

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: HALO COMMERCIAL

Report Number: P242020

Luminaire Tested: **PRS420D010-S4M12-41SWWH-4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242020
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-62)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS420D010-S4M12-41SWWH-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM HAZE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1246.5 lumens
Efficiency: N/A
Efficacy: 62.3 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.96 / 1.05
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

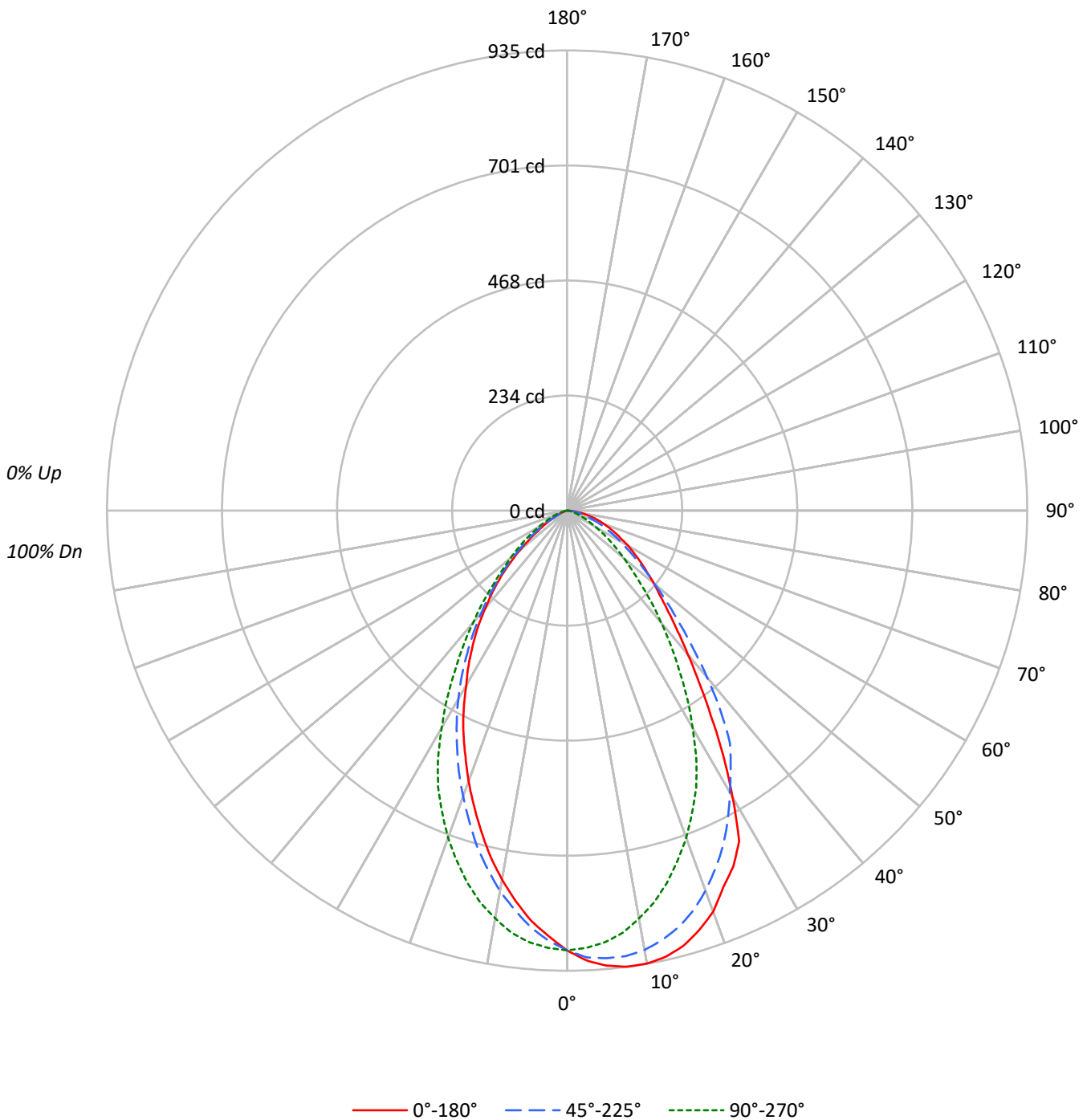
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90					90			
2	104	98	93	88	102	96	91	87	93	89	86	90	87	84	87	84	82	80					80			
3	97	89	83	78	95	88	82	77	85	80	76	82	78	74	80	76	73	71					71			
4	91	81	74	69	89	80	73	68	78	72	68	76	71	67	74	69	66	64					64			
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	58					58			
6	79	68	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53					53			
7	75	63	56	51	73	62	56	51	61	55	50	60	54	50	59	53	50	48					48			
8	70	59	51	46	69	58	51	46	57	51	46	56	50	46	55	49	46	44					44			
9	66	55	48	43	65	54	47	43	53	47	42	52	46	42	51	46	42	41					41			
10	62	51	44	40	61	51	44	39	50	44	39	49	43	39	48	43	39	38					38			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	68392	68392	68392
5°	71319	67654	64319
10°	72649	65397	59164
15°	72524	62040	53450
20°	70663	57589	47692
25°	67405	52380	42127
30°	59421	45041	36229
35°	47618	37087	31210
40°	38140	29686	25789
45°	31457	23003	20654
50°	27377	17814	14980
55°	24314	13892	9555
60°	21907	10287	6307
65°	19633	7462	3930
70°	17949	5349	2417
75°	16029	3194	1272
80°	13400	1895	970
85°	9485	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	83.0	6.7
10°-20°	221.2	17.7
20°-30°	291.1	23.4
30°-40°	270.3	21.7
40°-50°	188.8	15.1
50°-60°	110.9	8.9
60°-70°	55.0	4.4
70°-80°	22.2	1.8
80°-90°	4.1	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°	595.4	47.8
0°-40°	865.6	69.4
0°-60°	1165.2	93.5
0°-90°	1246.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1246.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	894	894	894	894	894	
5°	928	913	880	850	837	89
15°	915	876	783	707	674	257
25°	798	750	620	529	499	363
35°	510	577	397	354	334	321
