

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: P583974

Luminaire Tested: **HC820D010-HM80520827-81RWWC**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P583974
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: HC820D010-HM80520827-81RWWC
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 2700K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2073.1 lumens
Efficiency: N/A
Efficacy: 103.7 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

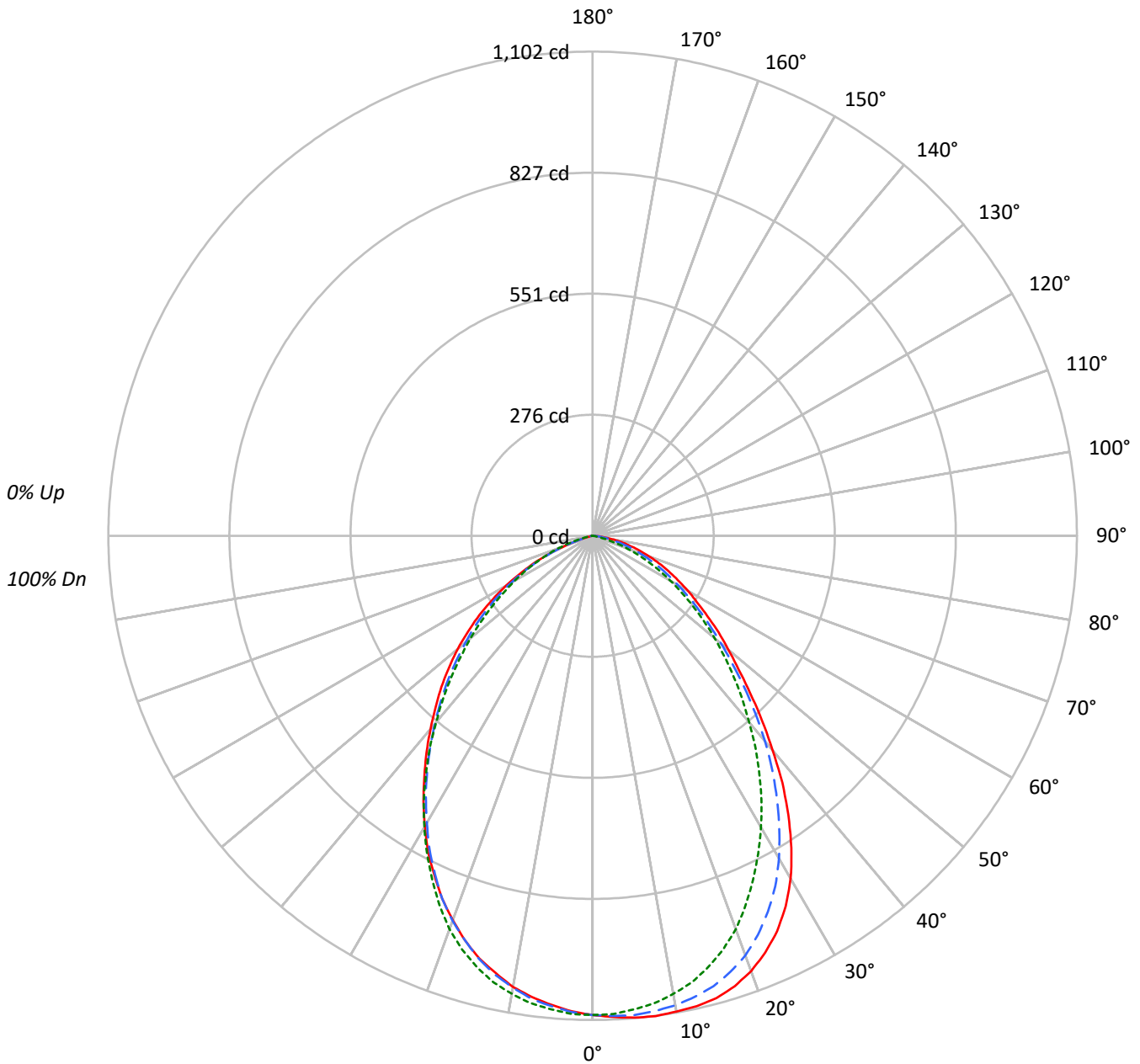
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	85	100	94	89	84	91	86	82	87	84	81	85	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°	33633	33633	33633
5°	34077	33492	33177
10°	34428	33150	32652
15°	34775	32451	31800
20°	34597	31257	30538
25°	33793	29383	28989
30°	32096	27278	27171
35°	29219	24890	25109
40°	25618	22277	23094
45°	22101	19816	21211
50°	19352	17395	19213
55°	17145	14951	16908
60°	15449	12575	14012
65°	13922	10091	10726
70°	12217	7357	5905
75°	10401	3813	1561
80°	8027	1030	249
85°	5130	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.9	5.0
10°-20°	289.3	14.0
20°-30°	410.6	19.8
30°-40°	432.2	20.9
40°-50°	367.7	17.7
50°-60°	265.7	12.8
60°-70°	151.1	7.3
70°-80°	47.6	2.3
80°-90°	5.8	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°	802.8	38.7
0°-40°	1235.1	59.6
0°-60°	1868.5	90.1
0°-90°	2073.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2073.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1091	1091	1091	1091	1091	
5°	1101	1095	1082	1075	1072	105
15°	1089	1062	1016	998	996	307
25°	993	944	864	849	852	455
35°	776	731	661	657	667	483
45°	507	488	454	466	486	394
55°	319	296	278	294	314	288
65°	191	164	138	137	147	189
75°	87	67	32	14	13	94
85°	14	9	0	0	0	19
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°	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7
2.5°	1096.5	1098.1	1095.1	1095.1	1098.1	1095.1	1096.5	1096.5	1095.1	1095.1	1093.7
5°	1100.9	1099.5	1099.5	1099.5	1100.9	1098.1	1096.5	1098.1	1095.1	1095.1	1095.1
7.5°	1102.5	1102.5	1100.9	1099.5	1099.5	1099.5	1098.1	1096.5	1095.1	1092.2	1090.7
10°	1099.5	1099.5	1100.9	1098.1	1098.1	1095.1	1095.1	1092.2	1092.2	1089.3	1085.0
12.5°	1096.5	1095.1	1095.1	1092.2	1092.2	1089.3	1089.3	1085.0	1083.4	1079.2	1074.8
