

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: P584862

Luminaire Tested: **HC850D010-HM82555927-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584862
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: HC850D010-HM82555927-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3803.7 lumens
Efficiency: N/A
Efficacy: 79.2 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

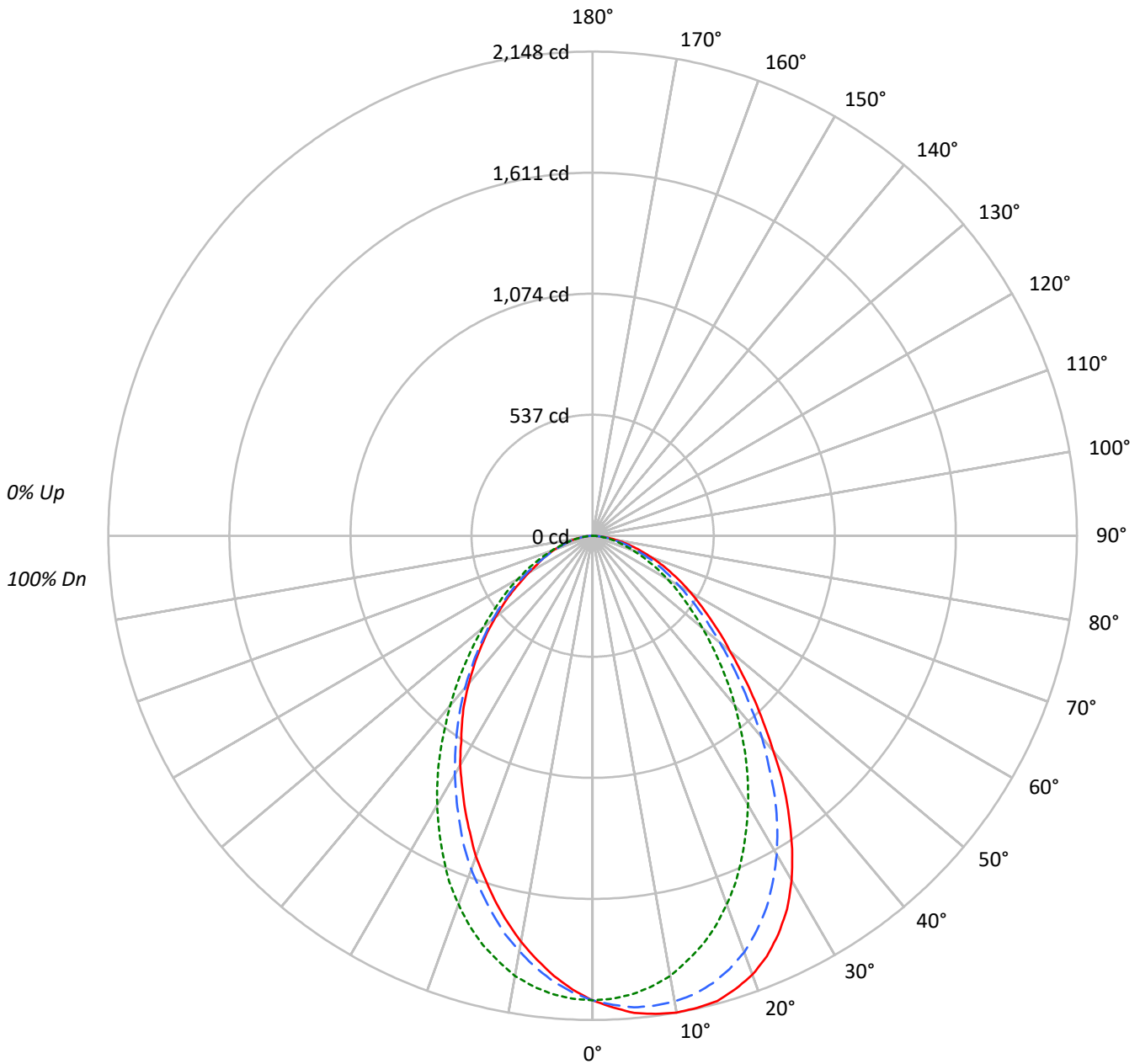
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	63557	63557	63557
5°	65790	63190	60682
10°	67249	62082	57267
15°	68209	59995	53476
20°	68000	57082	49646
25°	66320	53377	45579
30°	62832	49091	41820
35°	57163	44424	38002
40°	50205	39513	34333
45°	43779	34756	30614
50°	38100	30453	26966
55°	33977	26762	23456
60°	30873	23454	20007
65°	27749	20401	18161
70°	24704	17401	16391
75°	21660	14666	13999
80°	18379	11916	12413
85°	13869	8881	9871



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.0	5.1
10°-20°	531.9	14.0
20°-30°	738.3	19.4
30°-40°	763.4	20.1
40°-50°	639.2	16.8
50°-60°	464.0	12.2
60°-70°	292.8	7.7
70°-80°	145.0	3.8
80°-90°	36.1	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°	1463.3	38.5
0°-40°	2226.6	58.5
0°-60°	3329.8	87.5
0°-90°	3803.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3803.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2061	2061	2061	2061	2061	
5°	2125	2100	2041	1986	1960	203
15°	2137	2056	1879	1728	1675	601
25°	1949	1823	1569	1398	1340	893
35°	1518	1407	1180	1046	1010	946
45°	1004	931	797	719	702	776
55°	632	576	498	456	436	570
65°	380	333	280	246	249	379
75°	182	151	123	118	118	195
85°	39	31	25	28	28	48
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°	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1
2.5°	2094.6	2094.6	2097.4	2094.6	2094.6	2094.6	2091.8	2091.8	2089.0	2089.0	2083.4
5°	2125.4	2119.7	2125.4	2119.7	2119.7	2119.7	2116.9	2111.3	2108.5	2103.0	2100.2
7.5°	2139.4	2136.6	2136.6	2133.8	2133.8	2131.0	2128.2	2125.4	2114.1	2111.3	2103.0
10°	2147.7	2144.9	2144.9	2142.2	2136.6	2136.6	2131.0	2128.2	2114.1	2108.5	2097.4
12.5°	2144.9	2144.9	2144.9	2142.2	2133.8	2131.0	2125.4	2116.9	2105.8	2094.6	2083.4
15°	2136.6	2136.6	2131.0	2128.2	2119.7	2114.1	2111.3	2097.4	2086.2	2072.2	2055.5
17.5°	2108.5	2108.5	2105.8	2100.2	2091.8	2086.2	2080.6	2066.7	2055.5	2033.1	2016.3
20°	2072.2	2069.5	2066.7	2058.3	2049.8	2047.0	2038.6	2019.1	2005.1	1988.4	1965.9
