

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: P593685

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

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P593685
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-18)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 10/21/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC830D010-HM82555950-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3356.9 lumens
Efficiency: N/A
Efficacy: 119.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.09 / 1.18
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

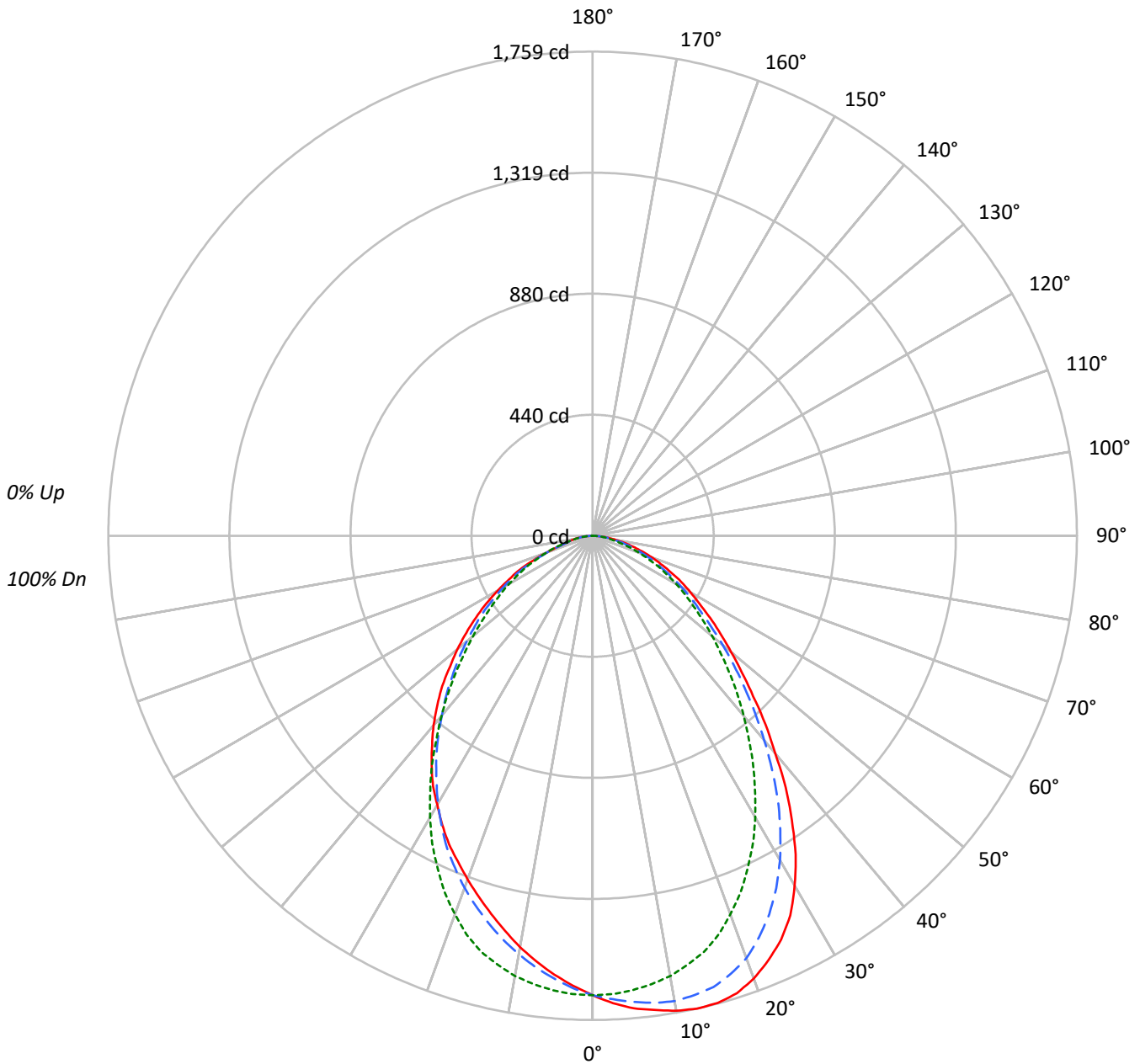
Input Watts (W): 28
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	92	91	89	87								
2	102	94	88	83	99	93	87	82	89	85	81	86	82	79	83	80	77	75								
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65								
4	87	76	68	62	84	75	67	61	72	66	61	70	64	60	68	63	59	57								
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50								
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45								
7	70	57	49	43	68	56	49	43	55	48	43	53	47	43	52	47	42	40								
8	65	52	45	39	64	52	44	39	51	44	39	49	43	39	48	43	38	37								
9	61	48	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	51469	51469	51469
5°	53352	51297	49536
10°	54862	50854	47513
15°	56081	49952	45412
20°	56173	48002	43566
25°	55095	45334	42030
30°	52256	42041	40182
35°	47481	38288	38374
40°	41514	34357	36168
45°	35978	30601	33701
50°	31504	27186	30712
55°	28042	24091	27789
60°	25298	21641	24416
65°	22831	19022	21284
70°	20520	16030	15823
75°	18074	12712	11855
80°	15165	10513	11365
85°	11746	9199	10048



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.5	4.7
10°-20°	443.5	13.2
20°-30°	633.8	18.9
30°-40°	673.5	20.1
40°-50°	579.8	17.3
50°-60°	433.5	12.9
60°-70°	276.5	8.2
70°-80°	125.8	3.7
80°-90°	33.0	1.0
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°	1234.8	36.8
0°-40°	1908.2	56.8
0°-60°	2921.6	87.0
0°-90°	3356.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3356.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1669	1669	1669	1669	1669	
