8	520.8	517.8	511.8	502.8	493.8	481.8	472.9
62.5°	469.9	466.9	464.0	461.0	455.0	452.0	449.0	440.0	431.0	422.1	413.1
65°	407.1	407.1	404.1	398.1	395.1	392.1	389.1	383.1	371.1	365.2	356.2
67.5°	350.2	347.2	347.2	341.2	335.2	332.2	332.2	326.2	317.2	308.2	302.3
70°	293.3	296.3	293.3	290.3	284.3	284.3	278.4	275.4	263.4	260.4	251.5
72.5°	242.5	242.5	239.5	239.5	233.5	230.5	230.5	224.5	218.5	212.5	206.5
75°	194.6	194.6	194.6	191.6	188.6	182.6	182.6	179.6	173.6	167.6	161.6
77.5°	152.6	149.6	149.6	146.6	143.6	140.6	140.6	137.7	131.7	128.7	122.7
80°	110.7	107.7	107.7	107.7	101.7	104.7	101.7	98.7	95.7	92.8	89.8
82.5°	71.9	74.9	74.9	71.9	68.9	68.9	68.9	65.9	65.9	62.9	59.9
85°	41.9	41.9	41.9	41.9	38.9	38.9	38.9	35.9	35.9	35.9	32.9
87.5°	18.0	18.0	18.0	18.0	18.0	18.0	15.0	15.0	15.0	15.0	15.0
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9
2.5°	2229.8	2223.8	2220.9	2217.9	2217.9	2214.9	2211.9	2205.9	2205.9	2199.9	2196.9
5°	2241.8	2232.8	2226.8	2220.9	2217.9	2211.9	2205.9	2196.9	2193.9	2184.9	2175.9
7.5°	2244.8	2229.8	2223.8	2211.9	2205.9	2199.9	2187.9	2178.9	2166.9	2158.0	2146.0
10°	2232.8	2220.9	2205.9	2190.9	2187.9	2178.9	2161.0	2149.0	2134.1	2122.1	2104.2
12.5°	2214.9	2196.9	2181.9	2163.9	2155.0	2146.0	2128.1	2110.2	2089.2	2068.2	2050.3
15°	2184.9	2163.9	2143.1	2122.1	2110.2	2101.2	2080.2	2059.2	2038.3	2011.3	1993.4
17.5°	2140.1	2116.1	2095.2	2068.2	2056.2	2047.3	2020.3	1996.3	1969.4	1942.6	1924.6
20°	2083.2	2053.3	2029.3	1999.3	1990.4	1975.4	1948.5	1921.6	1891.6	1861.7	1840.7
22.5°	2008.3	1978.4	1951.5	1921.6	1906.6	1891.6	1864.7	1831.7	1801.8	1777.8	1757.0
25°	1921.6	1894.6	1861.7	1834.7	1816.8	1798.8	1769.0	1742.0	1715.1	1679.1	1658.2
27.5°	1825.8	1792.8	1769.0	1733.0	1715.1	1703.1	1670.1	1634.2	1610.2	1577.4	1553.4
30°	1718.1	1688.1	1661.1	1625.2	1607.2	1595.3	1565.4	1532.5	1508.5	1475.6	1451.6
32.5°	1604.2	1571.4	1538.5	1514.5	1493.5	1481.6	1448.6	1427.7	1397.8	1370.9	1343.9
35°	1481.6	1448.6	1424.7	1391.8	1379.9	1367.9	1340.9	1314.0	1287.0	1263.1	1242.1
37.5°	1349.9	1325.9	1299.0	1275.0	1266.0	1254.1	1221.1	1197.3	1176.3	1152.4	1134.4
40°	1221.1	1200.3	1182.3	1158.3	1143.4	1134.4	1110.4	1089.5	1065.5	1050.5	1032.6
42.5°	1104.4	1080.5	1062.5	1044.5	1029.6	1020.7	999.7	984.8	966.8	951.8	930.8
45°	981.8	969.8	948.8	933.8	924.9	912.9	897.9	879.9	865.0	853.0	838.1
47.5°	873.9	862.0	847.0	829.1	823.1	814.2	799.2	787.2	775.2	763.2	748.3
50°	775.2	760.3	748.3	736.3	730.3	721.3	706.3	700.4	691.4	679.4	670.4
52.5°	685.4	673.4	661.4	646.6	643.6	637.6	628.6	616.6	607.6	601.6	595.6
55°	604.6	592.7	583.7	571.7	568.7	562.7	550.7	544.7	538.7	532.8	526.8
57.5°	532.8	520.8	508.8	502.8	496.8	490.8	487.8	478.8	472.9	469.9	464.0
60°	466.9	455.0	446.0	437.0	434.0	431.0	425.1	419.1	413.1	407.1	404.1
62.5°	404.1	392.1	386.1	380.1	374.1	374.1	368.1	362.2	356.2	353.2	347.2