22.5°	2019.1	2016.3	2013.5	2007.9	1994.0	1988.4	1982.7	1968.7	1943.6	1926.9	1898.8
25°	1949.2	1949.2	1943.6	1935.2	1921.3	1915.6	1907.2	1893.2	1870.9	1845.7	1823.3
27.5°	1868.1	1865.3	1856.8	1851.3	1840.1	1831.7	1817.8	1801.0	1778.6	1759.0	1731.1
30°	1764.6	1764.6	1759.0	1750.6	1736.7	1731.1	1719.8	1700.3	1677.9	1652.7	1633.2
32.5°	1647.1	1647.1	1638.8	1633.2	1624.8	1610.8	1608.0	1585.6	1566.1	1546.5	1524.1
35°	1518.5	1521.3	1515.7	1504.5	1490.6	1490.6	1485.0	1465.3	1443.0	1423.4	1406.7
37.5°	1389.8	1381.5	1378.7	1373.1	1364.7	1353.5	1348.0	1339.6	1319.9	1306.0	1280.8
40°	1247.2	1250.0	1244.4	1238.9	1236.1	1227.7	1224.9	1210.9	1196.9	1180.1	1169.0
42.5°	1118.6	1118.6	1118.6	1113.0	1107.4	1099.0	1096.3	1087.9	1071.0	1059.9	1043.1
45°	1003.9	995.5	995.5	992.7	990.0	984.4	976.0	970.4	959.2	950.9	931.2
47.5°	892.1	894.9	892.1	889.3	881.0	878.2	875.3	864.1	852.9	844.6	830.6
50°	794.2	799.8	794.2	794.2	788.6	785.8	780.2	771.9	763.5	749.4	735.5
52.5°	713.1	713.1	710.3	707.5	699.2	693.6	690.8	688.0	673.9	662.8	651.6
55°	632.0	634.8	634.8	626.5	623.7	618.1	615.2	606.8	601.2	584.5	576.1
57.5°	562.1	559.2	562.1	556.6	550.9	545.3	542.5	536.9	528.5	517.4	506.2
60°	500.6	495.0	495.0	492.1	486.5	483.8	478.2	469.8	461.4	450.3	441.9
62.5°	439.1	436.3	433.5	430.7	425.0	422.2	419.4	411.1	402.7	394.3	385.9
65°	380.3	380.3	377.6	372.0	369.2	366.4	363.6	357.9	346.7	341.2	332.8
67.5°	327.2	324.4	324.4	318.8	313.2	310.4	310.4	304.9	296.5	288.0	282.4
70°	274.0	276.8	274.0	271.2	265.7	265.7	260.1	257.3	246.1	243.3	234.9
72.5°	226.6	226.6	223.7	223.7	218.1	215.3	215.3	209.7	204.1	198.5	193.0
75°	181.8	181.8	181.8	179.0	176.2	170.6	170.6	167.8	162.1	156.6	151.0
77.5°	142.6	139.8	139.8	137.0	134.2	131.4	131.4	128.6	123.1	120.3	114.7
80°	103.5	100.7	100.7	100.7	95.0	97.8	95.0	92.2	89.5	86.7	83.9
82.5°	67.1	69.9	69.9	67.1	64.3	64.3	64.3	61.5	61.5	58.7	55.9
85°	39.2	39.2	39.2	39.2	36.4	36.4	36.4	33.6	33.6	33.6	30.7
87.5°	16.8	16.8	16.8	16.8	16.8	16.8	14.0	14.0	14.0	14.0	14.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1
2.5°	2083.4	2077.8	2075.0	2072.2	2072.2	2069.5	2066.7	2061.1	2061.1	2055.5	2052.6
5°	2094.6	2086.2	2080.6	2075.0	2072.2	2066.7	2061.1	2052.6	2049.8	2041.4	2033.1
7.5°	2097.4	2083.4	2077.8	2066.7	2061.1	2055.5	2044.2	2035.8	2024.7	2016.3	2005.1
10°	2086.2	2075.0	2061.1	2047.0	2044.2	2035.8	2019.1	2007.9	1994.0	1982.7	1965.9
