

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: P345405

Luminaire Tested: **PR4FS12D010 PR4M12WW9FSMW 1500Lm4000K**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P345405
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1908-453-7)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PR4FS12D010 PR4M12WW9FSMW 1500Lm4000K
Description: PR4 WALLWASH ASSEMBLY WITH, MATTE WHITE FINISH
Light Source: ARRAY OF HIGH LUMEN LEDs 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 929.3 lumens
Efficiency: N/A
Efficacy: 66.9 lumens/watt
Spacing Criteria (0/90/45): 0.95 / 1.12 / 1.11
Luminous Opening: Circular (Dia: 0.4' x H: 0')
CIE Type: Direct

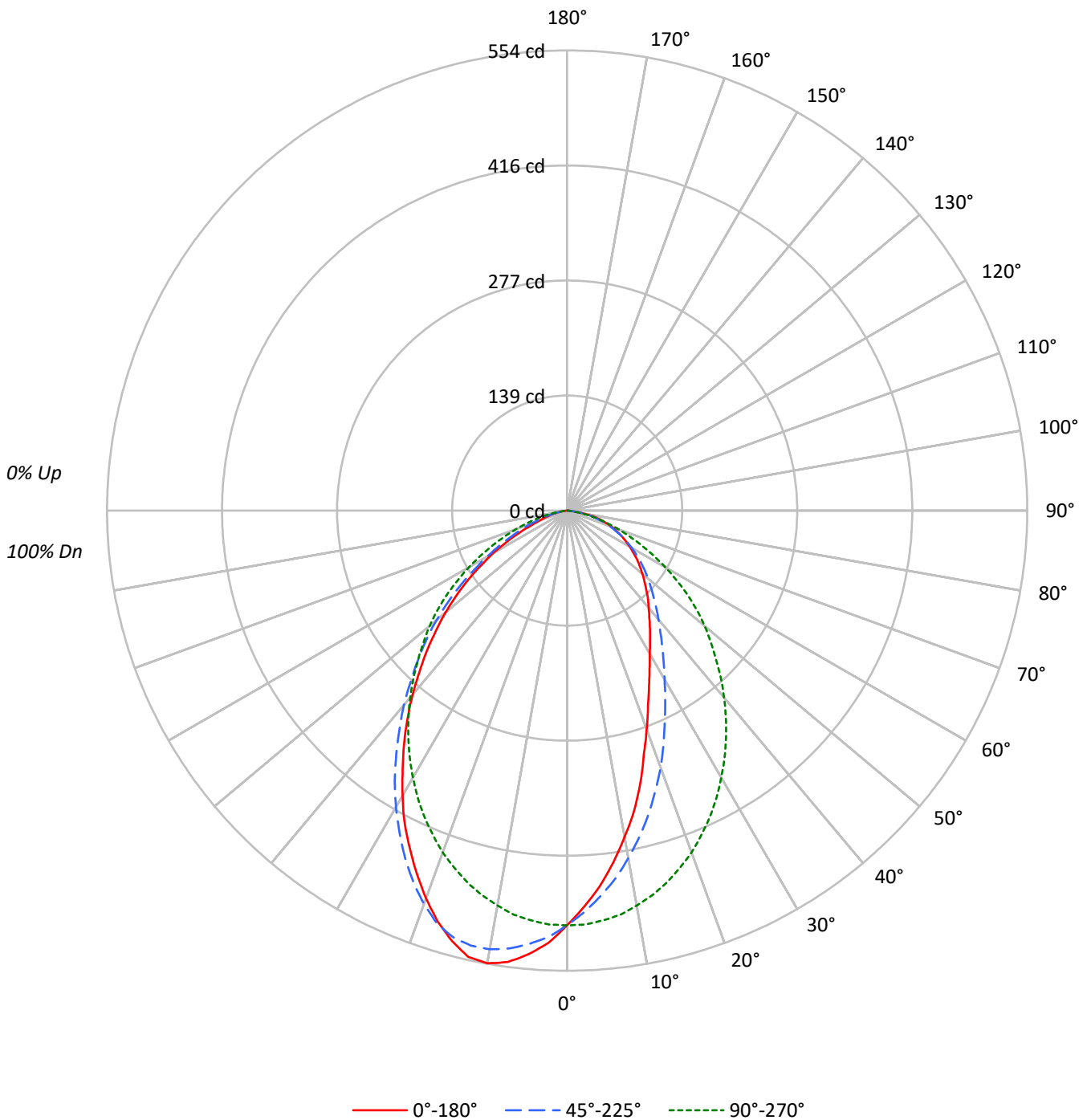
Input Watts (W): 13.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89					87				
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77					75				
3	94	85	77	72	92	83	76	71	80	75	70	78	73	69	75	71	68					66				
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59					57				
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53					51				
6	75	63	54	49	73	62	54	48	60	53	48	58	52	48	57	51	47					45				
7	70	57	49	44	68	57	49	43	55	48	43	54	47	43	52	47	43					41				
8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39					37				
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35					34				
10	58	45	38	33	56	45	38	33	44	37	33	43	37	33	42	36	32					31				

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	43673	43673	43673
5°	39836	43489	47089
10°	35430	42882	49161
15°	30798	41981	48565
20°	26063	40761	46234
25°	22497	39261	43286
30°	20079	37492	40027
35°	18548	35611	36530
40°	17424	33558	33033
45°	16662	31370	29577
50°	16084	29393	26059
55°	15707	26992	22265
60°	15255	23914	18019
65°	14902	20366	13267
70°	14526	16726	9130
75°	13822	12707	6928
80°	9671	7304	3979
85°	4014	2609	1305



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.8	5.0
10°-20°	126.8	13.6
20°-30°	171.4	18.4
30°-40°	180.4	19.4
40°-50°	162.5	17.5
50°-60°	125.4	13.5
60°-70°	77.2	8.3
70°-80°	34.0	3.7
80°-90°	4.9	0.5
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°	345.0	37.1
0°-40°	525.3	56.5
0°-60°	813.3	87.5
0°-90°	929.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	929.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	499	499	499	499	499	
5°	454	466	495	524	536	42
15°	340	378	464	532	536	94
