

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: FAIL-SAFE

Report Number: P837822

Luminaire Tested: **ORLG-24-2-INS-ASY2R-LD4-1STD-20-120-EDD**

Issue Date: 5/21/2024

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

**Test Information**

Test Method: LM-79-08
Report Number: P837822
Test Lab: INNOVATION CENTER(G2)
Issue Date: 5/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: ORLG-24-2-INS-ASY2R-LD4-1STD-20-120-EDD
Description: 2FT x 2FT ORL LED LUMINAIRE WITH asymmetric/symmetric lens v2 and
RFI grid
Light Source: 2000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

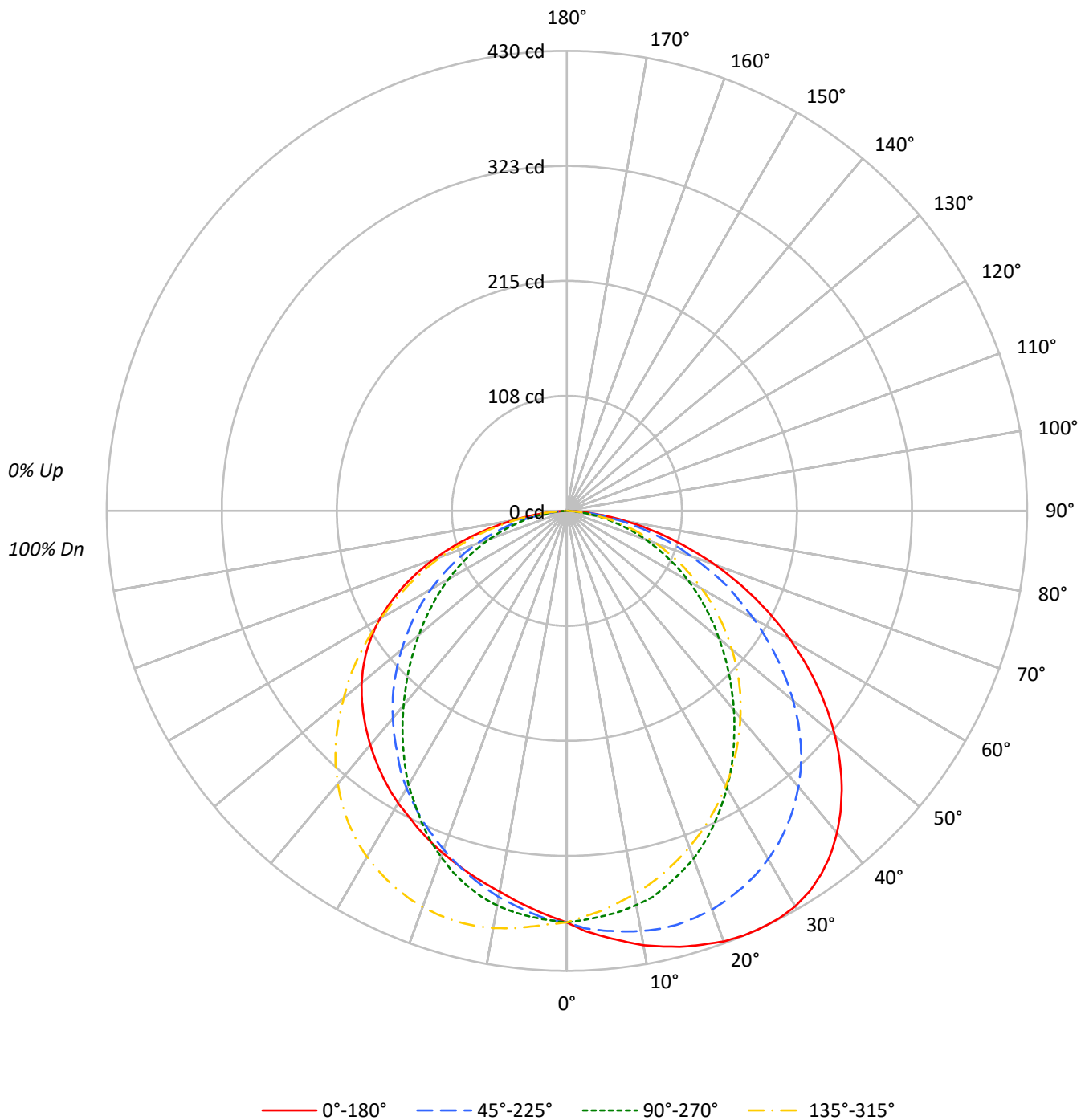
Lumens per Lamp: N/A
Luminaire Lumens: 1128.3 lumens
Efficiency: N/A
Efficacy: 68.0 lumens/watt
Spacing Criteria (0/90/45): 1.43 / 1.16 / 1.4
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