5°	1724	1700	1657	1614	1600	165
15°	1757	1698	1565	1458	1422	495
25°	1619	1517	1332	1252	1235	741
35°	1261	1174	1017	991	1019	786
45°	825	780	702	721	773	641
55°	522	479	448	486	517	469
65°	313	277	261	273	292	312
75°	152	130	107	97	100	161
85°	33	28	26	28	28	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°	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1
2.5°	1699.9	1695.2	1697.5	1695.2	1697.5	1697.5	1692.8	1692.8	1692.8	1692.8	1685.6
5°	1723.6	1721.2	1721.2	1718.8	1716.4	1718.8	1716.4	1714.2	1709.4	1707.0	1699.9
7.5°	1737.8	1737.8	1737.8	1737.8	1735.5	1733.1	1730.7	1726.0	1721.2	1716.4	1711.8
10°	1752.1	1754.4	1752.1	1749.7	1747.4	1742.6	1740.2	1735.5	1728.3	1721.2	1716.4
12.5°	1759.1	1759.1	1756.7	1756.7	1752.1	1749.7	1742.6	1735.5	1728.3	1721.2	1709.4
15°	1756.7	1756.7	1754.4	1752.1	1745.0	1742.6	1737.8	1730.7	1718.8	1709.4	1697.5
17.5°	1742.6	1740.2	1735.5	1735.5	1726.0	1723.6	1718.8	1709.4	1697.5	1683.3	1669.1
20°	1711.8	1711.8	1709.4	1707.0	1697.5	1690.4	1685.6	1673.9	1664.4	1647.7	1633.6
22.5°	1669.1	1673.9	1669.1	1664.4	1652.5	1650.1	1643.0	1628.8	1614.5	1595.6	1579.0
25°	1619.3	1616.9	1614.5	1609.8	1600.3	1595.6	1586.1	1571.9	1557.6	1536.3	1517.4
27.5°	1555.3	1545.8	1545.8	1536.3	1529.2	1522.0	1517.4	1503.1	1484.1	1467.6	1443.8
30°	1467.6	1470.0	1458.1	1455.7	1443.8	1439.0	1429.7	1415.4	1398.9	1379.8	1360.8
32.5°	1372.7	1365.6	1365.6	1356.2	1346.7	1339.5	1337.1	1320.5	1306.4	1287.3	1268.4
35°	1261.3	1261.3	1254.2	1251.8	1242.3	1237.6	1230.5	1221.0	1204.3	1187.8	1173.5
37.5°	1152.3	1147.5	1145.1	1140.4	1133.2	1126.1	1126.1	1109.6	1107.2	1088.2	1069.3
40°	1031.3	1036.1	1031.3	1024.2	1021.8	1017.1	1014.7	1005.2	998.2	981.5	969.6
42.5°	929.3	924.7	924.7	922.3	912.8	912.8	908.0	903.3	891.4	886.8	872.5
45°	825.0	829.8	822.7	825.0	815.5	815.5	815.5	806.1	796.6	789.5	780.0
47.5°	734.9	737.3	737.3	730.2	727.9	727.9	723.1	718.4	711.3	701.7	694.6
50°	656.7	659.1	654.3	651.9	647.3	644.9	644.9	635.4	630.6	621.1	616.4
52.5°	585.6	585.6	583.2	583.2	576.1	576.1	571.4	564.3	559.5	554.8	542.9
