

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: P242009

Luminaire Tested: **PRS415D010-S4M12-41SWWH-3000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P242009
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: PRS415D010-S4M12-41SWWH-3000K
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WALL WASH DISTRIBUTION, WW TRIM HAZE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 740.5 lumens
Efficiency: N/A
Efficacy: 61.7 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

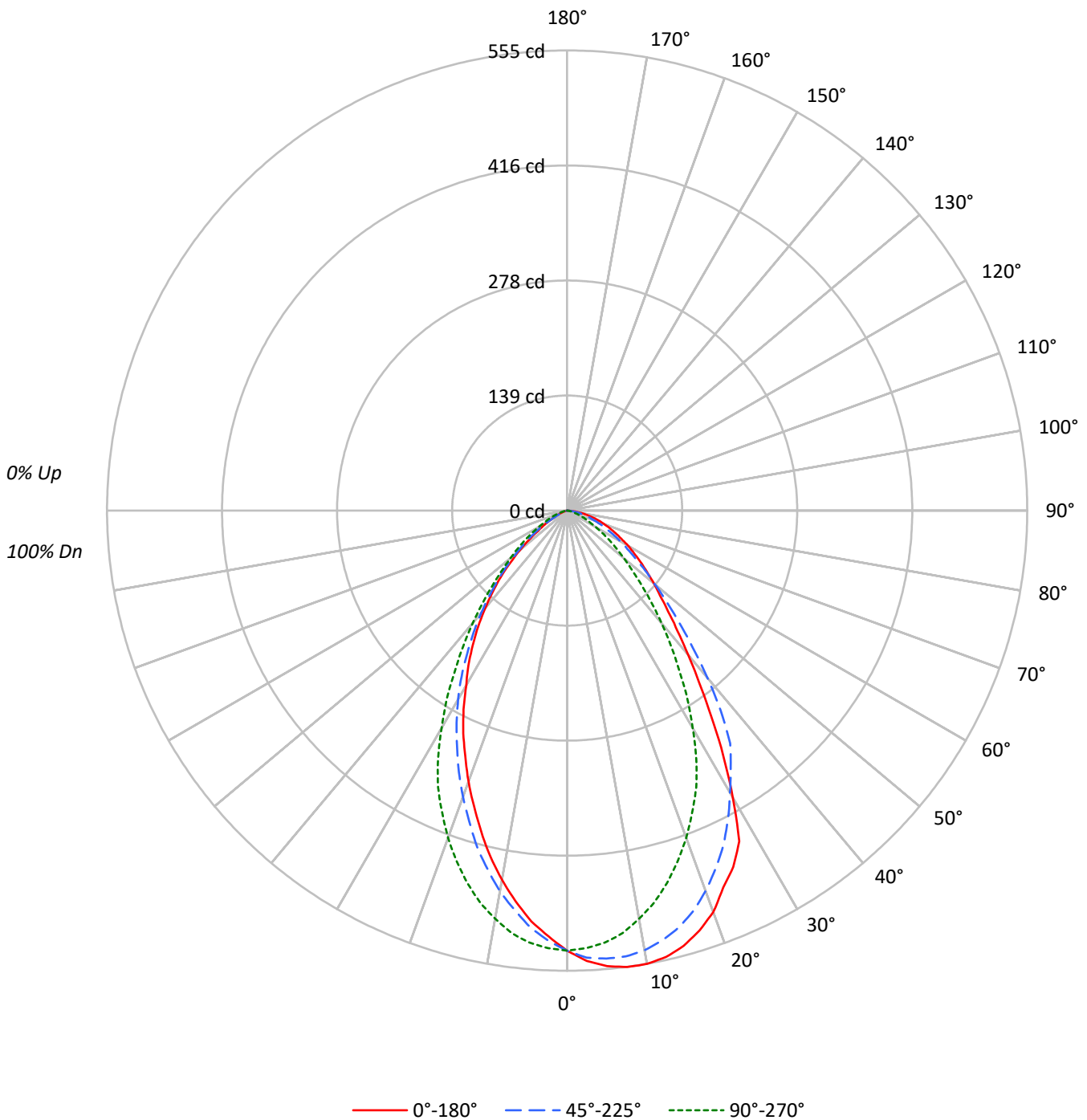
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	40629	40629	40629
5°	42367	40185	38210
10°	43152	38847	35147
15°	43077	36856	31753
20°	41974	34211	28330
25°	40041	31114	25024
30°	35301	26754	21522
35°	28285	22034	18539
40°	22652	17636	15318
45°	18684	13672	12275
50°	16266	10586	8895
55°	14439	8247	5672
60°	13012	6108	3751
65°	11664	4437	2336
70°	10675	3178	1432
75°	9523	1893	769
80°	7934	1146	573
85°	5621	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.3	6.7
10°-20°	131.4	17.7
20°-30°	172.9	23.4
30°-40°	160.5	21.7
40°-50°	112.1	15.1
50°-60°	65.8	8.9
60°-70°	32.7	4.4
70°-80°	13.2	1.8
80°-90°	2.4	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°	353.7	47.8
0°-40°	514.2	69.4
0°-60°	692.2	93.5
0°-90°	740.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	740.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	531	531	531	531	531	
5°	551	542	523	505	497	53
15°	544	520	465	420	401	153
25°	474	446	368	314	296	215
35°	303	343	236	210	198	191
45°	173	191	126	117	113	135
55°	108	100	62	50	42	97
65°	64	52	24	10	13	64
75°	32	22	6	3	3	34
85°	6	4	0	0	0	8
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°	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8
2.5°	543.6	542.4	542.4	542.4	542.4	541.1	541.1	541.1	539.8	539.8	539.8
5°	551.4	551.4	550.1	550.1	548.8	548.8	548.8	547.5	546.2	544.9	542.4
7.5°	555.2	555.2	554.0	554.0	552.7	551.4	551.4	548.8	547.5	544.9	542.4
10°	555.2	555.2	554.0	554.0	551.4	550.1	550.1	548.8	544.9	542.4	538.5
12.5°	551.4	551.4	550.1	548.8	547.5	546.2	544.9	542.4	538.5	534.6	530.8
