

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: P584013

Luminaire Tested: **HC820D010-HM80520835-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584013
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-HM80520835-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2132.9 lumens
Efficiency: N/A
Efficacy: 106.6 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

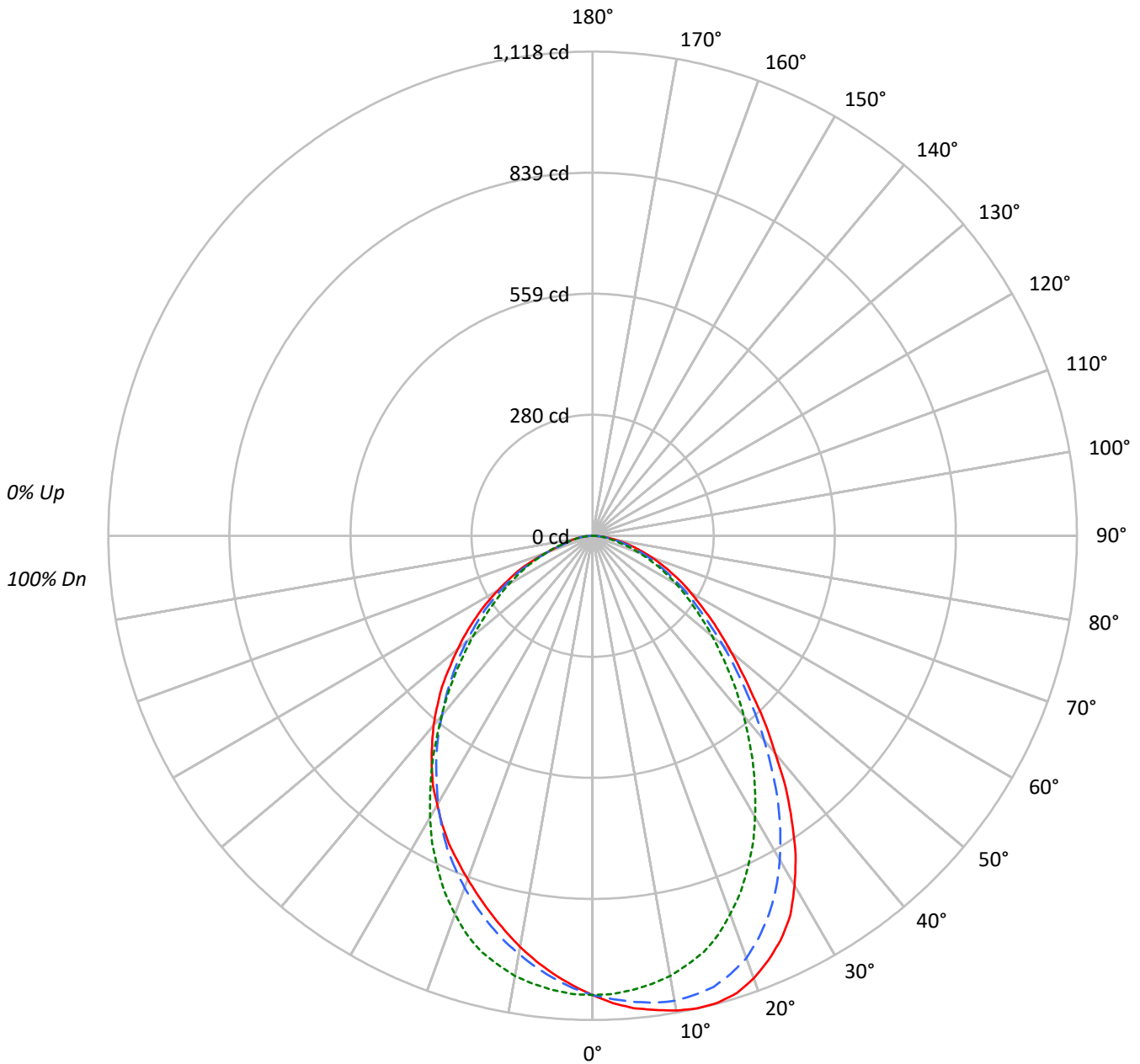
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	32702	32702	32702
5°	33898	32592	31474
10°	34857	32311	30185
15°	35637	31739	28856
20°	35690	30499	27683
25°	35004	28801	26702
30°	33203	26712	25530
35°	30168	24326	24382
40°	26378	21830	22981
45°	22860	19445	21416
50°	20014	17270	19511
55°	17817	15306	17655
60°	16072	13747	15511
65°	14505	12090	13520
70°	13037	10188	10053
75°	11497	8066	7530
80°	9643	6695	7227
85°	7430	5838	6404



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.0	4.7
10°-20°	281.8	13.2
20°-30°	402.7	18.9
30°-40°	427.9	20.1
40°-50°	368.4	17.3
50°-60°	275.4	12.9
60°-70°	175.7	8.2
70°-80°	80.0	3.7
80°-90°	21.0	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°	784.5	36.8
0°-40°	1212.4	56.8
0°-60°	1856.3	87.0
0°-90°	2132.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2132.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1060	1060	1060	1060	1060	
5°	1095	1080	1053	1026	1017	105
15°	1116	1079	994	926	904	314
25°	1029	964	846	795	785	471
35°	801	746	646	630	648	499
45°	524	496	446	458	491	408
55°	331	304	285	309	328	298
65°	199	176	166	173	185	198
75°	96	83	68	62	63	102
85°	21	18	16	18	18	25
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°	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5
2.5°	1080.1	1077.0	1078.6	1077.0	1078.6	1078.6	1075.5	1075.5	1075.5	1075.5	1071.0
5°	1095.1	1093.6	1093.6	1092.2	1090.6	1092.2	1090.6	1089.1	1086.1	1084.6	1080.1
7.5°	1104.2	1104.2	1104.2	1104.2	1102.7	1101.2	1099.6	1096.7	1093.6	1090.6	1087.6
10°	1113.2	1114.7	1113.2	1111.7	1110.3	1107.2	1105.6	1102.7	1098.2	1093.6	1090.6
12.5°	1117.7	1117.7	1116.3	1116.3	1113.2	1111.7	1107.2	1102.7	1098.2	1093.6	1086.1
15°	1116.3	1116.3	1114.7	1113.2	1108.7	1107.2	1104.2	1099.6	1092.2	1086.1	1078.6
17.5°	1107.2	1105.6	1102.7	1102.7	1096.7	1095.1	1092.2	1086.1	1078.6	1069.6	1060.5
