

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: P584616

Luminaire Tested: **HC840D010-HM82555935-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584616
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: HC840D010-HM82555935-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4252.5 lumens
Efficiency: N/A
Efficacy: 103.7 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

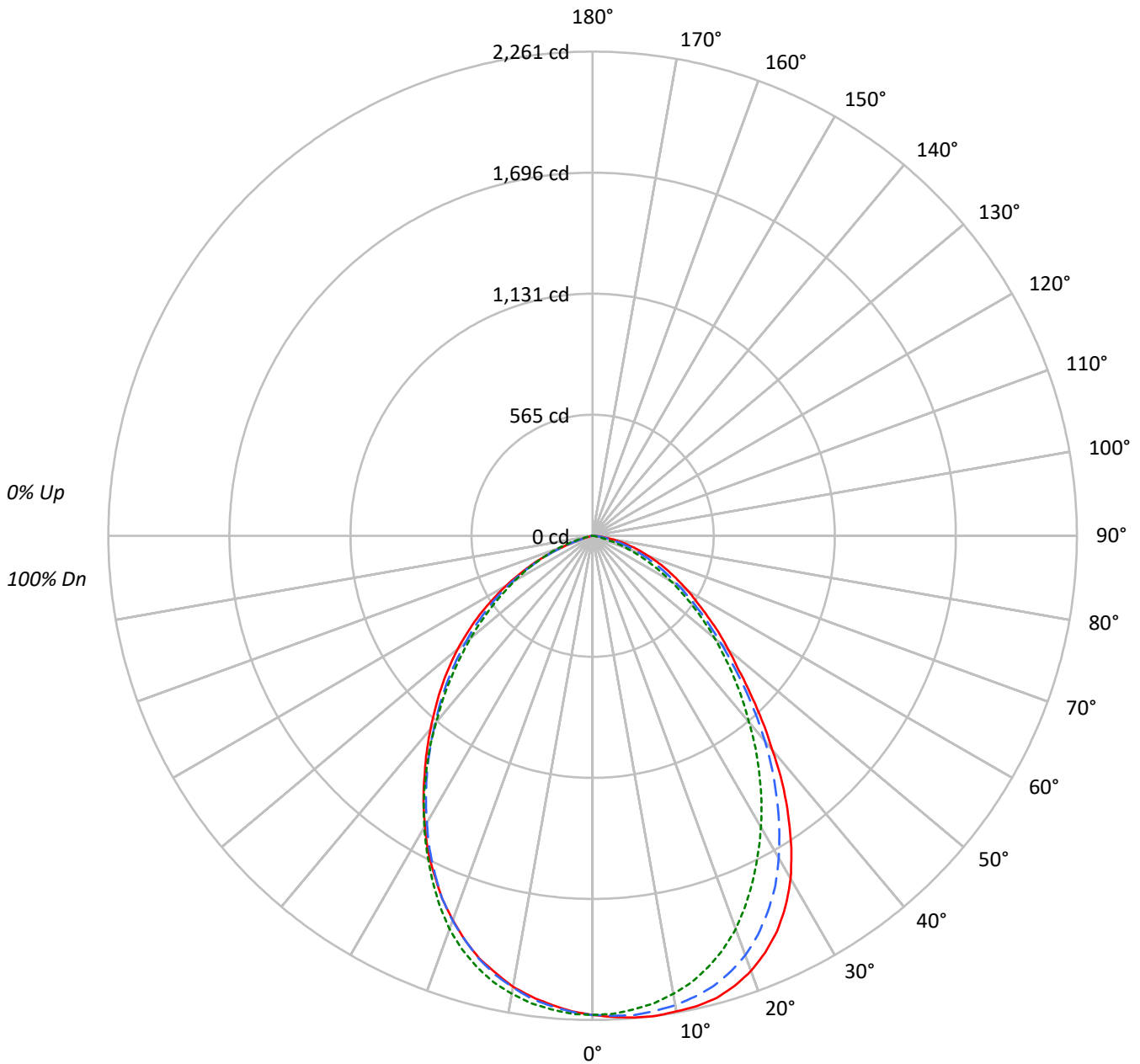
Input Watts (W): 41
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	68999	68999	68999
5°	69907	68706	68056
10°	70621	68003	66973
15°	71338	66565	65231
20°	70973	64111	62641
25°	69321	60270	59461
30°	65840	55952	55735
35°	59937	51053	51501
40°	52548	45692	47379
45°	45336	40644	43513
50°	39697	35687	39414
55°	35176	30676	34687
60°	31687	25798	28739
65°	28558	20707	22014
70°	25055	15084	12126
75°	21350	7828	3205
80°	16444	2113	533
85°	10579	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	211.1	5.0
10°-20°	593.5	14.0
20°-30°	842.3	19.8
30°-40°	886.7	20.9
40°-50°	754.3	17.7
50°-60°	545.1	12.8
60°-70°	310.0	7.3
70°-80°	97.7	2.3
80°-90°	11.9	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°	1646.9	38.7
0°-40°	2533.6	59.6
0°-60°	3833.0	90.1
0°-90°	4252.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4252.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2238	2238	2238	2238	2238	
5°	2258	2246	2220	2205	2199	215
15°	2235	2178	2085	2046	2043	629
25°	2037	1936	1771	1742	1748	933
35°	1592	1500	1356	1347	1368	991
45°	1040	1001	932	956	998	808
55°	654	606	571	603	645	590
65°	391	338	284	281	302	388
75°	179	137	66	30	27	193
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°	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6
2.5°	2249.5	2252.4	2246.5	2246.5	2252.4	2246.5	2249.5	2249.5	2246.5	2246.5	2243.5
5°	2258.4	2255.4	2255.4	2255.4	2258.4	2252.4	2249.5	2252.4	2246.5	2246.5	2246.5
7.5°	2261.4	2261.4	2258.4	2255.4	2255.4	2255.4	2252.4	2249.5	2246.5	2240.5	2237.6
10°	2255.4	2255.4	2258.4	2252.4	2252.4	2246.5	2246.5	2240.5	2240.5	2234.6	2225.5
12.5°	2249.5	2246.5	2246.5	2240.5	2240.5	2234.6	2234.6	2225.5	2222.6	2213.6	2204.7
15°	2234.6	2231.5	2225.5	2222.6	2219.6	2216.6	2210.7	2207.7	2198.6	2186.7	2177.8
17.5°	2204.7	2201.6	2198.6	2192.7	2186.7	2183.8	2180.8	2171.8	2159.8	2150.9	2135.9