65°	347.2	341.2	332.2	323.2	320.2	320.2	311.2	308.2	305.3	299.3	293.3
67.5°	293.3	287.3	278.4	275.4	272.4	269.4	266.4	260.4	254.5	251.5	245.5
70°	245.5	239.5	233.5	230.5	227.5	224.5	218.5	215.5	209.5	206.5	203.5
72.5°	197.6	194.6	188.6	185.6	182.6	179.6	176.6	173.6	167.6	164.6	161.6
75°	158.6	155.6	149.6	146.6	143.6	143.6	140.6	134.7	131.7	131.7	128.7
77.5°	119.7	116.7	113.7	110.7	107.7	107.7	104.7	101.7	98.7	98.7	95.7
80°	86.9	83.9	80.9	80.9	80.9	77.9	74.9	74.9	71.9	71.9	68.9
82.5°	56.9	56.9	53.9	53.9	53.9	50.9	50.9	47.9	47.9	47.9	47.9
85°	32.9	32.9	32.9	30.0	30.0	30.0	30.0	30.0	30.0	27.0	30.0
87.5°	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	12.0	12.0	12.0
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°	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9
2.5°	2193.9	2190.9	2184.9	2184.9	2178.9	2178.9	2175.9	2172.9	2169.9	2166.9	2163.9
5°	2172.9	2161.0	2155.0	2152.0	2146.0	2143.1	2134.1	2128.1	2125.1	2119.1	2113.2
7.5°	2134.1	2122.1	2110.2	2107.2	2104.2	2092.2	2083.2	2074.2	2068.2	2062.2	2056.2
10°	2089.2	2077.2	2062.2	2056.2	2050.3	2035.3	2023.3	2014.3	2002.3	1990.4	1987.4
12.5°	2035.3	2017.3	1999.3	1993.4	1984.4	1969.4	1957.5	1942.6	1933.6	1918.6	1915.6
15°	1972.4	1951.5	1936.6	1921.6	1915.6	1900.6	1879.7	1867.7	1849.7	1843.7	1828.7
17.5°	1897.6	1876.7	1855.7	1849.7	1840.7	1819.8	1798.8	1783.8	1766.0	1757.0	1748.0
20°	1819.8	1792.8	1772.0	1766.0	1754.0	1736.0	1715.1	1700.1	1685.1	1667.1	1658.2
22.5°	1730.0	1700.1	1682.1	1667.1	1664.1	1643.2	1619.2	1607.2	1595.3	1580.4	1568.4
25°	1631.2	1604.2	1583.4	1571.4	1565.4	1547.5	1529.5	1514.5	1496.5	1487.6	1472.6
27.5°	1529.5	1511.5	1484.6	1472.6	1463.6	1448.6	1427.7	1418.7	1400.7	1388.8	1379.9
30°	1430.7	1403.7	1388.8	1373.9	1364.9	1349.9	1331.9	1323.0	1308.0	1296.0	1287.0
32.5°	1323.0	1305.0	1284.0	1278.0	1266.0	1251.1	1239.1	1224.1	1212.3	1200.3	1197.3
35°	1224.1	1200.3	1179.3	1173.3	1164.3	1149.4	1143.4	1134.4	1119.4	1116.4	1104.4
37.5°	1116.4	1104.4	1080.5	1071.5	1068.5	1056.5	1044.5	1038.5	1029.6	1020.7	1017.7
40°	1014.7	999.7	987.8	978.8	972.8	963.8	951.8	948.8	942.8	930.8	927.9
42.5°	918.9	903.9	891.9	888.9	879.9	870.9	865.0	856.0	853.0	850.0	844.0
45°	826.1	817.2	805.2	802.2	799.2	787.2	781.2	775.2	769.2	766.2	760.3
47.5°	742.3	733.3	724.3	721.3	715.3	712.3	703.3	700.4	691.4	688.4	685.4
50°	661.4	655.4	649.6	646.6	640.6	637.6	631.6	625.6	619.6	616.6	613.6
52.5°	589.7	583.7	577.7	574.7	571.7	565.7	559.7	553.7	550.7	547.7	544.7
55°	520.8	514.8	511.8	508.8	505.8	502.8	493.8	490.8	487.8	484.8	478.8
57.5°	458.0	452.0	446.0	446.0	443.0	440.0	434.0	428.0	428.0	422.1	416.1
60°	401.1	395.1	389.1	386.1	383.1	377.1	374.1	371.1	368.1	365.2	359.2
62.5°	341.2	338.2	332.2	332.2	326.2	323.2	320.2	317.2	314.2	308.2	305.3
65°	290.3	287.3	281.3	278.4	278.4	275.4	269.4	266.4	263.4	263.4	260.4