12.5°	2069.5	2052.6	2038.6	2021.9	2013.5	2005.1	1988.4	1971.5	1952.0	1932.4	1915.6
15°	2041.4	2021.9	2002.3	1982.7	1971.5	1963.2	1943.6	1924.1	1904.4	1879.3	1862.5
17.5°	1999.5	1977.1	1957.6	1932.4	1921.3	1912.8	1887.7	1865.3	1840.1	1815.0	1798.2
20°	1946.4	1918.4	1896.0	1868.1	1859.6	1845.7	1820.5	1795.4	1767.4	1739.5	1719.8
22.5°	1876.5	1848.5	1823.3	1795.4	1781.4	1767.4	1742.3	1711.4	1683.5	1661.1	1641.5
25°	1795.4	1770.2	1739.5	1714.2	1697.5	1680.7	1652.7	1627.6	1602.5	1568.8	1549.3
27.5°	1705.9	1675.1	1652.7	1619.2	1602.5	1591.2	1560.5	1526.9	1504.5	1473.8	1451.4
30°	1605.2	1577.2	1552.1	1518.5	1501.7	1490.6	1462.5	1431.8	1409.5	1378.7	1356.3
32.5°	1498.9	1468.1	1437.4	1415.1	1395.4	1384.3	1353.5	1333.9	1306.0	1280.8	1255.6
35°	1384.3	1353.5	1331.1	1300.4	1289.2	1278.1	1252.8	1227.7	1202.6	1180.1	1160.6
37.5°	1261.2	1238.9	1213.7	1191.3	1182.9	1171.7	1140.9	1118.6	1099.0	1076.6	1059.9
40°	1140.9	1121.4	1104.6	1082.3	1068.2	1059.9	1037.5	1018.0	995.5	981.6	964.8
42.5°	1031.9	1009.5	992.7	976.0	962.0	953.7	934.0	920.0	903.3	889.3	869.7
45°	917.3	906.1	886.5	872.5	864.1	852.9	839.0	822.2	808.2	797.0	783.0
47.5°	816.5	805.4	791.4	774.6	769.1	760.7	746.6	735.5	724.3	713.1	699.2
50°	724.3	710.3	699.2	688.0	682.3	673.9	660.0	654.4	646.0	634.8	626.5
52.5°	640.4	629.3	618.1	604.0	601.2	595.6	587.3	576.1	567.7	562.1	556.6
55°	564.9	553.8	545.3	534.1	531.3	525.7	514.6	509.0	503.4	497.8	492.1
57.5°	497.8	486.5	475.4	469.8	464.2	458.6	455.8	447.5	441.9	439.1	433.5
60°	436.3	425.0	416.6	408.3	405.5	402.7	397.1	391.5	385.9	380.3	377.6
62.5°	377.6	366.4	360.8	355.1	349.5	349.5	343.9	338.4	332.8	330.0	324.4
65°	324.4	318.8	310.4	302.1	299.3	299.3	290.8	288.0	285.2	279.6	274.0
67.5°	274.0	268.5	260.1	257.3	254.5	251.7	248.9	243.3	237.7	234.9	229.4
70°	229.4	223.7	218.1	215.3	212.5	209.7	204.1	201.3	195.8	193.0	190.2
72.5°	184.6	181.8	176.2	173.4	170.6	167.8	164.9	162.1	156.6	153.8	151.0
75°	148.2	145.4	139.8	137.0	134.2	134.2	131.4	125.9	123.1	123.1	120.3
77.5°	111.9	109.1	106.3	103.5	100.7	100.7	97.8	95.0	92.2	92.2	89.5
80°	81.1	78.3	75.5	75.5	75.5	72.7	69.9	69.9	67.1	67.1	64.3
82.5°	53.2	53.2	50.4	50.4	50.4	47.6	47.6	44.8	44.8	44.8	44.8
85°	30.7	30.7	30.7	27.9	27.9	27.9	27.9	27.9	27.9	25.1	27.9
87.5°	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	11.2	11.2	11.2
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°	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1
