

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: P585083

Luminaire Tested: **HC860D010-HM86080830-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585083
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: HC860D010-HM86080830-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4707.4 lumens
Efficiency: N/A
Efficacy: 84.1 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

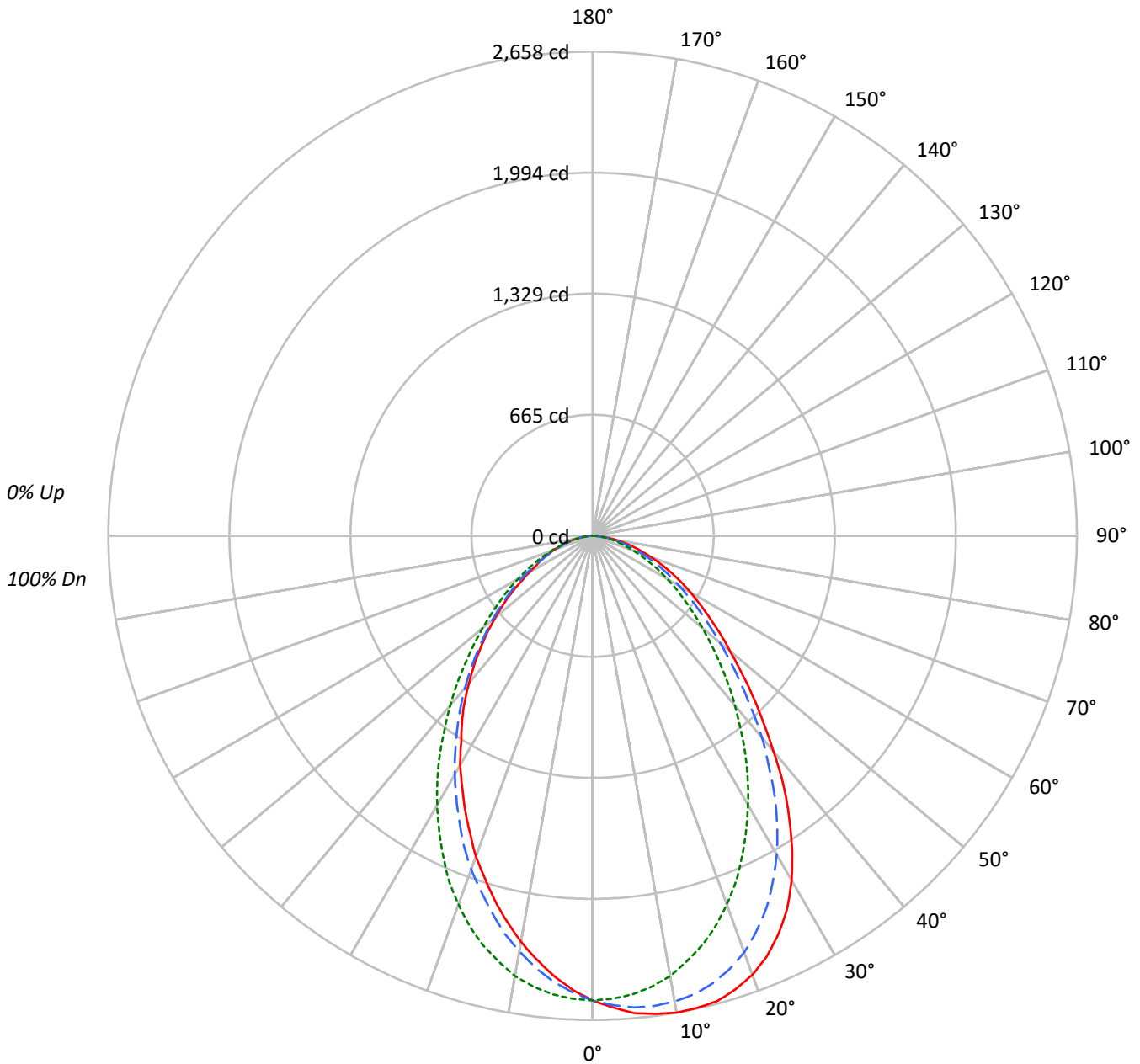
Input Watts (W): 56
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	78654	78654	78654
5°	81419	78206	75098
10°	83227	76830	70872
15°	84414	74246	66182
20°	84158	70642	61440
25°	82073	66058	56405
30°	77758	60752	51758
35°	70741	54983	47033
40°	62136	48900	42492
45°	54180	43016	37883
50°	47152	37687	33370
55°	42047	33117	29026
60°	38206	29029	24762
65°	34345	25253	22480
70°	30582	21530	20277
75°	26795	18133	17311
80°	22730	14739	15361
85°	17124	11003	12242



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	238.9	5.1
10°-20°	658.3	14.0
20°-30°	913.7	19.4
30°-40°	944.7	20.1
40°-50°	791.0	16.8
50°-60°	574.2	12.2
60°-70°	362.4	7.7
70°-80°	179.5	3.8
80°-90°	44.6	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°	1810.9	38.5
0°-40°	2755.6	58.5
0°-60°	4120.9	87.5
0°-90°	4707.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4707.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2551	2551	2551	2551	2551	
5°	2630	2599	2526	2457	2426	252
15°	2644	2544	2326	2139	2073	744
25°	2412	2256	1942	1730	1658	1105
35°	1879	1741	1461	1294	1249	1170
45°	1242	1152	986	890	869	961
55°	782	713	616	564	540	706
65°	471	412	346	305	308	469
75°	225	187	152	145	145	241
85°	48	38	31	35	35	59
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°	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7
2.5°	2592.3	2592.3	2595.7	2592.3	2592.3	2592.3	2588.8	2588.8	2585.3	2585.3	2578.4
5°	2630.3	2623.4	2630.3	2623.4	2623.4	2623.4	2619.9	2613.0	2609.6	2602.6	2599.2
7.5°	2647.6	2644.2	2644.2	2640.7	2640.7	2637.2	2633.8	2630.3	2616.5	2613.0	2602.6
10°	2658.0	2654.6	2654.6	2651.1	2644.2	2644.2	2637.2	2633.8	2616.5	2609.6	2595.7
12.5°	2654.6	2654.6	2654.6	2651.1	2640.7	2637.2	2630.3	2619.9	2606.1	2592.3	2578.4
15°	2644.2	2644.2	2637.2	2633.8	2623.4	2616.5	2613.0	2595.7	2581.9	2564.6	2543.8
17.5°	2609.6	2609.6	2606.1	2599.2	2588.8	2581.9	2575.0	2557.7	2543.8	2516.1	2495.3
20°	2564.6	2561.1	2557.7	2547.3	2536.9	2533.4	2523.1	2498.7	2481.4	2460.7	2433.0
