

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: P584642

Luminaire Tested: **HC840D010-HM82555940-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584642
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-18)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC840D010-HM82555940-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4674.2 lumens
Efficiency: N/A
Efficacy: 114.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.09 / 1.18
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

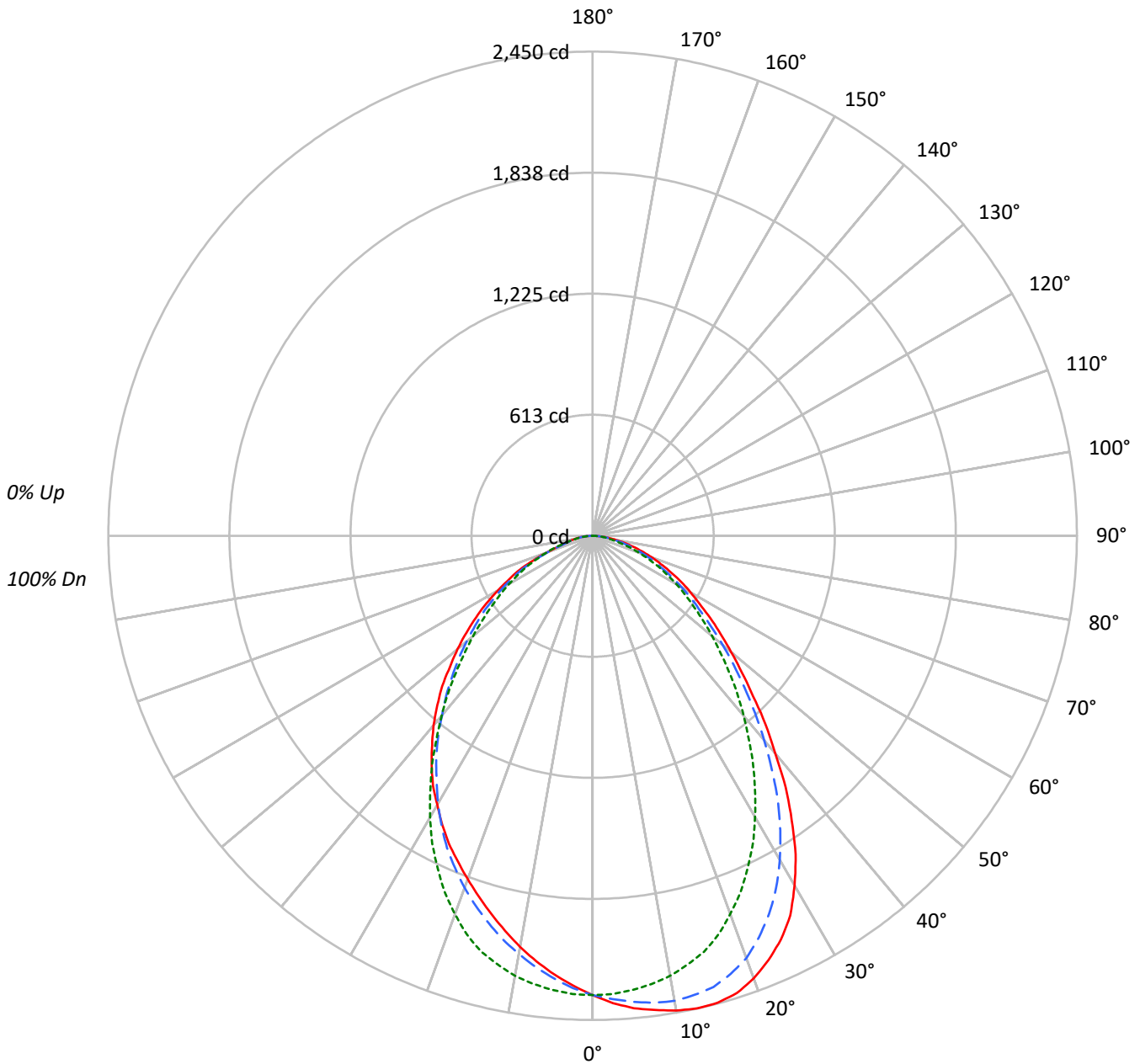
Input Watts (W): 41
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87								
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75								
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65								
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57								
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40								
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37								
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	71667	71667	71667
5°	74290	71427	68975
10°	76386	70803	66153
15°	78093	69556	63235
20°	78215	66838	60666
25°	76714	63122	58518
30°	72762	58537	55952
35°	66111	53312	53440
40°	57805	47842	50366
45°	50098	42610	46932
50°	43866	37851	42758
55°	39047	33542	38692
60°	35221	30133	34000
65°	31798	26494	29624
70°	28571	22323	22026
75°	25163	17693	16513
80°	21114	14668	15822
85°	16346	12843	14011



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.2	4.7
10°-20°	617.5	13.2
20°-30°	882.5	18.9
30°-40°	937.7	20.1
40°-50°	807.3	17.3
50°-60°	603.6	12.9
60°-70°	385.0	8.2
70°-80°	175.2	3.7
80°-90°	46.0	1.0
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°	1719.3	36.8
0°-40°	2657.0	56.8
0°-60°	4068.0	87.0
0°-90°	4674.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4674.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2324	2324	2324	2324	2324	
5°	2400	2367	2308	2248	2228	230
15°	2446	2364	2179	2030	1981	689
25°	2255	2113	1855	1743	1720	1032
35°	1756	1634	1416	1380	1420	1094
45°	1149	1086	977	1004	1076	893
55°	726	667	624	677	720	653
65°	436	386	363	380	406	435
75°	211	182	148	135	139	224
85°	46	40	36	40	40	56
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°	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1
2.5°	2366.9	2360.4	2363.6	2360.4	2363.6	2363.6	2357.0	2357.0	2357.0	2357.0	2347.2
5°	2400.0	2396.7	2396.7	2393.3	2390.0	2393.3	2390.0	2386.8	2380.1	2376.8	2366.9
7.5°	2419.7	2419.7	2419.7	2419.7	2416.4	2413.2	2409.9	2403.2	2396.7	2390.0	2383.5
