

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: P242034

Luminaire Tested: **PRS415D010-S4M12-41SWWMW-4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242034
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1802-584-63)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS415D010-S4M12-41SWWMW-4000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM MATTE WHITE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 802.0 lumens
Efficiency: N/A
Efficacy: 66.8 lumens/watt
Spacing Criteria (0/90/45): 1 / 0.97 / 1.07
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

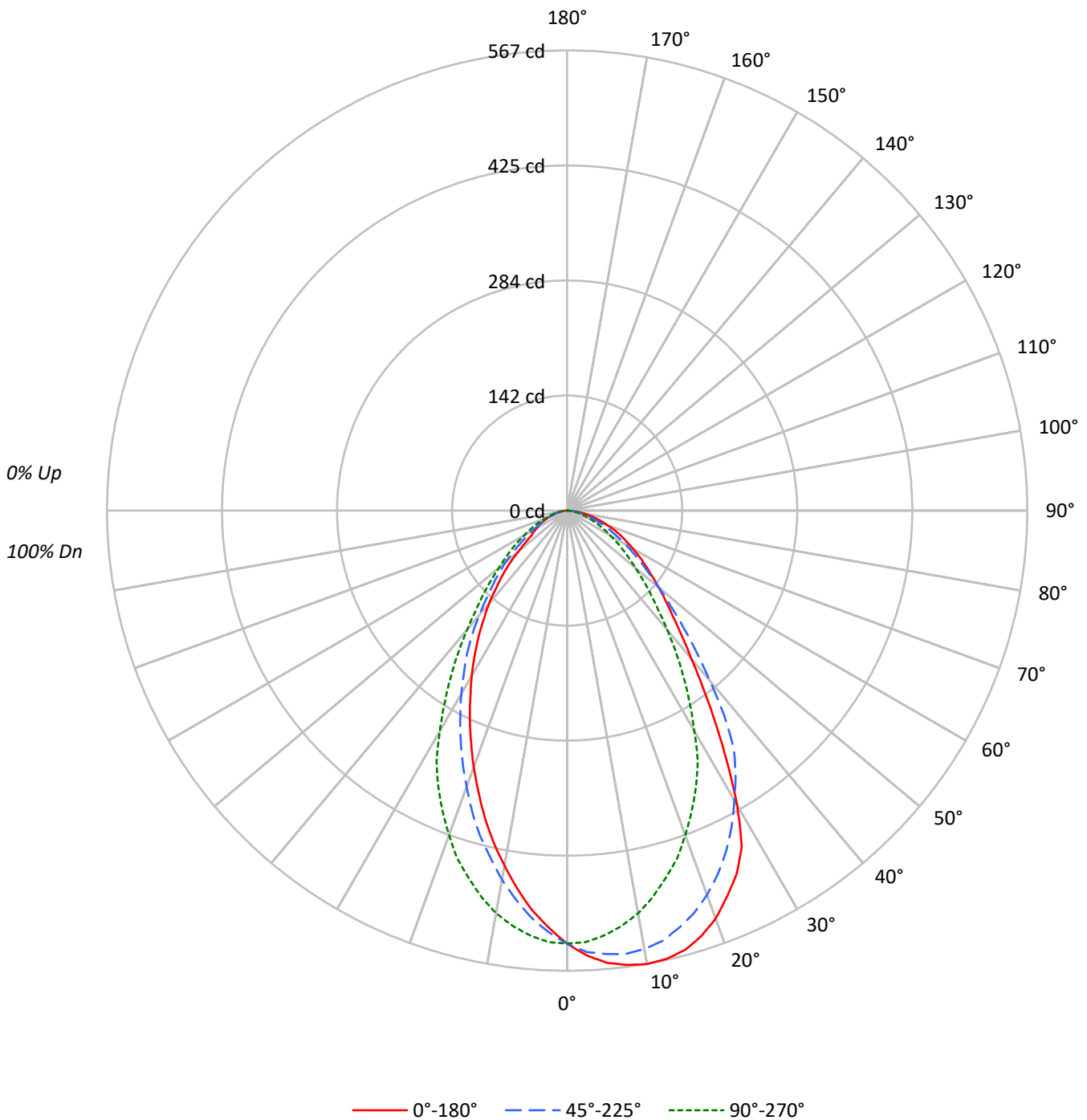
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89					89			
2	103	97	91	86	101	95	90	85	91	87	84	88	85	82	85	82	80	78					78			
3	96	87	81	75	94	86	80	75	83	78	73	80	76	72	78	74	71	69					69			
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62					62			
5	83	72	65	59	81	71	64	59	69	63	58	67	62	58	66	61	57	55					55			
6	78	66	59	53	76	65	58	53	64	57	53	62	57	52	61	56	52	50					50			
7	73	61	54	48	71	60	53	48	59	53	48	58	52	47	56	51	47	45					45			
8	68	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42					42			
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38					38			
10	61	49	42	37	60	49	42	37	48	41	37	47	41	37	46	41	37	35					35			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	40836	40836	40836
5°	42967	40370	37980
10°	44093	39157	34541
15°	44416	37141	31040
20°	43571	34659	27394
25°	41747	31713	23952
30°	37007	27700	20770
35°	29659	23351	17791
40°	23751	19165	14978
45°	19885	15793	12135
50°	17529	13027	9324
55°	15680	11170	7206
60°	14268	9308	6613
65°	13203	8078	6122
70°	11794	6647	5438
75°	10795	5590	4791
80°	9521	4761	4188
85°	5972	3601	3601



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.5	6.2
10°-20°	132.5	16.5
20°-30°	175.9	21.9
30°-40°	165.7	20.7
40°-50°	121.3	15.1
50°-60°	79.7	9.9
60°-70°	48.0	6.0
70°-80°	23.7	2.9
80°-90°	5.7	0.7
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°	357.9	44.6
0°-40°	523.7	65.3
0°-60°	724.6	90.4
0°-90°	802.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	802.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	534	534	534	534	534	
5°	559	548	525	504	494	54
15°	560	532	469	415	392	157