20°	2162.8	2159.8	2159.8	2150.9	2148.0	2138.9	2135.9	2124.0	2115.0	2097.1	2085.1
22.5°	2106.1	2109.0	2103.1	2097.1	2091.2	2082.1	2076.2	2064.3	2049.3	2031.4	2016.5
25°	2037.4	2040.4	2034.4	2028.4	2019.4	2013.5	2007.5	1989.6	1974.7	1953.7	1935.8
27.5°	1950.8	1950.8	1950.8	1944.8	1929.8	1926.8	1920.9	1902.9	1882.0	1864.1	1846.2
30°	1849.1	1846.2	1846.2	1837.2	1831.3	1819.3	1810.3	1795.4	1780.5	1759.5	1738.6
32.5°	1726.7	1729.7	1720.7	1714.8	1705.7	1705.7	1693.8	1681.8	1664.0	1643.0	1622.1
35°	1592.2	1595.2	1589.2	1586.3	1571.4	1568.3	1565.3	1550.5	1538.4	1523.6	1499.6
37.5°	1454.9	1451.8	1448.8	1448.8	1439.9	1434.0	1428.0	1419.0	1401.1	1389.1	1377.2
40°	1305.4	1305.4	1305.4	1302.5	1299.5	1293.5	1290.6	1284.6	1272.6	1260.7	1251.6
42.5°	1171.1	1171.1	1168.1	1165.0	1159.1	1162.0	1156.1	1150.1	1138.2	1129.2	1123.2
45°	1039.6	1039.6	1039.6	1042.6	1036.6	1027.7	1027.7	1021.6	1015.7	1009.7	1000.8
47.5°	923.1	932.0	926.1	923.1	926.1	914.2	914.2	908.2	902.1	896.2	884.3
50°	827.5	827.5	827.5	821.6	818.5	818.5	809.6	803.6	800.6	794.7	782.7
52.5°	740.9	734.9	734.9	731.8	728.9	722.9	722.9	717.0	705.0	699.0	690.1
55°	654.3	654.3	651.3	648.3	645.2	642.2	639.3	630.3	624.4	615.3	606.4
57.5°	576.6	582.5	579.5	573.6	567.6	567.6	561.6	555.6	546.7	537.8	528.7
60°	513.8	510.9	510.9	507.9	501.8	498.8	495.9	486.9	478.0	469.0	460.1
62.5°	448.2	448.2	448.2	442.1	436.1	433.2	430.2	424.2	412.2	403.3	397.3
65°	391.4	388.3	385.3	382.3	379.4	373.4	370.4	364.5	355.5	346.5	337.6
67.5°	334.6	331.7	331.7	328.6	319.6	316.7	316.7	307.7	298.7	289.8	280.8
70°	277.9	277.9	277.9	271.8	268.8	265.8	262.9	256.9	248.0	239.0	230.0
72.5°	230.0	227.1	227.1	224.1	215.0	212.1	209.1	203.1	194.2	188.3	182.2
75°	179.2	179.2	176.2	173.3	170.3	167.3	164.3	158.3	149.3	140.4	137.4
77.5°	137.4	134.5	134.5	131.5	125.4	122.5	122.5	116.5	107.6	101.6	95.6
80°	92.6	95.6	92.6	89.6	86.6	83.7	80.7	77.7	71.6	65.7	59.7
82.5°	56.8	59.7	56.8	56.8	53.8	50.8	50.8	44.9	41.8	38.8	35.8
85°	29.9	29.9	29.9	29.9	26.9	26.9	26.9	23.9	20.9	18.0	18.0
87.5°	8.9	11.9	8.9	8.9	8.9	8.9	8.9	8.9	5.9	5.9	5.9
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°	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6
2.5°	2246.5	2243.5	2240.5	2240.5	2240.5	2240.5	2240.5	2237.6	2234.6	2234.6	2234.6
5°	2240.5	2240.5	2240.5	2237.6	2234.6	2234.6	2228.5	2225.5	2222.6	2219.6	2216.6