10°	2439.5	2442.8	2439.5	2436.3	2433.0	2426.4	2423.1	2416.4	2406.5	2396.7	2390.0
12.5°	2449.5	2449.5	2446.2	2446.2	2439.5	2436.3	2426.4	2416.4	2406.5	2396.7	2380.1
15°	2446.2	2446.2	2442.8	2439.5	2429.6	2426.4	2419.7	2409.9	2393.3	2380.1	2363.6
17.5°	2426.4	2423.1	2416.4	2416.4	2403.2	2400.0	2393.3	2380.1	2363.6	2343.8	2324.1
20°	2383.5	2383.5	2380.1	2376.8	2363.6	2353.7	2347.2	2330.6	2317.4	2294.3	2274.4
22.5°	2324.1	2330.6	2324.1	2317.4	2300.9	2297.7	2287.7	2267.9	2248.1	2221.7	2198.5
25°	2254.7	2251.4	2248.1	2241.5	2228.3	2221.7	2208.5	2188.6	2168.9	2139.1	2112.7
27.5°	2165.6	2152.4	2152.4	2139.1	2129.3	2119.4	2112.7	2093.0	2066.6	2043.5	2010.4
30°	2043.5	2046.7	2030.3	2026.9	2010.4	2003.8	1990.6	1970.8	1947.7	1921.3	1894.8
32.5°	1911.4	1901.5	1901.5	1888.3	1875.1	1865.2	1861.9	1838.8	1818.9	1792.5	1766.1
35°	1756.2	1756.2	1746.3	1743.0	1729.8	1723.2	1713.4	1700.2	1676.9	1653.9	1634.1
37.5°	1604.4	1597.8	1594.5	1587.8	1577.9	1568.1	1568.1	1545.0	1541.6	1515.2	1488.8
40°	1436.0	1442.6	1436.0	1426.1	1422.8	1416.2	1412.9	1399.7	1389.8	1366.7	1350.2
42.5°	1294.0	1287.5	1287.5	1284.1	1270.9	1270.9	1264.4	1257.7	1241.3	1234.6	1214.9
45°	1148.8	1155.4	1145.5	1148.8	1135.6	1135.6	1135.6	1122.4	1109.2	1099.3	1086.1
47.5°	1023.4	1026.6	1026.6	1016.7	1013.4	1013.4	1006.9	1000.2	990.3	977.1	967.2
50°	914.4	917.7	911.1	907.9	901.2	898.0	898.0	884.8	878.1	864.9	858.3
52.5°	815.4	815.4	812.1	812.1	802.2	802.2	795.6	785.6	779.1	772.4	756.0
55°	726.3	726.3	722.9	719.7	719.7	709.7	706.5	696.5	690.0	676.8	666.9
57.5°	640.5	643.7	640.5	637.1	633.8	630.6	623.9	614.0	607.4	597.5	591.0
60°	571.1	571.1	567.7	564.5	557.9	554.5	551.3	544.7	534.8	528.2	518.2
62.5°	505.0	501.8	498.5	495.2	488.6	488.6	482.0	475.4	465.4	458.9	452.2
65°	435.8	435.8	432.4	432.4	429.1	422.6	419.2	415.9	402.7	399.5	386.3
67.5°	373.1	376.3	369.7	369.7	363.1	363.1	359.9	350.0	346.6	340.0	333.4
70°	316.9	316.9	316.9	313.6	307.0	303.7	300.4	293.8	290.5	283.9	277.3
72.5°	260.8	260.8	257.5	257.5	254.2	250.9	247.6	241.0	241.0	234.4	227.8
75°	211.2	211.2	208.0	204.7	201.3	201.3	198.0	194.8	188.1	184.8	181.6
77.5°	161.7	161.7	161.7	158.5	155.2	155.2	155.2	148.5	142.0	142.0	138.6
80°	118.9	118.9	115.5	115.5	112.2	112.2	112.2	108.9	105.7	102.3	99.0
82.5°	79.3	79.3	79.3	79.3	75.9	75.9	75.9	72.6	69.4	69.4	69.4
85°	46.2	46.2	46.2	46.2	43.0	43.0	43.0	43.0	43.0	39.6	39.6
87.5°	19.8	16.5	19.8	16.5	19.8	16.5	19.8	16.5	16.5	16.5	16.5
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°	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1