25°	494	463	376	311	284	224
35°	317	358	250	215	190	200
45°	184	201	146	130	112	144
55°	118	111	84	70	54	106
65°	73	59	45	32	34	72
75°	36	27	19	16	16	39
85°	7	5	4	4	4	9
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°	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5
2.5°	548.4	548.4	548.4	548.4	547.0	547.0	547.0	545.7	545.7	544.3	544.3
5°	559.2	559.2	557.8	557.8	556.5	556.5	555.1	553.8	552.4	551.1	548.4
7.5°	564.6	564.6	563.2	563.2	561.9	561.9	560.5	559.2	556.5	553.8	551.1
10°	567.3	565.9	565.9	564.6	563.2	561.9	560.5	559.2	555.1	552.4	548.4
12.5°	565.9	564.6	564.6	561.9	560.5	559.2	557.8	555.1	551.1	547.0	543.0
15°	560.5	559.2	557.8	556.5	553.8	552.4	551.1	547.0	543.0	537.6	532.2
17.5°	549.7	548.4	548.4	545.7	543.0	541.6	540.3	536.2	530.8	525.4	520.0
20°	534.9	533.5	532.2	530.8	528.1	526.8	525.4	521.4	516.0	510.6	503.8
22.5°	514.6	513.3	513.3	511.9	509.2	507.9	506.5	502.5	498.4	491.6	484.9
25°	494.3	493.0	491.6	490.3	487.6	484.9	483.5	479.5	475.4	471.4	463.3
27.5°	466.0	467.3	467.3	466.0	464.6	463.3	461.9	456.5	451.1	445.7	439.0
30°	418.7	416.0	418.7	422.8	426.8	428.2	432.2	432.2	426.8	420.1	412.0
32.5°	366.0	367.4	368.7	374.1	379.5	380.9	383.6	391.7	398.4	394.4	386.3
35°	317.4	318.8	321.5	325.5	329.6	336.3	339.0	345.8	352.5	360.6	357.9
37.5°	274.2	275.5	278.2	280.9	287.7	290.4	295.8	301.2	312.0	318.8	317.4
40°	237.7	239.1	240.4	243.1	251.2	252.6	255.3	263.4	270.1	275.5	272.8
42.5°	209.4	208.0	210.7	213.4	217.5	218.8	221.5	226.9	232.3	235.0	235.0
45°	183.7	185.0	186.4	189.1	190.4	193.1	194.5	198.5	199.9	201.3	201.3
47.5°	164.8	164.8	166.1	167.5	168.8	170.2	171.5	172.9	172.9	172.9	171.5
50°	147.2	147.2	148.6	149.9	149.9	151.3	151.3	151.3	149.9	148.6	147.2
52.5°	131.0	131.0	132.4	133.7	133.7	133.7	133.7	132.4	131.0	129.7	127.0
55°	117.5	117.5	118.9	118.9	118.9	118.9	118.9	116.2	113.5	112.1	110.8
57.5°	105.4	105.4	105.4	105.4	105.4	105.4	104.0	101.3	99.9	97.2	95.9
60°	93.2	93.2	93.2	93.2	93.2	91.8	90.5	89.1	86.4	83.7	82.4
62.5°	82.4	82.4	82.4	82.4	81.0	79.7	79.7	77.0	75.6	72.9	70.2
65°	72.9	72.9	71.6	71.6	70.2	68.9	68.9	66.2	64.8	62.1	59.4
67.5°	63.5	62.1	62.1	62.1	60.8	59.4	58.1	56.7	55.4	52.7	50.0
70°	52.7	52.7	54.0	52.7	51.3	50.0	50.0	47.3	45.9	44.6	41.9