2.5°	2049.8	2047.0	2041.4	2041.4	2035.8	2035.8	2033.1	2030.3	2027.5	2024.7	2021.9
5°	2030.3	2019.1	2013.5	2010.7	2005.1	2002.3	1994.0	1988.4	1985.5	1979.9	1974.3
7.5°	1994.0	1982.7	1971.5	1968.7	1965.9	1954.8	1946.4	1938.0	1932.4	1926.9	1921.3
10°	1952.0	1940.8	1926.9	1921.3	1915.6	1901.6	1890.5	1882.1	1870.9	1859.6	1856.8
12.5°	1901.6	1884.9	1868.1	1862.5	1854.2	1840.1	1828.9	1815.0	1806.6	1792.5	1789.7
15°	1842.9	1823.3	1809.4	1795.4	1789.7	1775.8	1756.2	1745.1	1728.2	1722.6	1708.7
17.5°	1773.0	1753.4	1733.9	1728.2	1719.8	1700.3	1680.7	1666.8	1649.9	1641.5	1633.2
20°	1700.3	1675.1	1655.5	1649.9	1638.8	1622.0	1602.5	1588.4	1574.4	1557.7	1549.3
22.5°	1616.4	1588.4	1571.6	1557.7	1554.9	1535.2	1512.9	1501.7	1490.6	1476.6	1465.3
25°	1524.1	1498.9	1479.4	1468.1	1462.5	1445.8	1429.0	1415.1	1398.2	1389.8	1375.9
27.5°	1429.0	1412.3	1387.0	1375.9	1367.5	1353.5	1333.9	1325.5	1308.8	1297.6	1289.2
30°	1336.8	1311.6	1297.6	1283.6	1275.3	1261.2	1244.4	1236.1	1222.1	1210.9	1202.6
32.5°	1236.1	1219.3	1199.7	1194.1	1182.9	1169.0	1157.8	1143.7	1132.6	1121.4	1118.6
35°	1143.7	1121.4	1101.8	1096.3	1087.9	1073.8	1068.2	1059.9	1045.9	1043.1	1031.9
37.5°	1043.1	1031.9	1009.5	1001.1	998.3	987.2	976.0	970.4	962.0	953.7	950.9
40°	948.1	934.0	922.8	914.5	908.9	900.5	889.3	886.5	881.0	869.7	866.9
42.5°	858.5	844.6	833.4	830.6	822.2	813.7	808.2	799.8	797.0	794.2	788.6
45°	771.9	763.5	752.3	749.4	746.6	735.5	729.9	724.3	718.7	715.9	710.3
47.5°	693.6	685.2	676.7	673.9	668.3	665.6	657.2	654.4	646.0	643.2	640.4
50°	618.1	612.4	606.8	604.0	598.4	595.6	590.1	584.5	578.9	576.1	573.3
52.5°	550.9	545.3	539.7	536.9	534.1	528.5	522.9	517.4	514.6	511.8	509.0
55°	486.5	481.0	478.2	475.4	472.6	469.8	461.4	458.6	455.8	453.0	447.5
57.5°	427.9	422.2	416.6	416.6	413.9	411.1	405.5	399.9	399.9	394.3	388.7
60°	374.8	369.2	363.6	360.8	357.9	352.3	349.5	346.7	343.9	341.2	335.6
62.5°	318.8	316.0	310.4	310.4	304.9	302.1	299.3	296.5	293.7	288.0	285.2
65°	271.2	268.5	262.9	260.1	260.1	257.3	251.7	248.9	246.1	246.1	243.3
67.5°	226.6	223.7	218.1	215.3	215.3	212.5	209.7	209.7	206.9	204.1	206.9
70°	187.4	181.8	181.8	179.0	179.0	176.2	173.4	173.4	173.4	176.2	176.2
72.5°	148.2	145.4	142.6	142.6	142.6	142.6	139.8	139.8	142.6	145.4	145.4
75°	117.5	114.7	114.7	114.7	111.9	111.9	114.7	114.7	117.5	117.5	117.5
77.5°	86.7	86.7	86.7	86.7	86.7	86.7	89.5	89.5	92.2	92.2	92.2
80°	64.3	64.3	64.3	64.3	64.3	67.1	67.1	67.1	67.1	67.1	69.9