15°	1089.3	1087.8	1085.0	1083.4	1082.0	1080.6	1077.6	1076.2	1071.8	1066.0	1061.7
17.5°	1074.8	1073.3	1071.8	1068.9	1066.0	1064.5	1063.1	1058.7	1052.9	1048.6	1041.2
20°	1054.3	1052.9	1052.9	1048.6	1047.0	1042.8	1041.2	1035.4	1031.1	1022.3	1016.5
22.5°	1026.7	1028.1	1025.3	1022.3	1019.4	1015.0	1012.1	1006.4	999.0	990.3	983.0
25°	993.2	994.7	991.7	988.9	984.5	981.5	978.6	969.8	962.6	952.5	943.7
27.5°	950.9	950.9	950.9	948.1	940.8	939.3	936.4	927.6	917.5	908.7	900.0
30°	901.4	900.0	900.0	895.6	892.6	886.9	882.5	875.3	867.9	857.8	847.6
32.5°	841.7	843.2	838.9	835.9	831.5	831.5	825.7	819.8	811.2	800.9	790.8
35°	776.2	777.6	774.8	773.3	766.1	764.5	763.1	755.8	750.0	742.7	731.1
37.5°	709.2	707.8	706.2	706.2	702.0	699.0	696.1	691.7	683.0	677.2	671.4
40°	636.4	636.4	636.4	635.0	633.4	630.6	629.1	626.2	620.4	614.5	610.1
42.5°	570.9	570.9	569.4	568.0	565.0	566.5	563.6	560.6	554.8	550.5	547.6
45°	506.8	506.8	506.8	508.3	505.3	500.9	500.9	498.1	495.1	492.2	487.8
47.5°	450.0	454.4	451.4	450.0	451.4	445.6	445.6	442.7	439.8	436.9	431.1
50°	403.4	403.4	403.4	400.5	399.0	399.0	394.7	391.7	390.3	387.3	381.5
52.5°	361.1	358.3	358.3	356.8	355.3	352.5	352.5	349.5	343.7	340.8	336.4
55°	318.9	318.9	317.5	316.1	314.5	313.1	311.7	307.3	304.4	300.0	295.6
57.5°	281.1	284.0	282.5	279.7	276.7	276.7	273.8	270.9	266.5	262.2	257.8
60°	250.5	249.0	249.0	247.5	244.7	243.3	241.7	237.3	233.0	228.6	224.2
62.5°	218.4	218.4	218.4	215.5	212.6	211.1	209.7	206.8	200.9	196.6	193.7
65°	190.8	189.4	187.8	186.4	185.0	182.0	180.6	177.7	173.3	168.9	164.5
67.5°	163.1	161.7	161.7	160.2	155.8	154.4	154.4	150.0	145.6	141.2	136.9
70°	135.5	135.5	135.5	132.5	131.1	129.7	128.1	125.3	120.9	116.5	112.2
72.5°	112.2	110.6	110.6	109.2	104.8	103.4	101.9	99.1	94.7	91.7	88.9
75°	87.3	87.3	85.9	84.5	83.0	81.6	80.1	77.2	72.8	68.4	67.0
77.5°	67.0	65.5	65.5	64.1	61.1	59.7	59.7	56.9	52.5	49.5	46.6
80°	45.2	46.6	45.2	43.7	42.2	40.8	39.4	37.8	35.0	32.0	29.1
82.5°	27.7	29.1	27.7	27.7	26.2	24.7	24.7	21.9	20.3	18.9	17.5
85°	14.5	14.5	14.5	14.5	13.1	13.1	13.1	11.7	10.2	8.7	8.7
87.5°	4.4	5.8	4.4	4.4	4.4	4.4	4.4	4.4	3.0	3.0	3.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7
2.5°	1095.1	1093.7	1092.2	1092.2	1092.2	1092.2	1092.2	1090.7	1089.3	1089.3	1089.3
