

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: P584029

Luminaire Tested: **HC820D010-HM80520840-81WWW**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584029
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: HC820D010-HM80520840-81WWW
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, WHITE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2200.9 lumens
Efficiency: N/A
Efficacy: 110.0 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

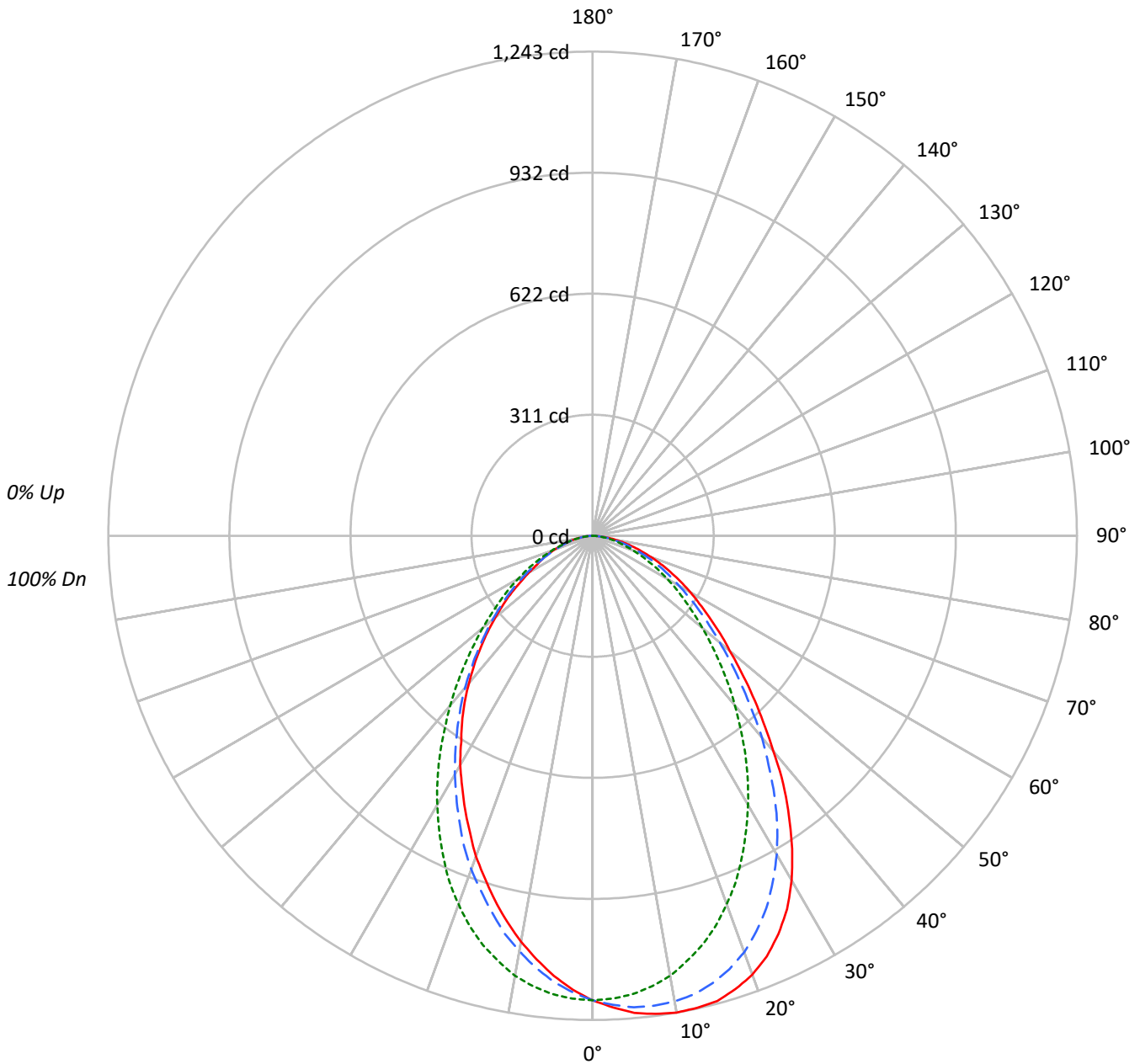
Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	36772	36772	36772
5°	38067	36566	35114
10°	38915	35921	33134
15°	39468	34714	30941
20°	39346	33029	28727
25°	38376	30887	26369
30°	36354	28403	24198
35°	33078	25703	21988
40°	29051	22864	19865
45°	25337	20113	17710
50°	22048	17625	15606
55°	19661	15489	13575
60°	17867	13574	11576
65°	16060	11806	10507
70°	14299	10071	9485
75°	12534	8483	8102
80°	10637	6908	7174
85°	8031	5130	5732