22.5°	2498.7	2495.3	2491.8	2484.9	2467.6	2460.7	2453.7	2436.4	2405.3	2384.5	2349.9
25°	2412.2	2412.2	2405.3	2394.9	2377.6	2370.7	2360.3	2343.0	2315.3	2284.2	2256.5
27.5°	2311.9	2308.4	2298.0	2291.1	2277.3	2266.9	2249.6	2228.8	2201.1	2176.9	2142.3
30°	2183.8	2183.8	2176.9	2166.5	2149.2	2142.3	2128.5	2104.3	2076.6	2045.4	2021.2
32.5°	2038.5	2038.5	2028.1	2021.2	2010.8	1993.5	1990.1	1962.4	1938.1	1913.8	1886.2
35°	1879.2	1882.7	1875.8	1861.9	1844.6	1844.6	1837.7	1813.5	1785.8	1761.6	1740.8
37.5°	1720.1	1709.7	1706.2	1699.3	1688.9	1675.1	1668.2	1657.8	1633.6	1616.3	1585.1
40°	1543.6	1547.1	1540.1	1533.2	1529.8	1519.4	1515.9	1498.6	1481.3	1460.6	1446.7
42.5°	1384.3	1384.3	1384.3	1377.4	1370.5	1360.1	1356.6	1346.2	1325.5	1311.6	1290.9
45°	1242.4	1232.1	1232.1	1228.6	1225.1	1218.2	1207.8	1200.9	1187.1	1176.7	1152.5
47.5°	1104.0	1107.5	1104.0	1100.6	1090.2	1086.7	1083.3	1069.4	1055.6	1045.2	1027.9
50°	982.9	989.8	982.9	982.9	976.0	972.5	965.6	955.2	944.9	927.6	910.3
52.5°	882.6	882.6	879.1	875.7	865.3	858.4	854.9	851.4	834.0	820.2	806.3
55°	782.1	785.6	785.6	775.2	771.7	764.8	761.4	751.0	744.1	723.3	712.9
57.5°	695.6	692.2	695.6	688.7	681.8	674.9	671.4	664.5	654.1	640.3	626.4
60°	619.5	612.6	612.6	609.1	602.2	598.7	591.8	581.4	571.0	557.2	546.8
62.5°	543.4	539.9	536.4	533.0	526.1	522.6	519.1	508.8	498.4	488.0	477.6
65°	470.7	470.7	467.2	460.3	456.9	453.4	449.9	443.0	429.2	422.3	411.9
67.5°	405.0	401.5	401.5	394.6	387.7	384.2	384.2	377.3	366.9	356.5	349.6
70°	339.2	342.7	339.2	335.8	328.8	328.8	321.9	318.5	304.6	301.2	290.8
72.5°	280.4	280.4	276.8	276.8	269.9	266.4	266.4	259.5	252.6	245.7	238.8
75°	224.9	224.9	224.9	221.5	218.0	211.1	211.1	207.6	200.7	193.8	186.9
77.5°	176.5	173.0	173.0	169.5	166.1	162.6	162.6	159.2	152.2	148.8	141.9
80°	128.0	124.6	124.6	124.6	117.6	121.1	117.6	114.2	110.7	107.3	103.8
82.5°	83.0	86.5	86.5	83.0	79.6	79.6	79.6	76.1	76.1	72.7	69.2
85°	48.4	48.4	48.4	48.4	45.0	45.0	45.0	41.5	41.5	41.5	38.1
87.5°	20.8	20.8	20.8	20.8	20.8	20.8	17.3	17.3	17.3	17.3	17.3
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°	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7
2.5°	2578.4	2571.5	2568.0	2564.6	2564.6	2561.1	2557.7	2550.7	2550.7	2543.8	2540.4
5°	2592.3	2581.9	2575.0	2568.0	2564.6	2557.7	2550.7	2540.4	2536.9	2526.5	2516.1
7.5°	2595.7	2578.4	2571.5	2557.7	2550.7	2543.8	2530.0	2519.6	2505.6	2495.3	2481.4
10°	2581.9	2568.0	2550.7	2533.4	2530.0	2519.6	2498.7	2484.9	2467.6	2453.7	2433.0