20°	1087.6	1087.6	1086.1	1084.6	1078.6	1074.1	1071.0	1063.6	1057.5	1046.9	1037.9
22.5°	1060.5	1063.6	1060.5	1057.5	1050.0	1048.4	1043.9	1034.8	1025.9	1013.8	1003.3
25°	1028.8	1027.4	1025.9	1022.8	1016.8	1013.8	1007.8	998.8	989.7	976.1	964.0
27.5°	988.2	982.1	982.1	976.1	971.6	967.1	964.0	955.1	943.0	932.5	917.4
30°	932.5	934.0	926.5	924.9	917.4	914.4	908.4	899.3	888.7	876.7	864.6
32.5°	872.2	867.7	867.7	861.7	855.6	851.2	849.6	839.1	830.0	817.9	805.9
35°	801.4	801.4	796.9	795.4	789.3	786.4	781.8	775.7	765.2	754.7	745.6
37.5°	732.1	729.1	727.6	724.6	720.1	715.6	715.6	704.9	703.5	691.5	679.4
40°	655.3	658.3	655.3	650.8	649.3	646.2	644.8	638.8	634.1	623.6	616.1
42.5°	590.5	587.5	587.5	586.0	580.0	580.0	576.9	574.0	566.4	563.3	554.4
45°	524.2	527.3	522.7	524.2	518.2	518.2	518.2	512.2	506.1	501.6	495.6
47.5°	467.0	468.5	468.5	463.9	462.5	462.5	459.4	456.5	451.9	445.9	441.4
50°	417.2	418.8	415.7	414.3	411.2	409.7	409.7	403.7	400.7	394.7	391.7
52.5°	372.1	372.1	370.6	370.6	366.1	366.1	363.0	358.5	355.5	352.5	344.9
55°	331.4	331.4	329.9	328.4	328.4	323.9	322.3	317.8	314.9	308.9	304.2
57.5°	292.2	293.7	292.2	290.8	289.2	287.7	284.7	280.1	277.2	272.7	269.6
60°	260.6	260.6	259.1	257.6	254.6	253.1	251.5	248.6	244.1	241.0	236.5
62.5°	230.5	229.0	227.4	226.0	222.9	222.9	220.0	216.9	212.4	209.3	206.4
65°	198.8	198.8	197.4	197.4	195.9	192.8	191.4	189.8	183.8	182.3	176.2
67.5°	170.2	171.7	168.7	168.7	165.7	165.7	164.2	159.7	158.2	155.2	152.1
70°	144.6	144.6	144.6	143.1	140.1	138.5	137.1	134.0	132.6	129.5	126.6
72.5°	119.0	119.0	117.5	117.5	116.0	114.5	113.0	109.9	109.9	107.0	103.9
75°	96.5	96.5	94.9	93.4	91.8	91.8	90.4	88.9	85.8	84.4	82.9
77.5°	73.8	73.8	73.8	72.3	70.8	70.8	70.8	67.7	64.8	64.8	63.2
80°	54.3	54.3	52.7	52.7	51.2	51.2	51.2	49.8	48.2	46.7	45.2
82.5°	36.2	36.2	36.2	36.2	34.6	34.6	34.6	33.1	31.7	31.7	31.7
85°	21.0	21.0	21.0	21.0	19.6	19.6	19.6	19.6	19.6	18.1	18.1
87.5°	9.0	7.6	9.0	7.6	9.0	7.6	9.0	7.6	7.6	7.6	7.6
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°	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5
2.5°	1072.5	1071.0	1069.6	1068.1	1068.1	1066.5	1063.6	1062.0	1060.5	1059.0	1059.0
5°	1078.6	1077.0	1074.1	1071.0	1069.6	1066.5	1063.6	1060.5	1057.5	1052.9	1051.5
7.5°	1083.1	1078.6	1075.5	1069.6	1068.1	1065.0	1060.5	1056.0	1050.0	1043.9	1039.5
