

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: P584000

Luminaire Tested: **HC820D010-HM80520830-81WWWB**

Issue Date: 10/21/2021

Test Information

Test Method: LM-41-14
Report Number: P584000
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-HM80520830-81WWWB
Description: HALO COMMERCIAL 8" ROUND, NEW CONSTRUCTION FRAME, WITH 8" WALLWASH DISTRIBUTION, BLACK BAFFLE TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2050.3 lumens
Efficiency: N/A
Efficacy: 102.5 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

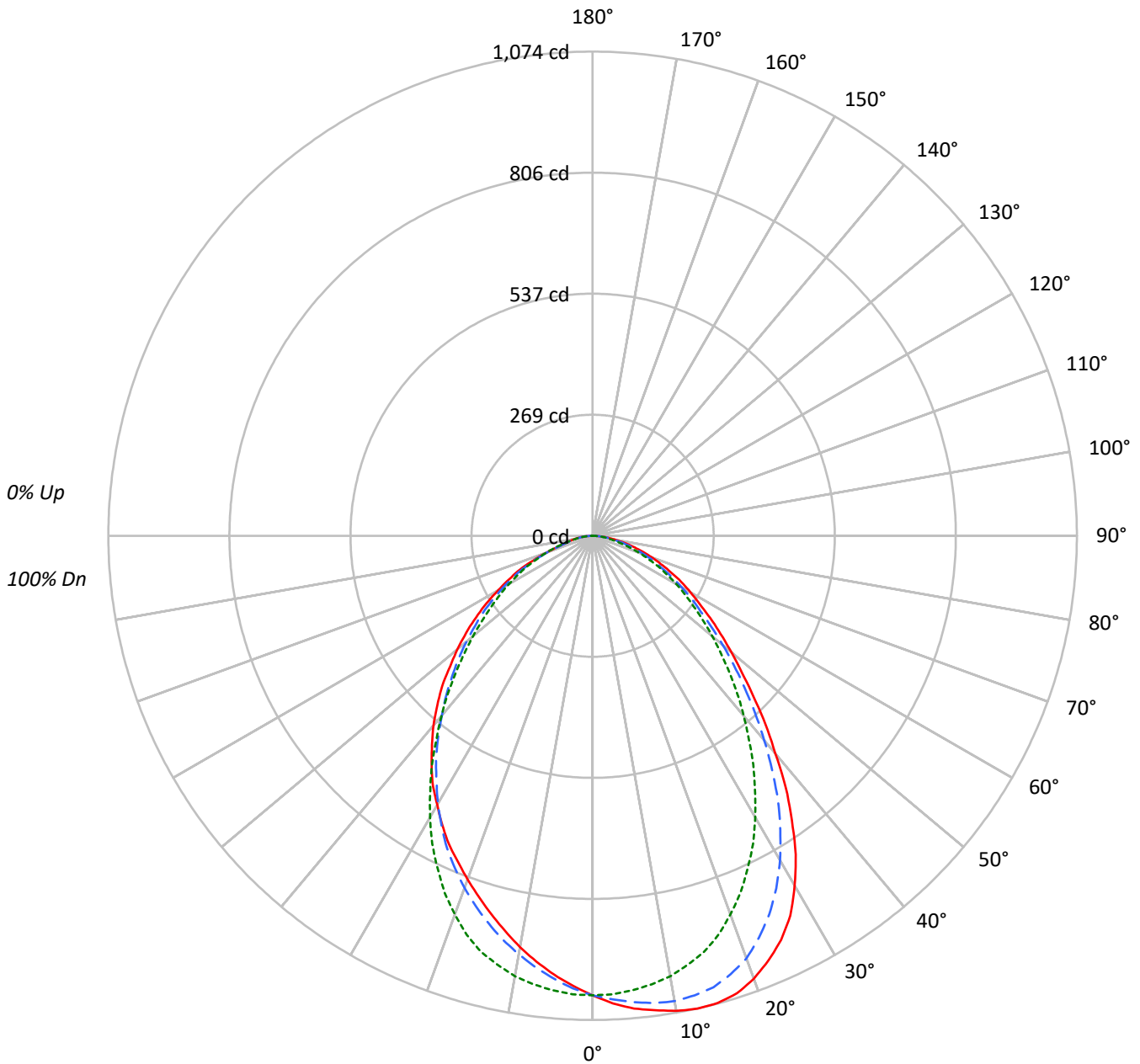
Input Watts (W): 20
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	31435	31435	31435
5°	32585	31329	30255
10°	33507	31058	29017
15°	34255	30507	27736
20°	34308	29317	26610
25°	33650	27689	25668
30°	31914	25676	24540
35°	28997	23381	23441
40°	25356	20984	22091
45°	21975	18691	20588
50°	19242	16603	18757
55°	17123	14709	16972
60°	15449	13216	14912
65°	13944	11623	12995
70°	12532	9791	9665
75°	11044	7756	7256
80°	9252	6428	6943
85°	7182	5661	6156



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.2	4.7
10°-20°	270.9	13.2
20°-30°	387.1	18.9
30°-40°	411.3	20.1
40°-50°	354.1	17.3
50°-60°	264.8	12.9
60°-70°	168.9	8.2
70°-80°	76.9	3.7
80°-90°	20.2	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°	754.1	36.8
0°-40°	1165.4	56.8
0°-60°	1784.3	87.0
0°-90°	2050.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2050.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	1019	1019	1019	1019	1019	
5°	1053	1038	1012	986	977	101
15°	1073	1037	956	890	869	302
25°	989	927	814	764	754	453
35°	770	717	621	605	623	480
45°	504	476	429	440	472	392
55°	318	292	274	297	316	286
65°	191	169	159	166	178	191
75°	93	80	65	59	61	98
85°	20	17	16	17	17	24
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°	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4
2.5°	1038.3	1035.3	1036.7	1035.3	1036.7	1036.7	1033.9	1033.9	1033.9	1033.9	1029.5
5°	1052.7	1051.3	1051.3	1049.9	1048.3	1049.9	1048.3	1046.9	1044.1	1042.5	1038.3
7.5°	1061.4	1061.4	1061.4	1061.4	1059.9	1058.5	1057.1	1054.1	1051.3	1048.3	1045.5
10°	1070.1	1071.5	1070.1	1068.6	1067.2	1064.3	1062.9	1059.9	1055.6	1051.3	1048.3
12.5°	1074.4	1074.4	1073.0	1073.0	1070.1	1068.6	1064.3	1059.9	1055.6	1051.3	1044.1
