

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: P584599

Luminaire Tested: **HC840D010-HM82555930-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584599
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-HM82555930-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4229.8 lumens
Efficiency: N/A
Efficacy: 103.2 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

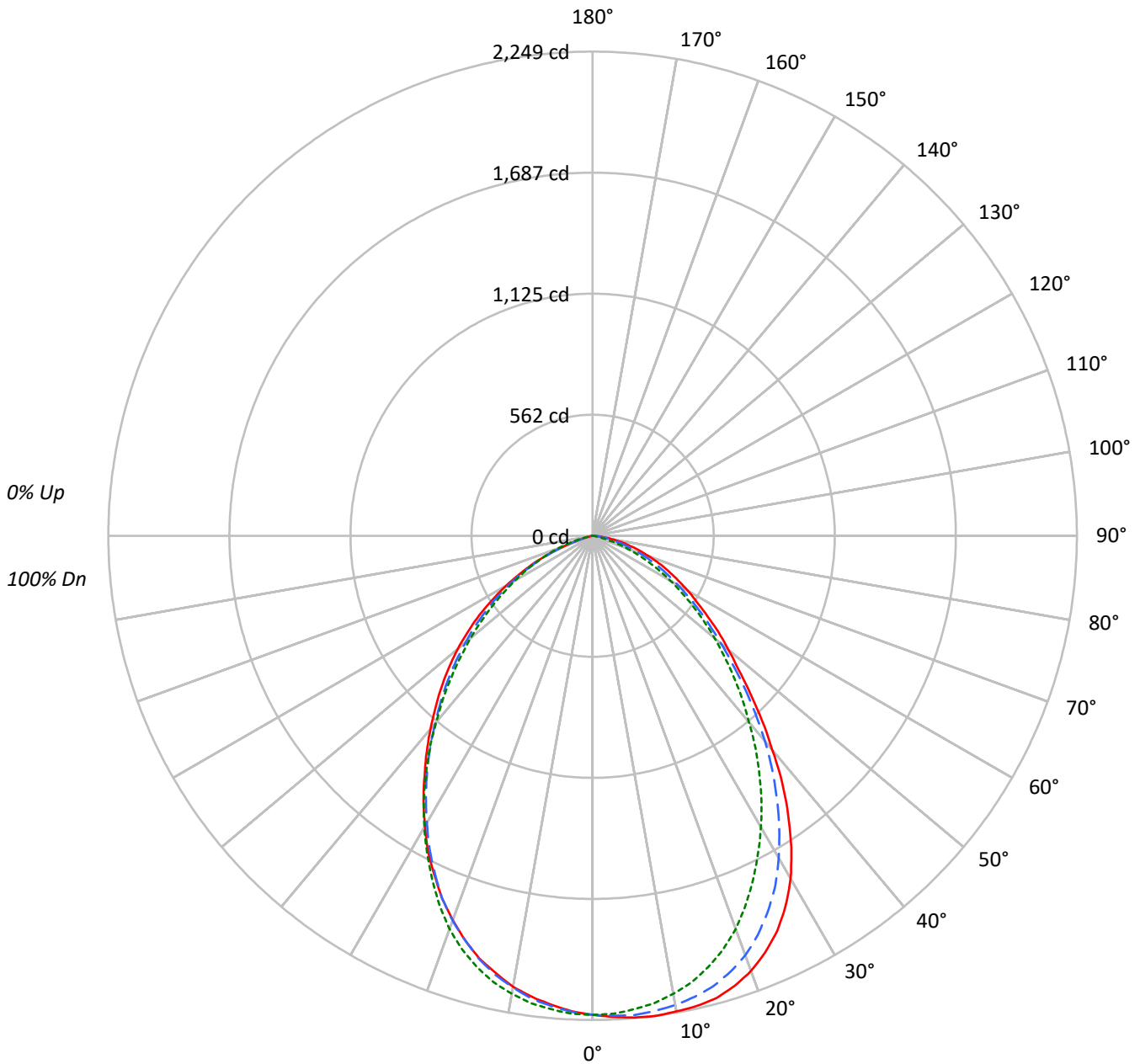
Input Watts (W): 41
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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			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	84	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°	68626	68626	68626
5°	69535	68337	67694
10°	70245	67640	66616
15°	70955	66214	64883
20°	70596	63770	62303
25°	68950	59950	59141
30°	65491	55650	55440
35°	59621	50782	51230
40°	52270	45451	47125
45°	45092	40426	43282
50°	39482	35490	39203
55°	34983	30510	34504
60°	31521	25656	28585
65°	28398	20598	21897
70°	24911	15003	12063
75°	21243	7780	3193
80°	16355	2113	533
85°	10543	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	210.0	5.0
10°-20°	590.3	14.0
20°-30°	837.8	19.8
30°-40°	881.9	20.9
40°-50°	750.2	17.7
50°-60°	542.2	12.8
60°-70°	308.4	7.3
70°-80°	97.2	2.3
80°-90°	11.8	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°	1638.1	38.7
0°-40°	2520.0	59.6
0°-60°	3812.4	90.1
0°-90°	4229.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4229.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2226	2226	2226	2226	2226	
5°	2246	2234	2208	2193	2187	214
15°	2223	2166	2074	2035	2032	626
25°	2026	1925	1762	1732	1738	928
35°	1584	1492	1349	1340	1361	985
45°	1034	995	927	951	992	804
55°	651	603	568	600	642	587
65°	389	336	282	279	300	386
75°	178	137	65	30	27	192
85°	30	18	0	0	0	38
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°	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5
2.5°	2237.4	2240.4	2234.5	2234.5	2240.4	2234.5	2237.4	2237.4	2234.5	2234.5	2231.5
5°	2246.4	2243.4	2243.4	2243.4	2246.4	2240.4	2237.4	2240.4	2234.5	2234.5	2234.5
7.5°	2249.3	2249.3	2246.4	2243.4	2243.4	2243.4	2240.4	2237.4	2234.5	2228.5	2225.5
10°	2243.4	2243.4	2246.4	2240.4	2240.4	2234.5	2234.5	2228.5	2228.5	2222.6	2213.6
12.5°	2237.4	2234.5	2234.5	2228.5	2228.5	2222.6	2222.6	2213.6	2210.7	2201.7	2192.8