67.5°	242.5	239.5	233.5	230.5	230.5	227.5	224.5	224.5	221.5	218.5	221.5
70°	200.5	194.6	194.6	191.6	191.6	188.6	185.6	185.6	185.6	188.6	188.6
72.5°	158.6	155.6	152.6	152.6	152.6	152.6	149.6	149.6	152.6	155.6	155.6
75°	125.7	122.7	122.7	122.7	119.7	119.7	122.7	122.7	125.7	125.7	125.7
77.5°	92.8	92.8	92.8	92.8	92.8	92.8	95.7	95.7	98.7	98.7	98.7
80°	68.9	68.9	68.9	68.9	68.9	71.9	71.9	71.9	71.9	71.9	74.9
82.5°	47.9	47.9	47.9	47.9	47.9	47.9	47.9	50.9	50.9	50.9	50.9
85°	27.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
87.5°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
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: P584437

CATALOG NUMBER: HC835D010-HM82555840-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9	2205.9
2.5°	2161.0	2161.0	2161.0	2163.9	2158.0	2158.0	2158.0	2158.0
5°	2110.2	2107.2	2104.2	2107.2	2101.2	2101.2	2098.2	2098.2
7.5°	2047.3	2044.3	2041.3	2041.3	2035.3	2035.3	2032.3	2029.3
10°	1978.4	1972.4	1975.4	1969.4	1966.4	1963.4	1960.4	1957.5
12.5°	1903.6	1897.6	1894.6	1888.6	1882.7	1879.7	1882.7	1876.7
15°	1822.8	1813.8	1810.8	1804.8	1798.8	1795.8	1795.8	1792.8
17.5°	1733.0	1727.0	1724.0	1718.1	1715.1	1709.1	1706.1	1703.1
20°	1649.2	1634.2	1637.2	1631.2	1628.2	1616.2	1616.2	1619.2
22.5°	1556.4	1547.5	1541.5	1535.5	1532.5	1526.5	1526.5	1523.5
25°	1463.6	1454.6	1451.6	1445.6	1442.6	1436.6	1433.6	1433.6
27.5°	1373.9	1361.9	1361.9	1355.9	1349.9	1346.9	1343.9	1340.9
30°	1278.0	1269.0	1266.0	1266.0	1263.1	1263.1	1254.1	1257.1
32.5°	1188.3	1182.3	1179.3	1173.3	1173.3	1170.3	1170.3	1161.3
35°	1098.4	1089.5	1092.5	1086.5	1083.5	1080.5	1083.5	1080.5
37.5°	1011.7	1005.7	1005.7	999.7	999.7	996.7	993.7	999.7
40°	924.9	921.9	918.9	915.9	918.9	915.9	909.9	912.9
42.5°	838.1	838.1	835.1	835.1	832.1	832.1	832.1	832.1
45°	760.3	757.3	757.3	754.3	754.3	754.3	754.3	751.3
47.5°	682.4	679.4	679.4	679.4	676.4	676.4	673.4	676.4
50°	607.6	607.6	604.6	604.6	607.6	604.6	601.6	601.6
52.5°	538.7	538.7	535.7	535.7	532.8	529.8	532.8	532.8
55°	475.8	472.9	469.9	469.9	466.9	464.0	464.0	466.9
57.5°	416.1	413.1	410.1	410.1	404.1	401.1	401.1	401.1
60°	359.2	353.2	353.2	350.2	350.2	347.2	347.2	347.2
62.5°	305.3	302.3	302.3	302.3	302.3	299.3	299.3	299.3
65°	260.4	260.4	260.4	263.4	263.4	266.4	266.4	266.4
67.5°	224.5	227.5	227.5	227.5	230.5	230.5	230.5	227.5
70°	191.6	191.6	191.6	194.6	194.6	194.6	194.6	194.6
72.5°	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6
75°	125.7	128.7	128.7	128.7	125.7	128.7	128.7	125.7
77.5°	98.7	98.7	98.7	98.7	98.7	98.7	98.7	98.7
80°	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9
82.5°	50.9	50.9	50.9	50.9	50.9	50.9	50.9	50.9
85°	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
87.5°	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
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)