45°	291	321	212	197	191	228
55°	182	169	104	85	72	164
65°	108	87	41	17	22	108
75°	54	37	11	4	4	57
85°	11	6	0	0	0	13
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°	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5
2.5°	915.2	913.0	913.0	913.0	913.0	910.8	910.8	910.8	908.7	908.7	908.7
5°	928.2	928.2	926.0	926.0	923.9	923.9	923.9	921.7	919.5	917.4	913.0
7.5°	934.7	934.7	932.5	932.5	930.4	928.2	928.2	923.9	921.7	917.4	913.0
10°	934.7	934.7	932.5	932.5	928.2	926.0	926.0	923.9	917.4	913.0	906.5
12.5°	928.2	928.2	926.0	923.9	921.7	919.5	917.4	913.0	906.5	900.0	893.5
15°	915.2	915.2	913.0	910.8	906.5	904.3	902.2	897.8	891.3	882.7	876.1
17.5°	893.5	893.5	891.3	889.2	887.0	882.7	880.5	874.0	867.5	861.0	852.3
20°	867.5	865.3	865.3	863.1	858.8	858.8	854.5	848.0	841.4	830.6	821.9
22.5°	828.4	830.6	830.6	826.3	821.9	821.9	817.6	815.4	806.7	798.1	787.2
25°	798.1	795.9	795.9	791.6	785.1	785.1	782.9	776.4	767.7	759.0	750.4
27.5°	756.9	754.7	754.7	754.7	748.2	748.2	743.9	735.2	726.5	720.0	707.0
30°	672.3	678.8	678.8	685.3	691.8	696.1	700.5	696.1	685.3	674.5	661.4
32.5°	589.9	594.2	598.6	605.1	613.7	620.2	626.7	633.3	641.9	631.1	618.1
35°	509.6	514.0	516.1	524.8	535.7	537.8	546.5	561.7	570.4	579.0	576.9
37.5°	440.2	442.4	446.7	453.3	461.9	468.4	474.9	485.8	501.0	514.0	511.8
40°	381.7	379.5	386.0	388.2	396.9	403.4	412.0	420.7	435.9	442.4	442.4
42.5°	331.8	331.8	334.0	338.3	344.8	349.2	353.5	362.2	375.2	377.3	377.3
45°	290.6	290.6	292.8	297.1	301.4	301.4	308.0	316.6	318.8	321.0	321.0
47.5°	255.9	258.1	258.1	260.2	262.4	266.7	268.9	273.3	273.3	273.3	273.3
50°	229.9	229.9	229.9	232.0	234.2	236.4	236.4	236.4	236.4	234.2	232.0
52.5°	203.9	203.9	203.9	206.0	206.0	208.2	208.2	206.0	203.9	201.7	199.5
55°	182.2	180.0	182.2	182.2	184.3	184.3	182.2	180.0	177.8	173.5	169.2
57.5°	160.5	160.5	160.5	160.5	162.7	160.5	160.5	158.3	154.0	149.6	145.3
60°	143.1	141.0	141.0	141.0	143.1	141.0	141.0	136.6	134.5	128.0	123.6
62.5°	123.6	123.6	123.6	125.8	123.6	123.6	121.4	117.1	114.9	110.6	106.3
65°	108.4	108.4	108.4	108.4	106.3	104.1	104.1	99.8	97.6	93.3	86.7
67.5°	93.3	93.3	93.3	93.3	91.1	88.9	88.9	84.6	82.4	78.1	73.7
70°	80.2	78.1	80.2	78.1	75.9	73.7	73.7	71.6	67.2	62.9	58.6
72.5°	67.2	67.2	67.2	65.1	62.9	60.7	60.7	56.4	54.2	52.0	47.7
75°	54.2	54.2	54.2	52.0	49.9	49.9	47.7	45.5	43.4	41.2	36.9