15°	1073.0	1073.0	1071.5	1070.1	1065.7	1064.3	1061.4	1057.1	1049.9	1044.1	1036.7
17.5°	1064.3	1062.9	1059.9	1059.9	1054.1	1052.7	1049.9	1044.1	1036.7	1028.1	1019.4
20°	1045.5	1045.5	1044.1	1042.5	1036.7	1032.5	1029.5	1022.3	1016.5	1006.4	997.7
22.5°	1019.4	1022.3	1019.4	1016.5	1009.3	1007.8	1003.5	994.8	986.1	974.6	964.4
25°	989.0	987.6	986.1	983.2	977.4	974.6	968.8	960.0	951.3	938.3	926.7
27.5°	949.9	944.1	944.1	938.3	933.9	929.6	926.7	918.1	906.5	896.3	881.8
30°	896.3	897.7	890.5	889.1	881.8	878.9	873.1	864.4	854.3	842.8	831.2
32.5°	838.4	834.0	834.0	828.2	822.4	818.1	816.6	806.5	797.8	786.3	774.7
35°	770.3	770.3	765.9	764.5	758.7	755.9	751.5	745.7	735.6	725.4	716.8
37.5°	703.8	700.8	699.4	696.4	692.2	687.8	687.8	677.6	676.2	664.6	653.1
40°	629.9	632.7	629.9	625.5	624.1	621.1	619.7	613.9	609.6	599.5	592.2
42.5°	567.6	564.8	564.8	563.2	557.4	557.4	554.6	551.6	544.4	541.6	532.8
45°	503.9	506.8	502.5	503.9	498.1	498.1	498.1	492.3	486.5	482.1	476.3
47.5°	448.9	450.3	450.3	446.0	444.6	444.6	441.6	438.8	434.4	428.6	424.2
50°	401.1	402.6	399.6	398.2	395.3	393.8	393.8	388.1	385.2	379.4	376.5
52.5°	357.7	357.7	356.3	356.3	351.9	351.9	348.9	344.7	341.7	338.9	331.6
55°	318.5	318.5	317.1	315.7	315.7	311.3	309.9	305.5	302.6	296.8	292.5
57.5°	281.0	282.4	281.0	279.4	278.0	276.6	273.6	269.4	266.4	262.0	259.2
60°	250.5	250.5	249.0	247.6	244.7	243.3	241.8	238.9	234.6	231.7	227.3
62.5°	221.5	220.1	218.7	217.3	214.3	214.3	211.5	208.5	204.1	201.3	198.3
65°	191.1	191.1	189.7	189.7	188.3	185.3	183.9	182.5	176.7	175.2	169.4
67.5°	163.6	165.1	162.2	162.2	159.3	159.3	157.8	153.5	152.0	149.2	146.2
70°	139.0	139.0	139.0	137.6	134.6	133.2	131.8	128.8	127.4	124.6	121.6
72.5°	114.4	114.4	113.0	113.0	111.5	110.0	108.6	105.7	105.7	102.8	99.9
75°	92.7	92.7	91.3	89.8	88.3	88.3	86.9	85.5	82.5	81.1	79.7
77.5°	70.9	70.9	70.9	69.5	68.1	68.1	68.1	65.1	62.3	62.3	60.9
80°	52.1	52.1	50.7	50.7	49.3	49.3	49.3	47.8	46.3	44.9	43.5
82.5°	34.8	34.8	34.8	34.8	33.3	33.3	33.3	31.9	30.4	30.4	30.4
85°	20.3	20.3	20.3	20.3	18.8	18.8	18.8	18.8	18.8	17.4	17.4
87.5°	8.7	7.2	8.7	7.2	8.7	7.2	8.7	7.2	7.2	7.2	7.2
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°	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4
2.5°	1030.9	1029.5	1028.1	1026.7	1026.7	1025.1	1022.3	1020.9	1019.4	1017.9	1017.9
