

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: P584098

Luminaire Tested: **HC820D010-HM80520940-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584098
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: HC820D010-HM80520940-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2015.6 lumens
Efficiency: N/A
Efficacy: 100.8 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

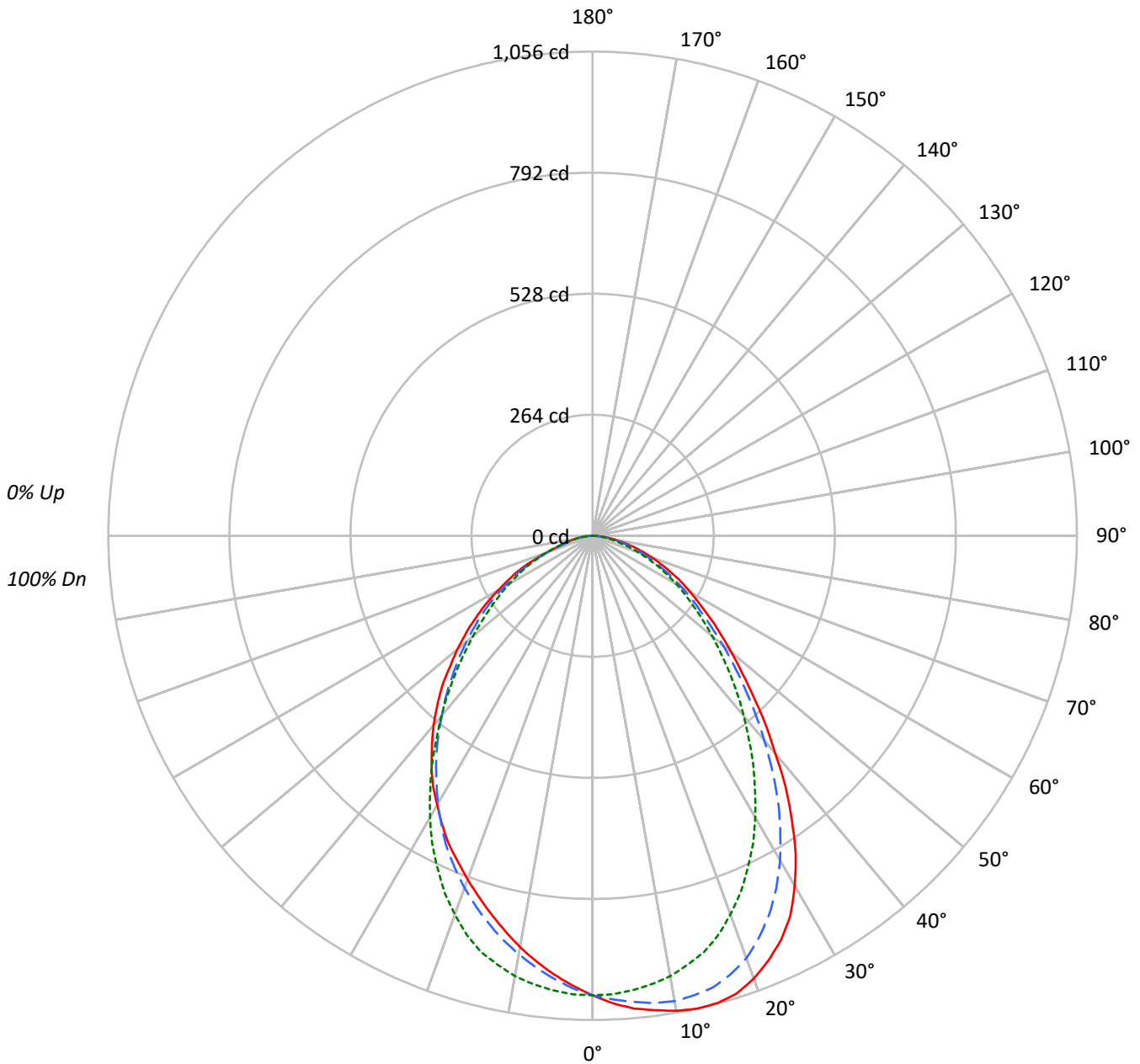
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