7.5°	2234.6	2228.5	2225.5	2222.6	2219.6	2219.6	2213.6	2207.7	2207.7	2201.6	2195.7
10°	2216.6	2213.6	2207.7	2201.6	2198.6	2195.7	2189.7	2180.8	2177.8	2171.8	2165.8
12.5°	2195.7	2189.7	2183.8	2171.8	2168.8	2165.8	2153.9	2144.9	2138.9	2135.9	2121.1
15°	2168.8	2156.9	2148.0	2133.0	2130.0	2124.0	2115.0	2106.1	2094.2	2085.1	2079.2
17.5°	2121.1	2109.0	2094.2	2079.2	2073.2	2073.2	2058.2	2046.3	2031.4	2025.4	2013.5
20°	2064.3	2049.3	2037.4	2019.4	2010.5	2001.5	1992.5	1974.7	1962.7	1953.7	1938.7
22.5°	1998.5	1977.7	1962.7	1944.8	1929.8	1920.9	1905.9	1891.0	1876.0	1867.1	1855.1
25°	1914.8	1897.0	1873.1	1855.1	1846.2	1834.3	1816.3	1801.4	1786.4	1771.4	1765.5
27.5°	1822.2	1798.3	1777.5	1756.6	1747.6	1738.6	1717.8	1699.8	1687.9	1672.9	1667.0
30°	1720.7	1696.8	1672.9	1654.9	1646.0	1631.1	1619.1	1598.2	1583.3	1571.4	1556.4
32.5°	1604.2	1586.3	1565.3	1538.4	1532.5	1520.6	1502.6	1493.7	1475.7	1466.8	1454.9
35°	1478.7	1466.8	1445.8	1424.9	1416.0	1410.0	1395.0	1377.2	1365.2	1356.2	1350.3
37.5°	1359.2	1344.3	1323.4	1308.4	1302.5	1293.5	1275.6	1266.6	1254.7	1248.7	1236.8
40°	1230.8	1215.8	1200.9	1191.9	1183.0	1177.0	1165.0	1156.1	1144.2	1135.1	1132.2
42.5°	1105.3	1096.3	1084.4	1072.4	1069.5	1060.5	1054.6	1045.5	1036.6	1033.6	1024.7
45°	991.7	982.8	970.9	958.9	955.9	950.0	947.0	938.1	932.0	932.0	932.0
47.5°	878.2	869.3	857.4	851.4	854.4	842.4	842.4	839.4	833.5	833.5	836.5
50°	776.7	764.8	761.7	755.8	749.8	743.9	746.8	737.9	737.9	743.9	740.9
52.5°	681.2	669.1	666.2	660.2	657.2	657.2	654.3	654.3	651.3	654.3	654.3
55°	594.5	585.5	579.5	573.6	570.6	570.6	570.6	567.6	564.7	570.6	573.6
57.5°	516.8	513.8	507.9	498.8	495.9	492.9	489.9	489.9	489.9	489.9	492.9
60°	448.2	442.1	436.1	427.2	427.2	424.2	421.3	418.3	418.3	418.3	418.3
62.5°	388.3	379.4	370.4	364.5	361.5	358.4	355.5	349.5	349.5	349.5	349.5
65°	328.6	319.6	313.7	307.7	301.7	301.7	295.7	292.7	286.8	283.8	277.9
67.5°	271.8	265.8	259.9	251.0	248.0	245.0	239.0	236.0	227.1	224.1	221.1
70°	221.1	212.1	206.1	200.2	197.2	191.2	185.2	179.2	173.3	167.3	161.4
72.5°	173.3	164.3	158.3	152.3	146.4	146.4	137.4	131.5	122.5	116.5	107.6
75°	128.4	119.5	113.5	104.6	101.6	98.5	89.6	83.7	74.7	65.7	59.7
77.5°	86.6	80.7	74.7	65.7	59.7	59.7	50.8	44.9	38.8	29.9	26.9
80°	53.8	47.8	41.8	35.8	35.8	29.9	26.9	20.9	15.0	11.9	8.9
82.5°	29.9	26.9	23.9	18.0	18.0	15.0	11.9	8.9	5.9	3.0	3.0