15°	2222.6	2219.6	2213.6	2210.7	2207.7	2204.7	2198.8	2195.8	2186.9	2175.0	2166.2
17.5°	2192.8	2189.8	2186.9	2180.9	2175.0	2172.0	2169.1	2160.2	2148.3	2139.4	2124.5
20°	2151.3	2148.3	2148.3	2139.4	2136.4	2127.5	2124.5	2112.6	2103.7	2085.8	2074.1
22.5°	2094.8	2097.7	2091.8	2085.8	2079.9	2071.1	2065.1	2053.2	2038.4	2020.5	2005.6
25°	2026.5	2029.4	2023.5	2017.5	2008.6	2002.7	1996.7	1978.9	1964.1	1943.3	1925.4
27.5°	1940.3	1940.3	1940.3	1934.3	1919.5	1916.5	1910.5	1892.7	1872.0	1854.1	1836.3
30°	1839.3	1836.3	1836.3	1827.4	1821.4	1809.5	1800.6	1785.7	1771.0	1750.1	1729.3
32.5°	1717.4	1720.4	1711.5	1705.5	1696.6	1696.6	1684.8	1672.9	1655.1	1634.2	1613.4
35°	1583.8	1586.7	1580.8	1577.8	1562.9	1560.0	1557.0	1542.1	1530.2	1515.3	1491.7
37.5°	1447.0	1444.1	1441.1	1441.1	1432.2	1426.2	1420.3	1411.3	1393.6	1381.7	1369.8
40°	1298.5	1298.5	1298.5	1295.6	1292.6	1286.6	1283.7	1277.7	1265.8	1253.9	1245.0
42.5°	1164.8	1164.8	1161.8	1158.8	1152.9	1155.8	1149.9	1143.9	1132.0	1123.1	1117.2
45°	1034.0	1034.0	1034.0	1037.0	1031.0	1022.1	1022.1	1016.1	1010.3	1004.4	995.4
47.5°	918.1	927.0	921.1	918.1	921.1	909.3	909.3	903.3	897.4	891.4	879.5
50°	823.0	823.0	823.0	817.2	814.2	814.2	805.3	799.3	796.3	790.4	778.5
52.5°	736.8	730.9	730.9	727.9	724.9	719.1	719.1	713.2	701.3	695.3	686.4
55°	650.7	650.7	647.7	644.7	641.8	638.8	635.8	627.0	621.1	612.1	603.2
57.5°	573.5	579.4	576.4	570.5	564.5	564.5	558.6	552.6	543.7	534.8	526.0
60°	511.1	508.1	508.1	505.2	499.2	496.2	493.3	484.3	475.4	466.5	457.6
62.5°	445.7	445.7	445.7	439.7	433.9	430.9	427.9	422.0	410.1	401.1	395.2
65°	389.2	386.3	383.3	380.3	377.3	371.4	368.4	362.5	353.5	344.6	335.8
67.5°	332.8	329.9	329.9	326.9	318.0	315.0	315.0	306.1	297.1	288.2	279.3
70°	276.3	276.3	276.3	270.4	267.4	264.4	261.4	255.5	246.6	237.8	228.8
72.5°	228.8	225.9	225.9	222.9	214.0	211.0	208.0	202.1	193.1	187.2	181.2
75°	178.3	178.3	175.3	172.3	169.3	166.4	163.4	157.4	148.5	139.7	136.7
77.5°	136.7	133.8	133.8	130.8	124.8	121.9	121.9	115.9	107.0	101.0	95.1
80°	92.1	95.1	92.1	89.1	86.2	83.2	80.2	77.2	71.3	65.3	59.4
82.5°	56.4	59.4	56.4	56.4	53.4	50.5	50.5	44.6	41.6	38.7	35.7
85°	29.8	29.8	29.8	29.8	26.8	26.8	26.8	23.8	20.8	17.8	17.8
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°	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5
