

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: P585150

Luminaire Tested: **HC860D010-HM86080930-81WWBB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P585150
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-17)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC860D010-HM86080930-81WWBB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4047.8 lumens
Efficiency: N/A
Efficacy: 72.3 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.07 / 1.16
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

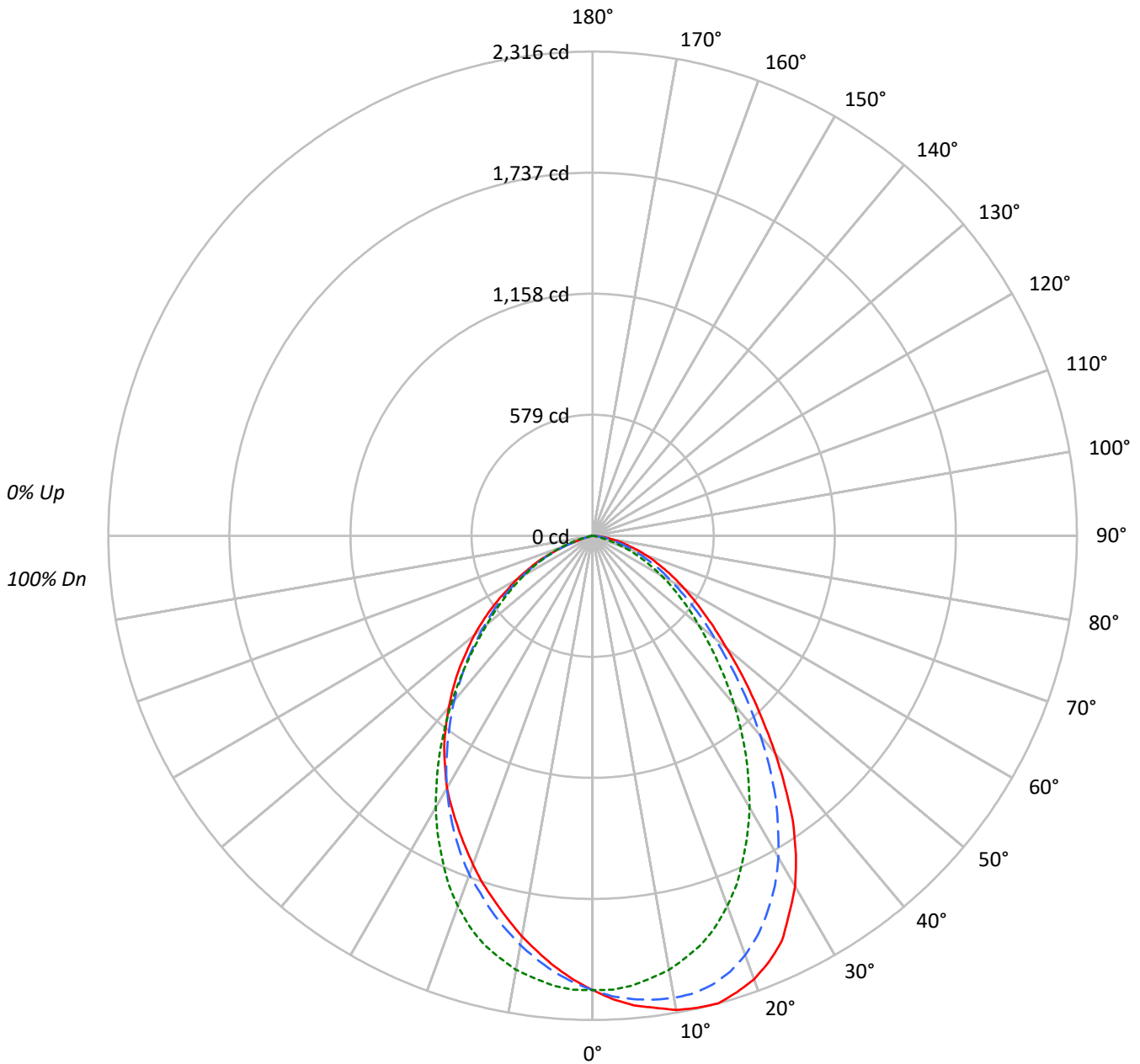
Input Watts (W): 56
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59																			
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53																			
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47																			
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43																			
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39																			
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	67010	67010	67010
5°	69780	66864	64050
10°	72115	66012	60927
15°	73936	64499	57760
20°	74081	61827	54897
25°	72832	57912	52057
30°	68935	53435	49618
35°	62855	48057	46588
40°	54657	42367	43019
45°	46889	36688	39379
50°	40048	31633	35375
55°	35101	27241	30735
60°	31250	23238	25841
65°	27727	18964	20620
70°	24604	14056	11721
75°	20516	7351	3479
80°	16160	2309	568
85°	11499	1132	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	204.8	5.1
10°-20°	573.9	14.2
20°-30°	812.3	20.1
30°-40°	849.9	21.0
40°-50°	708.8	17.5
50°-60°	502.7	12.4
60°-70°	289.5	7.2
70°-80°	93.1	2.3
80°-90°	12.8	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°	1591.0	39.3
0°-40°	2440.9	60.3
0°-60°	3652.4	90.2
0°-90°	4047.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4047.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2173	2173	2173	2173	2173	
5°	2254	2225	2160	2095	2069	216
15°	2316	2222	2020	1861	1809	651
25°	2141	1981	1702	1566	1530	977
35°	1670	1523	1277	1208	1238	1035
45°	1075	988	841	851	903	833
55°	653	585	507	533	572	590
65°	380	318	260	260	283	380
75°	172	127	62	29	29	187
85°	32	16	3	0	0	41
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°	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1
2.5°	2218.6	2215.3	2212.1	2215.3	2212.1	2215.3	2212.1	2212.1	2208.9	2205.6	2205.6
5°	2254.3	2251.1	2251.1	2251.1	2247.9	2244.6	2244.6	2241.4	2234.8	2231.6	2225.1
7.5°	2277.0	2280.3	2280.3	2280.3	2273.8	2273.8	2267.4	2260.9	2254.3	2247.9	2238.1