2.5°	2350.4	2347.2	2343.8	2340.5	2340.5	2337.3	2330.6	2327.3	2324.1	2320.7	2320.7
5°	2363.6	2360.4	2353.7	2347.2	2343.8	2337.3	2330.6	2324.1	2317.4	2307.5	2304.2
7.5°	2373.6	2363.6	2357.0	2343.8	2340.5	2333.9	2324.1	2314.1	2300.9	2287.7	2277.8
10°	2373.6	2360.4	2350.4	2333.9	2327.3	2320.7	2307.5	2291.0	2274.4	2261.2	2244.8
12.5°	2366.9	2350.4	2333.9	2317.4	2307.5	2297.7	2277.8	2261.2	2241.5	2221.7	2208.5
15°	2343.8	2324.1	2304.2	2284.4	2274.4	2261.2	2241.5	2218.4	2198.5	2178.8	2155.7
17.5°	2300.9	2281.1	2258.0	2234.9	2221.7	2211.7	2182.1	2165.6	2135.8	2116.1	2096.2
20°	2244.8	2221.7	2192.0	2168.9	2152.4	2142.5	2119.4	2089.6	2066.6	2036.8	2017.0
22.5°	2172.1	2142.5	2112.7	2089.6	2073.1	2059.9	2030.3	2000.5	1980.8	1954.3	1931.1
25°	2086.3	2056.7	2026.9	1993.8	1977.4	1964.2	1937.8	1911.4	1885.0	1855.2	1835.5
27.5°	1984.0	1951.0	1924.6	1894.8	1878.4	1858.5	1828.8	1802.5	1776.1	1756.2	1729.8
30°	1871.8	1835.5	1809.0	1779.3	1762.9	1746.3	1716.6	1690.2	1667.1	1644.0	1630.8
32.5°	1736.4	1710.0	1683.6	1653.9	1640.7	1630.8	1601.0	1574.6	1548.2	1528.4	1518.6
35°	1607.7	1577.9	1554.9	1528.4	1511.9	1502.0	1475.6	1452.5	1439.3	1416.2	1403.0
37.5°	1472.3	1449.2	1422.8	1396.3	1386.5	1376.6	1356.7	1333.6	1313.9	1297.3	1290.8
40°	1330.4	1310.5	1287.5	1270.9	1261.0	1251.2	1234.6	1218.1	1204.9	1188.5	1181.8
42.5°	1195.0	1181.8	1162.0	1142.2	1132.3	1129.0	1109.2	1096.0	1089.3	1082.8	1076.2
45°	1072.9	1053.0	1039.8	1026.6	1016.7	1010.2	1000.2	990.3	983.8	977.1	970.6
47.5°	954.0	937.5	924.3	914.4	904.5	901.2	894.6	884.8	878.1	878.1	878.1
50°	845.1	831.9	818.7	812.1	808.8	802.2	795.6	792.3	789.0	789.0	789.0
52.5°	749.3	736.1	726.3	719.7	719.7	713.0	706.5	703.2	703.2	703.2	703.2
55°	660.2	650.3	643.7	637.1	630.6	627.2	627.2	627.2	623.9	623.9	627.2
57.5°	581.0	574.4	564.5	557.9	554.5	554.5	551.3	548.0	551.3	554.5	557.9
60°	508.4	501.8	498.5	488.6	488.6	488.6	485.3	485.3	485.3	488.6	491.8
62.5°	442.3	439.1	432.4	429.1	425.9	425.9	422.6	422.6	422.6	422.6	425.9
65°	382.9	376.3	369.7	369.7	369.7	366.4	366.4	359.9	363.1	363.1	359.9
67.5°	326.8	320.2	316.9	313.6	310.4	310.4	307.0	303.7	300.4	300.4	300.4
70°	273.9	267.4	267.4	260.8	260.8	257.5	254.2	254.2	250.9	247.6	244.3
72.5°	221.2	217.9	214.6	211.2	211.2	211.2	208.0	204.7	201.3	198.0	191.5
75°	174.9	174.9	168.4	165.1	165.1	161.7	158.5	155.2	151.8	148.5	145.3
77.5°	135.3	132.1	125.4	122.1	122.1	122.1	118.9	115.5	112.2	108.9	105.7
80°	99.0	95.7	92.5	89.1	89.1	89.1	85.8	85.8	82.6	82.6	82.6
82.5°	66.0	66.0	62.7	62.7	62.7	62.7	59.4	59.4	59.4	59.4	59.4
85°	39.6	39.6	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3
