

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: P584335

Luminaire Tested: **HC830D010-HM82555930-81WWW**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584335  
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-HM82555930-81WWW  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2901.2 lumens  
Efficiency: N/A  
Efficacy: 103.6 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

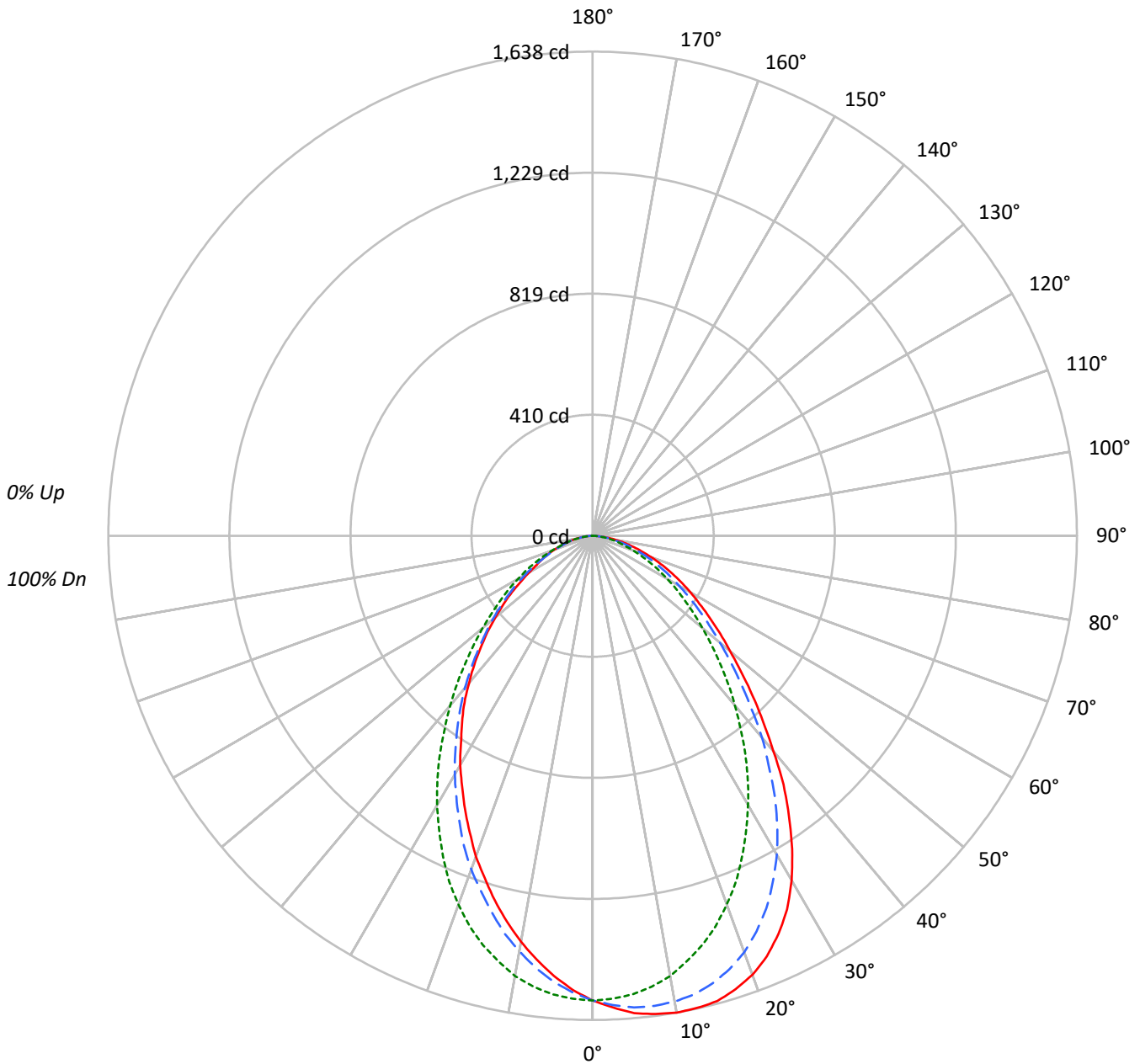
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20					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°	48475	48475	48475
5°	50180	48199	46286
10°	51292	47353	43677
15°	52024	45757	40789
20°	51865	43536	37866
25°	50584	40713	34762
30°	47923	37444	31900
35°	43599	33884	28986
40°	38294	30138	26189
45°	33392	26510	23348
50°	29062	23228	20571
55°	25913	20408	17892
60°	23547	17891	15258
65°	21167	15563	13856
70°	18843	13271	12496
75°	16513	11176	10663
80°	14011	9092	9465
85°	10543	6758	7536



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.2	5.1
10°-20°	405.7	14.0
20°-30°	563.1	19.4
30°-40°	582.2	20.1
40°-50°	487.5	16.8
50°-60°	353.9	12.2
60°-70°	223.3	7.7
70°-80°	110.6	3.8
80°-90°	27.5	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°	1116.1	38.5
0°-40°	1698.3	58.5
0°-60°	2539.8	87.5
0°-90°	2901.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2901.2	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1572	1572	1572	1572	1572	
5°	1621	1602	1557	1514	1495	155
15°	1630	1568	1433	1318	1278	459
25°	1487	1391	1197	1066	1022	681
35°	1158	1073	900	798	770	721
45°	766	710	608	548	535	592
55°	482	440	380	348	333	435
65°	290	254	213	188	190	289
75°	139	115	94	90	90	149
85°	30	23	19	21	21	36
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°	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0
2.5°	1597.7	1597.7	1599.8	1597.7	1597.7	1597.7	1595.5	1595.5	1593.4	1593.4	1589.1
5°	1621.1	1616.8	1621.1	1616.8	1616.8	1616.8	1614.7	1610.4	1608.2	1604.0	1601.9
7.5°	1631.8	1629.6	1629.6	1627.5	1627.5	1625.4	1623.2	1621.1	1612.5	1610.4	1604.0
10°	1638.1	1636.1	1636.1	1633.9	1629.6	1629.6	1625.4	1623.2	1612.5	1608.2	1599.8
12.5°	1636.1	1636.1	1636.1	1633.9	1627.5	1625.4	1621.1	1614.7	1606.1	1597.7	1589.1
15°	1629.6	1629.6	1625.4	1623.2	1616.8	1612.5	1610.4	1599.8	1591.2	1580.5	1567.7
17.5°	1608.2	1608.2	1606.1	1601.9	1595.5	1591.2	1587.0	1576.3	1567.7	1550.7	1537.9