2.5°	2234.5	2231.5	2228.5	2228.5	2228.5	2228.5	2228.5	2225.5	2222.6	2222.6	2222.6
5°	2228.5	2228.5	2228.5	2225.5	2222.6	2222.6	2216.6	2213.6	2210.7	2207.7	2204.7
7.5°	2222.6	2216.6	2213.6	2210.7	2207.7	2207.7	2201.7	2195.8	2195.8	2189.8	2183.9
10°	2204.7	2201.7	2195.8	2189.8	2186.9	2183.9	2177.9	2169.1	2166.2	2160.2	2154.3
12.5°	2183.9	2177.9	2172.0	2160.2	2157.2	2154.3	2142.4	2133.4	2127.5	2124.5	2109.6
15°	2157.2	2145.3	2136.4	2121.5	2118.6	2112.6	2103.7	2094.8	2082.9	2074.1	2068.1
17.5°	2109.6	2097.7	2082.9	2068.1	2062.2	2062.2	2047.3	2035.4	2020.5	2014.6	2002.7
20°	2053.2	2038.4	2026.5	2008.6	1999.7	1990.8	1981.8	1964.1	1952.2	1943.3	1928.4
22.5°	1987.8	1967.1	1952.2	1934.3	1919.5	1910.5	1895.7	1880.9	1866.0	1857.1	1845.2
25°	1904.6	1886.7	1863.1	1845.2	1836.3	1824.4	1806.5	1791.7	1776.9	1762.0	1756.1
27.5°	1812.5	1788.7	1768.0	1747.2	1738.2	1729.3	1708.5	1690.6	1678.9	1664.0	1658.0
30°	1711.5	1687.8	1664.0	1646.1	1637.2	1622.3	1610.4	1589.7	1574.8	1562.9	1548.1
32.5°	1595.6	1577.8	1557.0	1530.2	1524.3	1512.4	1494.6	1485.7	1467.9	1458.9	1447.0
35°	1470.8	1458.9	1438.1	1417.3	1408.4	1402.4	1387.7	1369.8	1357.9	1349.0	1343.0
37.5°	1352.0	1337.1	1316.3	1301.5	1295.6	1286.6	1268.8	1259.9	1248.0	1242.0	1230.1
40°	1224.2	1209.3	1194.5	1185.6	1176.7	1170.7	1158.8	1149.9	1138.0	1129.1	1126.1
42.5°	1099.4	1090.5	1078.6	1066.7	1063.7	1054.8	1048.9	1039.9	1031.0	1028.0	1019.1
45°	986.5	977.6	965.7	953.8	950.8	944.9	941.9	933.0	927.0	927.0	927.0
47.5°	873.6	864.7	852.8	846.8	849.8	837.9	837.9	834.9	829.0	829.0	831.9
50°	772.5	760.6	757.7	751.7	745.8	739.8	742.8	733.9	733.9	739.8	736.8
52.5°	677.5	665.6	662.6	656.6	653.7	653.7	650.7	650.7	647.7	650.7	650.7
55°	591.3	582.4	576.4	570.5	567.5	567.5	567.5	564.5	561.6	567.5	570.5
57.5°	514.1	511.1	505.2	496.2	493.3	490.3	487.3	487.3	487.3	487.3	490.3
60°	445.7	439.7	433.9	424.9	424.9	422.0	419.0	416.0	416.0	416.0	416.0
62.5°	386.3	377.3	368.4	362.5	359.5	356.5	353.5	347.6	347.6	347.6	347.6
65°	326.9	318.0	312.0	306.1	300.1	300.1	294.2	291.2	285.2	282.3	276.3
67.5°	270.4	264.4	258.5	249.5	246.6	243.6	237.8	234.8	225.9	222.9	219.9
70°	219.9	211.0	205.0	199.1	196.1	190.2	184.2	178.3	172.3	166.4	160.4
72.5°	172.3	163.4	157.4	151.5	145.5	145.5	136.7	130.8	121.9	115.9	107.0
75°	127.8	118.9	112.9	104.0	101.0	98.1	89.1	83.2	74.3	65.3	59.4