87.5°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
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°	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1
2.5°	2314.1	2314.1	2307.5	2304.2	2300.9	2304.2	2297.7	2294.3	2291.0	2291.0	2287.7
5°	2294.3	2291.0	2277.8	2274.4	2271.2	2267.9	2261.2	2254.7	2248.1	2244.8	2241.5
7.5°	2267.9	2258.0	2244.8	2241.5	2238.2	2228.3	2218.4	2211.7	2201.9	2198.5	2192.0
10°	2231.6	2218.4	2208.5	2198.5	2192.0	2182.1	2172.1	2162.2	2149.0	2145.8	2135.8
12.5°	2188.6	2172.1	2152.4	2149.0	2139.1	2125.9	2112.7	2102.8	2093.0	2086.3	2076.4
15°	2135.8	2119.4	2099.5	2089.6	2079.8	2069.9	2053.3	2040.1	2030.3	2020.3	2010.4
17.5°	2073.1	2053.3	2036.8	2026.9	2020.3	2003.8	1990.6	1974.1	1964.2	1954.3	1944.3
20°	1997.2	1980.8	1957.6	1947.7	1944.3	1931.1	1914.7	1908.0	1894.8	1885.0	1878.4
22.5°	1911.4	1894.8	1875.1	1868.4	1855.2	1848.7	1832.1	1825.6	1818.9	1809.0	1805.7
25°	1815.6	1799.2	1782.6	1779.3	1769.4	1762.9	1752.9	1743.0	1743.0	1733.1	1733.1
27.5°	1716.6	1700.2	1686.9	1680.3	1676.9	1670.4	1660.5	1657.2	1653.9	1650.5	1650.5
30°	1611.0	1591.1	1584.6	1581.3	1577.9	1571.4	1568.1	1561.4	1564.7	1568.1	1564.7
32.5°	1498.7	1492.1	1478.9	1472.3	1475.6	1472.3	1465.7	1472.3	1469.1	1475.6	1478.9
35°	1389.8	1383.1	1376.6	1376.6	1369.9	1369.9	1369.9	1373.3	1379.9	1383.1	1389.8
37.5°	1284.1	1274.3	1270.9	1267.6	1270.9	1270.9	1270.9	1277.6	1284.1	1290.8	1300.7
40°	1171.9	1165.4	1165.4	1165.4	1165.4	1175.2	1171.9	1178.5	1185.1	1195.0	1204.9
42.5°	1066.2	1066.2	1069.6	1069.6	1069.6	1069.6	1076.2	1086.1	1096.0	1105.9	1115.7
45°	967.2	967.2	967.2	973.9	973.9	977.1	990.3	997.0	1003.5	1013.4	1023.4
47.5°	874.8	874.8	878.1	881.4	884.8	891.3	898.0	907.9	917.7	924.3	934.3
50°	789.0	792.3	798.8	805.5	805.5	808.8	818.7	825.3	831.9	841.8	845.1
52.5°	706.5	713.0	719.7	722.9	726.3	732.8	736.1	746.0	749.3	759.2	762.6
55°	630.6	633.8	643.7	647.0	647.0	653.7	660.2	666.9	676.8	676.8	683.3
57.5°	561.2	564.5	571.1	574.4	571.1	581.0	584.3	591.0	594.2	600.8	604.2
60°	491.8	498.5	501.8	501.8	505.0	508.4	515.0	515.0	521.6	528.2	528.2
62.5°	425.9	429.1	432.4	435.8	439.1	435.8	445.7	445.7	452.2	455.5	462.2
65°	363.1	366.4	366.4	369.7	369.7	373.1	373.1	376.3	379.6	386.3	389.5
67.5°	300.4	300.4	300.4	303.7	300.4	303.7	303.7	307.0	307.0	313.6	316.9
70°	244.3	241.0	237.6	237.6	237.6	237.6	234.4	237.6	237.6	241.0	241.0
72.5°	188.1	184.8	181.6	178.3	178.3	174.9	171.7	174.9	174.9	178.3	178.3
75°	142.0	135.3	135.3	135.3	132.1	132.1	132.1	135.3	135.3	135.3	138.6