Input Watts (W): 16.6
Input Voltage (V): 120
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	104	100	96	106	102	98	94	97	94	91	94	91	89	90	88	86	84		
2	99	91	84	78	96	89	82	77	85	80	75	82	77	73	79	75	72	70		
3	90	79	71	65	88	78	70	64	75	68	63	72	66	62	69	65	61	59		
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50		
5	76	63	54	47	74	62	53	47	59	52	46	57	51	46	56	50	45	43		
6	70	56	47	41	68	55	47	41	54	46	40	52	45	40	50	44	40	38		
7	65	51	42	36	63	50	42	36	49	41	36	47	40	35	46	40	35	33		
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29		
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26		
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	26	24		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	1035	1035	1035	1035
5°	1079	1028	1008	1029
10°	1127	1022	988	1024
15°	1175	1009	978	1009
20°	1226	991	974	985
25°	1277	963	974	953
30°	1326	930	980	919
35°	1361	892	990	877
40°	1379	853	1004	834
45°	1382	814	1023	794
50°	1369	777	1048	756
55°	1341	742	1072	722
60°	1299	706	1086	688
65°	1240	665	1080	649
70°	1159	616	1042	605
75°	1043	549	957	547
80°	885	460	804	466
85°	614	306	509	312



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.5	3.2
10°-20°	105.7	9.4
20°-30°	162.0	14.4
30°-40°	197.0	17.5
40°-50°	204.8	18.2
50°-60°	185.0	16.4
60°-70°	140.7	12.5
70°-80°	78.4	7.0
80°-90°	18.1	1.6
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°	304.3	27.0
0°-40°	501.3	44.4
0°-60°	891.2	79.0
0°-90°	1128.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1128.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	385	385	385	385	385	
5°	399	380	373	381	399	39
15°	422	362	351	362	422	120
25°	430	324	328	321	430	199
35°	414	271	301	267	414	259
45°	363	214	269	209	363	280
55°	286	158	228	154	286	255
65°	195	104	170	102	195	193
75°	100	53	92	53	100	107
85°	20	10	16	10	20	25
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6
2.5°	393.1	387.4	387.4	392.5	388.6	390.5	385.1	387.2	386.5	387.0	382.6
5°	399.3	393.1	393.0	397.3	393.0	393.8	387.0	388.3	386.4	385.1	380.4
7.5°	405.8	399.6	399.0	402.8	397.1	396.5	389.0	389.0	385.4	382.2	377.8
10°	412.3	405.9	405.1	408.0	401.0	398.9	389.8	388.3	383.6	378.9	374.1
12.5°	417.1	410.7	410.1	411.8	404.0	400.2	389.8	387.0	380.0	373.5	369.7