Luminous Intensity Polar Plot





TEST NUMBER: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

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	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°	30904	30904	30904
5°	32037	30799	29741
10°	32940	30535	28528
15°	33674	29996	27266
20°	33724	28822	26157
25°	33082	27219	25236
30°	31377	25245	24127
35°	28508	22989	23046
40°	24925	20630	21717
45°	21604	18377	20239
50°	18916	16320	18441
55°	16838	14462	16682
60°	15190	12988	14660
65°	13710	11426	12776
70°	12316	9620	9494
75°	10854	7637	7125
80°	9110	6322	6819
85°	7076	5519	6050



TEST NUMBER: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	94.5	4.7
10°-20°	266.3	13.2
20°-30°	380.6	18.9
30°-40°	404.4	20.1
40°-50°	348.2	17.3
50°-60°	260.3	12.9
60°-70°	166.0	8.2
70°-80°	75.5	3.7
80°-90°	19.8	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°	741.4	36.8
0°-40°	1145.8	56.8
0°-60°	1754.2	87.0
0°-90°	2015.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2015.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1002	1002	1002	1002	1002	
5°	1035	1021	995	970	961	99
15°	1055	1019	940	876	854	297
25°	972	911	800	752	742	445
35°	757	705	611	595	612	472
45°	495	468	421	433	464	385
55°	313	288	269	292	310	282
65°	188	166	157	164	175	187
75°	91	78	64	58	60	97
85°	20	17	16	17	17	24
90°	0	0	0	0	0	