55°	521.6	521.6	519.2	516.9	516.9	509.7	507.3	500.2	495.5	486.1	478.9
57.5°	459.9	462.3	459.9	457.5	455.1	452.9	448.1	441.0	436.2	429.1	424.4
60°	410.2	410.2	407.8	405.4	400.7	398.3	395.9	391.2	384.0	379.3	372.3
62.5°	362.8	360.4	358.0	355.6	350.9	350.9	346.1	341.4	334.3	329.6	324.8
65°	312.9	312.9	310.6	310.6	308.2	303.4	301.1	298.7	289.3	286.9	277.4
67.5°	267.9	270.3	265.5	265.5	260.7	260.7	258.4	251.4	249.0	244.2	239.5
70°	227.6	227.6	227.6	225.2	220.4	218.1	215.8	211.0	208.7	203.9	199.2
72.5°	187.3	187.3	184.9	184.9	182.5	180.1	177.8	173.1	173.1	168.4	163.6
75°	151.7	151.7	149.3	147.0	144.6	144.6	142.2	139.8	135.2	132.8	130.4
77.5°	116.2	116.2	116.2	113.8	111.4	111.4	111.4	106.7	101.9	101.9	99.5
80°	85.4	85.4	83.0	83.0	80.6	80.6	80.6	78.2	75.9	73.5	71.1
82.5°	57.0	57.0	57.0	57.0	54.6	54.6	54.6	52.2	49.8	49.8	49.8
85°	33.2	33.2	33.2	33.2	30.8	30.8	30.8	30.8	30.8	28.4	28.4
87.5°	14.3	11.9	14.3	11.9	14.3	11.9	14.3	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°	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1
2.5°	1688.0	1685.6	1683.3	1680.9	1680.9	1678.5	1673.9	1671.5	1669.1	1666.7	1666.7
5°	1697.5	1695.2	1690.4	1685.6	1683.3	1678.5	1673.9	1669.1	1664.4	1657.2	1654.9
7.5°	1704.7	1697.5	1692.8	1683.3	1680.9	1676.1	1669.1	1662.0	1652.5	1643.0	1635.8
10°	1704.7	1695.2	1688.0	1676.1	1671.5	1666.7	1657.2	1645.3	1633.6	1624.1	1612.2
12.5°	1699.9	1688.0	1676.1	1664.4	1657.2	1650.1	1635.8	1624.1	1609.8	1595.6	1586.1
15°	1683.3	1669.1	1654.9	1640.6	1633.6	1624.1	1609.8	1593.3	1579.0	1564.7	1548.2
17.5°	1652.5	1638.2	1621.7	1605.0	1595.6	1588.5	1567.1	1555.3	1533.9	1519.7	1505.5
20°	1612.2	1595.6	1574.2	1557.6	1545.8	1538.7	1522.0	1500.8	1484.1	1462.8	1448.6
22.5°	1560.0	1538.7	1517.4	1500.8	1488.9	1479.4	1458.1	1436.8	1422.5	1403.5	1387.0
25°	1498.4	1477.1	1455.7	1432.0	1420.1	1410.6	1391.7	1372.7	1353.8	1332.4	1318.2
27.5°	1424.9	1401.1	1382.2	1360.8	1349.0	1334.8	1313.5	1294.5	1275.6	1261.3	1242.3
30°	1344.3	1318.2	1299.2	1277.9	1266.0	1254.2	1232.9	1213.9	1197.3	1180.7	1171.2
32.5°	1247.0	1228.1	1209.1	1187.8	1178.3	1171.2	1149.9	1130.9	1112.0	1097.7	1090.6