15°	421.7	415.1	413.4	414.3	405.2	400.2	388.5	384.2	375.2	366.6	362.2
17.5°	424.9	418.6	416.9	416.8	405.8	398.7	385.8	379.9	369.1	358.7	354.3
20°	428.2	421.8	419.7	418.0	405.7	396.6	381.9	373.9	361.3	349.7	346.0
22.5°	429.8	423.2	420.9	418.5	404.5	392.8	377.0	366.9	352.6	338.6	335.6
25°	430.1	423.3	420.8	417.3	402.2	388.3	370.8	358.5	342.4	327.0	324.4
27.5°	429.3	422.0	419.5	415.3	398.7	382.9	363.3	348.9	331.6	314.6	311.8
30°	426.8	419.4	417.0	411.5	393.7	376.1	355.2	338.2	319.7	301.6	299.2
32.5°	421.8	414.5	412.6	407.1	388.3	368.3	345.6	326.7	306.5	289.2	285.6
35°	414.4	407.2	405.9	400.2	380.8	359.0	335.2	314.2	292.5	274.9	271.4
37.5°	404.8	398.7	396.9	391.2	371.9	348.4	323.3	300.5	278.3	259.3	257.1
40°	392.7	387.0	385.6	380.5	361.6	336.7	310.4	286.4	263.6	245.9	242.8
42.5°	378.9	373.5	372.7	367.5	348.9	323.7	296.4	271.8	248.2	231.2	228.1
45°	363.2	358.0	357.8	352.9	335.0	309.2	281.7	257.0	233.2	215.6	214.0
47.5°	345.9	341.2	341.2	336.7	319.4	293.3	266.5	241.6	218.2	202.6	199.7
50°	327.1	322.7	321.3	319.1	302.3	276.0	250.6	226.5	203.3	188.4	185.6
52.5°	307.0	303.2	304.1	300.0	283.7	258.0	234.4	209.6	188.3	174.8	172.0
55°	285.8	280.4	281.2	279.7	264.4	239.4	216.3	195.6	173.6	160.8	158.2
57.5°	263.8	256.8	259.7	258.8	243.7	220.4	199.7	179.7	159.0	147.2	144.7
60°	241.3	234.6	237.5	236.7	222.6	201.4	182.6	164.0	144.4	133.8	131.2
62.5°	218.2	212.0	214.7	214.0	201.0	181.9	165.5	148.5	129.8	120.2	117.9
65°	194.8	188.9	191.3	190.9	178.9	164.3	148.0	132.4	115.1	106.8	104.4
67.5°	171.0	165.5	167.8	167.8	156.7	142.8	130.4	116.2	100.7	93.5	91.3
70°	147.3	142.2	144.2	144.0	134.7	123.3	112.7	99.9	86.0	80.1	78.3
72.5°	123.4	119.0	120.7	120.6	112.8	105.5	94.9	83.9	71.8	67.0	65.4
75°	100.3	96.1	97.8	97.6	91.2	84.4	77.3	68.2	57.8	54.5	52.8
77.5°	78.2	73.9	75.4	75.4	70.7	65.8	60.1	53.0	45.7	42.1	40.9
80°	57.1	55.0	54.3	54.4	51.2	48.0	45.1	38.3	32.9	30.5	29.7
82.5°	37.5	35.8	35.1	35.3	33.5	31.5	29.7	24.9	21.4	19.9	19.5
85°	19.9	18.7	18.0	18.5	18.1	17.0	16.1	12.9	10.7	10.1	9.9
87.5°	6.3	5.5	5.0	6.6	5.7	5.0	4.8	3.9	3.0	3.0	2.9
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6
2.5°	384.0	384.0	380.5	379.7	379.4	379.8	376.3	375.7	380.7	379.0	375.2
5°	381.0	380.8	375.9	375.0	375.0	374.4	370.5	369.6	374.6	373.2	369.0
7.5°	377.2	376.7	370.9	370.2	369.3	369.0	364.6	363.9	368.2	367.4	363.4