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CATALOG NUMBER: HC820D010-HM80520840-81WWW

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.7	5.1
10°-20°	307.8	14.0
20°-30°	427.2	19.4
30°-40°	441.7	20.1
40°-50°	369.8	16.8
50°-60°	268.5	12.2
60°-70°	169.4	7.7
70°-80°	83.9	3.8
80°-90°	20.9	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°	846.7	38.5
0°-40°	1288.4	58.5
0°-60°	1926.7	87.5
0°-90°	2200.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2200.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1192	1192	1192	1192	1192	
5°	1230	1215	1181	1149	1134	118
15°	1236	1189	1087	1000	969	348
25°	1128	1055	908	809	775	517
35°	879	814	683	605	584	547
45°	581	539	461	416	406	449
55°	366	333	288	264	252	330
65°	220	192	162	142	144	219
75°	105	87	71	68	68	113
85°	23	18	14	16	16	28
90°	0	0	0	0	0	



TEST NUMBER: P584029

CATALOG NUMBER: HC820D010-HM80520840-81WWW

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5
2.5°	1212.0	1212.0	1213.6	1212.0	1212.0	1212.0	1210.4	1210.4	1208.7	1208.7	1205.5
5°	1229.8	1226.6	1229.8	1226.6	1226.6	1226.6	1224.9	1221.7	1220.1	1216.9	1215.2
7.5°	1237.9	1236.3	1236.3	1234.6	1234.6	1233.1	1231.4	1229.8	1223.4	1221.7	1216.9
10°	1242.8	1241.1	1241.1	1239.4	1236.3	1236.3	1233.1	1231.4	1223.4	1220.1	1213.6
12.5°	1241.1	1241.1	1241.1	1239.4	1234.6	1233.1	1229.8	1224.9	1218.5	1212.0	1205.5
15°	1236.3	1236.3	1233.1	1231.4	1226.6	1223.4	1221.7	1213.6	1207.2	1199.0	1189.3
17.5°	1220.1	1220.1	1218.5	1215.2	1210.4	1207.2	1203.9	1195.8	1189.3	1176.4	1166.6
20°	1199.0	1197.5	1195.8	1191.0	1186.1	1184.5	1179.6	1168.3	1160.3	1150.6	1137.6
22.5°	1168.3	1166.6	1165.1	1161.8	1153.8	1150.6	1147.2	1139.2	1124.7	1114.9	1098.7
25°	1127.9	1127.9	1124.7	1119.7	1111.7	1108.5	1103.6	1095.5	1082.6	1067.9	1055.1
27.5°	1080.9	1079.3	1074.4	1071.2	1064.7	1059.9	1051.7	1042.1	1029.2	1017.8	1001.6
30°	1021.0	1021.0	1017.8	1013.0	1004.8	1001.6	995.1	983.8	970.9	956.4	945.0
32.5°	953.0	953.0	948.2	945.0	940.2	932.0	930.5	917.5	906.1	894.9	881.9
35°	878.7	880.2	877.0	870.5	862.5	862.5	859.2	848.0	835.0	823.6	813.9
37.5°	804.2	799.4	797.7	794.5	789.7	783.2	780.0	775.0	763.8	755.7	741.1
40°	721.7	723.3	720.1	716.9	715.2	710.4	708.7	700.7	692.5	682.8	676.3
42.5°	647.3	647.3	647.3	644.1	640.8	635.9	634.3	629.4	619.7	613.2	603.5
45°	581.0	576.1	576.1	574.5	572.8	569.6	564.8	561.4	555.1	550.2	538.9
47.5°	516.2	517.8	516.2	514.5	509.7	508.1	506.5	500.0	493.5	488.6	480.6
50°	459.6	462.8	459.6	459.6	456.4	454.7	451.4	446.6	441.7	433.7	425.5
52.5°	412.6	412.6	411.0	409.4	404.5	401.3	399.6	398.1	389.9	383.6	377.1
55°	365.7	367.4	367.4	362.5	360.9	357.6	356.0	351.2	347.9	338.2	333.3
57.5°	325.3	323.6	325.3	322.0	318.8	315.6	313.9	310.6	305.8	299.4	292.9
60°	289.7	286.4	286.4	284.7	281.6	279.9	276.7	271.9	267.0	260.5	255.7
62.5°	254.0	252.5	250.8	249.2	246.0	244.3	242.7	237.8	233.0	228.1	223.3
65°	220.1	220.1	218.4	215.2	213.6	211.9	210.4	207.1	200.7	197.4	192.5
67.5°	189.4	187.7	187.7	184.5	181.2	179.7	179.7	176.4	171.5	166.7	163.5
70°	158.6	160.2	158.6	157.0	153.8	153.8	150.5	148.8	142.4	140.8	135.9
72.5°	131.1	131.1	129.4	129.4	126.2	124.6	124.6	121.4	118.1	114.9	111.7
75°	105.2	105.2	105.2	103.5	101.9	98.7	98.7	97.0	93.9	90.7	87.3
77.5°	82.5	80.8	80.8	79.3	77.7	76.0	76.0	74.5	71.2	69.6	66.3
80°	59.9	58.3	58.3	58.3	55.0	56.6	55.0	53.4	51.8	50.1	48.6
82.5°	38.9	40.4	40.4	38.9	37.2	37.2	37.2	35.6	35.6	33.9	32.4
85°	22.7	22.7	22.7	22.7	21.0	21.0	21.0	19.4	19.4	19.4	17.8
87.5°	9.7	9.7	9.7	9.7	9.7	9.7	8.0	8.0	8.0	8.0	8.0
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: P584029