72.5°	44.6	44.6	44.6	43.2	43.2	41.9	40.5	39.2	37.8	36.5	33.8
75°	36.5	36.5	36.5	35.1	33.8	33.8	33.8	31.1	31.1	28.4	27.0
77.5°	28.4	28.4	28.4	27.0	27.0	27.0	25.7	24.3	23.0	23.0	21.6
80°	21.6	21.6	20.3	20.3	18.9	18.9	18.9	17.6	17.6	16.2	14.9
82.5°	14.9	13.5	13.5	13.5	13.5	13.5	12.2	12.2	10.8	10.8	9.5
85°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	5.4	5.4	5.4
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5
2.5°	541.6	541.6	540.3	538.9	537.6	537.6	536.2	534.9	533.5	532.2	529.5
5°	547.0	544.3	541.6	538.9	538.9	537.6	533.5	530.8	528.1	525.4	522.7
7.5°	547.0	543.0	540.3	536.2	534.9	532.2	528.1	524.1	520.0	516.0	511.9
10°	544.3	538.9	534.9	529.5	526.8	524.1	518.7	513.3	507.9	503.8	497.0
12.5°	536.2	530.8	525.4	518.7	516.0	513.3	506.5	499.7	494.3	487.6	482.2
15°	525.4	520.0	513.3	506.5	502.5	499.7	491.6	483.5	475.4	468.7	461.9
17.5°	513.3	505.2	498.4	490.3	486.2	480.8	472.7	464.6	456.5	449.8	441.7
20°	495.7	488.9	479.5	470.0	466.0	460.6	452.5	443.0	434.9	425.5	417.4
22.5°	478.1	468.7	459.2	448.4	444.4	439.0	429.5	418.7	410.6	401.1	391.7
25°	455.2	445.7	436.3	426.8	420.1	416.0	406.6	395.7	386.3	375.5	366.0
27.5°	430.9	421.4	412.0	401.1	395.7	390.3	378.2	367.4	356.6	348.5	337.7
30°	403.9	395.7	384.9	370.1	363.3	357.9	344.4	332.3	321.5	313.4	306.6
32.5°	376.8	364.7	349.8	335.0	328.2	321.5	308.0	297.1	289.0	280.9	272.8
35°	341.7	328.2	314.7	301.2	294.4	287.7	276.9	266.1	256.6	249.9	243.1
37.5°	309.3	294.4	279.6	267.4	260.7	255.3	243.1	235.0	226.9	220.2	213.4
40°	270.1	262.0	245.8	235.0	228.3	222.9	212.1	204.0	197.2	191.8	186.4
42.5°	232.3	228.3	214.8	204.0	198.5	194.5	185.0	178.3	171.5	166.1	163.4
45°	198.5	193.1	187.7	176.9	172.9	168.8	160.7	154.0	148.6	145.9	141.8
47.5°	170.2	166.1	160.7	152.6	148.6	145.9	139.1	133.7	129.7	127.0	124.3
50°	144.5	141.8	137.8	132.4	128.3	125.6	120.2	116.2	112.1	109.4	108.1
52.5°	124.3	121.6	117.5	113.5	110.8	108.1	104.0	99.9	98.6	95.9	93.2
55°	106.7	104.0	101.3	97.2	95.9	94.5	90.5	87.8	85.1	83.7	82.4
57.5°	93.2	90.5	86.4	83.7	82.4	81.0	78.3	75.6	72.9	71.6	70.2
60°	79.7	77.0	74.3	71.6	70.2	68.9	67.5	64.8	62.1	60.8	60.8
62.5°	68.9	66.2	63.5	60.8	60.8	59.4	56.7	55.4	54.0	52.7	51.3
65°	58.1	55.4	54.0	51.3	50.0	50.0	48.6	45.9	44.6	44.6	43.2
67.5°	48.6	47.3	44.6	43.2	41.9	41.9	39.2	39.2	37.8	36.5	35.1