35°	1154.6	1133.2	1116.7	1097.7	1085.8	1078.8	1059.8	1043.2	1033.7	1017.1	1007.6
37.5°	1057.4	1040.9	1021.8	1002.9	995.8	988.7	974.4	957.9	943.6	931.7	926.9
40°	955.5	941.2	924.7	912.8	905.7	898.5	886.8	874.9	865.4	853.5	848.7
42.5°	858.2	848.7	834.6	820.3	813.2	810.8	796.6	787.1	782.4	777.6	772.8
45°	770.5	756.3	746.8	737.3	730.2	725.5	718.4	711.3	706.5	701.7	697.0
47.5°	685.2	673.3	663.8	656.7	649.7	647.3	642.5	635.4	630.6	630.6	630.6
50°	607.0	597.5	588.0	583.2	580.8	576.1	571.4	569.1	566.7	566.7	566.7
52.5°	538.1	528.7	521.6	516.9	516.9	512.1	507.3	505.0	505.0	505.0	505.0
55°	474.2	467.0	462.3	457.5	452.9	450.5	450.5	450.5	448.1	448.1	450.5
57.5°	417.2	412.6	405.4	400.7	398.3	398.3	395.9	393.6	395.9	398.3	400.7
60°	365.1	360.4	358.0	350.9	350.9	350.9	348.5	348.5	348.5	350.9	353.3
62.5°	317.7	315.3	310.6	308.2	305.8	305.8	303.4	303.4	303.4	303.4	305.8
65°	275.0	270.3	265.5	265.5	265.5	263.1	263.1	258.4	260.7	260.7	258.4
67.5°	234.7	230.0	227.6	225.2	222.8	222.8	220.4	218.1	215.8	215.8	215.8
70°	196.8	192.0	192.0	187.3	187.3	184.9	182.5	182.5	180.1	177.8	175.5
72.5°	158.9	156.5	154.1	151.7	151.7	151.7	149.3	147.0	144.6	142.2	137.6
75°	125.7	125.7	120.9	118.5	118.5	116.2	113.8	111.4	109.0	106.7	104.3
77.5°	97.3	94.9	90.1	87.7	87.7	87.7	85.4	83.0	80.6	78.2	75.9
80°	71.1	68.7	66.3	64.0	64.0	64.0	61.6	61.6	59.2	59.2	59.2
82.5°	47.4	47.4	45.1	45.1	45.1	45.1	42.7	42.7	42.7	42.7	42.7
85°	28.4	28.4	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1
2.5°	1662.0	1662.0	1657.2	1654.9	1652.5	1654.9	1650.1	1647.7	1645.3	1645.3	1643.0
5°	1647.7	1645.3	1635.8	1633.6	1631.2	1628.8	1624.1	1619.3	1614.5	1612.2	1609.8
7.5°	1628.8	1621.7	1612.2	1609.8	1607.4	1600.3	1593.3	1588.5	1581.4	1579.0	1574.2
10°	1602.7	1593.3	1586.1	1579.0	1574.2	1567.1	1560.0	1553.0	1543.4	1541.1	1533.9
12.5°	1571.9	1560.0	1545.8	1543.4	1536.3	1526.8	1517.4	1510.3	1503.1	1498.4	1491.2
15°	1533.9	1522.0	1507.9	1500.8	1493.6	1486.5	1474.7	1465.2	1458.1	1450.9	1443.8
17.5°	1488.9	1474.7	1462.8	1455.7	1450.9	1439.0	1429.7	1417.8	1410.6	1403.5	1396.5
