

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: P584470

Luminaire Tested: **HC835D010-HM82555930-81WWBB**

Issue Date: 10/21/2021

**Test Information**

Test Method: LM-41-14  
Report Number: P584470  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2109-368-17)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 10/21/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO COMMERCIAL  
Catalog Number: HC835D010-HM82555930-81WWBB  
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE BAFFLE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3194.3 lumens  
Efficiency: N/A  
Efficacy: 94.8 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.07 / 1.16  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

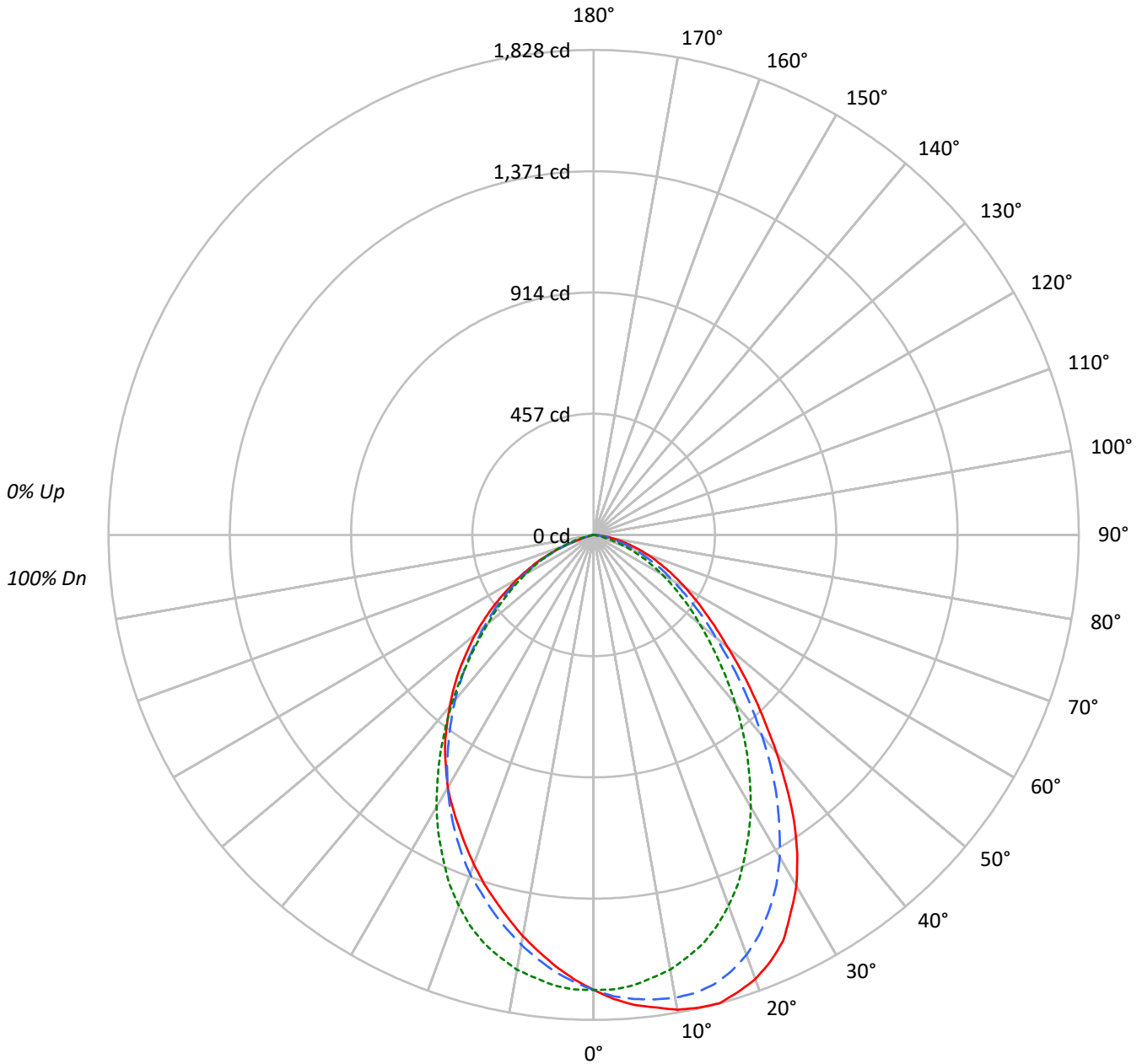
Input Watts (W): 33.7  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88																			
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77																			
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67																			
4	88	78	70	64	86	76	69	64	74	68	63	72	66	62	70	65	61	59																			
5	82	70	63	57	80	69	62	56	67	61	56	65	60	55	64	59	55	53																			
6	76	64	56	51	74	63	56	50	62	55	50	60	54	50	58	53	49	47																			
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43																			
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39																			
9	62	50	43	37	61	50	42	37	48	42	37	47	41	37	46	41	37	35																			
10	59	47	39	34	57	46	39	34	45	39	34	44	38	34	43	38	34	32																			