15°	543.6	543.6	542.4	541.1	538.5	537.2	535.9	533.3	529.5	524.3	520.5
17.5°	530.8	530.8	529.5	528.2	526.9	524.3	523.0	519.2	515.3	511.4	506.3
20°	515.3	514.0	514.0	512.7	510.2	510.2	507.6	503.7	499.8	493.4	488.3
22.5°	492.1	493.4	493.4	490.8	488.3	488.3	485.7	484.4	479.2	474.1	467.6
25°	474.1	472.8	472.8	470.2	466.4	466.4	465.1	461.2	456.0	450.9	445.7
27.5°	449.6	448.3	448.3	448.3	444.5	444.5	441.9	436.7	431.6	427.7	420.0
30°	399.4	403.2	403.2	407.1	411.0	413.5	416.1	413.5	407.1	400.7	392.9
32.5°	350.4	353.0	355.6	359.4	364.6	368.4	372.3	376.2	381.3	374.9	367.2
35°	302.7	305.3	306.6	311.8	318.2	319.5	324.6	333.7	338.8	344.0	342.7
37.5°	261.5	262.8	265.4	269.2	274.4	278.3	282.1	288.6	297.6	305.3	304.0
40°	226.7	225.4	229.3	230.6	235.8	239.6	244.8	249.9	258.9	262.8	262.8
42.5°	197.1	197.1	198.4	201.0	204.8	207.4	210.0	215.1	222.9	224.2	224.2
45°	172.6	172.6	173.9	176.5	179.1	179.1	182.9	188.1	189.4	190.7	190.7
47.5°	152.0	153.3	153.3	154.6	155.9	158.5	159.7	162.3	162.3	162.3	162.3
50°	136.6	136.6	136.6	137.8	139.1	140.4	140.4	140.4	140.4	139.1	137.8
52.5°	121.1	121.1	121.1	122.4	122.4	123.7	123.7	122.4	121.1	119.8	118.5
55°	108.2	106.9	108.2	108.2	109.5	109.5	108.2	106.9	105.6	103.1	100.5
57.5°	95.3	95.3	95.3	95.3	96.6	95.3	95.3	94.0	91.5	88.9	86.3
60°	85.0	83.7	83.7	83.7	85.0	83.7	83.7	81.2	79.9	76.0	73.4
62.5°	73.4	73.4	73.4	74.7	73.4	73.4	72.1	69.6	68.3	65.7	63.1
65°	64.4	64.4	64.4	64.4	63.1	61.8	61.8	59.3	58.0	55.4	51.5
67.5°	55.4	55.4	55.4	55.4	54.1	52.8	52.8	50.2	49.0	46.4	43.8
70°	47.7	46.4	47.7	46.4	45.1	43.8	43.8	42.5	39.9	37.4	34.8
72.5°	39.9	39.9	39.9	38.6	37.4	36.1	36.1	33.5	32.2	30.9	28.3
75°	32.2	32.2	32.2	30.9	29.6	29.6	28.3	27.1	25.8	24.5	21.9
77.5°	24.5	24.5	24.5	24.5	23.2	21.9	21.9	20.6	19.3	18.0	16.7
80°	18.0	18.0	18.0	16.7	16.7	16.7	15.5	15.5	14.2	12.9	11.6
82.5°	11.6	11.6	11.6	11.6	10.3	10.3	10.3	9.0	9.0	7.7	6.4
85°	6.4	6.4	6.4	6.4	5.2	5.2	5.2	5.2	5.2	3.9	3.9
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8
2.5°	538.5	537.2	535.9	534.6	534.6	533.3	532.1	530.8	529.5	528.2	528.2
