

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: P593684

Luminaire Tested: **HC830D010-HM82555950-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593684
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: HC830D010-HM82555950-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3224.2 lumens
Efficiency: N/A
Efficacy: 115.1 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

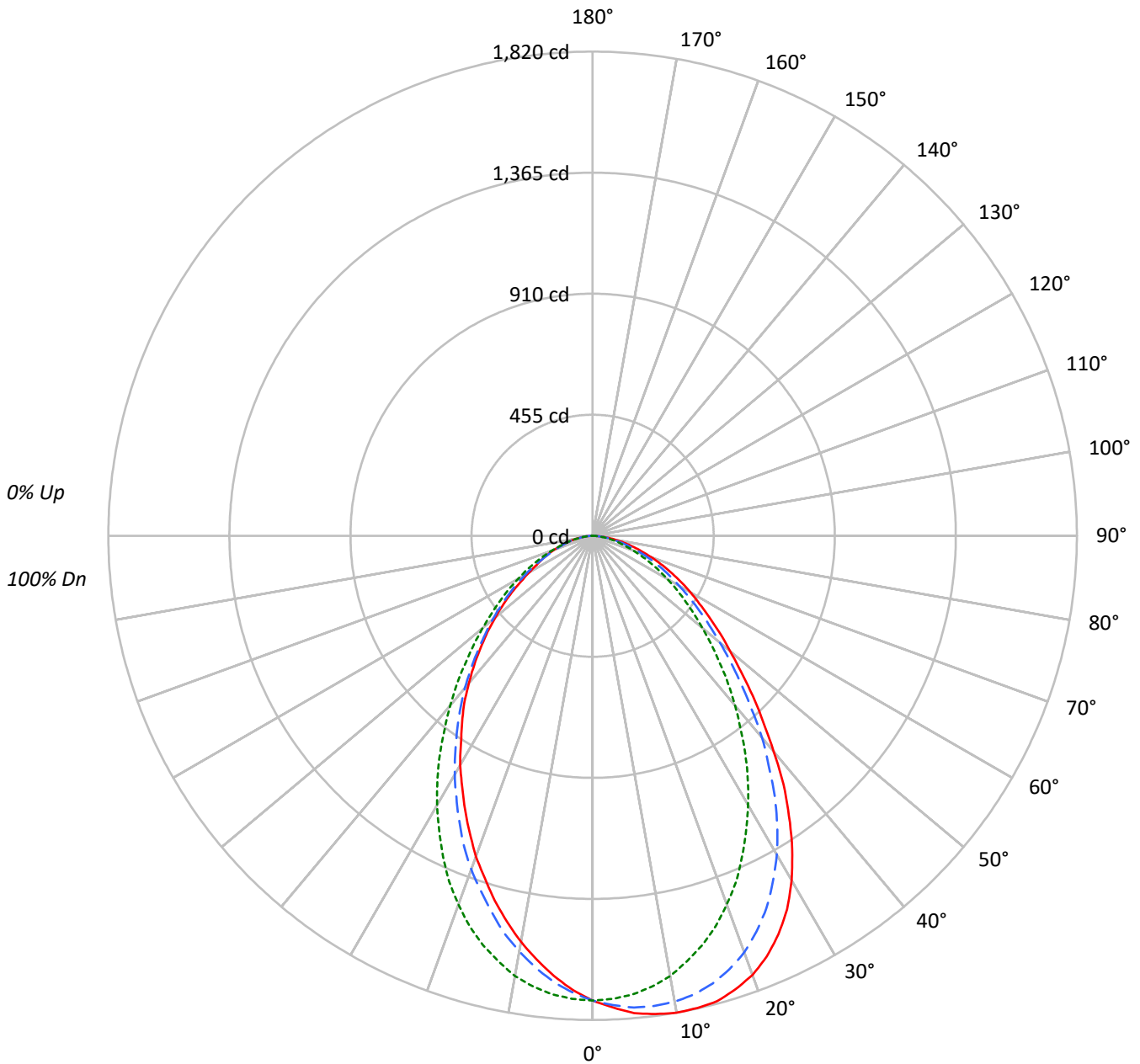
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
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	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°	53871	53871	53871
5°	55767	53563	51433
10°	57004	52626	48540
15°	57815	50852	45329
20°	57640	48383	42086
25°	56215	45245	38631
30°	53261	41614	35446
35°	48452	37655	32212
40°	42561	33495	29104
45°	37111	29462	25947
50°	32295	25814	22854
55°	28805	22687	19881
60°	26174	19877	16960
65°	23517	17300	15388
70°	20944	14750	13894
75°	18360	12427	11855
80°	15574	10087	10513
85°	11746	7536	8385



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	163.6	5.1
10°-20°	450.9	14.0
20°-30°	625.8	19.4
30°-40°	647.0	20.1
40°-50°	541.8	16.8
50°-60°	393.3	12.2
60°-70°	248.2	7.7
70°-80°	122.9	3.8
80°-90°	30.6	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°	1240.3	38.5
0°-40°	1887.4	58.5
0°-60°	2822.5	87.5
0°-90°	3224.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3224.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1747	1747	1747	1747	1747	
5°	1802	1780	1730	1683	1662	172
15°	1811	1742	1593	1465	1420	510
25°	1652	1546	1330	1185	1135	757
35°	1287	1192	1000	886	856	802
45°	851	789	676	609	595	658
55°	536	488	422	386	370	484
65°	322	282	237	209	211	321
75°	154	128	104	100	100	165
85°	33	26	21	24	24	40
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°	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0
2.5°	1775.4	1775.4	1777.8	1775.4	1775.4	1775.4	1773.0	1773.0	1770.7	1770.7	1766.0
5°	1801.6	1796.8	1801.6	1796.8	1796.8	1796.8	1794.4	1789.7	1787.3	1782.5	1780.2
7.5°	1813.3	1811.0	1811.0	1808.6	1808.6	1806.2	1804.0	1801.6	1792.1	1789.7	1782.5
10°	1820.5	1818.1	1818.1	1815.7	1811.0	1811.0	1806.2	1804.0	1792.1	1787.3	1777.8
12.5°	1818.1	1818.1	1818.1	1815.7	1808.6	1806.2	1801.6	1794.4	1784.9	1775.4	1766.0
15°	1811.0	1811.0	1806.2	1804.0	1796.8	1792.1	1789.7	1777.8	1768.3	1756.5	1742.2
17.5°	1787.3	1787.3	1784.9	1780.2	1773.0	1768.3	1763.6	1751.8	1742.2	1723.3	1709.1