77.5°	105.7	105.7	102.3	102.3	102.3	105.7	105.7	108.9	108.9	108.9	108.9
80°	79.3	82.6	82.6	82.6	82.6	85.8	85.8	85.8	85.8	89.1	89.1
82.5°	59.4	59.4	59.4	59.4	62.7	62.7	62.7	62.7	62.7	62.7	62.7
85°	36.3	39.6	39.6	36.3	39.6	39.6	39.6	39.6	39.6	39.6	39.6
87.5°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
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: P584642

CATALOG NUMBER: HC840D010-HM82555940-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1	2324.1
2.5°	2284.4	2284.4	2284.4	2284.4	2281.1	2281.1	2281.1	2277.8
5°	2234.9	2234.9	2234.9	2228.3	2231.6	2231.6	2224.9	2228.3
7.5°	2185.3	2182.1	2178.8	2178.8	2175.4	2172.1	2168.9	2172.1
10°	2129.3	2119.4	2119.4	2116.1	2116.1	2109.4	2109.4	2112.7
12.5°	2066.6	2059.9	2059.9	2056.7	2053.3	2050.0	2046.7	2046.7
15°	2003.8	1997.2	1993.8	1990.6	1987.3	1980.8	1984.0	1980.8
17.5°	1941.1	1931.1	1931.1	1927.9	1924.6	1917.9	1917.9	1914.7
20°	1868.4	1865.2	1858.5	1861.9	1858.5	1852.0	1848.7	1848.7
22.5°	1795.8	1795.8	1792.5	1792.5	1789.3	1786.0	1782.6	1782.6
25°	1726.5	1723.2	1726.5	1726.5	1716.6	1716.6	1716.6	1719.9
27.5°	1647.3	1650.5	1647.3	1647.3	1647.3	1647.3	1650.5	1647.3
30°	1568.1	1568.1	1568.1	1571.4	1577.9	1574.6	1574.6	1571.4
32.5°	1482.3	1485.5	1485.5	1488.8	1492.1	1498.7	1498.7	1502.0
35°	1396.3	1403.0	1406.3	1403.0	1412.9	1412.9	1419.6	1419.6
37.5°	1307.2	1310.5	1317.2	1320.4	1327.1	1330.4	1333.6	1333.6
40°	1211.5	1224.7	1228.1	1231.3	1241.3	1241.3	1244.5	1251.2
42.5°	1122.4	1135.6	1138.9	1142.2	1148.8	1158.7	1155.4	1162.0
45°	1036.6	1046.5	1049.8	1053.0	1063.0	1066.2	1066.2	1076.2
47.5°	944.1	950.7	954.0	960.7	967.2	973.9	980.4	977.1
50°	851.7	861.6	868.2	871.6	881.4	884.8	888.0	891.3
52.5°	769.2	775.8	779.1	782.4	792.3	795.6	798.8	805.5
55°	690.0	693.3	699.8	696.5	706.5	709.7	713.0	719.7
57.5°	610.7	614.0	617.4	617.4	623.9	630.6	633.8	637.1
60°	534.8	541.4	544.7	544.7	544.7	551.3	551.3	551.3
62.5°	465.4	465.4	468.7	468.7	475.4	475.4	475.4	475.4
65°	392.8	396.2	399.5	399.5	406.0	402.7	409.4	406.0
67.5°	316.9	316.9	323.6	323.6	320.2	323.6	323.6	323.6
70°	241.0	241.0	244.3	244.3	244.3	244.3	244.3	244.3
72.5°	178.3	178.3	178.3	181.6	178.3	178.3	181.6	178.3
75°	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6
77.5°	108.9	108.9	112.2	112.2	112.2	112.2	112.2	112.2
80°	89.1	89.1	89.1	89.1	92.5	89.1	89.1	89.1
82.5°	66.0	62.7	66.0	62.7	66.0	66.0	66.0	66.0
85°	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
87.5°	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
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)