70°	40.5	37.8	36.5	35.1	35.1	33.8	32.4	32.4	31.1	29.7	28.4
72.5°	32.4	31.1	29.7	28.4	28.4	27.0	27.0	25.7	24.3	24.3	23.0
75°	25.7	24.3	24.3	21.6	21.6	21.6	20.3	20.3	18.9	18.9	17.6
77.5°	20.3	18.9	17.6	17.6	16.2	16.2	16.2	14.9	14.9	14.9	13.5
80°	13.5	13.5	12.2	12.2	12.2	12.2	10.8	10.8	10.8	10.8	9.5
82.5°	9.5	8.1	8.1	8.1	8.1	8.1	6.8	6.8	6.8	6.8	6.8
85°	5.4	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5
2.5°	528.1	526.8	525.4	525.4	524.1	522.7	522.7	521.4	520.0	518.7	517.3
5°	520.0	517.3	514.6	513.3	511.9	510.6	507.9	505.2	503.8	501.1	499.7
7.5°	507.9	503.8	501.1	498.4	497.0	493.0	490.3	487.6	483.5	482.2	479.5
10°	493.0	487.6	482.2	480.8	478.1	474.1	470.0	464.6	461.9	459.2	456.5
12.5°	475.4	470.0	463.3	460.6	457.9	452.5	447.1	443.0	437.6	434.9	430.9
15°	455.2	448.4	441.7	439.0	436.3	429.5	424.1	418.7	414.7	409.3	405.2
17.5°	433.6	425.5	417.4	414.7	412.0	405.2	399.8	393.0	389.0	383.6	379.5
20°	409.3	401.1	393.0	391.7	386.3	379.5	372.8	367.4	362.0	357.9	352.5
22.5°	383.6	375.5	368.7	364.7	360.6	353.9	347.1	341.7	336.3	329.6	325.5
25°	359.3	349.8	341.7	340.4	335.0	329.6	322.8	316.1	310.7	305.3	301.2
27.5°	330.9	324.2	316.1	312.0	309.3	302.6	297.1	290.4	285.0	279.6	275.5
30°	298.5	291.7	286.3	283.6	280.9	276.9	270.1	266.1	260.7	255.3	251.2
32.5°	267.4	263.4	258.0	255.3	253.9	248.5	245.8	241.8	236.4	232.3	228.3
35°	236.4	233.7	228.3	228.3	225.6	222.9	220.2	217.5	214.8	210.7	206.7
37.5°	209.4	206.7	202.6	199.9	199.9	197.2	195.8	193.1	191.8	189.1	186.4
40°	183.7	179.6	176.9	175.6	174.2	172.9	170.2	168.8	168.8	167.5	164.8
42.5°	158.0	156.7	154.0	152.6	154.0	151.3	151.3	149.9	147.2	145.9	144.5
45°	139.1	136.4	136.4	135.1	135.1	133.7	132.4	131.0	129.7	127.0	127.0
47.5°	121.6	120.2	118.9	118.9	117.5	117.5	116.2	114.8	113.5	112.1	109.4
50°	106.7	105.4	104.0	104.0	102.7	102.7	101.3	99.9	98.6	95.9	93.2
52.5°	93.2	91.8	90.5	90.5	89.1	89.1	87.8	85.1	83.7	82.4	79.7
55°	81.0	79.7	78.3	78.3	77.0	77.0	75.6	72.9	70.2	68.9	66.2
57.5°	68.9	68.9	67.5	67.5	66.2	64.8	63.5	60.8	59.4	58.1	55.4
60°	59.4	58.1	58.1	56.7	56.7	55.4	52.7	51.3	48.6	47.3	44.6
62.5°	50.0	50.0	48.6	47.3	47.3	44.6	43.2	41.9	40.5	37.8	39.2
65°	41.9	40.5	40.5	39.2	39.2	36.5	35.1	33.8	32.4	32.4	33.8
67.5°	35.1	33.8	32.4	32.4	31.1	29.7	28.4	28.4	28.4	28.4	28.4
