

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: P593681

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

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P593681  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-14)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC830D010-HM82555950-81RWWC  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3375.9 lumens  
Efficiency: N/A  
Efficacy: 120.6 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.08 / 1.17  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

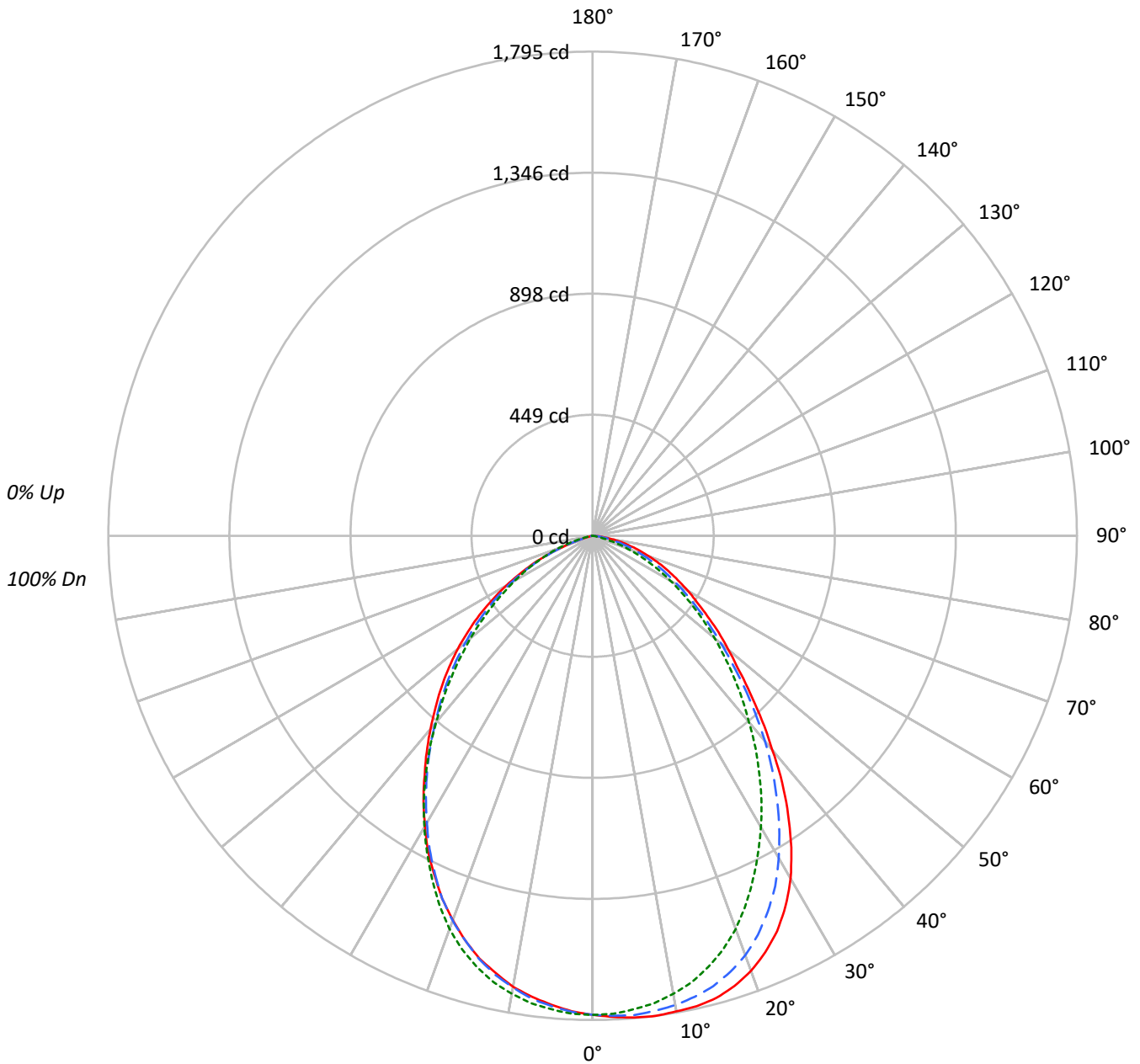
Input Watts (W): 28  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88								
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	84	82	79	77								
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67								
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59								
5	81	70	62	56	80	69	62	56	67	61	56	65	59	55	63	58	54	52								
6	76	64	56	50	74	63	55	50	61	55	50	60	54	49	58	53	49	47								
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42								
8	66	54	46	41	65	53	46	41	52	45	40	51	45	40	50	44	40	38								
9	62	50	42	37	61	49	42	37	48	42	37	47	41	37	46	41	37	35								
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	54771	54771	54771
5°	55498	54541	54030
10°	56064	53982	53168
15°	56630	52844	51787
20°	56341	50893	49728
25°	55031	47848	47202
30°	52267	44416	44245
35°	47582	40528	40889
40°	41715	36273	37609
45°	35991	32266	34543
50°	31513	28328	31288
55°	27924	24354	27537
60°	25156	20475	22813
65°	22670	16439	17475
70°	19889	11973	9629
75°	16954	6219	2550
80°	13052	1687	426
85°	8385	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	167.6	5.0
10°-20°	471.1	14.0
20°-30°	668.7	19.8
30°-40°	703.9	20.9
40°-50°	598.8	17.7
50°-60°	432.7	12.8
60°-70°	246.1	7.3
70°-80°	77.6	2.3
80°-90°	9.4	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°	1307.4	38.7
0°-40°	2011.3	59.6
0°-60°	3042.8	90.1
0°-90°	3375.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3375.9	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1776	1776	1776	1776	1776	
5°	1793	1783	1762	1750	1746	171
15°	1774	1729	1655	1624	1622	500
25°	1617	1537	1406	1383	1387	741
35°	1264	1190	1077	1070	1086	787
45°	825	794	740	759	792	642
55°	519	481	453	479	512	468
65°	311	268	225	223	240	308
75°	142	109	52	24	21	153
85°	24	14	0	0	0	31
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°	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2
2.5°	1785.8	1788.1	1783.4	1783.4	1788.1	1783.4	1785.8	1785.8	1783.4	1783.4	1781.0