77.5°	41.2	41.2	41.2	41.2	39.0	36.9	36.9	34.7	32.5	30.4	28.2
80°	30.4	30.4	30.4	28.2	28.2	28.2	26.0	26.0	23.9	21.7	19.5
82.5°	19.5	19.5	19.5	19.5	17.3	17.3	17.3	15.2	15.2	13.0	10.8
85°	10.8	10.8	10.8	10.8	8.7	8.7	8.7	8.7	8.7	6.5	6.5
87.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
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°	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5
2.5°	906.5	904.3	902.2	900.0	900.0	897.8	895.7	893.5	891.3	889.2	889.2
5°	910.8	906.5	904.3	900.0	897.8	897.8	893.5	889.2	884.8	880.5	876.1
7.5°	908.7	904.3	897.8	893.5	891.3	887.0	882.7	876.1	869.6	865.3	858.8
10°	900.0	893.5	887.0	878.3	876.1	871.8	865.3	856.6	850.1	841.4	834.9
12.5°	887.0	878.3	869.6	861.0	856.6	852.3	843.6	832.8	824.1	815.4	804.6
15°	865.3	858.8	845.8	837.1	830.6	826.3	815.4	804.6	793.7	782.9	774.2
17.5°	839.3	830.6	819.8	806.7	800.2	795.9	782.9	767.7	756.9	746.0	737.4
20°	813.3	800.2	787.2	774.2	765.5	761.2	746.0	730.8	720.0	707.0	694.0
22.5°	778.6	763.4	750.4	735.2	728.7	720.0	707.0	689.6	674.5	663.6	648.4
25°	737.4	726.5	709.2	694.0	685.3	678.8	661.4	648.4	633.3	620.2	605.1
27.5°	696.1	681.0	668.0	652.8	641.9	633.3	618.1	600.7	585.5	568.2	555.2
30°	650.6	639.8	622.4	598.6	587.7	579.0	559.5	540.0	524.8	509.6	498.8
32.5°	605.1	583.4	563.9	542.2	531.3	522.7	501.0	485.8	468.4	455.4	444.6
35°	550.8	529.2	507.5	481.4	472.8	461.9	442.4	427.2	409.9	396.9	388.2
37.5°	496.6	470.6	446.7	427.2	418.6	405.5	388.2	370.8	357.8	347.0	336.1
40°	438.1	416.4	394.7	370.8	362.2	353.5	336.1	323.1	305.8	297.1	288.4
42.5°	373.0	364.3	342.7	323.1	312.3	303.6	286.3	273.3	262.4	253.7	245.1
45°	316.6	310.1	294.9	275.4	268.9	260.2	245.1	229.9	221.2	212.5	206.0
47.5°	268.9	262.4	251.6	234.2	225.5	219.0	206.0	195.2	186.5	177.8	173.5
50°	227.7	221.2	210.4	199.5	193.0	184.3	173.5	164.8	156.1	149.6	145.3
52.5°	193.0	186.5	175.7	167.0	162.7	156.1	145.3	138.8	130.1	125.8	121.4
55°	164.8	158.3	149.6	141.0	136.6	130.1	121.4	112.8	108.4	104.1	99.8
57.5°	141.0	132.3	125.8	119.3	114.9	108.4	99.8	95.4	88.9	84.6	80.2
60°	119.3	112.8	106.3	97.6	93.3	91.1	82.4	75.9	71.6	67.2	62.9
62.5°	99.8	93.3	86.7	80.2	78.1	73.7	67.2	60.7	56.4	52.0	49.9
65°	82.4	78.1	71.6	65.1	62.9	58.6	52.0	47.7	43.4	41.2	39.0
67.5°	69.4	62.9	58.6	52.0	49.9	47.7	41.2	36.9	34.7	32.5	28.2