20°	1434.4	1422.5	1405.9	1398.9	1396.5	1387.0	1375.1	1370.3	1360.8	1353.8	1349.0
22.5°	1372.7	1360.8	1346.7	1341.9	1332.4	1327.6	1315.9	1311.1	1306.4	1299.2	1296.8
25°	1304.0	1292.1	1280.3	1277.9	1270.8	1266.0	1258.9	1251.8	1251.8	1244.6	1244.6
27.5°	1232.9	1221.0	1211.5	1206.7	1204.3	1199.7	1192.6	1190.2	1187.8	1185.4	1185.4
30°	1157.0	1142.7	1138.0	1135.6	1133.2	1128.5	1126.1	1121.5	1123.7	1126.1	1123.7
32.5°	1076.4	1071.6	1062.1	1057.4	1059.8	1057.4	1052.6	1057.4	1055.0	1059.8	1062.1
35°	998.2	993.4	988.7	988.7	983.9	983.9	983.9	986.3	991.0	993.4	998.2
37.5°	922.3	915.2	912.8	910.4	912.8	912.8	912.8	917.6	922.3	926.9	934.1
40°	841.7	836.9	836.9	836.9	836.9	844.1	841.7	846.4	851.1	858.2	865.4
42.5°	765.8	765.8	768.2	768.2	768.2	768.2	772.8	780.0	787.1	794.3	801.4
45°	694.6	694.6	694.6	699.4	699.4	701.7	711.3	716.0	720.8	727.9	734.9
47.5°	628.3	628.3	630.6	633.0	635.4	640.2	644.9	651.9	659.1	663.8	671.0
50°	566.7	569.1	573.7	578.4	578.4	580.8	588.0	592.7	597.5	604.6	607.0
52.5°	507.3	512.1	516.9	519.2	521.6	526.4	528.7	535.8	538.1	545.3	547.7
55°	452.9	455.1	462.3	464.7	464.7	469.4	474.2	478.9	486.1	486.1	490.8
57.5°	403.1	405.4	410.2	412.6	410.2	417.2	419.6	424.4	426.7	431.5	433.9
60°	353.3	358.0	360.4	360.4	362.8	365.1	369.9	369.9	374.5	379.3	379.3
62.5°	305.8	308.2	310.6	312.9	315.3	312.9	320.1	320.1	324.8	327.2	332.0
65°	260.7	263.1	263.1	265.5	265.5	267.9	267.9	270.3	272.6	277.4	279.8
67.5°	215.8	215.8	215.8	218.1	215.8	218.1	218.1	220.4	220.4	225.2	227.6
70°	175.5	173.1	170.7	170.7	170.7	170.7	168.4	170.7	170.7	173.1	173.1
72.5°	135.2	132.8	130.4	128.1	128.1	125.7	123.3	125.7	125.7	128.1	128.1
75°	101.9	97.3	97.3	97.3	94.9	94.9	94.9	97.3	97.3	97.3	99.5
77.5°	75.9	75.9	73.5	73.5	73.5	75.9	75.9	78.2	78.2	78.2	78.2
80°	57.0	59.2	59.2	59.2	59.2	61.6	61.6	61.6	61.6	64.0	64.0
82.5°	42.7	42.7	42.7	42.7	45.1	45.1	45.1	45.1	45.1	45.1	45.1
85°	26.0	28.4	28.4	26.0	28.4	28.4	28.4	28.4	28.4	28.4	28.4
87.5°	11.9	11.9	11.9	11.9	11.9	11.9	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



TEST NUMBER: P593685

CATALOG NUMBER: HC830D010-HM82555950-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1	1669.1