5°	1036.7	1035.3	1032.5	1029.5	1028.1	1025.1	1022.3	1019.4	1016.5	1012.1	1010.7
7.5°	1041.1	1036.7	1033.9	1028.1	1026.7	1023.7	1019.4	1015.1	1009.3	1003.5	999.1
10°	1041.1	1035.3	1030.9	1023.7	1020.9	1017.9	1012.1	1004.9	997.7	991.9	984.6
12.5°	1038.3	1030.9	1023.7	1016.5	1012.1	1007.8	999.1	991.9	983.2	974.6	968.8
15°	1028.1	1019.4	1010.7	1002.0	997.7	991.9	983.2	973.0	964.4	955.6	945.5
17.5°	1009.3	1000.6	990.4	980.4	974.6	970.2	957.1	949.9	936.9	928.1	919.5
20°	984.6	974.6	961.4	951.3	944.1	939.7	929.6	916.5	906.5	893.4	884.7
22.5°	952.8	939.7	926.7	916.5	909.3	903.5	890.5	877.5	868.8	857.2	847.0
25°	915.1	902.1	889.1	874.6	867.4	861.6	850.0	838.4	826.8	813.8	805.1
27.5°	870.2	855.8	844.2	831.2	823.9	815.2	802.2	790.6	779.1	770.3	758.7
30°	821.0	805.1	793.5	780.5	773.3	765.9	752.9	741.4	731.2	721.1	715.3
32.5°	761.7	750.1	738.5	725.4	719.6	715.3	702.2	690.6	679.1	670.4	666.1
35°	705.2	692.2	682.0	670.4	663.2	658.8	647.3	637.1	631.3	621.1	615.3
37.5°	645.8	635.7	624.1	612.5	608.1	603.8	595.1	585.0	576.3	569.0	566.2
40°	583.6	574.8	564.8	557.4	553.2	548.8	541.6	534.3	528.5	521.3	518.4
42.5°	524.2	518.4	509.7	501.0	496.7	495.3	486.5	480.7	477.9	474.9	472.1
45°	470.6	461.9	456.1	450.3	446.0	443.1	438.8	434.4	431.5	428.6	425.8
47.5°	418.4	411.2	405.4	401.1	396.8	395.3	392.4	388.1	385.2	385.2	385.2
50°	370.7	364.9	359.1	356.3	354.7	351.9	348.9	347.5	346.1	346.1	346.1
52.5°	328.7	322.9	318.5	315.7	315.7	312.8	309.9	308.4	308.4	308.4	308.4
55°	289.6	285.2	282.4	279.4	276.6	275.2	275.2	275.2	273.6	273.6	275.2
57.5°	254.8	252.0	247.6	244.7	243.3	243.3	241.8	240.4	241.8	243.3	244.7
60°	223.0	220.1	218.7	214.3	214.3	214.3	212.9	212.9	212.9	214.3	215.7
62.5°	194.1	192.5	189.7	188.3	186.8	186.8	185.3	185.3	185.3	185.3	186.8
65°	168.0	165.1	162.2	162.2	162.2	160.8	160.8	157.8	159.3	159.3	157.8
67.5°	143.4	140.4	139.0	137.6	136.2	136.2	134.6	133.2	131.8	131.8	131.8
70°	120.2	117.3	117.3	114.4	114.4	113.0	111.5	111.5	110.0	108.6	107.2
72.5°	97.0	95.6	94.1	92.7	92.7	92.7	91.3	89.8	88.3	86.9	84.0
75°	76.7	76.7	73.9	72.5	72.5	70.9	69.5	68.1	66.7	65.1	63.7
77.5°	59.3	57.9	55.1	53.5	53.5	53.5	52.1	50.7	49.3	47.8	46.3
80°	43.5	42.0	40.5	39.1	39.1	39.1	37.7	37.7	36.2	36.2	36.2
82.5°	29.0	29.0	27.5	27.5	27.5	27.5	26.1	26.1	26.1	26.1	26.1
85°	17.4	17.4	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