82.5°	44.8	44.8	44.8	44.8	44.8	44.8	44.8	47.6	47.6	47.6	47.6
85°	25.1	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9
87.5°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
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: P584862

CATALOG NUMBER: HC850D010-HM82555927-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1	2061.1
2.5°	2019.1	2019.1	2019.1	2021.9	2016.3	2016.3	2016.3	2016.3
5°	1971.5	1968.7	1965.9	1968.7	1963.2	1963.2	1960.4	1960.4
7.5°	1912.8	1910.0	1907.2	1907.2	1901.6	1901.6	1898.8	1896.0
10°	1848.5	1842.9	1845.7	1840.1	1837.3	1834.5	1831.7	1828.9
12.5°	1778.6	1773.0	1770.2	1764.6	1759.0	1756.2	1759.0	1753.4
15°	1703.1	1694.7	1691.9	1686.3	1680.7	1677.9	1677.9	1675.1
17.5°	1619.2	1613.6	1610.8	1605.2	1602.5	1596.9	1594.0	1591.2
20°	1540.9	1526.9	1529.8	1524.1	1521.3	1510.1	1510.1	1512.9
22.5°	1454.2	1445.8	1440.2	1434.6	1431.8	1426.2	1426.2	1423.4
25°	1367.5	1359.1	1356.3	1350.8	1348.0	1342.4	1339.6	1339.6
27.5°	1283.6	1272.5	1272.5	1266.8	1261.2	1258.4	1255.6	1252.8
30°	1194.1	1185.7	1182.9	1182.9	1180.1	1180.1	1171.7	1174.5
32.5°	1110.2	1104.6	1101.8	1096.3	1096.3	1093.5	1093.5	1085.1
35°	1026.4	1018.0	1020.8	1015.2	1012.4	1009.5	1012.4	1009.5
37.5°	945.3	939.6	939.6	934.0	934.0	931.2	928.4	934.0
40°	864.1	861.3	858.5	855.7	858.5	855.7	850.1	852.9
42.5°	783.0	783.0	780.2	780.2	777.4	777.4	777.4	777.4
45°	710.3	707.5	707.5	704.7	704.7	704.7	704.7	702.0
47.5°	637.6	634.8	634.8	634.8	632.0	632.0	629.3	632.0
50°	567.7	567.7	564.9	564.9	567.7	564.9	562.1	562.1
52.5°	503.4	503.4	500.6	500.6	497.8	495.0	497.8	497.8
55°	444.7	441.9	439.1	439.1	436.3	433.5	433.5	436.3
57.5°	388.7	385.9	383.1	383.1	377.6	374.8	374.8	374.8
60°	335.6	330.0	330.0	327.2	327.2	324.4	324.4	324.4
62.5°	285.2	282.4	282.4	282.4	282.4	279.6	279.6	279.6
65°	243.3	243.3	243.3	246.1	246.1	248.9	248.9	248.9
67.5°	209.7	212.5	212.5	212.5	215.3	215.3	215.3	212.5
70°	179.0	179.0	179.0	181.8	181.8	181.8	181.8	181.8
72.5°	148.2	148.2	148.2	148.2	148.2	148.2	148.2	148.2
75°	117.5	120.3	120.3	120.3	117.5	120.3	120.3	117.5
77.5°	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2
80°	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9
82.5°	47.6	47.6	47.6	47.6	47.6	47.6	47.6	47.6
85°	27.9	27.9	27.9	27.9	27.9	27.9	27.9	27.9
87.5°	11.2	11.2	11.2	11.2	11.2	11.2	11.2	11.2
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)