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

	0°	90°	180°
0°	52881	52881	52881
5°	55067	52764	50545
10°	56910	52094	48080
15°	58348	50900	45581
20°	58460	48787	43323
25°	57477	45701	41077
30°	54400	42165	39153
35°	49600	37923	36763
40°	43132	33435	33950
45°	36998	28952	31076
50°	31604	24965	27915
55°	27703	21499	24257
60°	24663	18335	20389
65°	21882	14965	16278
70°	19411	11090	9241
75°	16191	5814	2752
80°	12750	1829	444
85°	9057	885	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	161.6	5.1
10°-20°	452.9	14.2
20°-30°	641.0	20.1
30°-40°	670.7	21.0
40°-50°	559.4	17.5
50°-60°	396.7	12.4
60°-70°	228.5	7.2
70°-80°	73.5	2.3
80°-90°	10.1	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°	1255.5	39.3
0°-40°	1926.2	60.3
0°-60°	2882.2	90.2
0°-90°	3194.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3194.3	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1715	1715	1715	1715	1715	
5°	1779	1756	1705	1653	1633	171
15°	1828	1753	1594	1469	1428	514
25°	1689	1564	1343	1236	1207	771
35°	1318	1202	1007	954	977	817
45°	848	779	664	672	713	657
55°	515	461	400	420	451	466
65°	300	251	205	205	223	300
75°	136	100	49	23	23	147
85°	26	13	2	0	0	32
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°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1750.8	1748.2	1745.6	1748.2	1745.6	1748.2	1745.6	1745.6	1743.1	1740.6	1740.6
5°	1779.0	1776.4	1776.4	1776.4	1773.9	1771.2	1771.2	1768.7	1763.6	1761.1	1755.9
7.5°	1796.9	1799.5	1799.5	1799.5	1794.4	1794.4	1789.2	1784.1	1779.0	1773.9	1766.2
10°	1817.5	1817.5	1814.9	1812.3	1807.2	1804.7	1802.0	1796.9	1789.2	1779.0	1771.2
12.5°	1825.2	1825.2	1822.5	1817.5	1814.9	1812.3	1809.7	1802.0	1791.8	1779.0	1768.7
15°	1827.7	1822.5	1820.0	1817.5	1812.3	1804.7	1804.7	1794.4	1781.5	1766.2	1753.4
17.5°	1807.2	1809.7	1804.7	1799.5	1791.8	1786.7	1779.0	1771.2	1755.9	1737.9	1725.1
20°	1781.5	1779.0	1776.4	1768.7	1758.4	1755.9	1748.2	1735.4	1722.6	1702.1	1684.1
22.5°	1740.6	1737.9	1732.8	1727.8	1717.5	1712.3	1704.6	1689.3	1671.3	1650.8	1630.4
25°	1689.3	1684.1	1676.5	1666.2	1658.5	1653.4	1643.2	1627.7	1607.2	1584.1	1563.6
27.5°	1607.2	1614.9	1609.8	1594.4	1586.8	1576.4	1573.9	1553.4	1535.5	1512.4	1489.4
30°	1527.8	1527.8	1520.1	1512.4	1499.5	1491.9	1481.7	1466.2	1448.3	1420.1	1402.1
32.5°	1427.8	1425.3	1415.0	1412.4	1402.1	1386.8	1384.2	1363.7	1345.8	1325.2	1302.2
35°	1317.6	1312.4	1302.2	1294.6	1289.4	1281.7	1274.0	1256.1	1238.1	1217.6	1202.2
37.5°	1192.0	1192.0	1189.4	1176.6	1171.4	1166.4	1158.7	1140.7	1130.4	1109.9	1094.6
40°	1071.5	1069.0	1061.2	1058.7	1053.5	1045.9	1040.7	1030.5	1015.1	999.7	984.4
42.5°	953.6	956.1	945.9	948.5	938.2	933.1	930.5	915.2	907.5	892.0	879.2
45°	848.4	845.9	840.8	838.2	833.1	827.9	822.8	815.1	802.3	787.0	779.3
47.5°	751.0	743.4	743.4	740.8	738.2	728.0	725.4	717.7	710.1	694.7	684.4
50°	658.8	658.8	658.8	656.3	648.5	646.0	640.8	633.1	625.5	615.2	599.8
52.5°	584.5	584.5	584.5	581.9	571.7	569.0	566.5	556.2	546.0	538.3	528.1
55°	515.3	517.8	515.3	510.1	502.4	502.4	494.8	489.6	479.3	471.7	461.3