5°	541.1	538.5	537.2	534.6	533.3	533.3	530.8	528.2	525.6	523.0	520.5
7.5°	539.8	537.2	533.3	530.8	529.5	526.9	524.3	520.5	516.6	514.0	510.2
10°	534.6	530.8	526.9	521.7	520.5	517.9	514.0	508.9	505.0	499.8	496.0
12.5°	526.9	521.7	516.6	511.4	508.9	506.3	501.1	494.7	489.5	484.4	477.9
15°	514.0	510.2	502.4	497.3	493.4	490.8	484.4	477.9	471.5	465.1	459.9
17.5°	498.6	493.4	487.0	479.2	475.4	472.8	465.1	456.0	449.6	443.2	438.0
20°	483.1	475.4	467.6	459.9	454.8	452.2	443.2	434.1	427.7	420.0	412.2
22.5°	462.5	453.5	445.7	436.7	432.9	427.7	420.0	409.7	400.7	394.2	385.2
25°	438.0	431.6	421.3	412.2	407.1	403.2	392.9	385.2	376.2	368.4	359.4
27.5°	413.5	404.5	396.8	387.8	381.3	376.2	367.2	356.9	347.8	337.5	329.8
30°	386.5	380.0	369.7	355.6	349.1	344.0	332.4	320.8	311.8	302.7	296.3
32.5°	359.4	346.5	335.0	322.1	315.6	310.5	297.6	288.6	278.3	270.5	264.1
35°	327.2	314.3	301.5	286.0	280.8	274.4	262.8	253.8	243.5	235.8	230.6
37.5°	295.0	279.6	265.4	253.8	248.6	240.9	230.6	220.3	212.6	206.1	199.7
40°	260.2	247.3	234.5	220.3	215.1	210.0	199.7	192.0	181.6	176.5	171.3
42.5°	221.6	216.4	203.5	192.0	185.5	180.4	170.1	162.3	155.9	150.7	145.6
45°	188.1	184.2	175.2	163.6	159.7	154.6	145.6	136.6	131.4	126.3	122.4
47.5°	159.7	155.9	149.4	139.1	134.0	130.1	122.4	115.9	110.8	105.6	103.1
50°	135.3	131.4	125.0	118.5	114.7	109.5	103.1	97.9	92.8	88.9	86.3
52.5°	114.7	110.8	104.3	99.2	96.6	92.8	86.3	82.4	77.3	74.7	72.1
55°	97.9	94.0	88.9	83.7	81.2	77.3	72.1	67.0	64.4	61.8	59.3
57.5°	83.7	78.6	74.7	70.9	68.3	64.4	59.3	56.7	52.8	50.2	47.7
60°	70.9	67.0	63.1	58.0	55.4	54.1	49.0	45.1	42.5	39.9	37.4
62.5°	59.3	55.4	51.5	47.7	46.4	43.8	39.9	36.1	33.5	30.9	29.6
65°	49.0	46.4	42.5	38.6	37.4	34.8	30.9	28.3	25.8	24.5	23.2
67.5°	41.2	37.4	34.8	30.9	29.6	28.3	24.5	21.9	20.6	19.3	16.7
70°	32.2	29.6	27.1	24.5	23.2	21.9	19.3	16.7	15.5	14.2	12.9
72.5°	25.8	23.2	20.6	18.0	16.7	16.7	14.2	12.9	11.6	10.3	9.0
75°	20.6	18.0	15.5	14.2	12.9	11.6	10.3	9.0	7.7	6.4	6.4
77.5°	14.2	12.9	11.6	9.0	9.0	7.7	6.4	6.4	5.2	5.2	3.9
80°	10.3	9.0	7.7	6.4	5.2	5.2	3.9	3.9	2.6	2.6	2.6
82.5°	6.4	5.2	3.9	3.9	3.9	2.6	2.6	2.6	1.3	1.3	1.3