CATALOG NUMBER: HC820D010-HM80520840-81WWW

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5
2.5°	1205.5	1202.3	1200.7	1199.0	1199.0	1197.5	1195.8	1192.5	1192.5	1189.3	1187.7
5°	1212.0	1207.2	1203.9	1200.7	1199.0	1195.8	1192.5	1187.7	1186.1	1181.3	1176.4
7.5°	1213.6	1205.5	1202.3	1195.8	1192.5	1189.3	1182.8	1178.0	1171.6	1166.6	1160.3
10°	1207.2	1200.7	1192.5	1184.5	1182.8	1178.0	1168.3	1161.8	1153.8	1147.2	1137.6
12.5°	1197.5	1187.7	1179.6	1169.9	1165.1	1160.3	1150.6	1140.7	1129.5	1118.2	1108.5
15°	1181.3	1169.9	1158.6	1147.2	1140.7	1135.9	1124.7	1113.3	1102.0	1087.4	1077.7
17.5°	1156.9	1144.1	1132.7	1118.2	1111.7	1106.8	1092.3	1079.3	1064.7	1050.2	1040.5
20°	1126.2	1110.0	1097.1	1080.9	1076.1	1067.9	1053.4	1038.9	1022.7	1006.5	995.1
22.5°	1085.8	1069.6	1055.1	1038.9	1030.7	1022.7	1008.1	990.3	974.1	961.2	949.9
25°	1038.9	1024.3	1006.5	991.9	982.2	972.5	956.4	941.8	927.2	907.8	896.4
27.5°	987.1	969.2	956.4	936.9	927.2	920.8	902.9	883.5	870.5	852.8	839.8
30°	928.8	912.6	898.1	878.7	869.0	862.5	846.3	828.5	815.6	797.7	784.8
32.5°	867.4	849.5	831.8	818.8	807.4	801.0	783.2	771.8	755.7	741.1	726.6
35°	801.0	783.2	770.2	752.5	746.0	739.5	724.9	710.4	695.8	682.8	671.5
37.5°	729.8	716.9	702.2	689.3	684.5	678.0	660.1	647.3	635.9	623.0	613.2
40°	660.1	648.9	639.2	626.2	618.2	613.2	600.3	589.0	576.1	568.0	558.3
42.5°	597.1	584.1	574.5	564.8	556.6	551.8	540.4	532.4	522.7	514.5	503.3
45°	530.7	524.3	513.0	504.8	500.0	493.5	485.4	475.8	467.6	461.2	453.1
47.5°	472.4	466.1	457.9	448.2	445.0	440.2	432.0	425.5	419.1	412.6	404.5
50°	419.1	411.0	404.5	398.1	394.8	389.9	381.9	378.6	373.7	367.4	362.5
52.5°	370.6	364.1	357.6	349.5	347.9	344.7	339.8	333.3	328.5	325.3	322.0
55°	326.8	320.4	315.6	309.1	307.4	304.2	297.7	294.6	291.2	288.1	284.7
57.5°	288.1	281.6	275.1	271.9	268.7	265.4	263.7	258.9	255.7	254.0	250.8
60°	252.5	246.0	241.1	236.3	234.6	233.0	229.8	226.6	223.3	220.1	218.4
62.5°	218.4	211.9	208.7	205.5	202.2	202.2	199.0	195.7	192.5	190.9	187.7
65°	187.7	184.5	179.7	174.8	173.2	173.2	168.3	166.7	165.0	161.8	158.6
67.5°	158.6	155.3	150.5	148.8	147.3	145.6	144.0	140.8	137.6	135.9	132.7
70°	132.7	129.4	126.2	124.6	122.9	121.4	118.1	116.5	113.2	111.7	110.0
72.5°	106.9	105.2	101.9	100.4	98.7	97.0	95.5	93.9	90.7	89.0	87.3
75°	85.8	84.2	80.8	79.3	77.7	77.7	76.0	72.8	71.2	71.2	69.6
77.5°	64.8	63.1	61.5	59.9	58.3	58.3	56.6	55.0	53.4	53.4	51.8
80°	46.9	45.3	43.7	43.7	43.7	42.1	40.4	40.4	38.9	38.9	37.2
82.5°	30.7	30.7	29.1	29.1	29.1	27.5	27.5	25.9	25.9	25.9	25.9
85°	17.8	17.8	17.8	16.2	16.2	16.2	16.2	16.2	16.2	14.5	16.2
87.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	6.5	6.5	6.5
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: P584029