57.5°	456.3	456.3	451.2	448.7	443.5	440.9	435.8	430.7	417.9	410.2	397.4
60°	399.9	397.4	397.4	392.2	387.1	381.9	379.4	371.7	366.6	353.8	343.5
62.5°	348.6	348.6	343.5	343.5	333.3	333.3	330.6	323.0	315.3	302.5	297.3
65°	299.9	299.9	297.3	294.8	287.0	284.5	282.0	274.2	266.6	258.9	251.2
67.5°	256.4	256.4	251.2	248.7	243.6	240.9	235.9	230.7	223.1	215.3	207.6
70°	215.3	212.8	210.2	207.6	202.5	199.9	194.8	189.6	182.0	176.8	169.2
72.5°	174.3	174.3	171.8	166.6	164.0	161.5	159.0	153.8	146.2	138.4	133.3
75°	135.9	135.9	135.9	130.7	125.6	123.0	123.0	117.9	112.7	105.1	99.9
77.5°	105.1	102.5	99.9	99.9	94.9	92.2	89.7	87.2	79.4	76.9	71.8
80°	71.8	74.4	71.8	69.2	66.6	64.1	64.1	58.9	56.4	51.3	46.1
82.5°	48.8	46.1	46.1	43.6	43.6	41.0	41.0	35.9	33.3	30.8	28.2
85°	25.6	25.6	23.1	23.1	23.1	20.5	20.5	18.0	18.0	15.3	12.8
87.5°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	5.2	5.2	5.2
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):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1737.9	1732.8	1730.3	1730.3	1727.8	1725.1	1722.6	1720.0	1714.9	1714.9	1709.8
5°	1750.8	1745.6	1743.1	1735.4	1730.3	1730.3	1720.0	1717.5	1709.8	1704.6	1699.5
7.5°	1761.1	1750.8	1743.1	1735.4	1730.3	1725.1	1714.9	1704.6	1694.5	1684.1	1679.0
10°	1761.1	1750.8	1737.9	1725.1	1720.0	1714.9	1702.1	1686.7	1673.8	1663.7	1650.8
12.5°	1755.9	1740.6	1725.1	1714.9	1704.6	1697.0	1681.6	1666.2	1650.8	1630.4	1620.1
15°	1740.6	1720.0	1704.6	1686.7	1679.0	1666.2	1653.4	1630.4	1612.4	1594.4	1581.6
17.5°	1709.8	1684.1	1666.2	1648.2	1635.4	1627.7	1607.2	1586.8	1566.3	1545.7	1530.3
20°	1663.7	1640.5	1620.1	1596.9	1586.8	1576.4	1550.8	1530.3	1509.8	1486.7	1471.4
22.5°	1607.2	1584.1	1556.0	1538.0	1522.7	1509.8	1486.7	1463.7	1443.2	1422.6	1402.1
25°	1538.0	1515.0	1489.4	1461.1	1450.9	1438.1	1412.4	1389.3	1366.3	1343.2	1325.2
27.5°	1463.7	1432.9	1412.4	1381.7	1371.4	1358.5	1330.4	1304.7	1284.3	1266.3	1245.8
30°	1374.0	1350.9	1322.7	1294.6	1284.3	1271.4	1248.3	1225.3	1204.8	1184.2	1163.7
32.5°	1276.6	1253.5	1225.3	1204.8	1189.4	1179.2	1156.1	1135.6	1115.1	1094.6	1076.6
35°	1174.0	1148.4	1127.9	1107.4	1094.6	1081.8	1058.7	1040.7	1025.4	1007.4	989.4
37.5°	1069.0	1051.0	1030.5	1007.4	994.6	984.4	966.4	945.9	933.1	917.7	904.8
40°	966.4	945.9	928.0	907.5	897.2	889.5	871.5	856.2	843.4	830.6	822.8
42.5°	861.2	843.4	825.4	812.6	804.9	797.3	784.5	766.5	758.8	746.0	738.2
45°	763.8	748.5	735.7	717.7	712.6	707.5	692.1	679.3	671.6	663.9	658.8
47.5°	671.6	661.3	646.0	635.7	628.0	623.0	612.7	602.4	594.7	589.5	584.5
50°	592.2	579.4	569.0	558.9	553.7	546.0	535.7	530.6	525.4	520.4	520.4
52.5°	517.8	505.0	494.8	487.0	482.0	476.8	469.1	466.5	461.3	461.3	458.8
55°	448.7	440.9	430.7	420.4	417.9	415.2	410.2	405.0	402.4	399.9	402.4
57.5°	389.6	381.9	371.7	364.0	361.4	358.9	356.3	351.1	348.6	348.6	348.6
60°	335.8	328.1	320.5	312.7	312.7	307.6	305.0	302.5	299.9	297.3	297.3
62.5°	287.0	279.4	271.7	266.6	264.0	261.5	256.4	253.7	251.2	251.2	248.7
65°	243.6	233.3	230.7	223.1	220.4	217.9	215.3	210.2	207.6	205.1	202.5
67.5°	199.9	194.8	187.1	182.0	179.5	176.8	174.3	169.2	166.6	164.0	159.0
