

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: P584624

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584624
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: HC840D010-HM82555935-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4061.4 lumens
Efficiency: N/A
Efficacy: 99.1 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

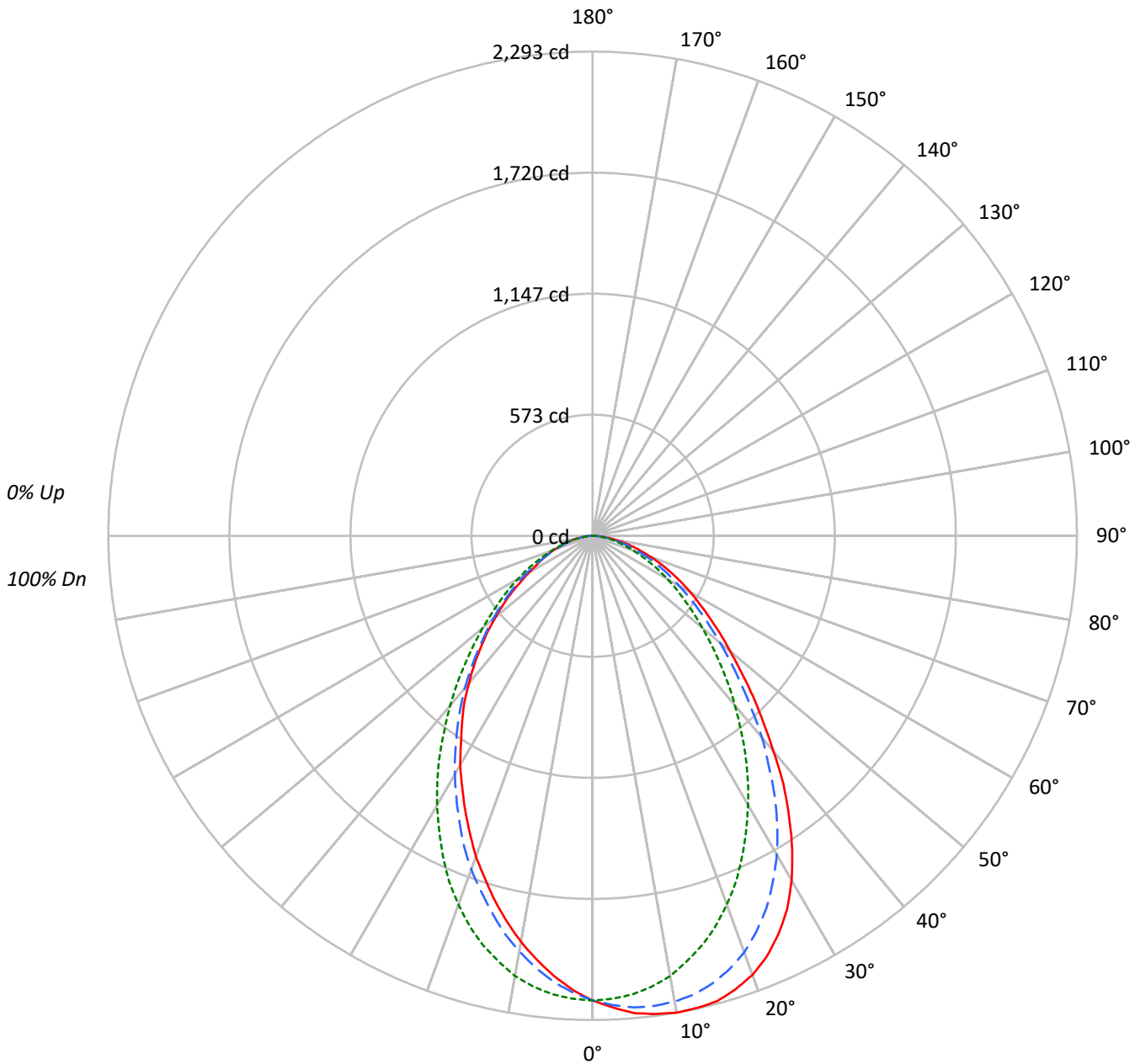
Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	67861	67861	67861
5°	70244	67471	64793
10°	71805	66288	61146
15°	72825	64059	57099
20°	72607	60945	53010
25°	70811	56997	48665
30°	67087	52413	44654
35°	61036	47435	40577
40°	53606	42186	36659
45°	46749	37111	32685
50°	40681	32516	28793
55°	36278	28574	25042
60°	32964	25045	21363
65°	29631	21787	19387
70°	26381	18573	17500
75°	23126	15655	14940
80°	19605	12715	13247
85°	14789	9517	10579



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	206.1	5.1
10°-20°	567.9	14.0
20°-30°	788.3	19.4
30°-40°	815.1	20.1
40°-50°	682.5	16.8
50°-60°	495.4	12.2
60°-70°	312.7	7.7
70°-80°	154.9	3.8
80°-90°	38.5	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°	1562.4	38.5
0°-40°	2377.5	58.5
0°-60°	3555.4	87.5
0°-90°	4061.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4061.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2201	2201	2201	2201	2201	
5°	2269	2242	2180	2120	2093	217
15°	2281	2195	2007	1845	1789	642
25°	2081	1947	1675	1493	1430	954
35°	1621	1502	1260	1117	1078	1010
45°	1072	994	851	767	750	829
55°	675	615	532	487	466	609
65°	406	355	299	263	266	405
75°	194	161	131	125	125	208
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°	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7
2.5°	2236.5	2236.5	2239.5	2236.5	2236.5	2236.5	2233.5	2233.5	2230.5	2230.5	2224.6
5°	2269.3	2263.4	2269.3	2263.4	2263.4	2263.4	2260.4	2254.5	2251.5	2245.4	2242.4
7.5°	2284.3	2281.2	2281.2	2278.3	2278.3	2275.3	2272.3	2269.3	2257.4	2254.5	2245.4
10°	2293.2	2290.3	2290.3	2287.3	2281.2	2281.2	2275.3	2272.3	2257.4	2251.5	2239.5
12.5°	2290.3	2290.3	2290.3	2287.3	2278.3	2275.3	2269.3	2260.4	2248.4	2236.5	2224.6
15°	2281.2	2281.2	2275.3	2272.3	2263.4	2257.4	2254.5	2239.5	2227.6	2212.6	2194.7
17.5°	2251.5	2251.5	2248.4	2242.4	2233.5	2227.6	2221.6	2206.6	2194.7	2170.8	2152.9
20°	2212.6	2209.6	2206.6	2197.7	2188.8	2185.8	2176.7	2155.9	2140.9	2123.1	2099.2