20°	1580.5	1578.4	1576.3	1569.8	1563.5	1561.4	1555.0	1540.0	1529.4	1516.6	1499.4
22.5°	1540.0	1537.9	1535.7	1531.6	1520.8	1516.6	1512.3	1501.6	1482.4	1469.6	1448.3
25°	1486.7	1486.7	1482.4	1476.0	1465.3	1461.2	1454.7	1444.0	1426.9	1407.8	1390.8
27.5°	1424.9	1422.8	1416.3	1412.1	1403.5	1397.1	1386.5	1373.7	1356.5	1341.7	1320.4
30°	1345.9	1345.9	1341.7	1335.2	1324.5	1320.4	1311.8	1296.8	1279.8	1260.6	1245.7
32.5°	1256.3	1256.3	1250.0	1245.7	1239.3	1228.6	1226.5	1209.5	1194.5	1179.6	1162.5
35°	1158.2	1160.3	1156.1	1147.5	1136.9	1136.9	1132.6	1117.7	1100.7	1085.7	1073.0
37.5°	1060.1	1053.7	1051.6	1047.3	1040.9	1032.4	1028.1	1021.7	1006.7	996.1	976.9
40°	951.3	953.5	949.2	944.9	942.8	936.3	934.2	923.6	912.9	900.1	891.6
42.5°	853.2	853.2	853.2	848.9	844.7	838.2	836.1	829.7	817.0	808.4	795.6
45°	765.7	759.3	759.3	757.3	755.1	750.9	744.4	740.2	731.6	725.2	710.3
47.5°	680.5	682.6	680.5	678.3	671.9	669.8	667.6	659.1	650.6	644.2	633.5
50°	605.8	610.1	605.8	605.8	601.5	599.4	595.1	588.7	582.3	571.7	561.0
52.5°	544.0	544.0	541.8	539.7	533.3	529.0	526.8	524.7	514.0	505.6	497.0
55°	482.0	484.2	484.2	477.7	475.6	471.4	469.3	462.9	458.6	445.8	439.5
57.5°	428.8	426.6	428.8	424.5	420.2	415.9	413.8	409.5	403.2	394.6	386.1
60°	381.8	377.5	377.5	375.4	371.1	369.1	364.8	358.4	351.9	343.4	337.0
62.5°	334.8	332.8	330.7	328.5	324.2	322.1	320.0	313.5	307.1	300.7	294.4
65°	290.1	290.1	288.0	283.7	281.6	279.4	277.3	273.0	264.4	260.3	253.9
67.5°	249.6	247.4	247.4	243.2	238.9	236.7	236.7	232.4	226.1	219.7	215.4
70°	209.0	211.2	209.0	206.9	202.6	202.6	198.3	196.2	187.7	185.6	179.2
72.5°	172.8	172.8	170.6	170.6	166.3	164.2	164.2	159.9	155.8	151.5	147.2
75°	138.6	138.6	138.6	136.5	134.4	130.1	130.1	127.9	123.7	119.5	115.2
77.5°	108.8	106.7	106.7	104.5	102.4	100.2	100.2	98.1	93.8	91.7	87.5
80°	78.9	76.8	76.8	76.8	72.5	74.7	72.5	70.4	68.2	66.1	64.0
82.5°	51.2	53.3	53.3	51.2	49.1	49.1	49.1	47.0	47.0	44.8	42.7
85°	29.8	29.8	29.8	29.8	27.7	27.7	27.7	25.6	25.6	25.6	23.4
87.5°	12.8	12.8	12.8	12.8	12.8	12.8	10.7	10.7	10.7	10.7	10.7
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°	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0
2.5°	1589.1	1584.8	1582.7	1580.5	1580.5	1578.4	1576.3	1572.0	1572.0	1567.7	1565.7
5°	1597.7	1591.2	1587.0	1582.7	1580.5	1576.3	1572.0	1565.7	1563.5	1557.1	1550.7
7.5°	1599.8	1589.1	1584.8	1576.3	1572.0	1567.7	1559.3	1552.8	1544.3	1537.9	1529.4