10°	1083.1	1077.0	1072.5	1065.0	1062.0	1059.0	1052.9	1045.5	1037.9	1031.9	1024.3
12.5°	1080.1	1072.5	1065.0	1057.5	1052.9	1048.4	1039.5	1031.9	1022.8	1013.8	1007.8
15°	1069.6	1060.5	1051.5	1042.4	1037.9	1031.9	1022.8	1012.3	1003.3	994.2	983.7
17.5°	1050.0	1040.9	1030.3	1019.8	1013.8	1009.3	995.7	988.2	974.7	965.6	956.6
20°	1024.3	1013.8	1000.2	989.7	982.1	977.6	967.1	953.5	943.0	929.4	920.4
22.5°	991.2	977.6	964.0	953.5	946.0	940.0	926.5	912.9	903.9	891.8	881.2
25°	952.0	938.5	924.9	909.9	902.3	896.3	884.3	872.2	860.1	846.5	837.6
27.5°	905.3	890.3	878.2	864.6	857.2	848.1	834.5	822.4	810.4	801.4	789.3
30°	854.1	837.6	825.5	811.9	804.5	796.9	783.3	771.3	760.7	750.2	744.2
32.5°	792.4	780.4	768.3	754.7	748.7	744.2	730.6	718.5	706.5	697.5	692.9
35°	733.7	720.1	709.6	697.5	689.9	685.4	673.4	662.9	656.8	646.2	640.2
37.5°	671.8	661.3	649.3	637.2	632.7	628.1	619.1	608.6	599.5	592.1	589.0
40°	607.1	598.1	587.5	580.0	575.4	570.9	563.3	555.9	549.9	542.3	539.2
42.5°	545.3	539.2	530.2	521.3	516.7	515.2	506.1	500.1	497.1	494.1	491.1
45°	489.6	480.5	474.5	468.5	463.9	461.0	456.5	451.9	448.9	445.9	442.9
47.5°	435.3	427.8	421.7	417.2	412.8	411.2	408.3	403.7	400.7	400.7	400.7
50°	385.7	379.7	373.6	370.6	369.0	366.1	363.0	361.6	360.0	360.0	360.0
52.5°	342.0	335.9	331.4	328.4	328.4	325.4	322.3	320.9	320.9	320.9	320.9
55°	301.3	296.8	293.7	290.8	287.7	286.2	286.2	286.2	284.7	284.7	286.2
57.5°	265.1	262.2	257.6	254.6	253.1	253.1	251.5	250.1	251.5	253.1	254.6
60°	232.0	229.0	227.4	222.9	222.9	222.9	221.4	221.4	221.4	222.9	224.5
62.5°	201.9	200.3	197.4	195.9	194.3	194.3	192.8	192.8	192.8	192.8	194.3
65°	174.7	171.7	168.7	168.7	168.7	167.3	167.3	164.2	165.7	165.7	164.2
67.5°	149.2	146.1	144.6	143.1	141.6	141.6	140.1	138.5	137.1	137.1	137.1
70°	125.1	122.0	122.0	119.0	119.0	117.5	116.0	116.0	114.5	113.0	111.5
72.5°	100.9	99.4	97.9	96.5	96.5	96.5	94.9	93.4	91.8	90.4	87.3
75°	79.8	79.8	76.8	75.3	75.3	73.8	72.3	70.8	69.3	67.7	66.3
77.5°	61.8	60.3	57.2	55.8	55.8	55.8	54.3	52.7	51.2	49.8	48.2
80°	45.2	43.7	42.2	40.7	40.7	40.7	39.1	39.1	37.7	37.7	37.7
82.5°	30.1	30.1	28.6	28.6	28.6	28.6	27.1	27.1	27.1	27.1	27.1
85°	18.1	18.1	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5	16.5
87.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
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°	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5
