

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: P345474

Luminaire Tested: **PR4FS12D010 PR4M12WW8FSBZ 1500Lm4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345474
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1908-453-9)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PR4FS12D010 PR4M12WW8FSBZ 1500lm4000K
Description: PR4 WALLWASH ASSEMBLY WITH, BRONZE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 80CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1094.9 lumens
Efficiency: N/A
Efficacy: 78.8 lumens/watt
Spacing Criteria (0/90/45): 0.94 / 1.12 / 1.1
Luminous Opening: Circular (Dia: 0.4' x H: 0')
CIE Type: Direct

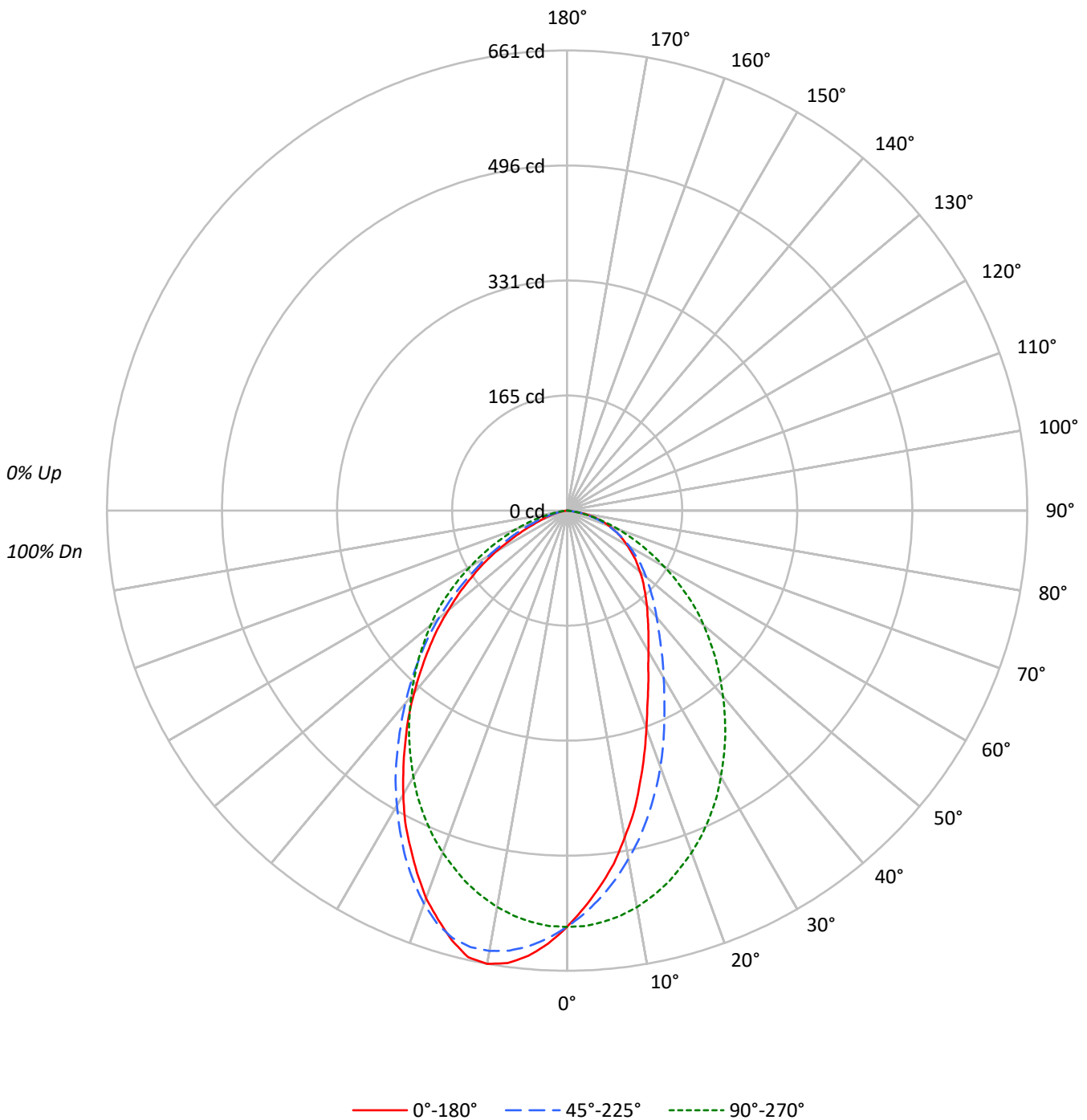
Input Watts (W): 13.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66
4	87	76	69	63	85	75	68	62	73	66	61	70	65	61	68	64	60	58
5	81	69	61	55	79	68	60	55	66	59	54	64	58	54	62	57	53	51
6	75	63	55	49	73	62	54	49	60	53	48	59	53	48	57	52	48	46
7	70	58	50	44	68	57	49	44	55	48	43	54	48	43	53	47	43	41
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37
9	61	49	41	36	60	48	41	36	47	41	36	46	40	36	45	40	36	34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	33	31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	52307	52307	52307
5°	47581	52085	56387
10°	42304	51355	58727
15°	36620	50213	57874
20°	30959	48673	55142
25°	26608	46808	51460
30°	23614	44602	47551
35°	21676	42264	43267
40°	20382	39781	39051
45°	19347	37333	34785
50°	18602	34822	30318
55°	18071	31796	25665
60°	17406	28060	20590
65°	17013	24195	14881
70°	16368	19795	10306
75°	15208	14938	7198
80°	10326	7959	3576
85°	803	3212	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.0	5.1
10°-20°	151.5	13.8
20°-30°	203.9	18.6
30°-40°	213.6	19.5
40°-50°	191.6	17.5
50°-60°	146.7	13.4
60°-70°	89.3	8.2
70°-80°	37.9	3.5
80°-90°	4.3	0.4
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°	411.4	37.6
0°-40°	625.1	57.1
0°-60°	963.3	88.0
0°-90°	1094.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1094.9	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	598	598	598	598	598	
5°	542	558	593	628	642	50
15°	404	452	554	636	639	113
25°	276	330	485	550	533	127
35°	203	234	396	426	405	127
45°	156	172	302	300	281	121
55°	118	126	208	182	168	106
65°	82	83	117	87	72	81
75°	45	40	44	27	21	46
85°	1	2	3	1	0	5
90°	0	0	0	0	0	