2.5°	1640.6	1640.6	1640.6	1640.6	1638.2	1638.2	1638.2	1635.8
5°	1605.0	1605.0	1605.0	1600.3	1602.7	1602.7	1597.9	1600.3
7.5°	1569.5	1567.1	1564.7	1564.7	1562.3	1560.0	1557.6	1560.0
10°	1529.2	1522.0	1522.0	1519.7	1519.7	1515.0	1515.0	1517.4
12.5°	1484.1	1479.4	1479.4	1477.1	1474.7	1472.3	1470.0	1470.0
15°	1439.0	1434.4	1432.0	1429.7	1427.3	1422.5	1424.9	1422.5
17.5°	1394.1	1387.0	1387.0	1384.6	1382.2	1377.5	1377.5	1375.1
20°	1341.9	1339.5	1334.8	1337.1	1334.8	1330.0	1327.6	1327.6
22.5°	1289.7	1289.7	1287.3	1287.3	1285.0	1282.6	1280.3	1280.3
25°	1240.0	1237.6	1240.0	1240.0	1232.9	1232.9	1232.9	1235.3
27.5°	1183.1	1185.4	1183.1	1183.1	1183.1	1183.1	1185.4	1183.1
30°	1126.1	1126.1	1126.1	1128.5	1133.2	1130.9	1130.9	1128.5
32.5°	1064.5	1066.9	1066.9	1069.3	1071.6	1076.4	1076.4	1078.8
35°	1002.9	1007.6	1009.9	1007.6	1014.7	1014.7	1019.4	1019.4
37.5°	938.8	941.2	946.0	948.3	953.1	955.5	957.9	957.9
40°	870.1	879.6	882.0	884.4	891.4	891.4	893.8	898.5
42.5°	806.1	815.5	817.9	820.3	825.0	832.2	829.8	834.6
45°	744.4	751.6	753.9	756.3	763.5	765.8	765.8	772.8
47.5°	678.1	682.8	685.2	689.9	694.6	699.4	704.1	701.7
50°	611.6	618.8	623.5	625.9	633.0	635.4	637.8	640.2
52.5°	552.4	557.2	559.5	561.9	569.1	571.4	573.7	578.4
55°	495.5	497.8	502.6	500.2	507.3	509.7	512.1	516.9
57.5°	438.6	441.0	443.4	443.4	448.1	452.9	455.1	457.5
60°	384.0	388.8	391.2	391.2	391.2	395.9	395.9	395.9
62.5°	334.3	334.3	336.6	336.6	341.4	341.4	341.4	341.4
65°	282.1	284.5	286.9	286.9	291.7	289.3	294.0	291.7
67.5°	227.6	227.6	232.3	232.3	230.0	232.3	232.3	232.3
70°	173.1	173.1	175.5	175.5	175.5	175.5	175.5	175.5
72.5°	128.1	128.1	128.1	130.4	128.1	128.1	130.4	128.1
75°	99.5	99.5	99.5	99.5	99.5	99.5	99.5	99.5
77.5°	78.2	78.2	80.6	80.6	80.6	80.6	80.6	80.6
80°	64.0	64.0	64.0	64.0	66.3	64.0	64.0	64.0
82.5°	47.4	45.1	47.4	45.1	47.4	47.4	47.4	47.4
85°	28.4	28.4	28.4	28.4	28.4	28.4	28.4	28.4
87.5°	11.9	11.9	11.9	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



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













(END OF REPORT)