70°	54.2	49.9	45.5	41.2	39.0	36.9	32.5	28.2	26.0	23.9	21.7
72.5°	43.4	39.0	34.7	30.4	28.2	28.2	23.9	21.7	19.5	17.3	15.2
75°	34.7	30.4	26.0	23.9	21.7	19.5	17.3	15.2	13.0	10.8	10.8
77.5°	23.9	21.7	19.5	15.2	15.2	13.0	10.8	10.8	8.7	8.7	6.5
80°	17.3	15.2	13.0	10.8	8.7	8.7	6.5	6.5	4.3	4.3	4.3
82.5°	10.8	8.7	6.5	6.5	6.5	4.3	4.3	4.3	2.2	2.2	2.2
85°	4.3	4.3	2.2	2.2	2.2	2.2	2.2	2.2	0.0	0.0	0.0
87.5°	2.2	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5
2.5°	887.0	884.8	882.7	880.5	880.5	880.5	876.1	876.1	874.0	871.8	871.8
5°	874.0	869.6	865.3	865.3	861.0	858.8	856.6	852.3	850.1	848.0	845.8
7.5°	852.3	848.0	841.4	839.3	837.1	832.8	826.3	824.1	817.6	815.4	813.3
10°	828.4	819.8	815.4	808.9	808.9	800.2	795.9	789.4	785.1	780.7	776.4
12.5°	798.1	787.2	778.6	776.4	772.0	763.4	759.0	750.4	746.0	741.7	737.4
15°	763.4	754.7	743.9	739.5	735.2	726.5	720.0	713.5	707.0	700.5	696.1
17.5°	724.3	715.7	702.7	698.3	696.1	685.3	676.6	668.0	661.4	657.1	650.6
20°	683.1	672.3	661.4	657.1	652.8	644.1	635.4	626.7	618.1	611.6	607.2
22.5°	637.6	624.6	615.9	611.6	607.2	596.4	589.9	581.2	574.7	568.2	563.9
25°	594.2	581.2	570.4	566.0	559.5	550.8	544.3	537.8	529.2	522.7	518.3
27.5°	544.3	531.3	522.7	520.5	514.0	507.5	498.8	490.1	485.8	479.3	474.9
30°	490.1	481.4	474.9	468.4	466.3	459.8	455.4	448.9	442.4	435.9	429.4
32.5°	433.7	427.2	418.6	418.6	416.4	412.0	407.7	403.4	399.0	394.7	388.2
35°	381.7	373.0	368.7	368.7	364.3	362.2	362.2	357.8	353.5	351.3	349.2
37.5°	329.6	325.3	318.8	318.8	316.6	316.6	314.5	312.3	312.3	312.3	310.1
40°	281.9	277.6	273.3	271.1	271.1	271.1	268.9	271.1	271.1	271.1	271.1
42.5°	238.6	236.4	232.0	232.0	232.0	232.0	232.0	232.0	232.0	234.2	234.2
45°	203.9	199.5	197.3	195.2	197.3	195.2	195.2	197.3	197.3	199.5	197.3
47.5°	169.2	169.2	164.8	164.8	164.8	164.8	164.8	164.8	164.8	164.8	167.0
50°	143.1	138.8	138.8	136.6	136.6	136.6	136.6	136.6	134.5	136.6	136.6
52.5°	119.3	114.9	114.9	112.8	112.8	110.6	110.6	108.4	108.4	108.4	108.4
55°	97.6	93.3	93.3	91.1	91.1	88.9	88.9	86.7	84.6	84.6	82.4
57.5°	78.1	73.7	73.7	71.6	71.6	69.4	67.2	65.1	62.9	62.9	60.7
60°	60.7	58.6	56.4	56.4	54.2	52.0	49.9	45.5	43.4	43.4	41.2
62.5°	47.7	45.5	43.4	41.2	41.2	36.9	34.7	30.4	28.2	26.0	28.2
65°	36.9	34.7	32.5	30.4	28.2	26.0	21.7	19.5	17.3	19.5	19.5
67.5°	26.0	23.9	21.7	21.7	19.5	17.3	13.0	13.0	13.0	13.0	15.2