TEST NUMBER: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2
2.5°	1020.7	1017.8	1019.2	1017.8	1019.2	1019.2	1016.4	1016.4	1016.4	1016.4	1012.1
5°	1035.0	1033.5	1033.5	1032.0	1030.6	1032.0	1030.6	1029.2	1026.3	1024.9	1020.7
7.5°	1043.5	1043.5	1043.5	1043.5	1042.1	1040.6	1039.2	1036.4	1033.5	1030.6	1027.7
10°	1052.0	1053.4	1052.0	1050.6	1049.1	1046.3	1044.9	1042.1	1037.8	1033.5	1030.6
12.5°	1056.2	1056.2	1054.8	1054.8	1052.0	1050.6	1046.3	1042.1	1037.8	1033.5	1026.3
15°	1054.8	1054.8	1053.4	1052.0	1047.7	1046.3	1043.5	1039.2	1032.0	1026.3	1019.2
17.5°	1046.3	1044.9	1042.1	1042.1	1036.4	1035.0	1032.0	1026.3	1019.2	1010.7	1002.2
20°	1027.7	1027.7	1026.3	1024.9	1019.2	1015.0	1012.1	1005.1	999.3	989.3	980.8
22.5°	1002.2	1005.1	1002.2	999.3	992.2	990.8	986.5	978.0	969.5	958.0	948.1
25°	972.3	970.9	969.5	966.5	960.8	958.0	952.3	943.8	935.3	922.4	911.1
27.5°	933.8	928.1	928.1	922.4	918.2	913.9	911.1	902.6	891.1	881.2	866.9
30°	881.2	882.6	875.5	874.1	866.9	864.0	858.4	849.9	839.9	828.5	817.1
32.5°	824.2	820.0	820.0	814.3	808.6	804.4	802.8	792.9	784.4	773.0	761.6
35°	757.3	757.3	753.1	751.6	746.0	743.1	738.9	733.1	723.1	713.2	704.6
37.5°	691.8	689.0	687.6	684.7	680.5	676.2	676.2	666.2	664.8	653.4	642.1
40°	619.2	622.1	619.2	615.0	613.6	610.7	609.3	603.5	599.3	589.3	582.3
42.5°	558.0	555.2	555.2	553.8	548.1	548.1	545.3	542.4	535.2	532.4	523.9
45°	495.4	498.2	494.0	495.4	489.7	489.7	489.7	484.0	478.4	474.0	468.3
47.5°	441.2	442.8	442.8	438.4	437.0	437.0	434.1	431.3	427.1	421.4	417.1
50°	394.3	395.7	392.9	391.5	388.6	387.2	387.2	381.5	378.7	372.9	370.1
52.5°	351.6	351.6	350.2	350.2	346.0	346.0	343.0	338.8	335.9	333.1	326.0
55°	313.2	313.2	311.8	310.3	310.3	306.0	304.6	300.3	297.5	291.8	287.6
57.5°	276.1	277.5	276.1	274.7	273.3	271.9	269.0	264.8	261.9	257.7	254.8
60°	246.3	246.3	244.8	243.4	240.5	239.1	237.7	234.9	230.6	227.8	223.5
62.5°	217.8	216.4	215.0	213.6	210.6	210.6	207.8	205.0	200.7	197.9	195.0
65°	187.9	187.9	186.5	186.5	185.1	182.3	180.8	179.3	173.6	172.2	166.5
67.5°	160.9	162.3	159.5	159.5	156.6	156.6	155.2	150.9	149.5	146.6	143.7
70°	136.6	136.6	136.6	135.2	132.4	131.0	129.5	126.7	125.3	122.5	119.6
72.5°	112.4	112.4	111.0	111.0	109.6	108.2	106.7	103.9	103.9	101.1	98.2
75°	91.1	91.1	89.7	88.3	86.9	86.9	85.5	84.0	81.1	79.7	78.2
77.5°	69.7	69.7	69.7	68.3	66.9	66.9	66.9	64.1	61.2	61.2	59.8
80°	51.3	51.3	49.9	49.9	48.3	48.3	48.3	46.9	45.5	44.1	42.7
82.5°	34.2	34.2	34.2	34.2	32.7	32.7	32.7	31.3	29.9	29.9	29.9
85°	20.0	20.0	20.0	20.0	18.6	18.6	18.6	18.6	18.6	17.1	17.1
87.5°	8.5	7.1	8.5	7.1	8.5	7.1	8.5	7.1	7.1	7.1	7.1
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: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2
2.5°	1013.6	1012.1	1010.7	1009.3	1009.3	1007.9	1005.1	1003.6	1002.2	1000.8	1000.8
5°	1019.2	1017.8	1015.0	1012.1	1010.7	1007.9	1005.1	1002.2	999.3	995.0	993.6
7.5°	1023.5	1019.2	1016.4	1010.7	1009.3	1006.5	1002.2	997.8	992.2	986.5	982.2
10°	1023.5	1017.8	1013.6	1006.5	1003.6	1000.8	995.0	987.9	980.8	975.2	968.1
12.5°	1020.7	1013.6	1006.5	999.3	995.0	990.8	982.2	975.2	966.5	958.0	952.3
15°	1010.7	1002.2	993.6	985.1	980.8	975.2	966.5	956.6	948.1	939.6	929.5
17.5°	992.2	983.7	973.7	963.7	958.0	953.8	941.0	933.8	921.0	912.5	904.0
20°	968.1	958.0	945.2	935.3	928.1	923.9	913.9	901.0	891.1	878.3	869.8
22.5°	936.7	923.9	911.1	901.0	893.9	888.3	875.5	862.6	854.1	842.8	832.7
25°	899.6	886.9	874.1	859.8	852.7	847.0	835.6	824.2	812.9	800.0	791.5
27.5°	855.5	841.3	829.9	817.1	810.0	801.4	788.6	777.3	765.8	757.3	746.0
30°	807.2	791.5	780.1	767.2	760.1	753.1	740.3	728.8	718.9	709.0	703.2
32.5°	748.8	737.3	726.0	713.2	707.5	703.2	690.4	679.1	667.6	659.1	654.8
35°	693.2	680.5	670.4	659.1	652.0	647.7	636.3	626.3	620.7	610.7	604.9
37.5°	634.9	624.9	613.6	602.1	597.9	593.6	585.1	575.2	566.5	559.4	556.6
40°	573.6	565.1	555.2	548.1	543.8	539.5	532.4	525.3	519.6	512.5	509.7