85°	2.6	2.6	1.3	1.3	1.3	1.3	1.3	1.3	0.0	0.0	0.0
87.5°	1.3	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°	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8
2.5°	526.9	525.6	524.3	523.0	523.0	523.0	520.5	520.5	519.2	517.9	517.9
5°	519.2	516.6	514.0	514.0	511.4	510.2	508.9	506.3	505.0	503.7	502.4
7.5°	506.3	503.7	499.8	498.6	497.3	494.7	490.8	489.5	485.7	484.4	483.1
10°	492.1	487.0	484.4	480.5	480.5	475.4	472.8	468.9	466.4	463.8	461.2
12.5°	474.1	467.6	462.5	461.2	458.6	453.5	450.9	445.7	443.2	440.6	438.0
15°	453.5	448.3	441.9	439.3	436.7	431.6	427.7	423.8	420.0	416.1	413.5
17.5°	430.3	425.1	417.4	414.8	413.5	407.1	401.9	396.8	392.9	390.3	386.5
20°	405.8	399.4	392.9	390.3	387.8	382.6	377.5	372.3	367.2	363.3	360.7
22.5°	378.8	371.0	365.9	363.3	360.7	354.3	350.4	345.3	341.4	337.5	335.0
25°	353.0	345.3	338.8	336.2	332.4	327.2	323.4	319.5	314.3	310.5	307.9
27.5°	323.4	315.6	310.5	309.2	305.3	301.5	296.3	291.1	288.6	284.7	282.1
30°	291.1	286.0	282.1	278.3	277.0	273.1	270.5	266.7	262.8	258.9	255.1
32.5°	257.7	253.8	248.6	248.6	247.3	244.8	242.2	239.6	237.0	234.5	230.6
35°	226.7	221.6	219.0	219.0	216.4	215.1	215.1	212.6	210.0	208.7	207.4
37.5°	195.8	193.2	189.4	189.4	188.1	188.1	186.8	185.5	185.5	185.5	184.2
40°	167.5	164.9	162.3	161.0	161.0	161.0	159.7	161.0	161.0	161.0	161.0
42.5°	141.7	140.4	137.8	137.8	137.8	137.8	137.8	137.8	137.8	139.1	139.1
45°	121.1	118.5	117.2	115.9	117.2	115.9	115.9	117.2	117.2	118.5	117.2
47.5°	100.5	100.5	97.9	97.9	97.9	97.9	97.9	97.9	97.9	97.9	99.2
50°	85.0	82.4	82.4	81.2	81.2	81.2	81.2	81.2	79.9	81.2	81.2
52.5°	70.9	68.3	68.3	67.0	67.0	65.7	65.7	64.4	64.4	64.4	64.4
55°	58.0	55.4	55.4	54.1	54.1	52.8	52.8	51.5	50.2	50.2	49.0
57.5°	46.4	43.8	43.8	42.5	42.5	41.2	39.9	38.6	37.4	37.4	36.1
60°	36.1	34.8	33.5	33.5	32.2	30.9	29.6	27.1	25.8	25.8	24.5
62.5°	28.3	27.1	25.8	24.5	24.5	21.9	20.6	18.0	16.7	15.5	16.7
65°	21.9	20.6	19.3	18.0	16.7	15.5	12.9	11.6	10.3	11.6	11.6
67.5°	15.5	14.2	12.9	12.9	11.6	10.3	7.7	7.7	7.7	7.7	9.0
70°	11.6	10.3	9.0	7.7	6.4	5.2	5.2	5.2	5.2	5.2	6.4