10°	1591.2	1582.7	1572.0	1561.4	1559.3	1552.8	1540.0	1531.6	1520.8	1512.3	1499.4
12.5°	1578.4	1565.7	1555.0	1542.1	1535.7	1529.4	1516.6	1503.7	1488.9	1473.9	1461.2
15°	1557.1	1542.1	1527.3	1512.3	1503.7	1497.3	1482.4	1467.5	1452.6	1433.3	1420.6
17.5°	1525.1	1508.0	1493.1	1473.9	1465.3	1459.0	1439.8	1422.8	1403.5	1384.4	1371.5
20°	1484.6	1463.2	1446.2	1424.9	1418.5	1407.8	1388.6	1369.4	1348.1	1326.7	1311.8
22.5°	1431.2	1409.9	1390.8	1369.4	1358.7	1348.1	1328.8	1305.4	1284.1	1267.0	1252.0
25°	1369.4	1350.2	1326.7	1307.5	1294.7	1282.0	1260.6	1241.4	1222.2	1196.6	1181.6
27.5°	1301.1	1277.7	1260.6	1235.0	1222.2	1213.7	1190.2	1164.6	1147.5	1124.1	1107.1
30°	1224.3	1203.0	1183.8	1158.2	1145.4	1136.9	1115.5	1092.1	1075.0	1051.6	1034.5
32.5°	1143.3	1119.8	1096.4	1079.3	1064.4	1055.8	1032.4	1017.4	996.1	976.9	957.7
35°	1055.8	1032.4	1015.3	991.9	983.3	974.7	955.6	936.3	917.2	900.1	885.2
37.5°	962.0	944.9	925.8	908.6	902.2	893.8	870.2	853.2	838.2	821.2	808.4
40°	870.2	855.4	842.5	825.5	814.8	808.4	791.4	776.4	759.3	748.7	735.9
42.5°	787.1	770.0	757.3	744.4	733.7	727.3	712.4	701.7	688.9	678.3	663.3
45°	699.6	691.0	676.2	665.5	659.1	650.6	639.9	627.1	616.5	607.9	597.2
47.5°	622.8	614.4	603.7	590.8	586.5	580.2	569.5	561.0	552.4	544.0	533.3
50°	552.4	541.8	533.3	524.7	520.4	514.0	503.4	499.1	492.7	484.2	477.7
52.5°	488.4	479.9	471.4	460.7	458.6	454.3	447.9	439.5	433.0	428.8	424.5
55°	430.9	422.3	415.9	407.4	405.2	401.0	392.5	388.2	383.9	379.6	375.4
57.5°	379.6	371.1	362.6	358.4	354.1	349.8	347.7	341.2	337.0	334.8	330.7
60°	332.8	324.2	317.8	311.4	309.3	307.1	302.8	298.7	294.4	290.1	288.0
62.5°	288.0	279.4	275.1	270.9	266.6	266.6	262.4	258.1	253.9	251.7	247.4
65°	247.4	243.2	236.7	230.3	228.3	228.3	221.9	219.7	217.6	213.3	209.0
67.5°	209.0	204.7	198.3	196.2	194.0	192.0	189.9	185.6	181.3	179.2	174.9
70°	174.9	170.6	166.3	164.2	162.1	159.9	155.8	153.6	149.3	147.2	145.1
72.5°	140.8	138.6	134.4	132.2	130.1	127.9	125.8	123.7	119.5	117.4	115.2
75°	113.1	110.9	106.7	104.5	102.4	102.4	100.2	96.0	93.8	93.8	91.7
77.5°	85.4	83.2	81.1	78.9	76.8	76.8	74.7	72.5	70.4	70.4	68.2
80°	61.8	59.7	57.5	57.5	57.5	55.4	53.3	53.3	51.2	51.2	49.1
82.5°	40.5	40.5	38.4	38.4	38.4	36.3	36.3	34.1	34.1	34.1	34.1
85°	23.4	23.4	23.4	21.3	21.3	21.3	21.3	21.3	21.3	19.1	21.3
87.5°	10.7	10.7	10.7	10.7	10.7	10.7	10.7	10.7	8.6	8.6	8.6