77.5°	86.2	80.2	74.3	65.3	59.4	59.4	50.5	44.6	38.7	29.8	26.8
80°	53.4	47.6	41.6	35.7	35.7	29.8	26.8	20.8	14.9	11.9	8.9
82.5°	29.8	26.8	23.8	17.8	17.8	14.9	11.9	8.9	5.9	3.0	3.0
85°	14.9	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°	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5
2.5°	2219.6	2219.6	2216.6	2216.6	2216.6	2213.6	2216.6	2213.6	2213.6	2213.6	2216.6
5°	2207.7	2201.7	2201.7	2198.8	2198.8	2195.8	2198.8	2195.8	2192.8	2189.8	2192.8
7.5°	2183.9	2177.9	2175.0	2172.0	2172.0	2172.0	2169.1	2166.2	2169.1	2160.2	2166.2
10°	2151.3	2148.3	2142.4	2139.4	2136.4	2139.4	2136.4	2130.5	2130.5	2130.5	2127.5
12.5°	2109.6	2103.7	2100.7	2097.7	2091.8	2091.8	2094.8	2088.8	2088.8	2082.9	2082.9
15°	2059.2	2053.2	2047.3	2047.3	2041.3	2041.3	2038.4	2038.4	2035.4	2032.4	2032.4
17.5°	1996.7	1987.8	1981.8	1984.8	1981.8	1978.9	1978.9	1973.0	1970.0	1973.0	1973.0
20°	1922.4	1916.5	1910.5	1913.5	1907.6	1904.6	1907.6	1898.6	1901.6	1901.6	1901.6
22.5°	1839.3	1836.3	1827.4	1827.4	1821.4	1818.4	1821.4	1821.4	1824.4	1821.4	1821.4
25°	1747.2	1741.2	1735.3	1735.3	1732.3	1729.3	1732.3	1735.3	1732.3	1735.3	1735.3
27.5°	1649.1	1640.2	1640.2	1634.2	1634.2	1637.2	1634.2	1637.2	1640.2	1640.2	1646.1
30°	1542.1	1539.1	1536.2	1533.2	1533.2	1536.2	1536.2	1536.2	1539.1	1545.1	1545.1
32.5°	1441.1	1435.1	1429.2	1429.2	1435.1	1432.2	1435.1	1435.1	1441.1	1441.1	1447.0
35°	1331.1	1331.1	1325.2	1328.2	1328.2	1328.2	1328.2	1334.1	1340.1	1343.0	1349.0
37.5°	1230.1	1221.2	1224.2	1224.2	1227.1	1224.2	1233.1	1233.1	1239.0	1239.0	1245.0
40°	1120.1	1120.1	1123.1	1120.1	1123.1	1123.1	1129.1	1135.0	1138.0	1143.9	1146.9
42.5°	1016.1	1022.1	1016.1	1019.1	1022.1	1025.1	1028.0	1031.0	1042.9	1048.9	1057.8
45°	921.1	924.0	927.0	930.0	927.0	933.0	935.9	941.9	950.8	953.8	956.8
47.5°	829.0	831.9	834.9	837.9	837.9	843.8	846.8	852.8	858.7	861.7	864.7
50°	739.8	745.8	748.7	748.7	751.7	757.7	763.6	763.6	769.6	778.5	781.5
52.5°	659.6	659.6	665.6	668.5	671.5	671.5	680.4	683.4	686.4	692.3	698.3
55°	570.5	579.4	582.4	582.4	588.3	594.3	597.3	600.2	600.2	612.1	612.1
57.5°	493.3	496.2	502.2	502.2	502.2	511.1	511.1	517.1	520.0	523.0	529.0
60°	416.0	422.0	422.0	424.9	422.0	427.9	430.9	436.7	439.7	442.7	445.7
62.5°	344.6	344.6	347.6	347.6	347.6	347.6	353.5	353.5	359.5	362.5	365.4