25°	233	278	407	462	448	108
35°	174	200	334	359	342	109
45°	135	147	254	254	239	104
55°	103	108	177	156	146	92
65°	72	72	98	75	64	71
75°	41	36	38	24	20	42
85°	4	3	3	2	1	7
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°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	476.9	477.5	477.5	477.5	478.2	478.8	478.8	480.2	480.8	482.1	483.5
5°	453.7	453.1	453.1	454.4	455.7	456.4	456.4	459.0	461.0	463.0	465.6
7.5°	426.7	426.0	428.0	428.6	430.0	431.9	433.3	435.9	437.9	442.5	446.5
10°	398.9	398.9	400.2	402.2	404.2	406.2	407.5	410.8	414.8	419.4	424.7
12.5°	371.2	369.2	371.2	373.8	375.8	377.8	379.8	383.7	389.7	395.6	402.2
15°	340.1	339.5	340.8	343.4	348.1	349.4	351.4	357.3	363.3	371.2	378.4
17.5°	307.1	309.1	309.8	313.7	318.3	320.3	322.3	328.3	336.8	344.8	353.3
20°	280.0	278.7	281.4	284.0	288.0	291.3	293.9	300.5	309.8	318.3	328.9
22.5°	254.3	253.6	255.6	258.9	262.2	264.8	267.5	274.1	281.4	291.3	303.2
25°	233.1	232.5	234.5	236.4	240.4	242.4	244.4	251.0	258.9	266.8	278.1
27.5°	214.7	214.7	216.0	217.3	220.6	222.6	225.2	230.5	237.1	245.0	255.6
30°	198.8	198.8	200.1	201.4	204.7	206.1	208.0	212.0	217.3	225.9	234.5
32.5°	185.6	185.6	186.3	188.2	189.6	190.9	192.9	196.2	201.4	208.0	216.0
35°	173.7	173.7	174.4	175.7	177.7	178.3	179.6	182.9	186.9	192.2	199.5
37.5°	162.5	163.1	163.1	164.5	165.8	166.4	167.8	170.4	173.7	178.3	184.3
40°	152.6	153.2	153.2	154.5	155.9	156.5	157.2	158.5	162.5	165.8	171.1
42.5°	144.0	144.0	144.0	144.6	146.0	146.6	147.3	149.3	151.2	154.5	158.5
45°	134.7	134.7	135.4	136.1	137.4	137.4	138.0	140.0	141.3	144.0	147.3
47.5°	126.1	126.1	126.8	126.8	128.1	128.1	128.8	130.1	131.4	134.1	136.7
50°	118.2	118.2	118.2	118.9	119.5	120.2	120.2	121.5	122.8	124.8	126.8
52.5°	110.3	110.3	110.3	110.3	111.0	111.6	111.6	112.9	114.3	115.6	117.6
55°	103.0	102.4	103.0	103.0	103.0	103.7	103.7	105.0	105.0	106.3	108.3
57.5°	94.4	95.1	95.1	94.4	95.1	95.8	95.8	95.8	96.4	97.7	98.4
60°	87.2	87.2	87.2	87.2	87.8	87.8	87.8	87.8	88.5	88.5	89.8
62.5°	79.3	79.3	79.9	79.9	79.3	79.9	79.9	79.9	80.6	80.6	80.6
65°	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0	72.0
67.5°	64.1	64.1	64.1	64.1	64.1	64.1	64.1	63.4	63.4	63.4	62.7
70°	56.8	56.8	56.8	56.1	56.1	56.1	56.1	55.5	55.5	54.8	54.2
72.5°	48.9	48.9	48.9	48.2	48.2	48.2	47.6	46.9	46.2	45.6	45.6
75°	40.9	40.9	40.3	39.6	39.6	39.0	39.0	38.3	38.3	37.0	36.3