TEST NUMBER: P345474

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0
2.5°	570.3	571.1	572.7	571.9	573.5	573.5	573.5	575.1	576.6	577.4	579.0
5°	541.9	542.7	543.5	545.1	545.8	545.1	547.4	549.8	552.2	555.3	557.7
7.5°	511.9	511.9	511.1	513.5	516.6	517.4	519.0	521.4	524.5	529.3	534.0
10°	476.3	477.1	478.7	479.5	484.2	485.0	487.4	490.5	496.1	501.6	507.9
12.5°	443.2	442.4	443.2	445.5	448.7	452.6	455.0	458.9	466.1	473.2	481.1
15°	404.4	405.2	407.6	410.0	414.7	417.1	421.0	428.1	435.3	442.4	451.8
17.5°	368.1	367.3	370.5	374.4	378.4	382.3	385.5	391.8	401.3	411.6	421.8
20°	332.6	331.8	334.1	337.3	343.6	346.0	349.9	359.4	368.1	379.2	391.8
22.5°	301.0	301.0	303.3	307.3	311.2	313.6	317.6	325.5	335.7	348.4	361.0
25°	275.7	275.7	277.3	279.6	284.4	286.7	290.7	296.2	305.7	317.6	330.2
27.5°	252.0	253.6	254.4	256.7	260.7	263.0	265.4	271.7	279.6	289.9	301.8
30°	233.8	234.6	235.4	237.0	240.1	241.7	244.9	250.4	257.5	266.2	277.3
32.5°	217.2	218.0	218.0	220.4	222.8	225.1	226.7	231.4	236.2	244.9	255.1
35°	203.0	203.0	204.6	205.4	207.0	208.5	210.1	214.1	219.6	225.9	233.8
37.5°	189.6	189.6	190.4	192.0	193.5	195.1	195.9	199.1	203.8	209.3	215.7
40°	178.5	178.5	178.5	180.1	181.7	182.5	183.3	186.4	190.4	194.3	199.9
42.5°	166.7	167.5	168.3	169.0	169.8	171.4	172.2	173.8	176.9	180.1	185.6
45°	156.4	157.2	157.2	158.0	159.6	159.6	160.4	162.7	165.1	168.3	172.2
47.5°	146.9	146.9	146.9	147.7	148.5	149.3	150.1	151.7	154.0	155.6	159.6
50°	136.7	136.7	137.4	138.2	139.0	139.0	139.8	140.6	143.0	144.6	147.7
52.5°	127.2	127.2	128.0	128.0	128.8	128.8	129.5	131.1	131.9	134.3	136.7
55°	118.5	117.7	118.5	118.5	118.5	119.3	119.3	120.9	122.4	123.2	125.6
57.5°	108.2	109.0	109.0	109.8	109.8	109.8	110.6	110.6	112.2	113.0	113.7
60°	99.5	100.3	100.3	100.3	100.3	100.3	101.1	101.1	101.9	102.7	103.5
62.5°	90.8	90.8	90.8	90.8	90.8	91.6	91.6	91.6	91.6	92.4	93.2
65°	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.2	82.9
67.5°	72.7	72.7	72.7	73.5	72.7	72.7	72.7	72.7	72.7	72.7	71.9
70°	64.0	64.0	64.0	64.0	64.0	63.2	63.2	62.4	62.4	61.6	61.6
72.5°	54.5	54.5	54.5	53.7	53.7	53.7	52.9	52.1	51.3	51.3	51.3
75°	45.0	45.0	44.2	44.2	43.4	43.4	42.7	41.9	41.1	40.3	40.3
77.5°	34.0	34.0	34.0	34.0	33.2	32.4	32.4	31.6	30.8	30.8	30.0
80°	20.5	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.7	19.0	19.0
82.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