42.5°	515.4	509.7	501.0	492.5	488.3	486.9	478.4	472.6	469.7	466.9	464.1
45°	462.6	454.1	448.5	442.8	438.4	435.6	431.3	427.1	424.2	421.4	418.5
47.5°	411.5	404.2	398.6	394.3	390.1	388.6	385.8	381.5	378.7	378.7	378.7
50°	364.4	358.7	353.1	350.2	348.8	346.0	343.0	341.6	340.2	340.2	340.2
52.5°	323.2	317.5	313.2	310.3	310.3	307.4	304.6	303.2	303.2	303.2	303.2
55°	284.7	280.5	277.5	274.7	271.9	270.4	270.4	270.4	269.0	269.0	270.4
57.5°	250.6	247.7	243.4	240.5	239.1	239.1	237.7	236.3	237.7	239.1	240.5
60°	219.3	216.4	215.0	210.6	210.6	210.6	209.2	209.2	209.2	210.6	212.1
62.5°	190.8	189.4	186.5	185.1	183.7	183.7	182.3	182.3	182.3	182.3	183.7
65°	165.1	162.3	159.5	159.5	159.5	158.0	158.0	155.2	156.6	156.6	155.2
67.5°	140.9	138.1	136.6	135.2	133.8	133.8	132.4	131.0	129.5	129.5	129.5
70°	118.2	115.4	115.4	112.4	112.4	111.0	109.6	109.6	108.2	106.7	105.3
72.5°	95.4	94.0	92.6	91.1	91.1	91.1	89.7	88.3	86.9	85.5	82.6
75°	75.4	75.4	72.6	71.2	71.2	69.7	68.3	66.9	65.5	64.1	62.6
77.5°	58.4	57.0	54.1	52.7	52.7	52.7	51.3	49.9	48.3	46.9	45.5
80°	42.7	41.3	39.8	38.4	38.4	38.4	37.0	37.0	35.6	35.6	35.6
82.5°	28.5	28.5	27.1	27.1	27.1	27.1	25.6	25.6	25.6	25.6	25.6
85°	17.1	17.1	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6	15.6
87.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
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: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2
2.5°	997.8	997.8	995.0	993.6	992.2	993.6	990.8	989.3	987.9	987.9	986.5
5°	989.3	987.9	982.2	980.8	979.4	978.0	975.2	972.3	969.5	968.1	966.5
7.5°	978.0	973.7	968.1	966.5	965.1	960.8	956.6	953.8	949.5	948.1	945.2
10°	962.3	956.6	952.3	948.1	945.2	941.0	936.7	932.4	926.7	925.3	921.0
12.5°	943.8	936.7	928.1	926.7	922.4	916.8	911.1	906.8	902.6	899.6	895.4
15°	921.0	913.9	905.4	901.0	896.8	892.5	885.4	879.8	875.5	871.3	866.9
17.5°	893.9	885.4	878.3	874.1	871.3	864.0	858.4	851.3	847.0	842.8	838.5
20°	861.2	854.1	844.2	839.9	838.5	832.7	825.6	822.8	817.1	812.9	810.0
22.5°	824.2	817.1	808.6	805.8	800.0	797.1	790.0	787.2	784.4	780.1	778.7
25°	783.0	775.9	768.7	767.2	763.0	760.1	755.9	751.6	751.6	747.4	747.4
27.5°	740.3	733.1	727.4	724.6	723.1	720.3	716.1	714.6	713.2	711.8	711.8
30°	694.7	686.2	683.3	681.9	680.5	677.6	676.2	673.4	674.8	676.2	674.8
32.5°	646.3	643.5	637.7	634.9	636.3	634.9	632.0	634.9	633.4	636.3	637.7
35°	599.3	596.4	593.6	593.6	590.8	590.8	590.8	592.2	595.0	596.4	599.3
37.5°	553.8	549.5	548.1	546.7	548.1	548.1	548.1	550.9	553.8	556.6	560.9
40°	505.3	502.5	502.5	502.5	502.5	506.7	505.3	508.3	511.1	515.4	519.6
42.5°	459.8	459.8	461.2	461.2	461.2	461.2	464.1	468.3	472.6	476.9	481.2
45°	417.1	417.1	417.1	420.0	420.0	421.4	427.1	429.9	432.7	437.0	441.2
47.5°	377.3	377.3	378.7	380.1	381.5	384.4	387.2	391.5	395.7	398.6	402.8
50°	340.2	341.6	344.6	347.4	347.4	348.8	353.1	355.9	358.7	363.0	364.4
52.5°	304.6	307.4	310.3	311.8	313.2	316.1	317.5	321.7	323.2	327.4	328.8
55°	271.9	273.3	277.5	279.1	279.1	281.9	284.7	287.6	291.8	291.8	294.7
57.5°	242.0	243.4	246.3	247.7	246.3	250.6	252.0	254.8	256.3	259.1	260.5
60°	212.1	215.0	216.4	216.4	217.8	219.3	222.1	222.1	224.9	227.8	227.8
62.5°	183.7	185.1	186.5	187.9	189.4	187.9	192.2	192.2	195.0	196.4	199.3
65°	156.6	158.0	158.0	159.5	159.5	160.9	160.9	162.3	163.7	166.5	168.0
67.5°	129.5	129.5	129.5	131.0	129.5	131.0	131.0	132.4	132.4	135.2	136.6
70°	105.3	103.9	102.5	102.5	102.5	102.5	101.1	102.5	102.5	103.9	103.9
72.5°	81.1	79.7	78.2	76.8	76.8	75.4	74.0	75.4	75.4	76.8	76.8
75°	61.2	58.4	58.4	58.4	57.0	57.0	57.0	58.4	58.4	58.4	59.8
77.5°	45.5	45.5	44.1	44.1	44.1	45.5	45.5	46.9	46.9	46.9	46.9
80°	34.2	35.6	35.6	35.6	35.6	37.0	37.0	37.0	37.0	38.4	38.4
82.5°	25.6	25.6	25.6	25.6	27.1	27.1	27.1	27.1	27.1	27.1	27.1
85°	15.6	17.1	17.1	15.6	17.1	17.1	17.1	17.1	17.1	17.1	17.1
87.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
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: P584098