70°	28.4	27.0	25.7	25.7	25.7	24.3	23.0	23.0	23.0	24.3	24.3
72.5°	23.0	21.6	20.3	20.3	18.9	18.9	18.9	18.9	18.9	20.3	20.3
75°	17.6	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
77.5°	13.5	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2	12.2
80°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
85°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
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°	533.5	533.5	533.5	533.5	533.5	533.5	533.5	533.5
2.5°	517.3	517.3	517.3	516.0	516.0	516.0	516.0	514.6
5°	498.4	498.4	497.0	497.0	495.7	495.7	495.7	494.3
7.5°	476.8	475.4	475.4	474.1	472.7	471.4	471.4	470.0
10°	453.8	451.1	448.4	449.8	447.1	447.1	444.4	444.4
12.5°	428.2	425.5	425.5	422.8	420.1	420.1	418.7	418.7
15°	401.1	398.4	397.1	395.7	394.4	393.0	393.0	391.7
17.5°	374.1	372.8	371.4	370.1	367.4	366.0	364.7	363.3
20°	348.5	344.4	343.1	343.1	339.0	339.0	336.3	336.3
22.5°	321.5	317.4	317.4	316.1	313.4	310.7	310.7	309.3
25°	295.8	293.1	290.4	289.0	287.7	285.0	285.0	283.6
27.5°	270.1	267.4	266.1	264.7	262.0	260.7	259.3	258.0
30°	247.2	243.1	241.8	240.4	237.7	236.4	235.0	235.0
32.5°	224.2	220.2	220.2	217.5	216.1	213.4	212.1	212.1
35°	202.6	199.9	197.2	195.8	193.1	193.1	190.4	190.4
37.5°	181.0	178.3	178.3	175.6	172.9	171.5	170.2	168.8
40°	162.1	158.0	158.0	155.3	152.6	151.3	149.9	149.9
42.5°	143.2	139.1	137.8	136.4	133.7	131.0	131.0	129.7
45°	124.3	121.6	120.2	118.9	116.2	113.5	113.5	112.1
47.5°	106.7	105.4	102.7	101.3	99.9	97.2	95.9	95.9
50°	91.8	90.5	87.8	86.4	83.7	81.0	79.7	78.3
52.5°	77.0	75.6	74.3	72.9	70.2	67.5	66.2	64.8
55°	64.8	63.5	60.8	60.8	58.1	56.7	55.4	54.0
57.5°	52.7	51.3	50.0	50.0	48.6	48.6	48.6	48.6
60°	43.2	44.6	44.6	44.6	44.6	44.6	44.6	43.2
62.5°	39.2	39.2	39.2	39.2	39.2	39.2	39.2	39.2
65°	33.8	33.8	33.8	33.8	33.8	33.8	33.8	33.8
67.5°	28.4	28.4	29.7	28.4	28.4	28.4	28.4	28.4
70°	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3
72.5°	20.3	20.3	20.3	20.3	20.3	20.3	20.3	20.3
75°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
77.5°	13.5	13.5	12.2	12.2	13.5	13.5	12.2	13.5
80°	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
85°	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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