22.5°	2155.9	2152.9	2149.9	2143.9	2129.0	2123.1	2117.0	2102.1	2075.2	2057.4	2027.5
25°	2081.2	2081.2	2075.2	2066.3	2051.3	2045.4	2036.4	2021.5	1997.7	1970.8	1946.8
27.5°	1994.7	1991.7	1982.7	1976.7	1964.8	1955.8	1940.9	1922.9	1899.1	1878.2	1848.3
30°	1884.1	1884.1	1878.2	1869.3	1854.3	1848.3	1836.4	1815.5	1791.5	1764.8	1743.8
32.5°	1758.7	1758.7	1749.8	1743.8	1734.9	1719.9	1716.9	1693.0	1672.2	1651.2	1627.3
35°	1621.4	1624.4	1618.4	1606.5	1591.5	1591.5	1585.6	1564.6	1540.8	1519.9	1501.9
37.5°	1484.0	1475.1	1472.0	1466.1	1457.2	1445.3	1439.2	1430.3	1409.4	1394.4	1367.5
40°	1331.7	1334.7	1328.8	1322.8	1319.8	1310.9	1307.8	1292.9	1277.9	1260.1	1248.2
42.5°	1194.4	1194.4	1194.4	1188.5	1182.5	1173.5	1170.5	1161.6	1143.6	1131.7	1113.7
45°	1072.0	1063.0	1063.0	1060.1	1057.1	1051.0	1042.1	1036.1	1024.2	1015.2	994.4
47.5°	952.5	955.6	952.5	949.5	940.6	937.6	934.6	922.7	910.7	901.8	886.8
50°	848.0	853.9	848.0	848.0	842.0	839.1	833.1	824.1	815.2	800.3	785.3
52.5°	761.5	761.5	758.4	755.4	746.5	740.5	737.6	734.6	719.6	707.7	695.7
55°	674.8	677.8	677.8	668.9	665.9	659.9	656.9	648.0	642.0	624.0	615.1
57.5°	600.2	597.1	600.2	594.2	588.2	582.3	579.3	573.3	564.3	552.4	540.5
60°	534.5	528.5	528.5	525.5	519.6	516.6	510.6	501.7	492.7	480.8	471.8
62.5°	468.7	465.8	462.8	459.8	453.9	450.9	447.9	439.0	429.9	421.0	412.1
65°	406.1	406.1	403.1	397.1	394.1	391.2	388.2	382.2	370.2	364.3	355.3
67.5°	349.4	346.4	346.4	340.5	334.4	331.4	331.4	325.5	316.5	307.6	301.5
70°	292.6	295.6	292.6	289.6	283.7	283.7	277.7	274.7	262.8	259.8	250.9
72.5°	241.8	241.8	238.8	238.8	232.9	229.9	229.9	224.0	218.0	212.1	206.0
75°	194.1	194.1	194.1	191.1	188.1	182.2	182.2	179.2	173.1	167.2	161.2
77.5°	152.3	149.3	149.3	146.4	143.3	140.3	140.3	137.3	131.4	128.4	122.5
80°	110.4	107.5	107.5	107.5	101.5	104.5	101.5	98.5	95.6	92.6	89.6
82.5°	71.6	74.6	74.6	71.6	68.7	68.7	68.7	65.7	65.7	62.7	59.7
85°	41.8	41.8	41.8	41.8	38.8	38.8	38.8	35.8	35.8	35.8	32.8
87.5°	18.0	18.0	18.0	18.0	18.0	18.0	14.9	14.9	14.9	14.9	14.9
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°	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7
2.5°	2224.6	2218.6	2215.5	2212.6	2212.6	2209.6	2206.6	2200.7	2200.7	2194.7	2191.7
5°	2236.5	2227.6	2221.6	2215.5	2212.6	2206.6	2200.7	2191.7	2188.8	2179.7	2170.8
7.5°	2239.5	2224.6	2218.6	2206.6	2200.7	2194.7	2182.7	2173.8	2161.9	2152.9	2140.9
10°	2227.6	2215.5	2200.7	2185.8	2182.7	2173.8	2155.9	2143.9	2129.0	2117.0	2099.2