85°	15.0	11.9	8.9	8.9	5.9	5.9	5.9	3.0	3.0	0.0	0.0
87.5°	5.9	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°	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6
2.5°	2231.5	2231.5	2228.5	2228.5	2228.5	2225.5	2228.5	2225.5	2225.5	2225.5	2228.5
5°	2219.6	2213.6	2213.6	2210.7	2210.7	2207.7	2210.7	2207.7	2204.7	2201.6	2204.7
7.5°	2195.7	2189.7	2186.7	2183.8	2183.8	2183.8	2180.8	2177.8	2180.8	2171.8	2177.8
10°	2162.8	2159.8	2153.9	2150.9	2148.0	2150.9	2148.0	2141.9	2141.9	2141.9	2138.9
12.5°	2121.1	2115.0	2112.0	2109.0	2103.1	2103.1	2106.1	2100.1	2100.1	2094.2	2094.2
15°	2070.2	2064.3	2058.2	2058.2	2052.3	2052.3	2049.3	2049.3	2046.3	2043.3	2043.3
17.5°	2007.5	1998.5	1992.5	1995.5	1992.5	1989.6	1989.6	1983.6	1980.6	1983.6	1983.6
20°	1932.8	1926.8	1920.9	1923.9	1917.9	1914.8	1917.9	1908.9	1911.9	1911.9	1911.9
22.5°	1849.1	1846.2	1837.2	1837.2	1831.3	1828.2	1831.3	1831.3	1834.3	1831.3	1831.3
25°	1756.6	1750.6	1744.7	1744.7	1741.6	1738.6	1741.6	1744.7	1741.6	1744.7	1744.7
27.5°	1658.0	1649.0	1649.0	1643.0	1643.0	1646.0	1643.0	1646.0	1649.0	1649.0	1654.9
30°	1550.5	1547.5	1544.5	1541.5	1541.5	1544.5	1544.5	1544.5	1547.5	1553.4	1553.4
32.5°	1448.8	1442.9	1436.9	1436.9	1442.9	1439.9	1442.9	1442.9	1448.8	1448.8	1454.9
35°	1338.3	1338.3	1332.3	1335.3	1335.3	1335.3	1335.3	1341.4	1347.3	1350.3	1356.2
37.5°	1236.8	1227.8	1230.8	1230.8	1233.8	1230.8	1239.7	1239.7	1245.7	1245.7	1251.6
40°	1126.2	1126.2	1129.2	1126.2	1129.2	1129.2	1135.1	1141.2	1144.2	1150.1	1153.1
42.5°	1021.6	1027.7	1021.6	1024.7	1027.7	1030.7	1033.6	1036.6	1048.5	1054.6	1063.5
45°	926.1	929.0	932.0	935.0	932.0	938.1	941.1	947.0	955.9	958.9	961.9
47.5°	833.5	836.5	839.4	842.4	842.4	848.4	851.4	857.4	863.3	866.3	869.3
50°	743.9	749.8	752.8	752.8	755.8	761.7	767.8	767.8	773.7	782.7	785.6
52.5°	663.2	663.2	669.1	672.1	675.1	675.1	684.1	687.1	690.1	696.0	702.0
55°	573.6	582.5	585.5	585.5	591.5	597.5	600.5	603.4	603.4	615.3	615.3
57.5°	495.9	498.8	504.9	504.9	504.9	513.8	513.8	519.8	522.8	525.7	531.7
60°	418.3	424.2	424.2	427.2	424.2	430.2	433.2	439.1	442.1	445.1	448.2
62.5°	346.5	346.5	349.5	349.5	349.5	349.5	355.5	355.5	361.5	364.5	367.5
65°	277.9	277.9	277.9	277.9	277.9	277.9	277.9	277.9	280.8	280.8	286.8
67.5°	215.0	212.1	206.1	209.1	206.1	206.1	203.1	203.1	206.1	206.1	212.1