85°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.8	1.6
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°	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0
2.5°	580.6	582.2	584.5	586.1	586.9	587.7	590.1	592.4	594.8	597.2	598.8
5°	561.6	564.8	568.0	571.9	573.5	575.9	580.6	584.5	588.5	593.2	597.2
7.5°	538.7	544.3	549.8	556.1	558.5	560.9	567.2	574.3	579.8	586.9	593.2
10°	515.0	521.4	528.5	537.2	541.1	545.1	553.0	561.6	569.5	578.2	586.1
12.5°	488.2	498.4	507.9	517.4	521.4	526.1	536.4	546.6	556.9	567.2	576.6
15°	461.3	471.6	483.4	494.5	500.0	506.3	518.2	530.8	542.7	554.5	565.6
17.5°	434.5	444.7	457.4	471.6	478.7	485.0	497.7	511.9	526.1	538.7	553.0
20°	404.4	417.9	432.9	447.9	455.0	462.9	477.9	492.9	508.7	522.9	537.9
22.5°	375.2	389.4	407.6	422.6	430.5	438.4	455.8	473.2	489.0	504.8	519.8
25°	346.0	362.6	380.0	398.1	406.8	415.5	433.7	450.3	468.4	485.0	502.4
27.5°	317.6	334.9	353.1	372.1	381.5	391.0	409.2	428.1	446.3	464.5	481.9
30°	290.7	307.3	327.0	346.8	356.3	366.5	385.5	405.2	423.4	441.6	460.5
32.5°	267.0	281.2	301.0	320.7	331.0	341.2	361.8	381.5	399.7	418.7	438.4
35°	244.9	258.3	275.7	296.2	306.5	316.8	337.3	357.8	377.6	395.8	414.7
37.5°	225.9	237.8	252.8	270.9	282.8	293.1	313.6	334.1	353.1	372.1	390.2
40°	207.8	218.0	232.2	249.6	259.1	269.4	289.9	311.2	330.2	348.4	366.5
42.5°	192.0	200.6	212.5	227.5	237.8	246.5	267.8	288.3	306.5	324.7	342.8
45°	177.7	184.8	194.3	207.0	215.7	226.7	246.5	265.4	283.6	301.8	319.1
47.5°	163.5	169.8	177.7	189.6	196.7	205.4	225.1	243.3	261.5	278.1	294.6
50°	151.7	156.4	162.7	172.2	179.3	185.6	203.8	222.8	239.3	255.9	270.9
52.5°	139.8	143.0	148.5	157.2	161.9	168.3	184.1	201.4	218.0	233.8	247.2
55°	128.0	131.1	135.1	141.4	146.1	150.9	164.3	180.9	195.9	208.5	222.0
57.5°	116.1	118.5	121.6	127.2	130.3	134.3	145.3	158.8	172.2	184.8	195.1
60°	105.9	107.4	109.8	113.0	115.3	117.7	125.6	138.2	150.9	160.4	169.8
62.5°	94.0	94.8	96.4	99.5	101.1	102.7	108.2	119.3	129.5	138.2	146.1
65°	82.9	83.7	84.5	86.1	87.7	88.5	93.2	101.1	109.8	116.9	122.4
67.5°	71.9	72.7	72.7	74.3	74.3	75.8	78.2	82.9	90.8	96.4	101.1
70°	60.8	61.6	61.6	62.4	61.6	62.4	64.8	67.9	72.7	77.4	80.6
72.5°	50.6	49.8	49.8	49.8	49.8	50.6	51.3	52.9	56.9	60.8	61.6
75°	39.5	39.5	38.7	38.7	38.7	38.7	38.7	39.5	41.9	44.2	45.0
77.5°	29.2	28.4	28.4	27.6	27.6	27.6	26.9	26.9	27.6	29.2	29.2