12.5°	2209.6	2191.7	2176.7	2158.9	2149.9	2140.9	2123.1	2105.1	2084.2	2063.3	2045.4
15°	2179.7	2158.9	2138.0	2117.0	2105.1	2096.2	2075.2	2054.3	2033.5	2006.6	1988.6
17.5°	2135.0	2111.1	2090.2	2063.3	2051.3	2042.4	2015.5	1991.7	1964.8	1937.9	1919.9
20°	2078.2	2048.3	2024.5	1994.7	1985.6	1970.8	1943.9	1917.0	1887.1	1857.2	1836.4
22.5°	2003.6	1973.7	1946.8	1917.0	1902.1	1887.1	1860.2	1827.4	1797.6	1773.7	1752.8
25°	1917.0	1890.1	1857.2	1830.5	1812.5	1794.5	1764.8	1737.9	1711.0	1675.2	1654.2
27.5°	1821.4	1788.6	1764.8	1728.8	1711.0	1699.1	1666.1	1630.3	1606.5	1573.7	1549.7
30°	1714.0	1684.1	1657.2	1621.4	1603.5	1591.5	1561.6	1528.8	1505.0	1472.0	1448.2
32.5°	1600.4	1567.6	1534.7	1510.9	1490.0	1478.1	1445.3	1424.3	1394.4	1367.5	1340.7
35°	1478.1	1445.3	1421.3	1388.5	1376.6	1364.6	1337.7	1310.9	1284.0	1260.1	1239.1
37.5°	1346.7	1322.8	1295.9	1272.0	1263.1	1251.2	1218.3	1194.4	1173.5	1149.7	1131.7
40°	1218.3	1197.4	1179.4	1155.6	1140.6	1131.7	1107.8	1086.9	1063.0	1048.0	1030.2
42.5°	1101.8	1077.9	1060.1	1042.1	1027.2	1018.2	997.3	982.3	964.5	949.5	928.7
45°	979.4	967.5	946.5	931.7	922.7	910.7	895.8	877.9	863.0	851.0	836.1
47.5°	871.9	860.0	845.0	827.2	821.1	812.2	797.3	785.3	773.4	761.5	746.5
50°	773.4	758.4	746.5	734.6	728.6	719.6	704.7	698.8	689.7	677.8	668.9
52.5°	683.8	671.9	659.9	645.0	642.0	636.1	627.0	615.1	606.2	600.2	594.2
55°	603.2	591.2	582.3	570.4	567.4	561.3	549.4	543.5	537.5	531.5	525.5
57.5°	531.5	519.6	507.7	501.7	495.6	489.7	486.7	477.8	471.8	468.7	462.8
60°	465.8	453.9	444.9	435.9	432.9	429.9	424.0	418.0	412.1	406.1	403.1
62.5°	403.1	391.2	385.2	379.3	373.3	373.3	367.2	361.3	355.3	352.4	346.4
65°	346.4	340.5	331.4	322.5	319.5	319.5	310.6	307.6	304.5	298.6	292.6
67.5°	292.6	286.7	277.7	274.7	271.7	268.7	265.7	259.8	253.8	250.9	244.9
70°	244.9	238.8	232.9	229.9	226.9	224.0	218.0	215.0	209.0	206.0	203.0
72.5°	197.1	194.1	188.1	185.2	182.2	179.2	176.1	173.1	167.2	164.2	161.2
75°	158.3	155.3	149.3	146.4	143.3	143.3	140.3	134.4	131.4	131.4	128.4
77.5°	119.5	116.5	113.5	110.4	107.5	107.5	104.5	101.5	98.5	98.5	95.6
80°	86.6	83.7	80.6	80.6	80.6	77.6	74.6	74.6	71.6	71.6	68.7
82.5°	56.8	56.8	53.8	53.8	53.8	50.8	50.8	47.7	47.7	47.7	47.7
85°	32.8	32.8	32.8	29.9	29.9	29.9	29.9	29.9	29.9	26.9	29.9
87.5°	14.9	14.9	14.9	14.9	14.9	14.9	14.9	14.9	11.9	11.9	11.9