10°	2303.1	2303.1	2299.8	2296.5	2290.1	2286.8	2283.6	2277.0	2267.4	2254.3	2244.6
12.5°	2312.8	2312.8	2309.6	2303.1	2299.8	2296.5	2293.3	2283.6	2270.6	2254.3	2241.4
15°	2316.0	2309.6	2306.3	2303.1	2296.5	2286.8	2286.8	2273.8	2257.5	2238.1	2221.9
17.5°	2290.1	2293.3	2286.8	2280.3	2270.6	2264.1	2254.3	2244.6	2225.1	2202.4	2186.2
20°	2257.5	2254.3	2251.1	2241.4	2228.4	2225.1	2215.3	2199.1	2182.9	2156.9	2134.1
22.5°	2205.6	2202.4	2195.8	2189.4	2176.4	2169.9	2160.1	2140.6	2117.9	2091.9	2066.0
25°	2140.6	2134.1	2124.4	2111.4	2101.7	2095.2	2082.2	2062.7	2036.7	2007.5	1981.4
27.5°	2036.7	2046.5	2039.9	2020.4	2010.7	1997.7	1994.5	1968.5	1945.8	1916.5	1887.3
30°	1936.0	1936.0	1926.3	1916.5	1900.2	1890.5	1877.5	1858.0	1835.3	1799.5	1776.8
32.5°	1809.3	1806.1	1793.1	1789.8	1776.8	1757.3	1754.1	1728.1	1705.4	1679.4	1650.2
35°	1669.7	1663.1	1650.2	1640.4	1633.9	1624.2	1614.4	1591.7	1569.0	1542.9	1523.4
37.5°	1510.5	1510.5	1507.3	1491.0	1484.5	1478.0	1468.3	1445.6	1432.5	1406.6	1387.1
40°	1357.8	1354.6	1344.9	1341.5	1335.1	1325.4	1318.8	1305.9	1286.4	1266.9	1247.4
42.5°	1208.4	1211.6	1198.6	1201.8	1188.9	1182.4	1179.1	1159.6	1149.9	1130.4	1114.2
45°	1075.2	1072.0	1065.4	1062.2	1055.7	1049.2	1042.7	1033.0	1016.7	997.2	987.5
47.5°	951.8	942.0	942.0	938.8	935.5	922.5	919.3	909.6	899.8	880.3	867.4
50°	834.8	834.8	834.8	831.6	821.8	818.6	812.1	802.3	792.6	779.6	760.1
52.5°	740.6	740.6	740.6	737.4	724.3	721.1	717.9	704.8	691.9	682.1	669.2
55°	652.9	656.2	652.9	646.4	636.7	636.7	626.9	620.4	607.4	597.7	584.7
57.5°	578.2	578.2	571.7	568.5	561.9	558.7	552.2	545.7	529.5	519.7	503.5
60°	506.7	503.5	503.5	497.0	490.5	484.0	480.7	471.0	464.5	448.3	435.3
62.5°	441.8	441.8	435.3	435.3	422.3	422.3	419.0	409.3	399.5	383.3	376.8
65°	380.0	380.0	376.8	373.6	363.8	360.6	357.3	347.5	337.8	328.0	318.3
67.5°	324.8	324.8	318.3	315.1	308.5	305.3	298.8	292.4	282.6	272.9	263.1
70°	272.9	269.7	266.3	263.1	256.6	253.4	246.8	240.4	230.7	224.1	214.4
72.5°	220.9	220.9	217.6	211.2	207.8	204.6	201.4	194.9	185.1	175.4	168.9
75°	172.2	172.2	172.2	165.6	159.2	155.9	155.9	149.5	142.9	133.2	126.6
77.5°	133.2	130.0	126.6	126.6	120.2	117.0	113.7	110.5	100.7	97.5	91.0
80°	91.0	94.2	91.0	87.7	84.4	81.2	81.2	74.7	71.5	64.9	58.5
82.5°	61.7	58.5	58.5	55.2	55.2	52.0	52.0	45.4	42.2	39.0	35.8
85°	32.5	32.5	29.2	29.2	29.2	26.0	26.0	22.7	22.7	19.5	16.3
87.5°	9.7	9.7	9.7	9.7	9.7	9.7	9.7	9.7	6.5	6.5	6.5