2.5°	1056.0	1056.0	1052.9	1051.5	1050.0	1051.5	1048.4	1046.9	1045.5	1045.5	1043.9
5°	1046.9	1045.5	1039.5	1037.9	1036.4	1034.8	1031.9	1028.8	1025.9	1024.3	1022.8
7.5°	1034.8	1030.3	1024.3	1022.8	1021.4	1016.8	1012.3	1009.3	1004.8	1003.3	1000.2
10°	1018.3	1012.3	1007.8	1003.3	1000.2	995.7	991.2	986.7	980.7	979.2	974.7
12.5°	998.8	991.2	982.1	980.7	976.1	970.1	964.0	959.5	955.1	952.0	947.5
15°	974.7	967.1	958.0	953.5	949.0	944.5	937.0	930.9	926.5	922.0	917.4
17.5°	946.0	937.0	929.4	924.9	922.0	914.4	908.4	900.8	896.3	891.8	887.2
20°	911.3	903.9	893.2	888.7	887.2	881.2	873.7	870.7	864.6	860.1	857.2
22.5°	872.2	864.6	855.6	852.6	846.5	843.6	836.0	833.1	830.0	825.5	824.0
25°	828.5	821.0	813.5	811.9	807.4	804.5	799.9	795.4	795.4	790.9	790.9
27.5°	783.3	775.7	769.7	766.8	765.2	762.3	757.7	756.2	754.7	753.2	753.2
30°	735.1	726.1	723.0	721.6	720.1	717.0	715.6	712.5	714.0	715.6	714.0
32.5°	683.9	680.8	674.8	671.8	673.4	671.8	668.9	671.8	670.3	673.4	674.8
35°	634.1	631.2	628.1	628.1	625.2	625.2	625.2	626.7	629.7	631.2	634.1
37.5°	586.0	581.4	580.0	578.5	580.0	580.0	580.0	583.0	586.0	589.0	593.5
40°	534.7	531.8	531.8	531.8	531.8	536.3	534.7	537.8	540.8	545.3	549.9
42.5°	486.5	486.5	488.0	488.0	488.0	488.0	491.1	495.6	500.1	504.6	509.2
45°	441.4	441.4	441.4	444.4	444.4	445.9	451.9	455.0	457.9	462.5	467.0
47.5°	399.2	399.2	400.7	402.2	403.7	406.7	409.7	414.3	418.8	421.7	426.3
50°	360.0	361.6	364.5	367.6	367.6	369.0	373.6	376.6	379.7	384.2	385.7
52.5°	322.3	325.4	328.4	329.9	331.4	334.4	335.9	340.4	342.0	346.4	348.0
55°	287.7	289.2	293.7	295.3	295.3	298.2	301.3	304.2	308.9	308.9	311.8
57.5°	256.1	257.6	260.6	262.2	260.6	265.1	266.7	269.6	271.2	274.1	275.6
60°	224.5	227.4	229.0	229.0	230.5	232.0	235.0	235.0	238.1	241.0	241.0
62.5°	194.3	195.9	197.4	198.8	200.3	198.8	203.3	203.3	206.4	207.9	210.9
65°	165.7	167.3	167.3	168.7	168.7	170.2	170.2	171.7	173.3	176.2	177.8
67.5°	137.1	137.1	137.1	138.5	137.1	138.5	138.5	140.1	140.1	143.1	144.6
70°	111.5	109.9	108.5	108.5	108.5	108.5	107.0	108.5	108.5	109.9	109.9
72.5°	85.8	84.4	82.9	81.3	81.3	79.8	78.4	79.8	79.8	81.3	81.3
75°	64.8	61.8	61.8	61.8	60.3	60.3	60.3	61.8	61.8	61.8	63.2
77.5°	48.2	48.2	46.7	46.7	46.7	48.2	48.2	49.8	49.8	49.8	49.8
80°	36.2	37.7	37.7	37.7	37.7	39.1	39.1	39.1	39.1	40.7	40.7