5°	1092.2	1092.2	1092.2	1090.7	1089.3	1089.3	1086.4	1085.0	1083.4	1082.0	1080.6
7.5°	1089.3	1086.4	1085.0	1083.4	1082.0	1082.0	1079.2	1076.2	1076.2	1073.3	1070.4
10°	1080.6	1079.2	1076.2	1073.3	1071.8	1070.4	1067.5	1063.1	1061.7	1058.7	1055.8
12.5°	1070.4	1067.5	1064.5	1058.7	1057.3	1055.8	1050.0	1045.6	1042.8	1041.2	1034.0
15°	1057.3	1051.4	1047.0	1039.8	1038.4	1035.4	1031.1	1026.7	1020.9	1016.5	1013.6
17.5°	1034.0	1028.1	1020.9	1013.6	1010.6	1010.6	1003.4	997.6	990.3	987.3	981.5
20°	1006.4	999.0	993.2	984.5	980.1	975.7	971.4	962.6	956.8	952.5	945.1
22.5°	974.2	964.0	956.8	948.1	940.8	936.4	929.2	921.8	914.5	910.1	904.3
25°	933.4	924.8	913.1	904.3	900.0	894.2	885.4	878.1	870.9	863.6	860.6
27.5°	888.4	876.7	866.5	856.2	852.0	847.6	837.3	828.6	822.8	815.6	812.6
30°	838.9	827.2	815.6	806.8	802.5	795.1	789.3	779.1	771.8	766.1	758.7
32.5°	782.0	773.3	763.1	750.0	747.0	741.2	732.5	728.1	719.4	715.0	709.2
35°	720.9	715.0	704.8	694.7	690.3	687.3	680.1	671.4	665.5	661.2	658.3
37.5°	662.6	655.3	645.1	637.8	635.0	630.6	621.9	617.5	611.7	608.7	602.9
40°	600.0	592.7	585.4	581.1	576.7	573.7	568.0	563.6	557.8	553.4	551.9
42.5°	538.9	534.5	528.6	522.8	521.4	517.0	514.1	509.7	505.3	503.9	499.5
45°	483.4	479.1	473.3	467.5	466.1	463.1	461.7	457.3	454.4	454.4	454.4
47.5°	428.1	423.7	418.0	415.0	416.5	410.6	410.6	409.2	406.3	406.3	407.8
50°	378.6	372.8	371.4	368.4	365.5	362.6	364.1	359.7	359.7	362.6	361.1
52.5°	332.0	326.2	324.7	321.9	320.4	320.4	318.9	318.9	317.5	318.9	318.9
55°	289.8	285.5	282.5	279.7	278.1	278.1	278.1	276.7	275.3	278.1	279.7
57.5°	251.9	250.5	247.5	243.3	241.7	240.3	238.9	238.9	238.9	238.9	240.3
60°	218.4	215.5	212.6	208.3	208.3	206.8	205.3	203.9	203.9	203.9	203.9
62.5°	189.4	185.0	180.6	177.7	176.2	174.7	173.3	170.4	170.4	170.4	170.4
65°	160.2	155.8	153.0	150.0	147.0	147.0	144.2	142.7	139.8	138.3	135.5
67.5°	132.5	129.7	126.7	122.3	120.9	119.4	116.5	115.0	110.6	109.2	107.8
70°	107.8	103.4	100.5	97.5	96.1	93.3	90.3	87.3	84.5	81.6	78.6
72.5°	84.5	80.1	77.2	74.2	71.4	71.4	67.0	64.1	59.7	56.9	52.5
75°	62.6	58.3	55.3	50.9	49.5	48.1	43.7	40.8	36.4	32.0	29.1
77.5°	42.2	39.4	36.4	32.0	29.1	29.1	24.7	21.9	18.9	14.5	13.1
80°	26.2	23.3	20.3	17.5	17.5	14.5	13.1	10.2	7.3	5.8	4.4