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°	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1
2.5°	2202.4	2195.8	2192.6	2192.6	2189.4	2186.2	2182.9	2179.6	2173.1	2173.1	2166.7
5°	2218.6	2212.1	2208.9	2199.1	2192.6	2192.6	2179.6	2176.4	2166.7	2160.1	2153.6
7.5°	2231.6	2218.6	2208.9	2199.1	2192.6	2186.2	2173.1	2160.1	2147.2	2134.1	2127.7
10°	2231.6	2218.6	2202.4	2186.2	2179.6	2173.1	2156.9	2137.4	2121.1	2108.2	2091.9
12.5°	2225.1	2205.6	2186.2	2173.1	2160.1	2150.4	2130.9	2111.4	2091.9	2066.0	2052.9
15°	2205.6	2179.6	2160.1	2137.4	2127.7	2111.4	2095.2	2066.0	2043.2	2020.4	2004.3
17.5°	2166.7	2134.1	2111.4	2088.7	2072.4	2062.7	2036.7	2010.7	1984.8	1958.7	1939.2
20°	2108.2	2078.9	2052.9	2023.8	2010.7	1997.7	1965.3	1939.2	1913.3	1884.1	1864.6
22.5°	2036.7	2007.5	1971.7	1949.0	1929.5	1913.3	1884.1	1854.8	1828.8	1802.9	1776.8
25°	1949.0	1919.7	1887.3	1851.6	1838.5	1822.3	1789.8	1760.5	1731.4	1702.1	1679.4
27.5°	1854.8	1815.8	1789.8	1750.9	1737.8	1721.6	1685.9	1653.4	1627.4	1604.7	1578.7
30°	1741.1	1711.9	1676.1	1640.4	1627.4	1611.2	1581.9	1552.7	1526.8	1500.7	1474.7
32.5°	1617.6	1588.5	1552.7	1526.8	1507.3	1494.2	1465.0	1439.0	1413.0	1387.1	1364.2
35°	1487.8	1455.2	1429.3	1403.2	1387.1	1370.8	1341.5	1318.8	1299.3	1276.6	1253.9
37.5°	1354.6	1331.8	1305.9	1276.6	1260.3	1247.4	1224.6	1198.6	1182.4	1162.9	1146.7
40°	1224.6	1198.6	1175.9	1149.9	1136.9	1127.2	1104.4	1084.9	1068.7	1052.5	1042.7
42.5°	1091.5	1068.7	1046.0	1029.8	1020.0	1010.3	994.0	971.3	961.5	945.2	935.5
45°	968.0	948.6	932.3	909.6	903.0	896.5	877.0	860.8	851.1	841.3	834.8
47.5°	851.1	838.1	818.6	805.5	795.8	789.4	776.4	763.3	753.6	747.2	740.6
50°	750.4	734.1	721.1	708.2	701.6	691.9	678.9	672.4	665.9	659.4	659.4
52.5°	656.2	639.9	626.9	617.2	610.7	604.2	594.5	591.2	584.7	584.7	581.4
55°	568.5	558.7	545.7	532.8	529.5	526.2	519.7	513.3	510.0	506.7	510.0
57.5°	493.8	484.0	471.0	461.2	458.0	454.8	451.6	445.0	441.8	441.8	441.8
60°	425.5	415.8	406.0	396.3	396.3	389.8	386.5	383.3	380.0	376.8	376.8
62.5°	363.8	354.1	344.3	337.8	334.6	331.4	324.8	321.6	318.3	318.3	315.1
65°	308.5	295.6	292.4	282.6	279.4	276.1	272.9	266.3	263.1	259.9	256.6
67.5°	253.4	246.8	237.1	230.7	227.3	224.1	220.9	214.4	211.2	207.8	201.4
70°	204.6	198.2	191.7	185.1	181.9	178.7	172.2	165.6	162.4	155.9	146.1
72.5°	159.2	152.7	146.1	139.7	136.4	133.2	126.6	120.2	113.7	107.2	100.7
75°	120.2	113.7	103.9	97.5	94.2	94.2	84.4	78.0	71.5	61.7	55.2
77.5°	84.4	74.7	71.5	64.9	61.7	55.2	48.7	42.2	35.8	32.5	26.0