70°	161.5	156.3	151.2	146.2	143.5	141.0	135.9	130.7	128.2	123.0	115.4
72.5°	125.6	120.5	115.4	110.2	107.7	105.1	99.9	94.9	89.7	84.6	79.4
75°	94.9	89.7	82.1	76.9	74.4	74.4	66.6	61.6	56.4	48.8	43.6
77.5°	66.6	58.9	56.4	51.3	48.8	43.6	38.5	33.3	28.2	25.6	20.5
80°	43.6	38.5	33.3	30.8	28.2	25.6	23.1	18.0	12.8	10.3	7.7
82.5°	25.6	23.1	20.5	18.0	15.3	12.8	10.3	10.3	7.7	5.2	2.5
85°	12.8	10.3	7.7	7.7	5.2	5.2	5.2	2.5	2.5	2.5	2.5
87.5°	5.2	2.5	2.5	2.5	2.5	2.5	2.5	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°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1707.3	1704.6	1702.1	1699.5	1699.5	1694.5	1694.5	1691.8	1686.7	1684.1	1684.1
5°	1691.8	1684.1	1679.0	1676.5	1673.8	1666.2	1663.7	1658.5	1653.4	1648.2	1645.7
7.5°	1668.8	1656.0	1650.8	1648.2	1640.5	1632.9	1627.7	1620.1	1612.4	1604.7	1602.1
10°	1640.5	1627.7	1614.9	1609.8	1602.1	1596.9	1586.8	1576.4	1568.8	1561.1	1553.4
12.5°	1604.7	1589.3	1576.4	1571.3	1563.6	1553.4	1538.0	1532.8	1520.1	1515.0	1504.7
15°	1563.6	1545.7	1532.8	1525.2	1517.5	1502.2	1491.9	1481.7	1468.9	1463.7	1453.4
17.5°	1512.4	1491.9	1479.1	1471.4	1466.2	1453.4	1438.1	1425.3	1412.4	1407.3	1399.6
20°	1450.9	1438.1	1420.1	1412.4	1407.3	1392.0	1376.5	1371.4	1361.2	1350.9	1343.2
22.5°	1381.7	1368.8	1350.9	1343.2	1340.7	1327.9	1315.0	1307.4	1299.6	1291.9	1284.3
25°	1309.9	1294.6	1279.1	1274.0	1268.9	1258.6	1248.3	1243.3	1235.5	1230.5	1225.3
27.5°	1233.0	1217.6	1204.8	1197.0	1192.0	1184.2	1179.2	1174.0	1168.9	1163.7	1161.2
30°	1150.9	1135.6	1125.3	1120.2	1115.1	1112.5	1104.8	1102.3	1099.6	1094.6	1097.1
32.5°	1069.0	1056.2	1045.9	1038.2	1038.2	1033.0	1030.5	1030.5	1027.9	1027.9	1027.9
35°	979.2	971.6	963.8	961.3	958.8	956.1	953.6	956.1	953.6	956.1	958.8
37.5°	897.2	889.5	884.4	881.8	879.2	881.8	879.2	879.2	881.8	886.9	889.5
40°	812.6	807.5	802.3	804.9	802.3	802.3	802.3	810.0	812.6	815.1	817.8
42.5°	733.2	728.0	725.4	725.4	728.0	725.4	730.5	733.2	738.2	746.0	751.0
45°	656.3	653.6	653.6	656.3	653.6	658.8	658.8	663.9	671.6	676.8	681.9
47.5°	584.5	584.5	584.5	587.0	587.0	589.5	594.7	597.3	602.4	607.5	612.7
50°	517.8	520.4	522.9	522.9	522.9	528.1	533.2	535.7	538.3	540.9	548.6
52.5°	458.8	461.3	461.3	464.0	466.5	469.1	471.7	476.8	479.3	484.5	487.0
55°	402.4	402.4	407.6	410.2	410.2	410.2	415.2	415.2	420.4	423.0	428.0
57.5°	348.6	351.1	351.1	353.8	353.8	356.3	358.9	361.4	364.0	366.6	369.1
60°	297.3	297.3	297.3	299.9	302.5	305.0	302.5	307.6	307.6	312.7	315.3
62.5°	248.7	251.2	251.2	251.2	251.2	251.2	251.2	253.7	256.4	258.9	261.5
65°	202.5	202.5	202.5	199.9	202.5	199.9	202.5	205.1	205.1	207.6	210.2
67.5°	156.3	156.3	151.2	151.2	153.8	153.8	153.8	153.8	151.2	156.3	156.3
70°	112.7	110.2	107.7	105.1	105.1	102.5	102.5	99.9	99.9	99.9	99.9
72.5°	74.4	69.2	64.1	61.6	58.9	58.9	53.8	51.3	53.8	53.8	53.8
75°	38.5	33.3	30.8	28.2	25.6	25.6	23.1	23.1	23.1	23.1	23.1
77.5°	15.3	12.8	10.3	10.3	7.7	7.7	7.7	7.7	7.7	7.7	7.7
80°	5.2	5.2	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	2.5	0.0	0.0	2.5	0.0	2.5	2.5	2.5	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: P584470