5°	1792.9	1790.5	1790.5	1790.5	1792.9	1788.1	1785.8	1788.1	1783.4	1783.4	1783.4
7.5°	1795.3	1795.3	1792.9	1790.5	1790.5	1790.5	1788.1	1785.8	1783.4	1778.6	1776.2
10°	1790.5	1790.5	1792.9	1788.1	1788.1	1783.4	1783.4	1778.6	1778.6	1773.9	1766.7
12.5°	1785.8	1783.4	1783.4	1778.6	1778.6	1773.9	1773.9	1766.7	1764.4	1757.3	1750.2
15°	1773.9	1771.5	1766.7	1764.4	1762.0	1759.6	1755.0	1752.6	1745.5	1735.9	1728.8
17.5°	1750.2	1747.8	1745.5	1740.7	1735.9	1733.6	1731.2	1724.0	1714.7	1707.5	1695.6
20°	1716.9	1714.7	1714.7	1707.5	1705.1	1698.0	1695.6	1686.1	1679.0	1664.8	1655.3
22.5°	1671.9	1674.2	1669.6	1664.8	1660.1	1652.9	1648.2	1638.7	1626.9	1612.6	1600.8
25°	1617.4	1619.8	1615.0	1610.3	1603.1	1598.4	1593.6	1579.5	1567.6	1550.9	1536.8
27.5°	1548.6	1548.6	1548.6	1543.8	1532.0	1529.6	1524.9	1510.6	1494.1	1479.8	1465.6
30°	1467.9	1465.6	1465.6	1458.4	1453.8	1444.3	1437.1	1425.3	1413.4	1396.8	1380.2
32.5°	1370.7	1373.1	1366.0	1361.3	1354.2	1354.2	1344.6	1335.1	1321.0	1304.3	1287.7
35°	1264.0	1266.4	1261.6	1259.3	1247.4	1245.0	1242.6	1230.9	1221.3	1209.5	1190.5
37.5°	1154.9	1152.5	1150.2	1150.2	1143.1	1138.3	1133.6	1126.5	1112.2	1102.8	1093.3
40°	1036.3	1036.3	1036.3	1034.0	1031.6	1026.8	1024.4	1019.8	1010.3	1000.8	993.6
42.5°	929.7	929.7	927.3	924.9	920.2	922.5	917.8	913.0	903.5	896.4	891.6
45°	825.3	825.3	825.3	827.7	822.9	815.8	815.8	811.0	806.3	801.6	794.5
47.5°	732.8	739.9	735.2	732.8	735.2	725.6	725.6	720.9	716.3	711.5	702.0
50°	656.9	656.9	656.9	652.2	649.8	649.8	642.7	637.9	635.5	630.8	621.4
52.5°	588.1	583.4	583.4	581.1	578.7	573.9	573.9	569.2	559.7	554.9	547.8
55°	519.4	519.4	517.0	514.6	512.2	509.8	507.5	500.3	495.7	488.6	481.4
57.5°	457.6	462.4	460.0	455.4	450.6	450.6	445.9	441.1	434.0	426.9	419.7
60°	407.9	405.6	405.6	403.2	398.4	396.1	393.7	386.5	379.4	372.3	365.3
62.5°	355.7	355.7	355.7	351.0	346.2	343.9	341.5	336.7	327.2	320.2	315.4
65°	310.7	308.3	305.9	303.6	301.2	296.4	294.0	289.3	282.1	275.1	268.0
67.5°	265.6	263.2	263.2	260.9	253.7	251.4	251.4	244.2	237.2	230.1	222.9
70°	220.6	220.6	220.6	215.8	213.4	211.0	208.7	203.9	196.8	189.8	182.6
72.5°	182.6	180.3	180.3	177.9	170.7	168.4	166.0	161.2	154.1	149.5	144.7
75°	142.3	142.3	139.9	137.6	135.2	132.8	130.4	125.7	118.5	111.4	109.0
77.5°	109.0	106.8	106.8	104.4	99.6	97.3	97.3	92.5	85.4	80.6	75.9
80°	73.5	75.9	73.5	71.1	68.7	66.3	64.1	61.7	57.0	52.2	47.4
82.5°	45.1	47.4	45.1	45.1	42.7	40.3	40.3	35.6	33.2	30.8	28.4
85°	23.7	23.7	23.7	23.7	21.4	21.4	21.4	19.0	16.6	14.3	14.3
87.5°	7.1	9.5	7.1	7.1	7.1	7.1	7.1	7.1	4.8	4.8	4.8
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2