20°	1756.5	1754.1	1751.8	1744.6	1737.5	1735.1	1728.1	1711.4	1699.6	1685.4	1666.4
22.5°	1711.4	1709.1	1706.7	1701.9	1690.2	1685.4	1680.7	1668.8	1647.5	1633.2	1609.5
25°	1652.2	1652.2	1647.5	1640.3	1628.5	1623.7	1616.7	1604.8	1585.8	1564.5	1545.5
27.5°	1583.4	1581.1	1574.0	1569.2	1559.7	1552.6	1540.8	1526.6	1507.5	1491.0	1467.3
30°	1495.8	1495.8	1491.0	1483.9	1472.0	1467.3	1457.8	1441.2	1422.3	1400.9	1384.4
32.5°	1396.1	1396.1	1389.1	1384.4	1377.2	1365.3	1363.0	1344.0	1327.4	1310.9	1291.8
35°	1287.1	1289.5	1284.7	1275.3	1263.4	1263.4	1258.7	1242.1	1223.1	1206.6	1192.3
37.5°	1178.1	1171.0	1168.7	1163.9	1156.8	1147.3	1142.5	1135.4	1118.8	1107.0	1085.7
40°	1057.3	1059.6	1054.9	1050.1	1047.7	1040.6	1038.2	1026.3	1014.6	1000.3	990.8
42.5°	948.2	948.2	948.2	943.5	938.7	931.6	929.2	922.1	907.9	898.4	884.1
45°	851.0	843.8	843.8	841.5	839.1	834.4	827.3	822.6	813.0	805.9	789.4
47.5°	756.2	758.6	756.2	753.8	746.7	744.3	741.9	732.4	723.0	715.9	704.0
50°	673.2	678.0	673.2	673.2	668.5	666.1	661.3	654.2	647.2	635.3	623.4
52.5°	604.5	604.5	602.1	599.7	592.6	587.8	585.5	583.1	571.3	561.8	552.3
55°	535.8	538.1	538.1	531.0	528.6	523.9	521.5	514.4	509.6	495.5	488.3
57.5°	476.4	474.1	476.4	471.7	466.9	462.3	459.9	455.1	448.0	438.5	429.0
60°	424.4	419.6	419.6	417.2	412.5	410.1	405.3	398.2	391.1	381.7	374.5
62.5°	372.2	369.8	367.4	365.0	360.3	357.9	355.5	348.5	341.4	334.2	327.1
65°	322.3	322.3	320.0	315.3	312.9	310.6	308.2	303.4	293.9	289.2	282.0
67.5°	277.4	275.0	275.0	270.3	265.5	263.1	263.1	258.4	251.2	244.1	239.5
70°	232.3	234.7	232.3	230.0	225.2	225.2	220.4	218.1	208.6	206.2	199.2
72.5°	192.0	192.0	189.6	189.6	184.9	182.5	182.5	177.8	173.0	168.2	163.6
75°	154.1	154.1	154.1	151.7	149.3	144.6	144.6	142.2	137.4	132.7	128.1
77.5°	120.9	118.5	118.5	116.2	113.8	111.4	111.4	109.0	104.3	101.9	97.1
80°	87.7	85.4	85.4	85.4	80.6	83.0	80.6	78.2	75.9	73.5	71.1
82.5°	56.8	59.2	59.2	56.8	54.6	54.6	54.6	52.2	52.2	49.8	47.4
85°	33.2	33.2	33.2	33.2	30.8	30.8	30.8	28.4	28.4	28.4	26.0
87.5°	14.3	14.3	14.3	14.3	14.3	14.3	11.9	11.9	11.9	11.9	11.9
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°	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0
2.5°	1766.0	1761.3	1758.9	1756.5	1756.5	1754.1	1751.8	1747.0	1747.0	1742.2	1739.9
5°	1775.4	1768.3	1763.6	1758.9	1756.5	1751.8	1747.0	1739.9	1737.5	1730.4	1723.3
7.5°	1777.8	1766.0	1761.3	1751.8	1747.0	1742.2	1732.7	1725.7	1716.2	1709.1	1699.6