87.5°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4
2.5°	1015.1	1015.1	1012.1	1010.7	1009.3	1010.7	1007.8	1006.4	1004.9	1004.9	1003.5
5°	1006.4	1004.9	999.1	997.7	996.2	994.8	991.9	989.0	986.1	984.6	983.2
7.5°	994.8	990.4	984.6	983.2	981.8	977.4	973.0	970.2	965.8	964.4	961.4
10°	978.8	973.0	968.8	964.4	961.4	957.1	952.8	948.4	942.6	941.2	936.9
12.5°	960.0	952.8	944.1	942.6	938.3	932.5	926.7	922.3	918.1	915.1	910.7
15°	936.9	929.6	920.9	916.5	912.3	907.9	900.7	894.9	890.5	886.1	881.8
17.5°	909.3	900.7	893.4	889.1	886.1	878.9	873.1	865.9	861.6	857.2	852.8
20°	876.0	868.8	858.6	854.3	852.8	847.0	839.8	837.0	831.2	826.8	823.9
22.5°	838.4	831.2	822.4	819.6	813.8	810.9	803.6	800.7	797.8	793.5	792.1
25°	796.4	789.1	781.9	780.5	776.1	773.3	768.9	764.5	764.5	760.1	760.1
27.5°	752.9	745.7	739.9	737.0	735.6	732.7	728.3	726.9	725.4	724.0	724.0
30°	706.6	698.0	695.0	693.6	692.2	689.2	687.8	684.9	686.4	687.8	686.4
32.5°	657.4	654.5	648.7	645.8	647.3	645.8	642.9	645.8	644.3	647.3	648.7
35°	609.6	606.7	603.8	603.8	600.9	600.9	600.9	602.3	605.3	606.7	609.6
37.5°	563.2	559.0	557.4	556.0	557.4	557.4	557.4	560.4	563.2	566.2	570.6
40°	514.1	511.1	511.1	511.1	511.1	515.5	514.1	516.9	519.8	524.2	528.5
42.5°	467.7	467.7	469.1	469.1	469.1	469.1	472.1	476.3	480.7	485.1	489.5
45°	424.2	424.2	424.2	427.2	427.2	428.6	434.4	437.3	440.2	444.6	448.9
47.5°	383.7	383.7	385.2	386.6	388.1	391.0	393.8	398.2	402.6	405.4	409.8
50°	346.1	347.5	350.5	353.3	353.3	354.7	359.1	362.0	364.9	369.3	370.7
52.5°	309.9	312.8	315.7	317.1	318.5	321.5	322.9	327.3	328.7	333.1	334.5
55°	276.6	278.0	282.4	283.8	283.8	286.8	289.6	292.5	296.8	296.8	299.8
57.5°	246.2	247.6	250.5	252.0	250.5	254.8	256.3	259.2	260.6	263.6	265.0
60°	215.7	218.7	220.1	220.1	221.5	223.0	225.9	225.9	228.8	231.7	231.7
62.5°	186.8	188.3	189.7	191.1	192.5	191.1	195.5	195.5	198.3	199.9	202.7
65°	159.3	160.8	160.8	162.2	162.2	163.6	163.6	165.1	166.5	169.4	170.9
67.5°	131.8	131.8	131.8	133.2	131.8	133.2	133.2	134.6	134.6	137.6	139.0
70°	107.2	105.7	104.3	104.3	104.3	104.3	102.8	104.3	104.3	105.7	105.7
72.5°	82.5	81.1	79.7	78.2	78.2	76.7	75.3	76.7	76.7	78.2	78.2
75°	62.3	59.3	59.3	59.3	57.9	57.9	57.9	59.3	59.3	59.3	60.9
77.5°	46.3	46.3	44.9	44.9	44.9	46.3	46.3	47.8	47.8	47.8	47.8
80°	34.8	36.2	36.2	36.2	36.2	37.7	37.7	37.7	37.7	39.1	39.1