12.5°	2561.1	2540.4	2523.1	2502.2	2491.8	2481.4	2460.7	2439.9	2415.7	2391.5	2370.7
15°	2526.5	2502.2	2478.0	2453.7	2439.9	2429.5	2405.3	2381.1	2356.9	2325.7	2305.0
17.5°	2474.5	2446.8	2422.6	2391.5	2377.6	2367.2	2336.1	2308.4	2277.3	2246.1	2225.4
20°	2408.8	2374.2	2346.5	2311.9	2301.5	2284.2	2253.1	2221.9	2187.3	2152.7	2128.5
22.5°	2322.3	2287.7	2256.5	2221.9	2204.6	2187.3	2156.2	2118.1	2083.5	2055.8	2031.6
25°	2221.9	2190.8	2152.7	2121.6	2100.8	2080.0	2045.4	2014.3	1983.2	1941.5	1917.3
27.5°	2111.2	2073.1	2045.4	2003.9	1983.2	1969.3	1931.1	1889.6	1861.9	1823.9	1796.2
30°	1986.6	1952.0	1920.8	1879.2	1858.5	1844.6	1810.0	1772.0	1744.3	1706.2	1678.5
32.5°	1855.0	1817.0	1778.9	1751.2	1727.0	1713.1	1675.1	1650.9	1616.3	1585.1	1554.0
35°	1713.1	1675.1	1647.4	1609.3	1595.5	1581.7	1550.5	1519.4	1488.2	1460.6	1436.3
37.5°	1560.9	1533.2	1502.1	1474.4	1464.0	1450.2	1412.1	1384.3	1360.1	1332.4	1311.6
40°	1412.1	1387.8	1367.0	1339.3	1322.0	1311.6	1284.0	1259.7	1232.1	1214.8	1194.0
42.5°	1277.0	1249.4	1228.6	1207.8	1190.5	1180.2	1155.9	1138.6	1117.9	1100.6	1076.4
45°	1135.2	1121.3	1097.1	1079.8	1069.4	1055.6	1038.3	1017.5	1000.2	986.4	969.1
47.5°	1010.6	996.8	979.5	958.7	951.8	941.4	924.1	910.3	896.4	882.6	865.3
50°	896.4	879.1	865.3	851.4	844.5	834.0	816.7	809.8	799.4	785.6	775.2
52.5°	792.5	778.7	764.8	747.5	744.1	737.1	726.8	712.9	702.5	695.6	688.7
55°	699.1	685.2	674.9	661.0	657.6	650.6	636.8	629.9	623.0	616.0	609.1
57.5°	616.0	602.2	588.3	581.4	574.5	567.6	564.1	553.7	546.8	543.4	536.4
60°	539.9	526.1	515.7	505.3	501.8	498.4	491.5	484.5	477.6	470.7	467.2
62.5°	467.2	453.4	446.5	439.6	432.6	432.6	425.7	418.8	411.9	408.4	401.5
65°	401.5	394.6	384.2	373.8	370.4	370.4	360.0	356.5	353.1	346.1	339.2
67.5°	339.2	332.3	321.9	318.5	315.0	311.5	308.1	301.2	294.2	290.8	283.9
70°	283.9	276.8	269.9	266.4	263.0	259.5	252.6	249.1	242.2	238.8	235.3
72.5°	228.4	224.9	218.0	214.5	211.1	207.6	204.2	200.7	193.8	190.3	186.9
75°	183.4	179.9	173.0	169.5	166.1	166.1	162.6	155.7	152.2	152.2	148.8
77.5°	138.4	134.9	131.5	128.0	124.6	124.6	121.1	117.6	114.2	114.2	110.7
80°	100.3	96.9	93.4	93.4	93.4	90.0	86.5	86.5	83.0	83.0	79.6
82.5°	65.7	65.7	62.3	62.3	62.3	58.8	58.8	55.4	55.4	55.4	55.4
85°	38.1	38.1	38.1	34.6	34.6	34.6	34.6	34.6	34.6	31.1	34.6
87.5°	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	13.8	13.8	13.8
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°	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7