82.5°	14.5	13.1	11.7	8.7	8.7	7.3	5.8	4.4	3.0	1.4	1.4
85°	7.3	5.8	4.4	4.4	3.0	3.0	3.0	1.4	1.4	0.0	0.0
87.5°	3.0	1.4	1.4	1.4	1.4	1.4	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°	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7
2.5°	1087.8	1087.8	1086.4	1086.4	1086.4	1085.0	1086.4	1085.0	1085.0	1085.0	1086.4
5°	1082.0	1079.2	1079.2	1077.6	1077.6	1076.2	1077.6	1076.2	1074.8	1073.3	1074.8
7.5°	1070.4	1067.5	1066.0	1064.5	1064.5	1064.5	1063.1	1061.7	1063.1	1058.7	1061.7
10°	1054.3	1052.9	1050.0	1048.6	1047.0	1048.6	1047.0	1044.2	1044.2	1044.2	1042.8
12.5°	1034.0	1031.1	1029.6	1028.1	1025.3	1025.3	1026.7	1023.7	1023.7	1020.9	1020.9
15°	1009.2	1006.4	1003.4	1003.4	1000.4	1000.4	999.0	999.0	997.6	996.1	996.1
17.5°	978.6	974.2	971.4	972.8	971.4	969.8	969.8	967.0	965.6	967.0	967.0
20°	942.2	939.3	936.4	937.8	935.0	933.4	935.0	930.6	932.0	932.0	932.0
22.5°	901.4	900.0	895.6	895.6	892.6	891.2	892.6	892.6	894.2	892.6	892.6
25°	856.2	853.4	850.4	850.4	849.0	847.6	849.0	850.4	849.0	850.4	850.4
27.5°	808.3	803.9	803.9	800.9	800.9	802.5	800.9	802.5	803.9	803.9	806.8
30°	755.8	754.4	752.9	751.4	751.4	752.9	752.9	752.9	754.4	757.3	757.3
32.5°	706.2	703.4	700.5	700.5	703.4	702.0	703.4	703.4	706.2	706.2	709.2
35°	652.5	652.5	649.5	650.9	650.9	650.9	650.9	653.9	656.8	658.3	661.2
37.5°	602.9	598.6	600.0	600.0	601.4	600.0	604.4	604.4	607.3	607.3	610.1
40°	549.0	549.0	550.5	549.0	550.5	550.5	553.4	556.2	557.8	560.6	562.2
42.5°	498.1	500.9	498.1	499.5	500.9	502.5	503.9	505.3	511.2	514.1	518.4
45°	451.4	452.9	454.4	455.8	454.4	457.3	458.7	461.7	466.1	467.5	468.9
47.5°	406.3	407.8	409.2	410.6	410.6	413.6	415.0	418.0	420.9	422.3	423.7
50°	362.6	365.5	367.0	367.0	368.4	371.4	374.2	374.2	377.2	381.5	383.0
52.5°	323.3	323.3	326.2	327.7	329.1	329.1	333.4	335.0	336.4	339.4	342.2
55°	279.7	284.0	285.5	285.5	288.3	291.2	292.7	294.2	294.2	300.0	300.0
57.5°	241.7	243.3	246.1	246.1	246.1	250.5	250.5	253.4	254.8	256.3	259.2
60°	203.9	206.8	206.8	208.3	206.8	209.7	211.1	214.1	215.5	217.0	218.4
62.5°	168.9	168.9	170.4	170.4	170.4	170.4	173.3	173.3	176.2	177.7	179.1
65°	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	136.9	136.9	139.8
67.5°	104.8	103.4	100.5	101.9	100.5	100.5	99.1	99.1	100.5	100.5	103.4