77.5°	31.7	31.0	31.0	31.0	30.4	29.7	29.7	29.1	28.4	28.4	27.7
80°	19.2	19.2	19.8	19.2	19.8	19.2	19.2	19.8	19.2	18.5	18.5
82.5°	9.2	9.2	9.9	9.2	9.9	9.9	9.9	9.2	9.2	9.2	9.2
85°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.3	3.3	3.3
87.5°	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	484.8	486.8	487.4	489.4	490.1	491.4	492.7	494.7	496.7	498.7	500.0
5°	468.3	471.6	474.2	477.5	479.5	480.8	484.8	488.1	492.0	495.3	498.7
7.5°	450.4	454.4	460.3	464.3	466.3	469.6	474.2	479.5	484.8	490.7	495.3
10°	430.0	435.9	441.9	449.1	452.4	455.7	461.7	468.9	476.2	482.8	490.1
12.5°	408.2	416.1	424.0	431.3	435.9	439.9	449.1	457.0	465.6	474.2	482.1
15°	387.0	395.6	404.9	414.1	419.4	424.0	433.3	443.2	453.7	463.6	472.9
17.5°	363.9	373.8	384.4	395.0	400.2	406.2	418.1	428.6	440.5	451.1	462.3
20°	340.1	351.4	362.6	375.8	381.1	387.7	399.6	412.8	425.3	437.9	449.8
22.5°	315.7	328.3	340.8	354.7	361.9	368.5	382.4	395.6	409.5	422.7	435.9
25°	290.6	305.1	319.7	333.5	341.5	348.1	363.3	378.4	393.0	406.8	420.7
27.5°	267.5	281.4	297.2	312.4	320.3	327.6	344.1	358.6	374.5	389.7	403.5
30°	246.4	259.6	275.4	291.9	299.9	307.8	324.3	340.8	355.3	371.2	386.4
32.5°	226.5	238.4	254.3	270.8	280.0	287.3	304.5	320.3	336.8	352.7	367.9
35°	208.0	219.9	233.8	250.3	258.2	266.8	284.7	301.2	317.0	333.5	347.4
37.5°	192.2	201.4	214.0	229.8	238.4	247.0	264.8	281.4	297.2	313.7	328.3
40°	177.0	185.6	196.8	210.7	219.3	227.9	245.0	261.5	277.4	293.9	309.1
42.5°	164.5	171.1	180.3	193.5	200.8	209.4	226.5	242.4	258.2	274.1	288.6
45°	151.9	157.9	165.8	176.3	183.6	191.5	208.0	224.6	239.1	253.6	268.1
47.5°	140.0	144.6	151.9	161.2	167.1	174.4	190.2	206.1	220.6	234.5	247.7
50°	129.5	133.4	140.0	146.6	151.9	158.5	172.4	188.2	202.1	216.0	227.9
52.5°	119.5	122.8	127.5	134.1	138.0	143.3	156.5	170.4	184.3	196.8	208.0
55°	110.3	112.3	116.2	120.9	124.2	128.8	140.0	153.2	165.8	177.0	186.3
57.5°	99.7	102.4	105.0	108.3	111.6	114.3	122.8	134.7	146.0	155.9	165.1
60°	90.5	92.5	93.8	97.1	98.4	101.1	107.7	117.6	128.1	136.7	143.3
62.5°	81.2	81.9	83.2	85.9	86.5	88.5	93.1	101.1	109.0	116.9	123.5
65°	72.0	72.0	73.3	74.0	75.3	76.0	79.3	85.2	92.5	98.4	102.4
67.5°	62.7	62.7	63.4	63.4	64.7	64.7	66.7	71.3	76.0	81.2	84.5
70°	53.5	53.5	53.5	53.5	53.5	54.2	55.5	58.1	61.4	65.4	67.4
72.5°	44.9	44.3	44.3	43.6	43.6	43.6	44.3	45.6	48.2	50.9	52.8