CATALOG NUMBER: HC835D010-HM82555930-81WWBB

**CANDELA DISTRIBUTION (continued):**

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9	1714.9
2.5°	1681.6	1681.6	1679.0	1681.6	1676.5	1679.0	1676.5	1676.5
5°	1643.2	1638.0	1638.0	1638.0	1635.4	1635.4	1632.9	1632.9
7.5°	1596.9	1594.4	1591.9	1589.3	1586.8	1584.1	1584.1	1584.1
10°	1550.8	1545.7	1545.7	1543.1	1538.0	1535.5	1535.5	1535.5
12.5°	1497.0	1494.5	1491.9	1491.9	1481.7	1484.2	1481.7	1481.7
15°	1445.7	1443.2	1443.2	1435.4	1430.4	1430.4	1430.4	1427.8
17.5°	1392.0	1389.3	1386.8	1381.7	1376.5	1376.5	1374.0	1376.5
20°	1335.5	1333.0	1327.9	1327.9	1325.2	1322.7	1317.6	1320.2
22.5°	1279.1	1274.0	1271.4	1271.4	1268.9	1268.9	1263.8	1263.8
25°	1220.2	1217.6	1215.0	1217.6	1212.5	1212.5	1207.3	1207.3
27.5°	1158.7	1156.1	1156.1	1156.1	1153.6	1156.1	1153.6	1153.6
30°	1097.1	1097.1	1094.6	1094.6	1097.1	1094.6	1097.1	1099.6
32.5°	1030.5	1030.5	1033.0	1033.0	1035.6	1035.6	1035.6	1035.6
35°	961.3	966.4	966.4	968.9	971.6	974.1	974.1	976.6
37.5°	897.2	899.7	902.3	904.8	910.0	910.0	910.0	910.0
40°	827.9	830.6	835.6	833.1	843.4	845.9	843.4	843.4
42.5°	756.2	761.3	763.8	769.0	771.6	776.7	779.3	779.3
45°	689.6	692.1	697.2	702.4	704.9	712.6	712.6	712.6
47.5°	620.3	625.5	628.0	633.1	635.7	643.4	646.0	643.4
50°	553.7	558.9	563.9	563.9	571.7	574.2	579.4	581.9
52.5°	489.6	492.1	497.3	499.8	505.0	510.1	512.6	515.3
55°	428.0	430.7	435.8	435.8	443.5	446.0	451.2	451.2
57.5°	371.7	374.3	379.4	376.8	381.9	387.1	387.1	384.6
60°	317.8	317.8	317.8	323.0	325.5	328.1	330.6	330.6
62.5°	261.5	266.6	269.2	269.2	271.7	274.2	274.2	271.7
65°	210.2	215.3	217.9	217.9	220.4	220.4	220.4	223.1
67.5°	159.0	159.0	159.0	161.5	159.0	159.0	159.0	159.0
70°	99.9	99.9	99.9	99.9	97.4	99.9	99.9	102.5
72.5°	53.8	53.8	53.8	53.8	53.8	53.8	53.8	53.8
75°	23.1	23.1	23.1	25.6	23.1	23.1	23.1	23.1
77.5°	10.3	7.7	10.3	10.3	7.7	7.7	7.7	7.7
80°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
82.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
85°	0.0	2.5	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



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















(END OF REPORT)