70°	19.5	17.3	15.2	13.0	10.8	8.7	8.7	8.7	8.7	8.7	10.8
72.5°	13.0	10.8	8.7	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	8.7	6.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	6.5	4.3	2.2	2.2	2.2	2.2	2.2	4.3	4.3	2.2	4.3
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	0.0	0.0	0.0	2.2	2.2	0.0	2.2	2.2	0.0	2.2	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



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	893.5	893.5	893.5	893.5	893.5	893.5	893.5	893.5
2.5°	871.8	869.6	869.6	867.5	867.5	869.6	867.5	865.3
5°	841.4	841.4	841.4	839.3	837.1	837.1	837.1	837.1
7.5°	808.9	806.7	806.7	806.7	804.6	800.2	800.2	800.2
10°	772.0	767.7	767.7	765.5	765.5	763.4	763.4	761.2
12.5°	733.0	728.7	726.5	724.3	722.2	720.0	722.2	720.0
15°	691.8	687.5	683.1	683.1	681.0	676.6	676.6	674.5
17.5°	646.3	639.8	639.8	637.6	633.3	633.3	631.1	628.9
20°	600.7	596.4	594.2	592.0	589.9	585.5	585.5	585.5
22.5°	555.2	550.8	548.7	548.7	546.5	542.2	542.2	540.0
25°	511.8	507.5	505.3	503.1	501.0	501.0	498.8	498.8
27.5°	470.6	464.1	464.1	459.8	457.6	455.4	455.4	455.4
30°	425.1	422.9	418.6	420.7	414.2	414.2	414.2	409.9
32.5°	383.9	381.7	379.5	379.5	375.2	373.0	375.2	373.0
35°	344.8	342.7	340.5	338.3	336.1	336.1	334.0	334.0
37.5°	308.0	303.6	301.4	301.4	299.3	299.3	297.1	297.1
40°	268.9	268.9	266.7	264.6	262.4	260.2	258.1	258.1
42.5°	234.2	232.0	229.9	229.9	227.7	223.4	223.4	223.4
45°	199.5	197.3	195.2	195.2	193.0	190.8	188.7	190.8
47.5°	164.8	164.8	164.8	162.7	160.5	158.3	156.1	156.1
50°	136.6	134.5	134.5	134.5	130.1	128.0	125.8	125.8
52.5°	108.4	106.3	106.3	106.3	104.1	99.8	97.6	97.6
55°	82.4	82.4	82.4	80.2	78.1	75.9	73.7	71.6
57.5°	58.6	58.6	58.6	58.6	58.6	58.6	56.4	56.4
60°	41.2	43.4	43.4	45.5	45.5	43.4	41.2	41.2
62.5°	30.4	32.5	32.5	32.5	32.5	30.4	30.4	30.4
65°	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
67.5°	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
70°	10.8	10.8	10.8	10.8	10.8	10.8	8.7	10.8
72.5°	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
75°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
77.5°	2.2	4.3	2.2	2.2	2.2	2.2	2.2	2.2
80°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	2.2	2.2	2.2	0.0	0.0	0.0	0.0	2.2
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

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