2.5°	1783.4	1781.0	1778.6	1778.6	1778.6	1778.6	1778.6	1776.2	1773.9	1773.9	1773.9
5°	1778.6	1778.6	1778.6	1776.2	1773.9	1773.9	1769.1	1766.7	1764.4	1762.0	1759.6
7.5°	1773.9	1769.1	1766.7	1764.4	1762.0	1762.0	1757.3	1752.6	1752.6	1747.8	1743.1
10°	1759.6	1757.3	1752.6	1747.8	1745.5	1743.1	1738.3	1731.2	1728.8	1724.0	1719.3
12.5°	1743.1	1738.3	1733.6	1724.0	1721.7	1719.3	1709.9	1702.8	1698.0	1695.6	1683.7
15°	1721.7	1712.3	1705.1	1693.3	1690.9	1686.1	1679.0	1671.9	1662.5	1655.3	1650.6
17.5°	1683.7	1674.2	1662.5	1650.6	1645.8	1645.8	1633.9	1624.5	1612.6	1607.9	1598.4
20°	1638.7	1626.9	1617.4	1603.1	1596.0	1588.9	1581.8	1567.6	1558.1	1550.9	1539.2
22.5°	1586.5	1570.0	1558.1	1543.8	1532.0	1524.9	1513.0	1501.1	1489.3	1482.2	1472.7
25°	1520.1	1505.9	1487.0	1472.7	1465.6	1456.0	1441.9	1430.0	1418.1	1406.3	1401.6
27.5°	1446.7	1427.6	1411.0	1394.5	1387.3	1380.2	1363.7	1349.4	1339.9	1328.0	1323.4
30°	1366.0	1347.0	1328.0	1313.8	1306.7	1294.8	1285.3	1268.8	1256.9	1247.4	1235.6
32.5°	1273.5	1259.3	1242.6	1221.3	1216.6	1207.1	1192.9	1185.8	1171.5	1164.4	1154.9
35°	1173.9	1164.4	1147.9	1131.2	1124.1	1119.3	1107.4	1093.3	1083.8	1076.6	1071.9
37.5°	1079.0	1067.1	1050.6	1038.7	1034.0	1026.8	1012.7	1005.5	996.0	991.3	981.8
40°	977.0	965.2	953.3	946.2	939.1	934.3	924.9	917.8	908.3	901.1	898.8
42.5°	877.5	870.3	860.8	851.3	848.9	841.9	837.2	830.0	822.9	820.5	813.4
45°	787.4	780.2	770.7	761.2	758.9	754.2	751.8	744.7	739.9	739.9	739.9
47.5°	697.2	690.1	680.6	675.8	678.2	668.8	668.8	666.4	661.7	661.7	664.1
50°	616.6	607.1	604.7	600.0	595.2	590.5	592.8	585.8	585.8	590.5	588.1
52.5°	540.8	531.2	528.9	524.1	521.7	521.7	519.4	519.4	517.0	519.4	519.4
55°	471.9	464.8	460.0	455.4	453.0	453.0	453.0	450.6	448.3	453.0	455.4
57.5°	410.3	407.9	403.2	396.1	393.7	391.3	388.9	388.9	388.9	388.9	391.3
60°	355.7	351.0	346.2	339.1	339.1	336.7	334.3	332.0	332.0	332.0	332.0
62.5°	308.3	301.2	294.0	289.3	286.9	284.5	282.1	277.5	277.5	277.5	277.5
65°	260.9	253.7	249.0	244.2	239.5	239.5	234.8	232.4	227.7	225.3	220.6
67.5°	215.8	211.0	206.3	199.2	196.8	194.5	189.8	187.4	180.3	177.9	175.5
70°	175.5	168.4	163.6	158.9	156.5	151.8	147.1	142.3	137.6	132.8	128.1
72.5°	137.6	130.4	125.7	120.9	116.2	116.2	109.0	104.4	97.3	92.5	85.4
75°	102.0	94.9	90.1	83.0	80.6	78.2	71.1	66.3	59.3	52.2	47.4
77.5°	68.7	64.1	59.3	52.2	47.4	47.4	40.3	35.6	30.8	23.7	21.4
80°	42.7	37.9	33.2	28.4	28.4	23.7	21.4	16.6	11.9	9.5	7.1
82.5°	23.7	21.4	19.0	14.3	14.3	11.9	9.5	7.1	4.8	2.4	2.4
85°	11.9	9.5	7.1	7.1	4.8	4.8	4.8	2.4	2.4	0.0	0.0
87.5°	4.8	2.4	2.4	2.4	2.4	2.4	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