2.5°	2536.9	2533.4	2526.5	2526.5	2519.6	2519.6	2516.1	2512.7	2509.2	2505.6	2502.2
5°	2512.7	2498.7	2491.8	2488.3	2481.4	2478.0	2467.6	2460.7	2457.2	2450.3	2443.4
7.5°	2467.6	2453.7	2439.9	2436.4	2433.0	2419.1	2408.8	2398.4	2391.5	2384.5	2377.6
10°	2415.7	2401.8	2384.5	2377.6	2370.7	2353.4	2339.6	2329.2	2315.3	2301.5	2298.0
12.5°	2353.4	2332.6	2311.9	2305.0	2294.6	2277.3	2263.4	2246.1	2235.8	2218.4	2215.0
15°	2280.7	2256.5	2239.2	2221.9	2215.0	2197.7	2173.5	2159.6	2138.9	2131.9	2114.6
17.5°	2194.2	2170.0	2145.8	2138.9	2128.5	2104.3	2080.0	2062.7	2042.0	2031.6	2021.2
20°	2104.3	2073.1	2048.9	2042.0	2028.1	2007.4	1983.2	1965.9	1948.4	1927.7	1917.3
22.5°	2000.5	1965.9	1945.0	1927.7	1924.2	1900.0	1872.3	1858.5	1844.6	1827.3	1813.5
25°	1886.2	1855.0	1830.8	1817.0	1810.0	1789.3	1768.5	1751.2	1730.4	1720.1	1702.8
27.5°	1768.5	1747.7	1716.6	1702.8	1692.4	1675.1	1650.9	1640.5	1619.7	1605.9	1595.5
30°	1654.3	1623.2	1605.9	1588.6	1578.2	1560.9	1540.1	1529.8	1512.5	1498.6	1488.2
32.5°	1529.8	1509.0	1484.8	1477.9	1464.0	1446.7	1432.9	1415.6	1401.7	1387.8	1384.3
35°	1415.6	1387.8	1363.5	1356.6	1346.2	1328.9	1322.0	1311.6	1294.3	1290.9	1277.0
37.5°	1290.9	1277.0	1249.4	1239.0	1235.5	1221.7	1207.8	1200.9	1190.5	1180.2	1176.7
40°	1173.2	1155.9	1142.1	1131.7	1124.8	1114.4	1100.6	1097.1	1090.2	1076.4	1072.9
42.5°	1062.5	1045.2	1031.4	1027.9	1017.5	1007.1	1000.2	989.8	986.4	982.9	976.0
45°	955.2	944.9	931.0	927.6	924.1	910.3	903.3	896.4	889.5	886.0	879.1
47.5°	858.4	848.0	837.6	834.0	827.1	823.6	813.3	809.8	799.4	796.0	792.5
50°	764.8	757.9	751.0	747.5	740.6	737.1	730.2	723.3	716.4	712.9	709.5
52.5°	681.8	674.9	667.9	664.5	661.0	654.1	647.2	640.3	636.8	633.3	629.9
55°	602.2	595.3	591.8	588.3	584.9	581.4	571.0	567.6	564.1	560.7	553.7
57.5°	529.5	522.6	515.7	515.7	512.2	508.8	501.8	494.9	494.9	488.0	481.1
60°	463.8	456.9	449.9	446.5	443.0	436.1	432.6	429.2	425.7	422.3	415.3
62.5°	394.6	391.1	384.2	384.2	377.3	373.8	370.4	366.9	363.4	356.5	353.1
65°	335.8	332.3	325.4	321.9	321.9	318.5	311.5	308.1	304.6	304.6	301.2
67.5°	280.4	276.8	269.9	266.4	266.4	263.0	259.5	259.5	256.1	252.6	256.1
70°	231.8	224.9	224.9	221.5	221.5	218.0	214.5	214.5	214.5	218.0	218.0
72.5°	183.4	179.9	176.5	176.5	176.5	176.5	173.0	173.0	176.5	179.9	179.9
75°	145.3	141.9	141.9	141.9	138.4	138.4	141.9	141.9	145.3	145.3	145.3
77.5°	107.3	107.3	107.3	107.3	107.3	107.3	110.7	110.7	114.2	114.2	114.2