75°	35.7	35.0	34.3	34.3	33.7	33.7	33.7	35.0	36.3	37.6	38.3
77.5°	26.4	26.4	25.8	24.4	24.4	23.8	23.8	23.8	24.4	25.8	25.1
80°	18.5	17.2	16.5	16.5	15.9	15.9	15.2	14.5	14.5	14.5	13.9
82.5°	8.6	8.6	8.6	7.9	7.9	7.9	7.9	7.3	7.3	6.6	6.6
85°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.6	2.6	2.6	2.6
87.5°	2.0	2.0	2.0	2.0	2.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	502.0	503.9	505.9	506.6	507.2	509.2	510.5	512.5	513.8	514.5	515.8
5°	502.6	505.9	509.2	511.2	512.5	515.8	518.5	521.8	523.7	527.1	529.0
7.5°	500.6	505.9	510.5	513.2	515.8	520.4	524.4	528.4	531.7	535.0	538.3
10°	496.7	503.3	509.9	512.5	515.8	521.1	527.1	531.7	536.3	540.3	544.2
12.5°	490.7	498.7	506.6	509.9	513.2	520.4	526.4	531.7	536.3	540.3	542.9
15°	482.8	492.0	500.6	505.3	509.2	516.5	522.4	527.7	531.7	534.3	536.3
17.5°	472.9	483.5	493.4	497.3	502.0	508.6	514.5	518.5	521.1	521.1	521.8
20°	461.7	472.9	482.8	487.4	492.0	497.3	502.0	503.9	503.9	503.9	502.6
22.5°	448.5	460.3	470.3	474.9	478.8	482.8	485.4	485.4	484.1	482.1	480.2
25°	433.3	445.8	455.1	459.7	461.7	465.0	464.3	463.6	461.7	459.7	457.0
27.5°	416.8	429.3	439.2	441.2	442.5	443.2	441.2	439.9	437.2	434.6	432.6
30°	399.6	411.5	419.4	420.1	421.4	420.7	418.1	414.8	412.1	408.8	406.2
32.5°	381.1	392.3	397.6	398.9	398.3	395.6	393.0	389.7	386.4	382.4	379.1
35°	361.3	371.8	375.1	374.5	373.8	370.5	366.6	363.3	358.6	356.0	351.4
37.5°	340.8	350.7	352.0	350.0	348.1	344.1	340.1	336.8	331.6	328.9	325.6
40°	320.3	326.9	326.9	324.9	323.6	319.7	314.4	309.8	305.8	301.2	299.2
42.5°	299.2	304.5	301.8	300.5	298.5	292.6	288.6	284.0	278.7	276.1	272.8
45°	278.1	281.4	278.1	275.4	273.4	268.1	264.2	258.2	253.6	251.0	247.0
47.5°	256.3	257.6	254.9	251.0	249.7	243.7	239.1	234.5	229.8	225.2	221.9
50°	236.4	235.1	231.2	228.5	226.5	219.9	214.7	209.4	205.4	201.4	198.1
52.5°	214.0	212.7	207.4	204.1	200.8	195.5	188.9	184.9	180.3	177.0	173.7
55°	190.9	186.9	182.9	179.6	176.3	171.1	165.1	159.8	156.5	152.6	150.6
57.5°	167.1	164.5	157.9	155.2	152.6	147.3	141.3	136.7	132.1	129.5	128.1
60°	146.0	141.3	136.1	132.8	130.1	124.8	119.5	114.9	111.6	110.3	108.3
62.5°	123.5	119.5	113.6	111.0	109.0	103.7	99.1	95.1	92.5	89.8	88.5
65°	103.0	98.4	93.8	91.1	88.5	83.9	80.6	77.9	74.6	72.7	71.3
67.5°	83.2	79.3	75.3	73.3	71.3	67.4	64.1	62.1	59.4	57.5	54.8
70°	65.4	62.1	59.4	57.5	55.5	52.2	49.5	47.6	45.6	43.6	41.6