10°	1768.3	1758.9	1747.0	1735.1	1732.7	1725.7	1711.4	1701.9	1690.2	1680.7	1666.4
12.5°	1754.1	1739.9	1728.1	1713.8	1706.7	1699.6	1685.4	1671.1	1654.6	1638.0	1623.7
15°	1730.4	1713.8	1697.2	1680.7	1671.1	1664.0	1647.5	1630.8	1614.3	1592.9	1578.8
17.5°	1694.8	1675.9	1659.2	1638.0	1628.5	1621.3	1600.0	1581.1	1559.7	1538.4	1524.2
20°	1649.9	1626.1	1607.2	1583.4	1576.4	1564.5	1543.2	1521.8	1498.1	1474.4	1457.8
22.5°	1590.5	1566.9	1545.5	1521.8	1509.9	1498.1	1476.7	1450.7	1427.0	1408.0	1391.5
25°	1521.8	1500.5	1474.4	1453.1	1438.8	1424.7	1400.9	1379.6	1358.2	1329.8	1313.3
27.5°	1445.9	1419.9	1400.9	1372.5	1358.2	1348.8	1322.6	1294.2	1275.3	1249.2	1230.3
30°	1360.6	1336.9	1315.6	1287.1	1272.9	1263.4	1239.8	1213.6	1194.7	1168.7	1149.6
32.5°	1270.6	1244.5	1218.4	1199.5	1182.8	1173.3	1147.3	1130.7	1107.0	1085.7	1064.3
35°	1173.3	1147.3	1128.4	1102.2	1092.8	1083.3	1061.9	1040.6	1019.3	1000.3	983.8
37.5°	1069.0	1050.1	1028.7	1009.8	1002.7	993.2	967.1	948.2	931.6	912.6	898.4
40°	967.1	950.5	936.3	917.3	905.5	898.4	879.4	862.9	843.8	832.1	817.8
42.5°	874.6	855.7	841.5	827.3	815.4	808.3	791.8	779.9	765.6	753.8	737.2
45°	777.5	768.0	751.4	739.6	732.4	723.0	711.1	696.9	685.1	675.6	663.7
47.5°	692.1	682.7	670.8	656.6	651.8	644.8	632.9	623.4	614.0	604.5	592.6
50°	614.0	602.1	592.6	583.1	578.3	571.3	559.4	554.7	547.5	538.1	531.0
52.5°	542.8	533.4	523.9	512.0	509.6	504.8	497.8	488.3	481.2	476.4	471.7
55°	478.8	469.3	462.3	452.8	450.4	445.6	436.1	431.4	426.7	422.0	417.2
57.5°	422.0	412.5	403.0	398.2	393.4	388.8	386.4	379.3	374.5	372.2	367.4
60°	369.8	360.3	353.3	346.1	343.7	341.4	336.6	331.8	327.1	322.3	320.0
62.5°	320.0	310.6	305.8	301.1	296.3	296.3	291.5	286.8	282.0	279.7	275.0
65°	275.0	270.3	263.1	256.0	253.6	253.6	246.5	244.1	241.8	237.1	232.3
67.5°	232.3	227.6	220.4	218.1	215.7	213.3	210.9	206.2	201.5	199.2	194.4
70°	194.4	189.6	184.9	182.5	180.1	177.8	173.0	170.6	166.0	163.6	161.2
72.5°	156.5	154.1	149.3	147.0	144.6	142.2	139.8	137.4	132.7	130.3	128.1
75°	125.7	123.3	118.5	116.2	113.8	113.8	111.4	106.7	104.3	104.3	101.9
77.5°	94.8	92.5	90.1	87.7	85.4	85.4	83.0	80.6	78.2	78.2	75.9
80°	68.7	66.3	64.0	64.0	64.0	61.6	59.2	59.2	56.8	56.8	54.6
82.5°	45.1	45.1	42.7	42.7	42.7	40.3	40.3	37.9	37.9	37.9	37.9
85°	26.0	26.0	26.0	23.7	23.7	23.7	23.7	23.7	23.7	21.3	23.7
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	11.9	11.9	9.5	9.5	9.5
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°	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0