70°	155.3	152.3	146.4	146.4	143.4	140.4	137.4	134.5	131.5	131.5	131.5
72.5°	101.6	95.6	86.6	83.7	83.7	77.7	71.6	68.7	68.7	68.7	68.7
75°	50.8	44.9	38.8	35.8	35.8	29.9	32.8	29.9	29.9	29.9	29.9
77.5°	20.9	15.0	11.9	11.9	11.9	8.9	8.9	8.9	8.9	8.9	8.9
80°	5.9	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: P584616

CATALOG NUMBER: HC840D010-HM82555935-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6	2237.6
2.5°	2225.5	2225.5	2219.6	2222.6	2222.6	2222.6	2222.6	2222.6
5°	2198.6	2201.6	2198.6	2201.6	2201.6	2198.6	2198.6	2198.6
7.5°	2171.8	2174.7	2171.8	2174.7	2174.7	2174.7	2171.8	2171.8
10°	2138.9	2138.9	2138.9	2138.9	2138.9	2135.9	2138.9	2138.9
12.5°	2094.2	2094.2	2094.2	2097.1	2097.1	2094.2	2094.2	2091.2
15°	2046.3	2040.4	2043.3	2046.3	2043.3	2043.3	2043.3	2043.3
17.5°	1980.6	1983.6	1980.6	1980.6	1980.6	1980.6	1983.6	1980.6
20°	1911.9	1911.9	1914.8	1911.9	1911.9	1911.9	1911.9	1908.9
22.5°	1834.3	1831.3	1831.3	1834.3	1834.3	1831.3	1834.3	1834.3
25°	1747.6	1750.6	1747.6	1747.6	1750.6	1750.6	1750.6	1747.6
27.5°	1654.9	1658.0	1661.0	1658.0	1658.0	1658.0	1661.0	1664.0
30°	1559.4	1565.3	1559.4	1559.4	1565.3	1562.4	1565.3	1565.3
32.5°	1457.9	1466.8	1460.8	1466.8	1466.8	1469.8	1466.8	1469.8
35°	1356.2	1365.2	1365.2	1365.2	1368.1	1371.2	1371.2	1368.1
37.5°	1260.7	1263.7	1263.7	1269.6	1272.6	1275.6	1275.6	1272.6
40°	1162.0	1168.1	1171.1	1171.1	1171.1	1177.0	1183.0	1177.0
42.5°	1066.5	1069.5	1072.4	1072.4	1078.4	1081.5	1084.4	1084.4
45°	973.9	979.8	982.8	985.8	988.8	994.8	991.7	997.8
47.5°	878.2	887.3	890.2	893.2	899.2	902.1	905.1	908.2
50°	791.6	797.7	797.7	803.6	812.5	812.5	818.5	821.6
52.5°	705.0	708.0	711.0	714.0	719.9	725.9	725.9	731.8
55°	621.4	624.4	624.4	627.4	630.3	642.2	645.2	645.2
57.5°	534.8	534.8	540.7	543.7	546.7	552.6	552.6	552.6
60°	451.1	454.1	454.1	457.1	460.1	466.0	469.0	466.0
62.5°	367.5	370.4	370.4	373.4	379.4	382.3	379.4	379.4
65°	289.8	292.7	292.7	295.7	301.7	301.7	298.7	301.7
67.5°	212.1	212.1	212.1	212.1	212.1	212.1	212.1	212.1
70°	134.5	131.5	128.4	131.5	131.5	131.5	128.4	134.5
72.5°	65.7	68.7	68.7	68.7	68.7	68.7	68.7	65.7
75°	29.9	29.9	26.9	26.9	26.9	29.9	29.9	26.9
77.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
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



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













(END OF REPORT)