72.5°	50.9	47.6	44.3	43.6	42.3	39.6	37.6	35.7	33.7	32.4	31.0
75°	36.3	35.0	32.4	31.0	30.4	28.4	26.4	25.1	24.4	23.1	22.5
77.5°	23.8	22.5	20.5	20.5	19.8	19.2	17.8	16.5	16.5	15.9	15.9
80°	13.2	12.5	11.9	11.2	11.9	11.2	10.6	9.9	9.9	9.9	9.2
82.5°	5.9	5.9	5.3	5.3	5.3	5.3	5.3	4.6	4.6	4.6	4.6
85°	2.6	2.6	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	0.7	0.7	0.7	0.7	0.7
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°	499.3	499.3	499.3	499.3	499.3	499.3	499.3	499.3
2.5°	517.1	517.8	518.5	519.1	519.8	519.8	520.4	521.1
5°	530.4	532.3	533.0	533.7	535.0	535.6	535.6	536.3
7.5°	540.9	543.6	544.2	545.5	546.9	547.5	548.2	548.2
10°	546.9	548.8	549.5	550.8	552.1	552.8	553.5	553.5
12.5°	544.9	546.9	547.5	548.2	549.5	550.2	550.2	550.2
15°	537.6	537.6	537.6	537.6	537.0	537.6	537.6	536.3
17.5°	521.1	520.4	521.1	519.8	519.1	519.1	518.5	518.5
20°	501.3	500.6	500.0	500.0	499.3	498.0	497.3	496.7
22.5°	478.8	477.5	476.9	476.9	475.5	474.9	474.2	472.9
25°	455.7	452.4	452.4	452.4	451.1	451.1	449.8	448.5
27.5°	429.3	427.3	427.3	426.0	424.7	424.0	423.4	424.0
30°	404.2	401.6	400.2	399.6	398.9	398.9	396.9	396.3
32.5°	376.5	374.5	373.2	372.5	371.2	370.5	369.9	368.5
35°	349.4	347.4	346.1	346.1	343.4	342.8	342.1	342.1
37.5°	321.6	320.3	319.7	317.7	317.0	316.4	316.4	315.7
40°	295.9	293.9	293.2	291.3	290.6	290.6	288.6	289.3
42.5°	269.5	266.8	266.2	265.5	264.8	263.5	264.2	262.9
45°	244.4	242.4	241.1	241.1	240.4	239.1	238.4	239.1
47.5°	219.9	217.3	217.3	216.6	216.0	215.3	215.3	214.0
50°	196.8	194.8	193.5	192.2	192.9	192.2	190.9	191.5
52.5°	171.7	169.7	169.1	169.1	168.4	168.4	167.8	167.8
55°	149.3	147.3	147.3	146.6	146.6	146.6	146.0	146.0
57.5°	126.8	125.5	124.8	124.8	123.5	124.2	123.5	122.8
60°	107.0	105.0	103.7	104.4	103.7	103.7	102.4	103.0
62.5°	86.5	85.2	84.5	84.5	83.2	83.2	81.9	82.6
65°	69.3	67.4	66.7	66.0	64.7	64.1	64.1	64.1
67.5°	53.5	52.2	51.5	50.2	48.9	48.2	47.6	46.9
70°	40.3	39.0	38.3	37.6	37.0	36.3	36.3	35.7
72.5°	30.4	29.1	29.1	28.4	28.4	27.7	27.7	27.7
75°	21.8	21.8	21.1	21.1	20.5	21.1	20.5	20.5
77.5°	15.2	14.5	15.2	14.5	13.9	13.9	13.9	13.9
80°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	7.9
82.5°	4.6	4.6	4.6	4.0	4.0	4.0	4.0	4.0
85°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
87.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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