80°	55.2	48.7	42.2	39.0	35.8	32.5	29.2	22.7	16.3	13.0	9.7
82.5°	32.5	29.2	26.0	22.7	19.5	16.3	13.0	13.0	9.7	6.5	3.2
85°	16.3	13.0	9.7	9.7	6.5	6.5	6.5	3.2	3.2	3.2	3.2
87.5°	6.5	3.2	3.2	3.2	3.2	3.2	3.2	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°	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1
2.5°	2163.4	2160.1	2156.9	2153.6	2153.6	2147.2	2147.2	2143.9	2137.4	2134.1	2134.1
5°	2143.9	2134.1	2127.7	2124.4	2121.1	2111.4	2108.2	2101.7	2095.2	2088.7	2085.5
7.5°	2114.6	2098.4	2091.9	2088.7	2078.9	2069.2	2062.7	2052.9	2043.2	2033.4	2030.2
10°	2078.9	2062.7	2046.5	2039.9	2030.2	2023.8	2010.7	1997.7	1988.0	1978.2	1968.5
12.5°	2033.4	2014.0	1997.7	1991.2	1981.4	1968.5	1949.0	1942.6	1926.3	1919.7	1906.8
15°	1981.4	1958.7	1942.6	1932.8	1923.1	1903.6	1890.5	1877.5	1861.2	1854.8	1841.7
17.5°	1916.5	1890.5	1874.3	1864.6	1858.0	1841.7	1822.3	1806.1	1789.8	1783.4	1773.6
20°	1838.5	1822.3	1799.5	1789.8	1783.4	1763.9	1744.4	1737.8	1724.9	1711.9	1702.1
22.5°	1750.9	1734.6	1711.9	1702.1	1698.8	1682.6	1666.4	1656.6	1646.9	1637.1	1627.4
25°	1659.9	1640.4	1620.9	1614.4	1608.0	1594.9	1581.9	1575.4	1565.7	1559.2	1552.7
27.5°	1562.4	1542.9	1526.8	1517.0	1510.5	1500.7	1494.2	1487.8	1481.2	1474.7	1471.5
30°	1458.5	1439.0	1426.1	1419.5	1413.0	1409.8	1400.0	1396.8	1393.5	1387.1	1390.3
32.5°	1354.6	1338.3	1325.4	1315.6	1315.6	1309.1	1305.9	1305.9	1302.5	1302.5	1302.5
35°	1240.8	1231.1	1221.3	1218.1	1214.9	1211.6	1208.4	1211.6	1208.4	1211.6	1214.9
37.5°	1136.9	1127.2	1120.6	1117.4	1114.2	1117.4	1114.2	1114.2	1117.4	1123.9	1127.2
40°	1029.8	1023.2	1016.7	1020.0	1016.7	1016.7	1016.7	1026.5	1029.8	1033.0	1036.2
42.5°	929.1	922.5	919.3	919.3	922.5	919.3	925.7	929.1	935.5	945.2	951.8
45°	831.6	828.4	828.4	831.6	828.4	834.8	834.8	841.3	851.1	857.6	864.0
47.5°	740.6	740.6	740.6	743.8	743.8	747.2	753.6	756.9	763.3	769.9	776.4
50°	656.2	659.4	662.6	662.6	662.6	669.2	675.7	678.9	682.1	685.4	695.2
52.5°	581.4	584.7	584.7	588.0	591.2	594.5	597.7	604.2	607.4	614.0	617.2
55°	510.0	510.0	516.5	519.7	519.7	519.7	526.2	526.2	532.8	536.0	542.4
57.5°	441.8	445.0	445.0	448.3	448.3	451.6	454.8	458.0	461.2	464.5	467.7
60°	376.8	376.8	376.8	380.0	383.3	386.5	383.3	389.8	389.8	396.3	399.5
62.5°	315.1	318.3	318.3	318.3	318.3	318.3	318.3	321.6	324.8	328.0	331.4
65°	256.6	256.6	256.6	253.4	256.6	253.4	256.6	259.9	259.9	263.1	266.3
67.5°	198.2	198.2	191.7	191.7	194.9	194.9	194.9	194.9	191.7	198.2	198.2