80°	19.0	18.2	17.4	18.2	16.6	17.4	16.6	15.8	15.8	15.8	15.0
82.5°	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.1	7.1	7.1
85°	1.6	1.6	2.4	2.4	2.4	2.4	2.4	2.4	3.2	3.2	2.4
87.5°	1.6	1.6	1.6	2.4	2.4	2.4	2.4	2.4	3.2	3.2	3.2
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°	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0
2.5°	601.1	603.5	605.9	606.7	607.5	609.8	611.4	613.8	614.6	616.1	617.7
5°	601.1	605.9	609.8	612.2	613.8	617.7	621.7	624.0	628.0	630.4	632.7
7.5°	599.6	605.9	611.4	614.6	617.7	622.5	628.0	632.7	637.5	640.6	644.6
10°	594.8	602.7	609.8	613.8	617.7	624.8	631.2	636.7	642.2	647.0	650.9
12.5°	587.7	597.2	605.9	610.6	614.6	623.3	630.4	636.7	642.2	646.2	649.3
15°	577.4	589.3	599.6	604.3	609.0	618.5	625.6	631.2	635.9	638.3	640.6
17.5°	565.6	578.2	590.1	595.6	600.3	609.0	615.4	619.3	621.7	623.3	622.5
20°	552.2	565.6	577.4	583.0	588.5	595.6	600.3	601.9	601.1	600.3	598.8
22.5°	535.6	549.8	562.4	567.2	571.9	577.4	579.0	578.2	576.6	575.1	572.7
25°	518.2	532.4	544.3	548.2	552.2	554.5	553.7	552.2	549.8	547.4	543.5
27.5°	498.4	513.5	522.9	527.7	528.5	528.5	526.1	523.7	519.8	516.6	512.7
30°	477.9	490.5	500.0	501.6	502.4	500.8	498.4	494.5	489.0	486.6	482.6
32.5°	454.2	467.6	474.7	474.7	473.2	470.8	466.1	462.1	458.9	453.4	449.5
35°	432.1	442.4	446.3	446.3	443.9	440.0	436.0	430.5	425.8	422.6	417.1
37.5°	406.8	417.1	418.7	416.3	414.7	410.0	403.7	398.9	393.4	389.4	385.5
40°	383.1	390.2	388.6	386.3	384.7	380.0	372.8	367.3	361.8	357.0	353.1
42.5°	356.3	361.0	358.6	357.0	353.9	348.4	342.0	336.5	331.0	326.2	322.3
45°	331.8	334.1	330.2	327.0	324.7	318.3	313.6	305.7	300.2	295.4	292.3
47.5°	305.7	305.7	301.8	298.6	294.6	288.3	282.8	274.9	271.7	265.4	262.3
50°	280.4	278.1	273.3	269.4	266.2	259.1	252.0	246.5	240.9	236.2	233.0
52.5°	253.6	250.4	244.1	240.1	238.6	229.9	223.6	216.4	211.7	206.2	203.0
55°	226.7	222.0	214.9	211.7	208.5	201.4	194.3	187.2	182.5	178.5	175.4
57.5°	199.1	193.5	187.2	183.3	179.3	172.2	165.1	158.8	154.8	150.9	148.5
60°	170.6	166.7	160.4	156.4	152.5	146.1	138.2	133.5	130.3	125.6	124.8
62.5°	146.1	140.6	133.5	130.3	127.2	120.9	114.5	110.6	106.6	104.3	101.1
65°	121.6	116.1	109.8	106.6	104.3	98.7	94.0	90.1	86.9	83.7	81.4
67.5°	98.0	94.0	88.5	86.1	82.9	78.2	74.3	71.1	67.9	64.8	62.4
70°	78.2	73.5	68.7	67.1	65.6	60.8	57.7	54.5	51.3	49.0	46.6