82.5°	27.1	27.1	27.1	27.1	28.6	28.6	28.6	28.6	28.6	28.6	28.6
85°	16.5	18.1	18.1	16.5	18.1	18.1	18.1	18.1	18.1	18.1	18.1
87.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
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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CATALOG NUMBER: HC820D010-HM80520835-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5	1060.5
2.5°	1042.4	1042.4	1042.4	1042.4	1040.9	1040.9	1040.9	1039.5
5°	1019.8	1019.8	1019.8	1016.8	1018.3	1018.3	1015.3	1016.8
7.5°	997.3	995.7	994.2	994.2	992.8	991.2	989.7	991.2
10°	971.6	967.1	967.1	965.6	965.6	962.6	962.6	964.0
12.5°	943.0	940.0	940.0	938.5	937.0	935.4	934.0	934.0
15°	914.4	911.3	909.9	908.4	906.8	903.9	905.3	903.9
17.5°	885.8	881.2	881.2	879.8	878.2	875.2	875.2	873.7
20°	852.6	851.2	848.1	849.6	848.1	845.1	843.6	843.6
22.5°	819.5	819.5	817.9	817.9	816.4	815.0	813.5	813.5
25°	787.8	786.4	787.8	787.8	783.3	783.3	783.3	784.8
27.5°	751.6	753.2	751.6	751.6	751.6	751.6	753.2	751.6
30°	715.6	715.6	715.6	717.0	720.1	718.5	718.5	717.0
32.5°	676.3	677.9	677.9	679.4	680.8	683.9	683.9	685.4
35°	637.2	640.2	641.7	640.2	644.8	644.8	647.7	647.7
37.5°	596.6	598.1	601.0	602.6	605.5	607.1	608.6	608.6
40°	552.8	558.8	560.4	561.9	566.4	566.4	568.0	570.9
42.5°	512.2	518.2	519.7	521.3	524.2	528.7	527.3	530.2
45°	473.0	477.5	479.1	480.5	485.1	486.5	486.5	491.1
47.5°	430.8	433.8	435.3	438.4	441.4	444.4	447.4	445.9
50°	388.6	393.1	396.2	397.7	402.2	403.7	405.2	406.7
52.5°	350.9	354.0	355.5	357.0	361.6	363.0	364.5	367.6
55°	314.9	316.3	319.4	317.8	322.3	323.9	325.4	328.4
57.5°	278.7	280.1	281.7	281.7	284.7	287.7	289.2	290.8
60°	244.1	247.0	248.6	248.6	248.6	251.5	251.5	251.5
62.5°	212.4	212.4	213.9	213.9	216.9	216.9	216.9	216.9
65°	179.3	180.7	182.3	182.3	185.3	183.8	186.8	185.3
67.5°	144.6	144.6	147.6	147.6	146.1	147.6	147.6	147.6
70°	109.9	109.9	111.5	111.5	111.5	111.5	111.5	111.5
72.5°	81.3	81.3	81.3	82.9	81.3	81.3	82.9	81.3
75°	63.2	63.2	63.2	63.2	63.2	63.2	63.2	63.2
77.5°	49.8	49.8	51.2	51.2	51.2	51.2	51.2	51.2
80°	40.7	40.7	40.7	40.7	42.2	40.7	40.7	40.7
82.5°	30.1	28.6	30.1	28.6	30.1	30.1	30.1	30.1
85°	18.1	18.1	18.1	18.1	18.1	18.1	18.1	18.1
87.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
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)