82.5°	26.1	26.1	26.1	26.1	27.5	27.5	27.5	27.5	27.5	27.5	27.5
85°	16.0	17.4	17.4	16.0	17.4	17.4	17.4	17.4	17.4	17.4	17.4
87.5°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
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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CATALOG NUMBER: HC820D010-HM80520830-81WWWB

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4	1019.4
2.5°	1002.0	1002.0	1002.0	1002.0	1000.6	1000.6	1000.6	999.1
5°	980.4	980.4	980.4	977.4	978.8	978.8	976.0	977.4
7.5°	958.6	957.1	955.6	955.6	954.2	952.8	951.3	952.8
10°	933.9	929.6	929.6	928.1	928.1	925.3	925.3	926.7
12.5°	906.5	903.5	903.5	902.1	900.7	899.1	897.7	897.7
15°	878.9	876.0	874.6	873.1	871.7	868.8	870.2	868.8
17.5°	851.4	847.0	847.0	845.6	844.2	841.2	841.2	839.8
20°	819.6	818.1	815.2	816.6	815.2	812.3	810.9	810.9
22.5°	787.7	787.7	786.3	786.3	784.8	783.3	781.9	781.9
25°	757.3	755.9	757.3	757.3	752.9	752.9	752.9	754.4
27.5°	722.6	724.0	722.6	722.6	722.6	722.6	724.0	722.6
30°	687.8	687.8	687.8	689.2	692.2	690.6	690.6	689.2
32.5°	650.1	651.6	651.6	653.1	654.5	657.4	657.4	658.8
35°	612.5	615.3	616.9	615.3	619.7	619.7	622.7	622.7
37.5°	573.4	574.8	577.8	579.2	582.1	583.6	585.0	585.0
40°	531.4	537.2	538.6	540.1	544.4	544.4	545.8	548.8
42.5°	492.3	498.1	499.5	501.0	503.9	508.3	506.8	509.7
45°	454.7	459.0	460.5	461.9	466.3	467.7	467.7	472.1
47.5°	414.2	417.0	418.4	421.4	424.2	427.2	430.0	428.6
50°	373.6	377.9	380.8	382.3	386.6	388.1	389.5	391.0
52.5°	337.3	340.3	341.7	343.1	347.5	348.9	350.5	353.3
55°	302.6	304.1	307.0	305.5	309.9	311.3	312.8	315.7
57.5°	267.8	269.4	270.8	270.8	273.6	276.6	278.0	279.4
60°	234.6	237.5	238.9	238.9	238.9	241.8	241.8	241.8
62.5°	204.1	204.1	205.7	205.7	208.5	208.5	208.5	208.5
65°	172.3	173.8	175.2	175.2	178.1	176.7	179.5	178.1
67.5°	139.0	139.0	142.0	142.0	140.4	142.0	142.0	142.0
70°	105.7	105.7	107.2	107.2	107.2	107.2	107.2	107.2
72.5°	78.2	78.2	78.2	79.7	78.2	78.2	79.7	78.2
75°	60.9	60.9	60.9	60.9	60.9	60.9	60.9	60.9
77.5°	47.8	47.8	49.3	49.3	49.3	49.3	49.3	49.3
80°	39.1	39.1	39.1	39.1	40.5	39.1	39.1	39.1
82.5°	29.0	27.5	29.0	27.5	29.0	29.0	29.0	29.0
85°	17.4	17.4	17.4	17.4	17.4	17.4	17.4	17.4
87.5°	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
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)