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7
2.5°	2188.8	2185.8	2179.7	2179.7	2173.8	2173.8	2170.8	2167.8	2164.8	2161.9	2158.9
5°	2167.8	2155.9	2149.9	2146.9	2140.9	2138.0	2129.0	2123.1	2120.1	2114.0	2108.1
7.5°	2129.0	2117.0	2105.1	2102.1	2099.2	2087.1	2078.2	2069.3	2063.3	2057.4	2051.3
10°	2084.2	2072.3	2057.4	2051.3	2045.4	2030.5	2018.5	2009.6	1997.7	1985.6	1982.7
12.5°	2030.5	2012.5	1994.7	1988.6	1979.7	1964.8	1952.8	1937.9	1929.0	1914.0	1911.0
15°	1967.8	1946.8	1932.0	1917.0	1911.0	1896.1	1875.2	1863.3	1845.3	1839.4	1824.4
17.5°	1893.2	1872.2	1851.3	1845.3	1836.4	1815.5	1794.5	1779.6	1761.7	1752.8	1743.8
20°	1815.5	1788.6	1767.7	1761.7	1749.8	1731.9	1711.0	1696.0	1681.1	1663.1	1654.2
22.5°	1725.9	1696.0	1678.1	1663.1	1660.2	1639.3	1615.4	1603.5	1591.5	1576.6	1564.6
25°	1627.3	1600.4	1579.6	1567.6	1561.6	1543.8	1525.8	1510.9	1493.0	1484.0	1469.1
27.5°	1525.8	1508.0	1481.1	1469.1	1460.1	1445.3	1424.3	1415.4	1397.4	1385.5	1376.6
30°	1427.3	1400.4	1385.5	1370.5	1361.6	1346.7	1328.8	1319.8	1304.8	1292.9	1284.0
32.5°	1319.8	1301.9	1281.0	1275.0	1263.1	1248.2	1236.2	1221.3	1209.3	1197.4	1194.4
35°	1221.3	1197.4	1176.4	1170.5	1161.6	1146.6	1140.6	1131.7	1116.8	1113.7	1101.8
37.5°	1113.7	1101.8	1077.9	1069.0	1066.0	1054.1	1042.1	1036.1	1027.2	1018.2	1015.2
40°	1012.2	997.3	985.3	976.4	970.4	961.5	949.5	946.5	940.6	928.7	925.7
42.5°	916.7	901.8	889.8	886.8	877.9	868.9	863.0	853.9	851.0	848.0	842.0
45°	824.1	815.2	803.2	800.3	797.3	785.3	779.3	773.4	767.4	764.5	758.4
47.5°	740.5	731.6	722.6	719.6	713.6	710.7	701.7	698.8	689.7	686.7	683.8
50°	659.9	653.9	648.0	645.0	639.0	636.1	630.0	624.0	618.1	615.1	612.1
52.5°	588.2	582.3	576.3	573.3	570.4	564.3	558.3	552.4	549.4	546.4	543.5
55°	519.6	513.6	510.6	507.7	504.7	501.7	492.7	489.7	486.7	483.7	477.8
57.5°	456.8	450.9	444.9	444.9	442.0	439.0	432.9	427.0	427.0	421.0	415.1
60°	400.1	394.1	388.2	385.2	382.2	376.3	373.3	370.2	367.2	364.3	358.3
62.5°	340.5	337.4	331.4	331.4	325.5	322.5	319.5	316.5	313.6	307.6	304.5
65°	289.6	286.7	280.7	277.7	277.7	274.7	268.7	265.7	262.8	262.8	259.8
67.5°	241.8	238.8	232.9	229.9	229.9	226.9	224.0	224.0	221.0	218.0	221.0
70°	200.0	194.1	194.1	191.1	191.1	188.1	185.2	185.2	185.2	188.1	188.1
72.5°	158.3	155.3	152.3	152.3	152.3	152.3	149.3	149.3	152.3	155.3	155.3
75°	125.4	122.5	122.5	122.5	119.5	119.5	122.5	122.5	125.4	125.4	125.4