CATALOG NUMBER: HC820D010-HM80520840-81WWW

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5
2.5°	1186.1	1184.5	1181.3	1181.3	1178.0	1178.0	1176.4	1174.8	1173.1	1171.6	1169.9
5°	1174.8	1168.3	1165.1	1163.4	1160.3	1158.6	1153.8	1150.6	1148.9	1145.6	1142.4
7.5°	1153.8	1147.2	1140.7	1139.2	1137.6	1131.1	1126.2	1121.4	1118.2	1114.9	1111.7
10°	1129.5	1123.0	1114.9	1111.7	1108.5	1100.3	1093.8	1089.0	1082.6	1076.1	1074.4
12.5°	1100.3	1090.6	1080.9	1077.7	1072.8	1064.7	1058.2	1050.2	1045.4	1037.2	1035.7
15°	1066.4	1055.1	1046.9	1038.9	1035.7	1027.5	1016.2	1009.8	1000.0	996.8	988.7
17.5°	1025.9	1014.6	1003.3	1000.0	995.1	983.8	972.5	964.4	954.7	949.9	945.0
20°	983.8	969.2	957.9	954.7	948.2	938.5	927.2	919.1	911.0	901.3	896.4
22.5°	935.3	919.1	909.4	901.3	899.7	888.4	875.4	869.0	862.5	854.3	848.0
25°	881.9	867.4	856.0	849.5	846.3	836.6	826.9	818.8	809.1	804.2	796.1
27.5°	826.9	817.1	802.6	796.1	791.2	783.2	771.8	767.0	757.3	750.8	746.0
30°	773.5	759.0	750.8	742.8	737.9	729.8	720.1	715.2	707.2	700.7	695.8
32.5°	715.2	705.5	694.2	691.0	684.5	676.3	670.0	661.8	655.3	648.9	647.3
35°	661.8	648.9	637.6	634.3	629.4	621.4	618.2	613.2	605.2	603.5	597.1
37.5°	603.5	597.1	584.1	579.3	577.6	571.3	564.8	561.4	556.6	551.8	550.2
40°	548.6	540.4	534.0	529.2	525.9	521.0	514.5	513.0	509.7	503.3	501.6
42.5°	496.8	488.6	482.3	480.6	475.8	470.9	467.6	462.8	461.2	459.6	456.4
45°	446.6	441.7	435.3	433.7	432.0	425.5	422.3	419.1	415.8	414.3	411.0
47.5°	401.3	396.4	391.6	389.9	386.8	385.1	380.2	378.6	373.7	372.2	370.6
50°	357.6	354.4	351.2	349.5	346.3	344.7	341.5	338.2	335.0	333.3	331.7
52.5°	318.8	315.6	312.3	310.6	309.1	305.8	302.6	299.4	297.7	296.1	294.6
55°	281.6	278.4	276.7	275.1	273.5	271.9	267.0	265.4	263.7	262.2	258.9
57.5°	247.6	244.3	241.1	241.1	239.5	237.8	234.6	231.4	231.4	228.1	224.9
60°	216.8	213.6	210.4	208.7	207.1	203.9	202.2	200.7	199.0	197.4	194.2
62.5°	184.5	182.9	179.7	179.7	176.4	174.8	173.2	171.5	169.9	166.7	165.0
65°	157.0	155.3	152.1	150.5	150.5	148.8	145.6	144.0	142.4	142.4	140.8
67.5°	131.1	129.4	126.2	124.6	124.6	122.9	121.4	121.4	119.7	118.1	119.7
70°	108.4	105.2	105.2	103.5	103.5	101.9	100.4	100.4	100.4	101.9	101.9
72.5°	85.8	84.2	82.5	82.5	82.5	82.5	80.8	80.8	82.5	84.2	84.2
75°	68.0	66.3	66.3	66.3	64.8	64.8	66.3	66.3	68.0	68.0	68.0
77.5°	50.1	50.1	50.1	50.1	50.1	50.1	51.8	51.8	53.4	53.4	53.4
80°	37.2	37.2	37.2	37.2	37.2	38.9	38.9	38.9	38.9	38.9	40.4
82.5°	25.9	25.9	25.9	25.9	25.9	25.9	25.9	27.5	27.5	27.5	27.5
85°	14.5	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
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: P584029