10°	372.6	372.1	365.2	364.8	363.8	363.0	358.9	358.5	362.9	361.4	358.3
12.5°	366.6	365.6	358.6	358.1	357.3	357.0	353.0	352.8	357.7	356.2	352.9
15°	358.7	357.9	350.0	350.2	350.3	350.3	347.1	346.9	351.7	351.0	347.4
17.5°	350.0	349.0	341.4	342.0	342.6	343.3	340.8	341.2	346.3	345.5	342.2
20°	340.2	339.1	331.7	333.3	334.6	336.0	334.4	335.7	340.4	340.0	337.6
22.5°	329.1	328.1	321.2	323.6	325.8	328.5	327.8	329.2	334.2	334.1	331.9
25°	315.7	315.9	309.9	312.8	316.6	320.3	320.6	322.9	328.4	327.9	325.9
27.5°	303.1	303.5	297.1	302.0	307.0	311.8	313.0	316.2	321.8	321.3	319.6
30°	289.9	290.4	284.2	290.8	296.9	302.9	305.4	309.8	315.4	315.4	313.6
32.5°	276.2	277.0	270.6	279.4	286.5	293.4	297.8	302.4	308.9	308.7	307.2
35°	262.1	263.0	257.1	268.4	275.5	283.9	289.4	295.5	301.2	301.3	300.2
37.5°	247.8	248.8	243.5	255.8	263.9	273.9	280.9	287.0	293.3	293.7	292.6
40°	233.5	234.7	230.0	241.9	252.2	263.3	271.4	278.5	285.5	285.7	285.0
42.5°	219.2	220.5	217.0	228.7	240.2	252.2	261.7	269.8	277.0	277.5	276.7
45°	205.3	206.4	203.9	216.6	227.8	240.8	251.7	261.0	268.2	268.9	268.6
47.5°	191.5	192.5	190.3	201.9	214.8	228.6	241.2	251.5	259.2	259.9	259.7
50°	178.0	178.8	176.4	188.6	201.3	216.0	229.2	241.0	249.7	250.4	250.3
52.5°	164.5	165.3	163.3	176.1	187.7	203.2	217.5	230.4	238.9	240.0	240.1
55°	151.5	151.9	150.3	162.5	173.8	190.0	206.5	219.0	227.5	228.4	228.9
57.5°	138.5	138.6	137.3	149.0	159.8	176.4	193.7	206.8	214.8	215.7	216.6
60°	125.6	125.5	124.0	135.4	145.7	162.1	180.1	193.1	200.9	201.8	202.8
62.5°	112.8	112.5	111.1	121.6	131.3	147.6	165.7	178.2	185.7	186.2	187.7
65°	100.0	99.8	98.5	108.2	117.0	132.5	150.3	162.2	168.9	169.6	169.4
67.5°	87.5	86.9	85.9	94.6	102.6	117.0	134.0	145.4	151.0	151.6	153.3
70°	74.9	74.3	72.0	81.3	88.3	101.1	117.0	127.1	131.8	132.4	132.1
72.5°	62.5	61.9	59.5	68.0	73.9	85.1	99.3	107.7	111.8	112.3	112.3
75°	50.5	50.1	48.6	55.1	60.0	69.2	81.2	88.2	91.3	92.0	91.8
77.5°	38.9	38.7	37.1	42.7	46.6	53.4	63.1	68.5	70.9	71.6	73.1
80°	27.9	27.8	25.4	30.9	32.6	38.3	45.4	49.6	50.9	51.9	52.9
82.5°	17.9	17.9	15.5	20.2	20.9	24.6	29.0	31.6	32.5	33.3	34.1
85°	8.7	9.1	7.7	10.7	10.8	12.6	14.5	15.5	15.9	16.5	17.2
87.5°	2.2	2.6	1.4	3.1	2.7	3.5	4.0	4.3	4.2	4.7	4.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab