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**CANDELA DISTRIBUTION (continued):**

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2
2.5°	1771.5	1771.5	1769.1	1769.1	1769.1	1766.7	1769.1	1766.7	1766.7	1766.7	1769.1
5°	1762.0	1757.3	1757.3	1755.0	1755.0	1752.6	1755.0	1752.6	1750.2	1747.8	1750.2
7.5°	1743.1	1738.3	1735.9	1733.6	1733.6	1733.6	1731.2	1728.8	1731.2	1724.0	1728.8
10°	1716.9	1714.7	1709.9	1707.5	1705.1	1707.5	1705.1	1700.4	1700.4	1700.4	1698.0
12.5°	1683.7	1679.0	1676.6	1674.2	1669.6	1669.6	1671.9	1667.2	1667.2	1662.5	1662.5
15°	1643.4	1638.7	1633.9	1633.9	1629.2	1629.2	1626.9	1626.9	1624.5	1622.2	1622.2
17.5°	1593.6	1586.5	1581.8	1584.2	1581.8	1579.5	1579.5	1574.7	1572.3	1574.7	1574.7
20°	1534.4	1529.6	1524.9	1527.3	1522.5	1520.1	1522.5	1515.4	1517.8	1517.8	1517.8
22.5°	1467.9	1465.6	1458.4	1458.4	1453.8	1451.4	1453.8	1453.8	1456.0	1453.8	1453.8
25°	1394.5	1389.7	1384.9	1384.9	1382.6	1380.2	1382.6	1384.9	1382.6	1384.9	1384.9
27.5°	1316.2	1309.1	1309.1	1304.3	1304.3	1306.7	1304.3	1306.7	1309.1	1309.1	1313.8
30°	1230.9	1228.5	1226.1	1223.7	1223.7	1226.1	1226.1	1226.1	1228.5	1233.2	1233.2
32.5°	1150.2	1145.5	1140.7	1140.7	1145.5	1143.1	1145.5	1145.5	1150.2	1150.2	1154.9
35°	1062.5	1062.5	1057.7	1060.1	1060.1	1060.1	1060.1	1064.7	1069.5	1071.9	1076.6
37.5°	981.8	974.7	977.0	977.0	979.4	977.0	984.1	984.1	988.9	988.9	993.6
40°	894.0	894.0	896.4	894.0	896.4	896.4	901.1	905.9	908.3	913.0	915.4
42.5°	811.0	815.8	811.0	813.4	815.8	818.2	820.5	822.9	832.4	837.2	844.3
45°	735.2	737.5	739.9	742.3	739.9	744.7	747.0	751.8	758.9	761.2	763.6
47.5°	661.7	664.1	666.4	668.8	668.8	673.4	675.8	680.6	685.3	687.7	690.1
50°	590.5	595.2	597.6	597.6	600.0	604.7	609.5	609.5	614.2	621.4	623.7
52.5°	526.5	526.5	531.2	533.6	536.0	536.0	543.0	545.4	547.8	552.5	557.3
55°	455.4	462.4	464.8	464.8	469.5	474.3	476.7	479.0	479.0	488.6	488.6
57.5°	393.7	396.1	400.8	400.8	400.8	407.9	407.9	412.6	415.0	417.3	422.1
60°	332.0	336.7	336.7	339.1	336.7	341.5	343.9	348.6	351.0	353.4	355.7
62.5°	275.1	275.1	277.5	277.5	277.5	277.5	282.1	282.1	286.9	289.3	291.7
65°	220.6	220.6	220.6	220.6	220.6	220.6	220.6	220.6	222.9	222.9	227.7
67.5°	170.7	168.4	163.6	166.0	163.6	163.6	161.2	161.2	163.6	163.6	168.4
70°	123.3	120.9	116.2	116.2	113.8	111.4	109.0	106.8	104.4	104.4	104.4
72.5°	80.6	75.9	68.7	66.3	66.3	61.7	57.0	54.6	54.6	54.6	54.6
75°	40.3	35.6	30.8	28.4	28.4	23.7	26.0	23.7	23.7	23.7	23.7
77.5°	16.6	11.9	9.5	9.5	9.5	7.1	7.1	7.1	7.1	7.1	7.1
80°	4.8	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	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	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: P593681