CATALOG NUMBER: HC820D010-HM80520840-81WWW

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5	1192.5
2.5°	1168.3	1168.3	1168.3	1169.9	1166.6	1166.6	1166.6	1166.6
5°	1140.7	1139.2	1137.6	1139.2	1135.9	1135.9	1134.4	1134.4
7.5°	1106.8	1105.2	1103.6	1103.6	1100.3	1100.3	1098.7	1097.1
10°	1069.6	1066.4	1067.9	1064.7	1063.1	1061.6	1059.9	1058.2
12.5°	1029.2	1025.9	1024.3	1021.0	1017.8	1016.2	1017.8	1014.6
15°	985.4	980.6	978.9	975.7	972.5	970.9	970.9	969.2
17.5°	936.9	933.7	932.0	928.8	927.2	924.0	922.3	920.8
20°	891.6	883.5	885.1	881.9	880.2	873.9	873.9	875.4
22.5°	841.5	836.6	833.3	830.1	828.5	825.3	825.3	823.6
25°	791.2	786.4	784.8	781.5	780.0	776.7	775.0	775.0
27.5°	742.8	736.3	736.3	733.1	729.8	728.1	726.6	724.9
30°	691.0	686.2	684.5	684.5	682.8	682.8	678.0	679.6
32.5°	642.4	639.2	637.6	634.3	634.3	632.7	632.7	627.9
35°	593.8	589.0	590.6	587.3	585.8	584.1	585.8	584.1
37.5°	546.9	543.7	543.7	540.4	540.4	538.9	537.2	540.4
40°	500.0	498.4	496.8	495.1	496.8	495.1	491.9	493.5
42.5°	453.1	453.1	451.4	451.4	449.9	449.9	449.9	449.9
45°	411.0	409.4	409.4	407.8	407.8	407.8	407.8	406.1
47.5°	368.9	367.4	367.4	367.4	365.7	365.7	364.1	365.7
50°	328.5	328.5	326.8	326.8	328.5	326.8	325.3	325.3
52.5°	291.2	291.2	289.7	289.7	288.1	286.4	288.1	288.1
55°	257.3	255.7	254.0	254.0	252.5	250.8	250.8	252.5
57.5°	224.9	223.3	221.7	221.7	218.4	216.8	216.8	216.8
60°	194.2	190.9	190.9	189.4	189.4	187.7	187.7	187.7
62.5°	165.0	163.5	163.5	163.5	163.5	161.8	161.8	161.8
65°	140.8	140.8	140.8	142.4	142.4	144.0	144.0	144.0
67.5°	121.4	122.9	122.9	122.9	124.6	124.6	124.6	122.9
70°	103.5	103.5	103.5	105.2	105.2	105.2	105.2	105.2
72.5°	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8
75°	68.0	69.6	69.6	69.6	68.0	69.6	69.6	68.0
77.5°	53.4	53.4	53.4	53.4	53.4	53.4	53.4	53.4
80°	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4
82.5°	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
85°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
87.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
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)