2.5°	1737.5	1735.1	1730.4	1730.4	1725.7	1725.7	1723.3	1721.0	1718.6	1716.2	1713.8
5°	1721.0	1711.4	1706.7	1704.3	1699.6	1697.2	1690.2	1685.4	1683.0	1678.3	1673.5
7.5°	1690.2	1680.7	1671.1	1668.8	1666.4	1656.9	1649.9	1642.7	1638.0	1633.2	1628.5
10°	1654.6	1645.1	1633.2	1628.5	1623.7	1611.9	1602.4	1595.3	1585.8	1576.4	1574.0
12.5°	1611.9	1597.7	1583.4	1578.8	1571.6	1559.7	1550.2	1538.4	1531.3	1519.4	1517.0
15°	1562.1	1545.5	1533.7	1521.8	1517.0	1505.3	1488.6	1479.1	1465.0	1460.2	1448.3
17.5°	1502.9	1486.2	1469.7	1465.0	1457.8	1441.2	1424.7	1412.8	1398.5	1391.5	1384.4
20°	1441.2	1419.9	1403.3	1398.5	1389.1	1374.8	1358.2	1346.4	1334.5	1320.4	1313.3
22.5°	1370.1	1346.4	1332.2	1320.4	1318.0	1301.4	1282.5	1272.9	1263.4	1251.5	1242.1
25°	1291.8	1270.6	1253.9	1244.5	1239.8	1225.5	1211.2	1199.5	1185.2	1178.1	1166.3
27.5°	1211.2	1197.1	1175.7	1166.3	1159.2	1147.3	1130.7	1123.6	1109.3	1099.8	1092.8
30°	1133.1	1111.7	1099.8	1088.1	1080.9	1069.0	1054.9	1047.7	1035.9	1026.3	1019.3
32.5°	1047.7	1033.5	1017.0	1012.2	1002.7	990.8	981.4	969.5	960.0	950.5	948.2
35°	969.5	950.5	934.0	929.2	922.1	910.3	905.5	898.4	886.5	884.1	874.6
37.5°	884.1	874.6	855.7	848.6	846.2	836.8	827.3	822.6	815.4	808.3	805.9
40°	803.5	791.8	782.2	775.1	770.4	763.2	753.8	751.4	746.7	737.2	734.8
42.5°	727.7	715.9	706.4	704.0	696.9	689.7	685.1	678.0	675.6	673.2	668.5
45°	654.2	647.2	637.7	635.3	632.9	623.4	618.6	614.0	609.2	606.9	602.1
47.5°	587.8	580.7	573.7	571.3	566.6	564.2	557.0	554.7	547.5	545.2	542.8
50°	523.9	519.1	514.4	512.0	507.2	504.8	500.2	495.5	490.7	488.3	485.9
52.5°	466.9	462.3	457.5	455.1	452.8	448.0	443.3	438.5	436.1	433.7	431.4
55°	412.5	407.7	405.3	403.0	400.6	398.2	391.1	388.8	386.4	384.0	379.3
57.5°	362.6	357.9	353.3	353.3	350.9	348.5	343.7	339.0	339.0	334.2	329.5
60°	317.6	312.9	308.2	305.8	303.4	298.7	296.3	293.9	291.5	289.2	284.4
62.5°	270.3	267.9	263.1	263.1	258.4	256.0	253.6	251.2	248.9	244.1	241.8
65°	230.0	227.6	222.8	220.4	220.4	218.1	213.3	210.9	208.6	208.6	206.2
67.5°	192.0	189.6	184.9	182.5	182.5	180.1	177.8	177.8	175.4	173.0	175.4
70°	158.9	154.1	154.1	151.7	151.7	149.3	147.0	147.0	147.0	149.3	149.3
72.5°	125.7	123.3	120.9	120.9	120.9	120.9	118.5	118.5	120.9	123.3	123.3
75°	99.5	97.1	97.1	97.1	94.8	94.8	97.1	97.1	99.5	99.5	99.5
77.5°	73.5	73.5	73.5	73.5	73.5	73.5	75.9	75.9	78.2	78.2	78.2
80°	54.6	54.6	54.6	54.6	54.6	56.8	56.8	56.8	56.8	56.8	59.2