70°	75.8	74.2	71.4	71.4	69.9	68.4	67.0	65.5	64.1	64.1	64.1
72.5°	49.5	46.6	42.2	40.8	40.8	37.8	35.0	33.5	33.5	33.5	33.5
75°	24.7	21.9	18.9	17.5	17.5	14.5	16.1	14.5	14.5	14.5	14.5
77.5°	10.2	7.3	5.8	5.8	5.8	4.4	4.4	4.4	4.4	4.4	4.4
80°	3.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	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: P583974

CATALOG NUMBER: HC820D010-HM80520827-81RWWC

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7	1090.7
2.5°	1085.0	1085.0	1082.0	1083.4	1083.4	1083.4	1083.4	1083.4
5°	1071.8	1073.3	1071.8	1073.3	1073.3	1071.8	1071.8	1071.8
7.5°	1058.7	1060.1	1058.7	1060.1	1060.1	1060.1	1058.7	1058.7
10°	1042.8	1042.8	1042.8	1042.8	1042.8	1041.2	1042.8	1042.8
12.5°	1020.9	1020.9	1020.9	1022.3	1022.3	1020.9	1020.9	1019.4
15°	997.6	994.7	996.1	997.6	996.1	996.1	996.1	996.1
17.5°	965.6	967.0	965.6	965.6	965.6	965.6	967.0	965.6
20°	932.0	932.0	933.4	932.0	932.0	932.0	932.0	930.6
22.5°	894.2	892.6	892.6	894.2	894.2	892.6	894.2	894.2
25°	852.0	853.4	852.0	852.0	853.4	853.4	853.4	852.0
27.5°	806.8	808.3	809.7	808.3	808.3	808.3	809.7	811.2
30°	760.1	763.1	760.1	760.1	763.1	761.7	763.1	763.1
32.5°	710.6	715.0	712.2	715.0	715.0	716.5	715.0	716.5
35°	661.2	665.5	665.5	665.5	667.0	668.4	668.4	667.0
37.5°	614.5	616.1	616.1	618.9	620.4	621.9	621.9	620.4
40°	566.5	569.4	570.9	570.9	570.9	573.7	576.7	573.7
42.5°	519.8	521.4	522.8	522.8	525.8	527.2	528.6	528.6
45°	474.8	477.6	479.1	480.6	482.0	485.0	483.4	486.4
47.5°	428.1	432.5	434.0	435.4	438.3	439.8	441.2	442.7
50°	385.9	388.9	388.9	391.7	396.1	396.1	399.0	400.5
52.5°	343.7	345.1	346.6	348.1	350.9	353.9	353.9	356.8
55°	302.9	304.4	304.4	305.8	307.3	313.1	314.5	314.5
57.5°	260.6	260.6	263.6	265.0	266.5	269.4	269.4	269.4
60°	219.9	221.4	221.4	222.8	224.2	227.2	228.6	227.2
62.5°	179.1	180.6	180.6	182.0	185.0	186.4	185.0	185.0
65°	141.2	142.7	142.7	144.2	147.0	147.0	145.6	147.0
67.5°	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4
70°	65.5	64.1	62.6	64.1	64.1	64.1	62.6	65.5
72.5°	32.0	33.5	33.5	33.5	33.5	33.5	33.5	32.0
75°	14.5	14.5	13.1	13.1	13.1	14.5	14.5	13.1
77.5°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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)