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°	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0
2.5°	1563.5	1561.4	1557.1	1557.1	1552.8	1552.8	1550.7	1548.6	1546.4	1544.3	1542.1
5°	1548.6	1540.0	1535.7	1533.6	1529.4	1527.3	1520.8	1516.6	1514.4	1510.1	1505.9
7.5°	1520.8	1512.3	1503.7	1501.6	1499.4	1491.0	1484.6	1478.2	1473.9	1469.6	1465.3
10°	1488.9	1480.3	1469.6	1465.3	1461.2	1450.5	1441.9	1435.5	1426.9	1418.5	1416.3
12.5°	1450.5	1437.6	1424.9	1420.6	1414.2	1403.5	1394.9	1384.4	1377.9	1367.2	1365.1
15°	1405.6	1390.8	1380.1	1369.4	1365.1	1354.5	1339.5	1331.0	1318.2	1314.0	1303.3
17.5°	1352.4	1337.4	1322.4	1318.2	1311.8	1296.8	1282.0	1271.3	1258.4	1252.0	1245.7
20°	1296.8	1277.7	1262.7	1258.4	1250.0	1237.2	1222.2	1211.6	1200.9	1188.0	1181.6
22.5°	1232.9	1211.6	1198.7	1188.0	1185.9	1171.0	1153.9	1145.4	1136.9	1126.2	1117.7
25°	1162.5	1143.3	1128.4	1119.8	1115.5	1102.8	1090.0	1079.3	1066.5	1060.1	1049.4
27.5°	1090.0	1077.1	1058.0	1049.4	1043.0	1032.4	1017.4	1011.0	998.3	989.7	983.3
30°	1019.6	1000.4	989.7	979.0	972.6	962.0	949.2	942.8	932.2	923.6	917.2
32.5°	942.8	930.0	915.1	910.8	902.2	891.6	883.1	872.4	863.8	855.4	853.2
35°	872.4	855.4	840.4	836.1	829.7	819.1	814.8	808.4	797.7	795.6	787.1
37.5°	795.6	787.1	770.0	763.6	761.4	753.0	744.4	740.2	733.7	727.3	725.2
40°	723.0	712.4	703.9	697.5	693.2	686.9	678.3	676.2	671.9	663.3	661.2
42.5°	654.8	644.2	635.6	633.5	627.1	620.7	616.5	610.1	607.9	605.8	601.5
45°	588.7	582.3	573.8	571.7	569.5	561.0	556.7	552.4	548.1	546.0	541.8
47.5°	529.0	522.6	516.1	514.0	509.8	507.7	501.3	499.1	492.7	490.6	488.4
50°	471.4	467.2	462.9	460.7	456.5	454.3	450.0	445.8	441.5	439.5	437.3
52.5°	420.2	415.9	411.6	409.5	407.4	403.2	398.9	394.6	392.5	390.3	388.2
55°	371.1	366.9	364.8	362.6	360.5	358.4	351.9	349.8	347.7	345.5	341.2
57.5°	326.4	322.1	317.8	317.8	315.7	313.5	309.3	305.0	305.0	300.7	296.5
60°	285.8	281.6	277.3	275.1	273.0	268.7	266.6	264.4	262.4	260.3	256.0
62.5°	243.2	241.0	236.7	236.7	232.4	230.3	228.3	226.1	224.0	219.7	217.6
65°	206.9	204.7	200.5	198.3	198.3	196.2	192.0	189.9	187.7	187.7	185.6
67.5°	172.8	170.6	166.3	164.2	164.2	162.1	159.9	159.9	157.9	155.8	157.9
70°	142.9	138.6	138.6	136.5	136.5	134.4	132.2	132.2	132.2	134.4	134.4
72.5°	113.1	110.9	108.8	108.8	108.8	108.8	106.7	106.7	108.8	110.9	110.9
75°	89.5	87.5	87.5	87.5	85.4	85.4	87.5	87.5	89.5	89.5	89.5
77.5°	66.1	66.1	66.1	66.1	66.1	66.1	68.2	68.2	70.4	70.4	70.4