72.5°	60.0	56.1	52.1	49.8	48.2	45.8	43.4	40.3	37.9	35.5	34.0
75°	42.7	40.3	37.1	35.5	34.0	32.4	29.2	27.6	26.9	25.3	23.7
77.5°	27.6	25.3	23.7	22.1	22.1	20.5	19.0	18.2	16.6	16.6	15.8
80°	14.2	13.4	12.6	12.6	12.6	11.1	10.3	10.3	9.5	8.7	8.7
82.5°	6.3	6.3	5.5	5.5	5.5	4.7	4.7	3.9	3.9	3.2	3.2
85°	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	0.8	0.8	0.8
87.5°	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	0.8	0.8	0.8
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°	598.0	598.0	598.0	598.0	598.0	598.0	598.0	598.0
2.5°	618.5	620.1	620.1	620.9	621.7	622.5	621.7	622.5
5°	635.1	637.5	638.3	638.3	639.8	640.6	642.2	642.2
7.5°	647.7	650.1	651.7	652.5	654.1	655.6	655.6	655.6
10°	654.1	656.4	657.2	658.8	659.6	660.4	661.2	661.2
12.5°	651.7	654.1	654.9	654.9	656.4	656.4	656.4	657.2
15°	641.4	640.6	640.6	640.6	639.8	639.8	639.8	639.1
17.5°	620.9	620.1	620.1	620.1	619.3	618.5	617.7	616.1
20°	598.0	596.4	594.8	595.6	594.0	593.2	592.4	592.4
22.5°	571.1	568.7	568.0	567.2	565.6	564.8	563.2	563.2
25°	541.9	540.3	537.9	537.2	536.4	534.8	533.2	533.2
27.5°	511.1	508.7	507.9	506.3	505.6	504.0	503.2	504.0
30°	479.5	477.1	476.3	474.7	471.6	473.2	471.6	470.8
32.5°	446.3	443.9	442.4	440.8	440.8	438.4	438.4	437.6
35°	413.9	411.6	410.0	409.2	407.6	407.6	406.0	405.2
37.5°	382.3	380.0	378.4	377.6	376.0	374.4	373.6	374.4
40°	349.9	347.6	346.0	345.2	343.6	342.0	342.0	342.0
42.5°	318.3	316.0	316.0	314.4	312.0	311.2	310.4	310.4
45°	289.1	286.0	285.2	283.6	283.6	282.0	281.2	281.2
47.5°	258.3	255.9	255.1	254.4	253.6	252.8	252.8	252.8
50°	229.9	226.7	226.7	225.1	224.3	225.1	223.6	222.8
52.5°	201.4	199.1	198.3	198.3	196.7	196.7	196.7	195.9
55°	173.0	171.4	171.4	170.6	169.0	169.8	169.8	168.3
57.5°	146.9	144.6	144.6	143.8	143.8	143.8	142.2	143.8
60°	122.4	120.9	120.1	119.3	118.5	118.5	118.5	117.7
62.5°	99.5	98.0	97.2	96.4	94.8	94.8	93.2	92.4
65°	79.0	77.4	75.8	75.0	73.5	72.7	72.7	71.9
67.5°	60.0	58.5	56.9	56.1	54.5	53.7	52.9	52.9
70°	45.0	42.7	42.7	41.9	41.1	41.1	40.3	40.3
72.5°	32.4	32.4	31.6	31.6	30.8	30.8	30.8	30.8
75°	22.9	22.9	22.9	22.9	22.1	22.1	21.3	21.3
77.5°	15.0	15.0	15.0	14.2	14.2	14.2	14.2	14.2
80°	7.9	7.9	7.9	7.9	7.9	7.1	7.9	7.1
82.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
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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