65°	276.3	276.3	276.3	276.3	276.3	276.3	276.3	276.3	279.3	279.3	285.2
67.5°	214.0	211.0	205.0	208.0	205.0	205.0	202.1	202.1	205.0	205.0	211.0
70°	154.5	151.5	145.5	145.5	142.7	139.7	136.7	133.8	130.8	130.8	130.8
72.5°	101.0	95.1	86.2	83.2	83.2	77.2	71.3	68.3	68.3	68.3	68.3
75°	50.5	44.6	38.7	35.7	35.7	29.8	32.7	29.8	29.8	29.8	29.8
77.5°	20.8	14.9	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: P584599

CATALOG NUMBER: HC840D010-HM82555930-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5	2225.5
2.5°	2213.6	2213.6	2207.7	2210.7	2210.7	2210.7	2210.7	2210.7
5°	2186.9	2189.8	2186.9	2189.8	2189.8	2186.9	2186.9	2186.9
7.5°	2160.2	2163.2	2160.2	2163.2	2163.2	2163.2	2160.2	2160.2
10°	2127.5	2127.5	2127.5	2127.5	2127.5	2124.5	2127.5	2127.5
12.5°	2082.9	2082.9	2082.9	2085.8	2085.8	2082.9	2082.9	2079.9
15°	2035.4	2029.4	2032.4	2035.4	2032.4	2032.4	2032.4	2032.4
17.5°	1970.0	1973.0	1970.0	1970.0	1970.0	1970.0	1973.0	1970.0
20°	1901.6	1901.6	1904.6	1901.6	1901.6	1901.6	1901.6	1898.6
22.5°	1824.4	1821.4	1821.4	1824.4	1824.4	1821.4	1824.4	1824.4
25°	1738.2	1741.2	1738.2	1738.2	1741.2	1741.2	1741.2	1738.2
27.5°	1646.1	1649.1	1652.1	1649.1	1649.1	1649.1	1652.1	1655.1
30°	1551.0	1557.0	1551.0	1551.0	1557.0	1554.0	1557.0	1557.0
32.5°	1450.0	1458.9	1453.0	1458.9	1458.9	1461.9	1458.9	1461.9
35°	1349.0	1357.9	1357.9	1357.9	1360.9	1363.9	1363.9	1360.9
37.5°	1253.9	1256.9	1256.9	1262.8	1265.8	1268.8	1268.8	1265.8
40°	1155.8	1161.8	1164.8	1164.8	1164.8	1170.7	1176.7	1170.7
42.5°	1060.8	1063.7	1066.7	1066.7	1072.7	1075.6	1078.6	1078.6
45°	968.7	974.6	977.6	980.6	983.5	989.5	986.5	992.5
47.5°	873.6	882.5	885.5	888.5	894.4	897.4	900.4	903.3
50°	787.4	793.4	793.4	799.3	808.2	808.2	814.2	817.2
52.5°	701.3	704.2	707.2	710.2	716.1	722.1	722.1	727.9
55°	618.1	621.1	621.1	624.0	627.0	638.8	641.8	641.8
57.5°	531.8	531.8	537.8	540.7	543.7	549.7	549.7	549.7
60°	448.6	451.6	451.6	454.6	457.6	463.5	466.5	463.5
62.5°	365.4	368.4	368.4	371.4	377.3	380.3	377.3	377.3
65°	288.2	291.2	291.2	294.2	300.1	300.1	297.1	300.1
67.5°	211.0	211.0	211.0	211.0	211.0	211.0	211.0	211.0
70°	133.8	130.8	127.8	130.8	130.8	130.8	127.8	133.8
72.5°	65.3	68.3	68.3	68.3	68.3	68.3	68.3	65.3
75°	29.8	29.8	26.8	26.8	26.8	29.8	29.8	26.8
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)