CATALOG NUMBER: HC830D010-HM82555950-81RWWC

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2	1776.2
2.5°	1766.7	1766.7	1762.0	1764.4	1764.4	1764.4	1764.4	1764.4
5°	1745.5	1747.8	1745.5	1747.8	1747.8	1745.5	1745.5	1745.5
7.5°	1724.0	1726.4	1724.0	1726.4	1726.4	1726.4	1724.0	1724.0
10°	1698.0	1698.0	1698.0	1698.0	1698.0	1695.6	1698.0	1698.0
12.5°	1662.5	1662.5	1662.5	1664.8	1664.8	1662.5	1662.5	1660.1
15°	1624.5	1619.8	1622.2	1624.5	1622.2	1622.2	1622.2	1622.2
17.5°	1572.3	1574.7	1572.3	1572.3	1572.3	1572.3	1574.7	1572.3
20°	1517.8	1517.8	1520.1	1517.8	1517.8	1517.8	1517.8	1515.4
22.5°	1456.0	1453.8	1453.8	1456.0	1456.0	1453.8	1456.0	1456.0
25°	1387.3	1389.7	1387.3	1387.3	1389.7	1389.7	1389.7	1387.3
27.5°	1313.8	1316.2	1318.6	1316.2	1316.2	1316.2	1318.6	1321.0
30°	1237.9	1242.6	1237.9	1237.9	1242.6	1240.2	1242.6	1242.6
32.5°	1157.3	1164.4	1159.6	1164.4	1164.4	1166.8	1164.4	1166.8
35°	1076.6	1083.8	1083.8	1083.8	1086.2	1088.5	1088.5	1086.2
37.5°	1000.8	1003.2	1003.2	1007.9	1010.3	1012.7	1012.7	1010.3
40°	922.5	927.3	929.7	929.7	929.7	934.3	939.1	934.3
42.5°	846.6	848.9	851.3	851.3	856.1	858.5	860.8	860.8
45°	773.1	777.8	780.2	782.6	785.0	789.7	787.4	792.1
47.5°	697.2	704.4	706.7	709.1	713.9	716.3	718.5	720.9
50°	628.5	633.1	633.1	637.9	645.0	645.0	649.8	652.2
52.5°	559.7	562.0	564.4	566.8	571.6	576.3	576.3	581.1
55°	493.3	495.7	495.7	498.1	500.3	509.8	512.2	512.2
57.5°	424.5	424.5	429.2	431.6	434.0	438.7	438.7	438.7
60°	358.1	360.5	360.5	362.9	365.3	369.9	372.3	369.9
62.5°	291.7	294.0	294.0	296.4	301.2	303.6	301.2	301.2
65°	230.1	232.4	232.4	234.8	239.5	239.5	237.2	239.5
67.5°	168.4	168.4	168.4	168.4	168.4	168.4	168.4	168.4
70°	106.8	104.4	102.0	104.4	104.4	104.4	102.0	106.8
72.5°	52.2	54.6	54.6	54.6	54.6	54.6	54.6	52.2
75°	23.7	23.7	21.4	21.4	21.4	23.7	23.7	21.4
77.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
80°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	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



Report Generated By 670245859 / DESKTOP-HRDQ47P





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















(END OF REPORT)