72.5°	7.7	6.4	5.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	5.2	3.9	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	3.9	2.6	1.3	1.3	1.3	1.3	1.3	2.6	2.6	1.3	2.6
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.0	0.0	0.0	1.3	1.3	0.0	1.3	1.3	0.0	1.3	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°	530.8	530.8	530.8	530.8	530.8	530.8	530.8	530.8
2.5°	517.9	516.6	516.6	515.3	515.3	516.6	515.3	514.0
5°	499.8	499.8	499.8	498.6	497.3	497.3	497.3	497.3
7.5°	480.5	479.2	479.2	479.2	477.9	475.4	475.4	475.4
10°	458.6	456.0	456.0	454.8	454.8	453.5	453.5	452.2
12.5°	435.4	432.9	431.6	430.3	429.0	427.7	429.0	427.7
15°	411.0	408.4	405.8	405.8	404.5	401.9	401.9	400.7
17.5°	383.9	380.0	380.0	378.8	376.2	376.2	374.9	373.6
20°	356.9	354.3	353.0	351.7	350.4	347.8	347.8	347.8
22.5°	329.8	327.2	325.9	325.9	324.6	322.1	322.1	320.8
25°	304.0	301.5	300.2	298.9	297.6	297.6	296.3	296.3
27.5°	279.6	275.7	275.7	273.1	271.8	270.5	270.5	270.5
30°	252.5	251.2	248.6	249.9	246.1	246.1	246.1	243.5
32.5°	228.0	226.7	225.4	225.4	222.9	221.6	222.9	221.6
35°	204.8	203.5	202.3	201.0	199.7	199.7	198.4	198.4
37.5°	182.9	180.4	179.1	179.1	177.8	177.8	176.5	176.5
40°	159.7	159.7	158.5	157.2	155.9	154.6	153.3	153.3
42.5°	139.1	137.8	136.6	136.6	135.3	132.7	132.7	132.7
45°	118.5	117.2	115.9	115.9	114.7	113.4	112.1	113.4
47.5°	97.9	97.9	97.9	96.6	95.3	94.0	92.8	92.8
50°	81.2	79.9	79.9	79.9	77.3	76.0	74.7	74.7
52.5°	64.4	63.1	63.1	63.1	61.8	59.3	58.0	58.0
55°	49.0	49.0	49.0	47.7	46.4	45.1	43.8	42.5
57.5°	34.8	34.8	34.8	34.8	34.8	34.8	33.5	33.5
60°	24.5	25.8	25.8	27.1	27.1	25.8	24.5	24.5
62.5°	18.0	19.3	19.3	19.3	19.3	18.0	18.0	18.0
65°	12.9	12.9	12.9	12.9	12.9	12.9	12.9	12.9
67.5°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
70°	6.4	6.4	6.4	6.4	6.4	6.4	5.2	6.4
72.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
75°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
77.5°	1.3	2.6	1.3	1.3	1.3	1.3	1.3	1.3
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	1.3	1.3	0.0	0.0	0.0	0.0	1.3
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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