77.5°	92.6	92.6	92.6	92.6	92.6	92.6	95.6	95.6	98.5	98.5	98.5
80°	68.7	68.7	68.7	68.7	68.7	71.6	71.6	71.6	71.6	71.6	74.6
82.5°	47.7	47.7	47.7	47.7	47.7	47.7	47.7	50.8	50.8	50.8	50.8
85°	26.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
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: P584624

CATALOG NUMBER: HC840D010-HM82555935-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7	2200.7
2.5°	2155.9	2155.9	2155.9	2158.9	2152.9	2152.9	2152.9	2152.9
5°	2105.1	2102.1	2099.2	2102.1	2096.2	2096.2	2093.2	2093.2
7.5°	2042.4	2039.4	2036.4	2036.4	2030.5	2030.5	2027.5	2024.5
10°	1973.7	1967.8	1970.8	1964.8	1961.8	1958.9	1955.8	1952.8
12.5°	1899.1	1893.2	1890.1	1884.1	1878.2	1875.2	1878.2	1872.2
15°	1818.4	1809.5	1806.5	1800.6	1794.5	1791.5	1791.5	1788.6
17.5°	1728.8	1722.9	1719.9	1714.0	1711.0	1705.0	1702.1	1699.1
20°	1645.3	1630.3	1633.3	1627.3	1624.4	1612.4	1612.4	1615.4
22.5°	1552.7	1543.8	1537.8	1531.8	1528.8	1522.8	1522.8	1519.9
25°	1460.1	1451.2	1448.2	1442.3	1439.2	1433.2	1430.3	1430.3
27.5°	1370.5	1358.6	1358.6	1352.7	1346.7	1343.7	1340.7	1337.7
30°	1275.0	1266.0	1263.1	1263.1	1260.1	1260.1	1251.2	1254.1
32.5°	1185.5	1179.4	1176.4	1170.5	1170.5	1167.5	1167.5	1158.6
35°	1095.9	1086.9	1089.9	1083.9	1080.9	1077.9	1080.9	1077.9
37.5°	1009.2	1003.3	1003.3	997.3	997.3	994.4	991.4	997.3
40°	922.7	919.6	916.7	913.7	916.7	913.7	907.7	910.7
42.5°	836.1	836.1	833.1	833.1	830.1	830.1	830.1	830.1
45°	758.4	755.4	755.4	752.4	752.4	752.4	752.4	749.5
47.5°	680.8	677.8	677.8	677.8	674.8	674.8	671.9	674.8
50°	606.2	606.2	603.2	603.2	606.2	603.2	600.2	600.2
52.5°	537.5	537.5	534.5	534.5	531.5	528.5	531.5	531.5
55°	474.8	471.8	468.7	468.7	465.8	462.8	462.8	465.8
57.5°	415.1	412.1	409.1	409.1	403.1	400.1	400.1	400.1
60°	358.3	352.4	352.4	349.4	349.4	346.4	346.4	346.4
62.5°	304.5	301.5	301.5	301.5	301.5	298.6	298.6	298.6
65°	259.8	259.8	259.8	262.8	262.8	265.7	265.7	265.7
67.5°	224.0	226.9	226.9	226.9	229.9	229.9	229.9	226.9
70°	191.1	191.1	191.1	194.1	194.1	194.1	194.1	194.1
72.5°	158.3	158.3	158.3	158.3	158.3	158.3	158.3	158.3
75°	125.4	128.4	128.4	128.4	125.4	128.4	128.4	125.4
77.5°	98.5	98.5	98.5	98.5	98.5	98.5	98.5	98.5
80°	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6
82.5°	50.8	50.8	50.8	50.8	50.8	50.8	50.8	50.8
85°	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9
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)