80°	49.1	49.1	49.1	49.1	49.1	51.2	51.2	51.2	51.2	51.2	53.3
82.5°	34.1	34.1	34.1	34.1	34.1	34.1	34.1	36.3	36.3	36.3	36.3
85°	19.1	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
87.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
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: P584335

CATALOG NUMBER: HC830D010-HM82555930-81WWW

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0	1572.0
2.5°	1540.0	1540.0	1540.0	1542.1	1537.9	1537.9	1537.9	1537.9
5°	1503.7	1501.6	1499.4	1501.6	1497.3	1497.3	1495.3	1495.3
7.5°	1459.0	1456.9	1454.7	1454.7	1450.5	1450.5	1448.3	1446.2
10°	1409.9	1405.6	1407.8	1403.5	1401.4	1399.2	1397.1	1394.9
12.5°	1356.5	1352.4	1350.2	1345.9	1341.7	1339.5	1341.7	1337.4
15°	1299.0	1292.6	1290.4	1286.1	1282.0	1279.8	1279.8	1277.7
17.5°	1235.0	1230.7	1228.6	1224.3	1222.2	1217.9	1215.8	1213.7
20°	1175.3	1164.6	1166.8	1162.5	1160.3	1151.8	1151.8	1153.9
22.5°	1109.2	1102.8	1098.5	1094.2	1092.1	1087.8	1087.8	1085.7
25°	1043.0	1036.7	1034.5	1030.3	1028.1	1023.8	1021.7	1021.7
27.5°	979.0	970.5	970.5	966.3	962.0	959.9	957.7	955.6
30°	910.8	904.4	902.2	902.2	900.1	900.1	893.8	895.9
32.5°	846.8	842.5	840.4	836.1	836.1	834.0	834.0	827.7
35°	782.8	776.4	778.6	774.3	772.1	770.0	772.1	770.0
37.5°	721.0	716.7	716.7	712.4	712.4	710.3	708.2	712.4
40°	659.1	656.9	654.8	652.6	654.8	652.6	648.5	650.6
42.5°	597.2	597.2	595.1	595.1	593.0	593.0	593.0	593.0
45°	541.8	539.7	539.7	537.5	537.5	537.5	537.5	535.4
47.5°	486.3	484.2	484.2	484.2	482.0	482.0	479.9	482.0
50°	433.0	433.0	430.9	430.9	433.0	430.9	428.8	428.8
52.5°	383.9	383.9	381.8	381.8	379.6	377.5	379.6	379.6
55°	339.1	337.0	334.8	334.8	332.8	330.7	330.7	332.8
57.5°	296.5	294.4	292.3	292.3	288.0	285.8	285.8	285.8
60°	256.0	251.7	251.7	249.6	249.6	247.4	247.4	247.4
62.5°	217.6	215.4	215.4	215.4	215.4	213.3	213.3	213.3
65°	185.6	185.6	185.6	187.7	187.7	189.9	189.9	189.9
67.5°	159.9	162.1	162.1	162.1	164.2	164.2	164.2	162.1
70°	136.5	136.5	136.5	138.6	138.6	138.6	138.6	138.6
72.5°	113.1	113.1	113.1	113.1	113.1	113.1	113.1	113.1
75°	89.5	91.7	91.7	91.7	89.5	91.7	91.7	89.5
77.5°	70.4	70.4	70.4	70.4	70.4	70.4	70.4	70.4
80°	53.3	53.3	53.3	53.3	53.3	53.3	53.3	53.3
82.5°	36.3	36.3	36.3	36.3	36.3	36.3	36.3	36.3
85°	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
87.5°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
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)