80°	79.6	79.6	79.6	79.6	79.6	83.0	83.0	83.0	83.0	83.0	86.5
82.5°	55.4	55.4	55.4	55.4	55.4	55.4	55.4	58.8	58.8	58.8	58.8
85°	31.1	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6
87.5°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
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: P585083

CATALOG NUMBER: HC860D010-HM86080830-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7	2550.7
2.5°	2498.7	2498.7	2498.7	2502.2	2495.3	2495.3	2495.3	2495.3
5°	2439.9	2436.4	2433.0	2436.4	2429.5	2429.5	2426.1	2426.1
7.5°	2367.2	2363.8	2360.3	2360.3	2353.4	2353.4	2349.9	2346.5
10°	2287.7	2280.7	2284.2	2277.3	2273.8	2270.4	2266.9	2263.4
12.5°	2201.1	2194.2	2190.8	2183.8	2176.9	2173.5	2176.9	2170.0
15°	2107.7	2097.3	2093.9	2087.0	2080.0	2076.6	2076.6	2073.1
17.5°	2003.9	1997.0	1993.5	1986.6	1983.2	1976.2	1972.8	1969.3
20°	1906.9	1889.6	1893.1	1886.2	1882.7	1868.9	1868.9	1872.3
22.5°	1799.7	1789.3	1782.3	1775.4	1772.0	1765.0	1765.0	1761.6
25°	1692.4	1682.0	1678.5	1671.6	1668.2	1661.2	1657.8	1657.8
27.5°	1588.6	1574.7	1574.7	1567.8	1560.9	1557.4	1554.0	1550.5
30°	1477.9	1467.5	1464.0	1464.0	1460.6	1460.6	1450.2	1453.6
32.5°	1373.9	1367.0	1363.5	1356.6	1356.6	1353.2	1353.2	1342.8
35°	1270.1	1259.7	1263.2	1256.3	1252.8	1249.4	1252.8	1249.4
37.5°	1169.8	1162.9	1162.9	1155.9	1155.9	1152.5	1149.0	1155.9
40°	1069.4	1066.0	1062.5	1059.1	1062.5	1059.1	1052.1	1055.6
42.5°	969.1	969.1	965.6	965.6	962.2	962.2	962.2	962.2
45°	879.1	875.7	875.7	872.2	872.2	872.2	872.2	868.7
47.5°	789.0	785.6	785.6	785.6	782.1	782.1	778.7	782.1
50°	702.5	702.5	699.1	699.1	702.5	699.1	695.6	695.6
52.5°	623.0	623.0	619.5	619.5	616.0	612.6	616.0	616.0
55°	550.3	546.8	543.4	543.4	539.9	536.4	536.4	539.9
57.5°	481.1	477.6	474.2	474.2	467.2	463.8	463.8	463.8
60°	415.3	408.4	408.4	405.0	405.0	401.5	401.5	401.5
62.5°	353.1	349.6	349.6	349.6	349.6	346.1	346.1	346.1
65°	301.2	301.2	301.2	304.6	304.6	308.1	308.1	308.1
67.5°	259.5	263.0	263.0	263.0	266.4	266.4	266.4	263.0
70°	221.5	221.5	221.5	224.9	224.9	224.9	224.9	224.9
72.5°	183.4	183.4	183.4	183.4	183.4	183.4	183.4	183.4
75°	145.3	148.8	148.8	148.8	145.3	148.8	148.8	145.3
77.5°	114.2	114.2	114.2	114.2	114.2	114.2	114.2	114.2
80°	86.5	86.5	86.5	86.5	86.5	86.5	86.5	86.5
82.5°	58.8	58.8	58.8	58.8	58.8	58.8	58.8	58.8
85°	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6
87.5°	13.8	13.8	13.8	13.8	13.8	13.8	13.8	13.8
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)