CATALOG NUMBER: HC820D010-HM80520940-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2	1002.2
2.5°	985.1	985.1	985.1	985.1	983.7	983.7	983.7	982.2
5°	963.7	963.7	963.7	960.8	962.3	962.3	959.4	960.8
7.5°	942.4	941.0	939.6	939.6	938.2	936.7	935.3	936.7
10°	918.2	913.9	913.9	912.5	912.5	909.7	909.7	911.1
12.5°	891.1	888.3	888.3	886.9	885.4	884.0	882.6	882.6
15°	864.0	861.2	859.8	858.4	857.0	854.1	855.5	854.1
17.5°	837.1	832.7	832.7	831.3	829.9	827.0	827.0	825.6
20°	805.8	804.4	801.4	802.8	801.4	798.6	797.1	797.1
22.5°	774.4	774.4	773.0	773.0	771.6	770.1	768.7	768.7
25°	744.5	743.1	744.5	744.5	740.3	740.3	740.3	741.7
27.5°	710.4	711.8	710.4	710.4	710.4	710.4	711.8	710.4
30°	676.2	676.2	676.2	677.6	680.5	679.1	679.1	677.6
32.5°	639.1	640.6	640.6	642.1	643.5	646.3	646.3	647.7
35°	602.1	604.9	606.4	604.9	609.3	609.3	612.2	612.2
37.5°	563.7	565.1	568.0	569.4	572.2	573.6	575.2	575.2
40°	522.4	528.1	529.5	531.0	535.2	535.2	536.6	539.5
42.5°	484.0	489.7	491.1	492.5	495.4	499.6	498.2	501.0
45°	447.0	451.3	452.7	454.1	458.4	459.8	459.8	464.1
47.5°	407.1	410.0	411.5	414.3	417.1	420.0	422.8	421.4
50°	367.2	371.5	374.3	375.8	380.1	381.5	383.0	384.4
52.5°	331.7	334.5	335.9	337.3	341.6	343.0	344.6	347.4
55°	297.5	298.9	301.8	300.3	304.6	306.0	307.4	310.3
57.5°	263.3	264.8	266.2	266.2	269.0	271.9	273.3	274.7
60°	230.6	233.4	234.9	234.9	234.9	237.7	237.7	237.7
62.5°	200.7	200.7	202.1	202.1	205.0	205.0	205.0	205.0
65°	169.4	170.8	172.2	172.2	175.1	173.6	176.5	175.1
67.5°	136.6	136.6	139.5	139.5	138.1	139.5	139.5	139.5
70°	103.9	103.9	105.3	105.3	105.3	105.3	105.3	105.3
72.5°	76.8	76.8	76.8	78.2	76.8	76.8	78.2	76.8
75°	59.8	59.8	59.8	59.8	59.8	59.8	59.8	59.8
77.5°	46.9	46.9	48.3	48.3	48.3	48.3	48.3	48.3
80°	38.4	38.4	38.4	38.4	39.8	38.4	38.4	38.4
82.5°	28.5	27.1	28.5	27.1	28.5	28.5	28.5	28.5
85°	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
87.5°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
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)