82.5°	37.9	37.9	37.9	37.9	37.9	37.9	37.9	40.3	40.3	40.3	40.3
85°	21.3	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
87.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
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: P593684

CATALOG NUMBER: HC830D010-HM82555950-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0	1747.0
2.5°	1711.4	1711.4	1711.4	1713.8	1709.1	1709.1	1709.1	1709.1
5°	1671.1	1668.8	1666.4	1668.8	1664.0	1664.0	1661.6	1661.6
7.5°	1621.3	1618.9	1616.7	1616.7	1611.9	1611.9	1609.5	1607.2
10°	1566.9	1562.1	1564.5	1559.7	1557.4	1555.0	1552.6	1550.2
12.5°	1507.5	1502.9	1500.5	1495.8	1491.0	1488.6	1491.0	1486.2
15°	1443.6	1436.4	1434.1	1429.4	1424.7	1422.3	1422.3	1419.9
17.5°	1372.5	1367.7	1365.3	1360.6	1358.2	1353.6	1351.2	1348.8
20°	1306.1	1294.2	1296.6	1291.8	1289.5	1280.1	1280.1	1282.5
22.5°	1232.6	1225.5	1220.7	1216.0	1213.6	1209.0	1209.0	1206.6
25°	1159.2	1152.0	1149.6	1144.9	1142.5	1137.8	1135.4	1135.4
27.5°	1088.1	1078.5	1078.5	1073.8	1069.0	1066.7	1064.3	1061.9
30°	1012.2	1005.1	1002.7	1002.7	1000.3	1000.3	993.2	995.5
32.5°	941.1	936.3	934.0	929.2	929.2	926.8	926.8	919.7
35°	870.0	862.9	865.2	860.5	858.1	855.7	858.1	855.7
37.5°	801.1	796.5	796.5	791.8	791.8	789.4	787.0	791.8
40°	732.4	730.0	727.7	725.4	727.7	725.4	720.7	723.0
42.5°	663.7	663.7	661.3	661.3	658.9	658.9	658.9	658.9
45°	602.1	599.7	599.7	597.4	597.4	597.4	597.4	595.0
47.5°	540.4	538.1	538.1	538.1	535.8	535.8	533.4	535.8
50°	481.2	481.2	478.8	478.8	481.2	478.8	476.4	476.4
52.5°	426.7	426.7	424.4	424.4	422.0	419.6	422.0	422.0
55°	376.9	374.5	372.2	372.2	369.8	367.4	367.4	369.8
57.5°	329.5	327.1	324.7	324.7	320.0	317.6	317.6	317.6
60°	284.4	279.7	279.7	277.4	277.4	275.0	275.0	275.0
62.5°	241.8	239.5	239.5	239.5	239.5	237.1	237.1	237.1
65°	206.2	206.2	206.2	208.6	208.6	210.9	210.9	210.9
67.5°	177.8	180.1	180.1	180.1	182.5	182.5	182.5	180.1
70°	151.7	151.7	151.7	154.1	154.1	154.1	154.1	154.1
72.5°	125.7	125.7	125.7	125.7	125.7	125.7	125.7	125.7
75°	99.5	101.9	101.9	101.9	99.5	101.9	101.9	99.5
77.5°	78.2	78.2	78.2	78.2	78.2	78.2	78.2	78.2
80°	59.2	59.2	59.2	59.2	59.2	59.2	59.2	59.2
82.5°	40.3	40.3	40.3	40.3	40.3	40.3	40.3	40.3
85°	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
87.5°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Report Generated By 670245859 / DESKTOP-HRDQ47P





— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)