70°	142.9	139.7	136.4	133.2	133.2	130.0	130.0	126.6	126.6	126.6	126.6
72.5°	94.2	87.7	81.2	78.0	74.7	74.7	68.2	64.9	68.2	68.2	68.2
75°	48.7	42.2	39.0	35.8	32.5	32.5	29.2	29.2	29.2	29.2	29.2
77.5°	19.5	16.3	13.0	13.0	9.7	9.7	9.7	9.7	9.7	9.7	9.7
80°	6.5	6.5	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
85°	3.2	0.0	0.0	3.2	0.0	3.2	3.2	3.2	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: P585150

CATALOG NUMBER: HC860D010-HM86080930-81WWBB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1	2173.1
2.5°	2130.9	2130.9	2127.7	2130.9	2124.4	2127.7	2124.4	2124.4
5°	2082.2	2075.7	2075.7	2075.7	2072.4	2072.4	2069.2	2069.2
7.5°	2023.8	2020.4	2017.2	2014.0	2010.7	2007.5	2007.5	2007.5
10°	1965.3	1958.7	1958.7	1955.5	1949.0	1945.8	1945.8	1945.8
12.5°	1897.0	1893.8	1890.5	1890.5	1877.5	1880.7	1877.5	1877.5
15°	1832.1	1828.8	1828.8	1819.0	1812.6	1812.6	1812.6	1809.3
17.5°	1763.9	1760.5	1757.3	1750.9	1744.4	1744.4	1741.1	1744.4
20°	1692.4	1689.2	1682.6	1682.6	1679.4	1676.1	1669.7	1672.9
22.5°	1620.9	1614.4	1611.2	1611.2	1608.0	1608.0	1601.4	1601.4
25°	1546.2	1542.9	1539.7	1542.9	1536.4	1536.4	1530.0	1530.0
27.5°	1468.3	1465.0	1465.0	1465.0	1461.7	1465.0	1461.7	1461.7
30°	1390.3	1390.3	1387.1	1387.1	1390.3	1387.1	1390.3	1393.5
32.5°	1305.9	1305.9	1309.1	1309.1	1312.3	1312.3	1312.3	1312.3
35°	1218.1	1224.6	1224.6	1227.9	1231.1	1234.4	1234.4	1237.6
37.5°	1136.9	1140.1	1143.4	1146.7	1153.2	1153.2	1153.2	1153.2
40°	1049.2	1052.5	1058.9	1055.7	1068.7	1072.0	1068.7	1068.7
42.5°	958.2	964.7	968.0	974.5	977.7	984.2	987.5	987.5
45°	873.8	877.0	883.5	890.1	893.3	903.0	903.0	903.0
47.5°	786.0	792.6	795.8	802.3	805.5	815.3	818.6	815.3
50°	701.6	708.2	714.6	714.6	724.3	727.7	734.1	737.4
52.5°	620.4	623.6	630.2	633.4	639.9	646.4	649.7	652.9
55°	542.4	545.7	552.2	552.2	561.9	565.2	571.7	571.7
57.5°	471.0	474.3	480.7	477.5	484.0	490.5	490.5	487.2
60°	402.8	402.8	402.8	409.3	412.6	415.8	419.0	419.0
62.5°	331.4	337.8	341.1	341.1	344.3	347.5	347.5	344.3
65°	266.3	272.9	276.1	276.1	279.4	279.4	279.4	282.6
67.5°	201.4	201.4	201.4	204.6	201.4	201.4	201.4	201.4
70°	126.6	126.6	126.6	126.6	123.4	126.6	126.6	130.0
72.5°	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2
75°	29.2	29.2	29.2	32.5	29.2	29.2	29.2	29.2
77.5°	13.0	9.7	13.0	13.0	9.7	9.7	9.7	9.7
80°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
82.5°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
85°	0.0	3.2	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)