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CANDELA DISTRIBUTION (continued):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6
2.5°	376.4	379.3	377.8	382.5	384.3	381.4	386.5	386.5	383.0	387.2	389.5
5°	370.6	373.5	372.6	377.5	379.7	377.2	383.3	384.5	381.0	385.7	389.5
7.5°	364.7	368.2	367.0	371.9	374.6	372.6	379.2	381.1	378.4	383.6	388.6
10°	359.5	362.5	361.3	366.5	368.8	367.2	373.6	377.1	374.6	381.0	387.0
12.5°	354.5	356.9	355.5	359.8	362.1	360.0	367.9	371.1	369.3	376.0	383.7
15°	348.1	350.8	348.8	352.6	354.3	352.6	359.0	364.6	362.3	369.6	378.1
17.5°	343.1	344.7	342.0	345.0	346.0	343.6	350.1	355.6	354.0	361.9	371.7
20°	337.7	338.9	335.1	336.9	336.8	333.7	339.7	345.1	344.0	352.7	363.9
22.5°	331.6	332.2	327.8	328.1	328.0	322.9	328.3	333.8	333.4	342.1	354.7
25°	325.1	325.2	319.5	319.4	317.4	311.5	316.2	322.4	321.1	330.6	343.8
27.5°	318.7	317.8	311.0	309.4	306.3	299.2	303.4	309.0	308.1	317.5	332.1
30°	311.9	310.7	302.4	299.4	294.9	286.7	290.2	295.4	295.9	304.0	319.4
32.5°	305.5	302.5	293.3	288.9	283.2	273.7	275.6	280.9	281.6	289.8	305.6
35°	297.1	295.1	283.7	276.4	270.7	260.3	262.3	266.0	267.1	275.1	291.2
37.5°	289.2	286.1	274.0	265.0	257.7	246.8	247.3	251.1	252.2	260.3	276.2
40°	281.1	276.6	263.6	253.1	244.7	233.2	232.6	236.6	237.4	245.3	259.7
42.5°	272.4	267.0	252.3	240.9	231.3	219.6	218.3	221.8	222.7	230.5	244.5
45°	263.6	257.1	240.9	228.3	217.8	205.9	204.6	207.2	208.6	215.9	229.5
47.5°	254.2	246.7	229.0	215.0	204.2	192.2	190.7	193.3	194.4	201.7	214.5
50°	244.5	235.3	216.8	201.4	190.6	178.9	176.6	179.7	180.7	187.5	200.0
52.5°	233.7	223.6	203.8	187.7	176.9	165.7	163.0	166.0	167.1	173.8	185.3
55°	222.3	211.4	190.7	175.0	163.4	152.4	150.2	151.3	153.8	160.1	170.9
57.5°	209.5	198.6	176.9	160.9	149.7	139.2	137.3	138.4	140.8	146.9	156.5
60°	195.8	184.3	162.8	146.9	136.0	126.0	124.3	125.3	127.8	133.4	142.4
62.5°	182.4	169.5	148.3	132.4	122.5	113.3	112.9	112.5	114.8	120.2	128.1
65°	166.0	153.7	133.1	118.1	109.1	100.7	98.9	99.8	102.0	106.9	115.2
67.5°	148.6	137.3	117.6	103.7	95.7	88.3	86.7	87.1	89.4	93.7	100.9
70°	130.0	120.1	101.7	89.3	82.5	75.5	74.5	74.6	76.9	80.6	86.9
72.5°	110.5	101.6	85.7	75.0	69.4	64.4	63.5	62.4	64.5	67.7	73.1
75°	90.7	82.9	69.7	61.0	56.6	52.4	51.6	50.5	52.6	55.3	59.6
77.5°	70.7	64.4	54.2	47.5	44.0	40.9	40.2	39.0	41.1	43.1	46.5
80°	51.1	46.6	40.5	33.4	32.2	30.1	29.4	28.2	30.1	31.5	34.0
82.5°	33.0	30.0	26.5	21.5	21.4	19.8	19.5	18.0	19.8	20.6	22.5
85°	16.7	15.3	14.4	10.9	11.3	10.3	10.2	8.7	10.1	10.5	11.6
87.5°	4.8	5.0	4.5	2.7	3.4	3.2	3.2	2.3	3.2	3.2	3.7
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	384.6	384.6	384.6	384.6	384.6	384.6	384.6	384.6
2.5°	384.9	386.5	386.8	386.7	387.7	393.1	391.3	393.1
5°	385.8	389.2	390.1	391.4	393.0	399.1	397.1	399.3
7.5°	386.4	391.5	393.5	395.9	398.5	405.3	403.7	405.8
10°	386.4	393.0	395.9	399.9	403.4	411.3	409.8	412.3
12.5°	384.8	393.3	397.3	403.0	407.5	416.0	415.3	417.1
15°	381.4	391.9	397.5	404.8	410.3	419.8	419.6	421.7
17.5°	377.0	389.6	396.3	405.5	412.5	423.2	423.8	424.9
20°	371.3	385.2	394.0	405.2	414.0	425.8	426.6	428.2
22.5°	363.9	379.9	390.5	404.0	414.2	426.8	428.3	429.8
25°	355.1	373.5	385.9	401.8	413.3	426.7	428.7	430.1
27.5°	345.0	365.3	380.1	398.2	410.8	425.3	427.7	429.3
30°	333.4	356.5	373.5	393.5	407.4	422.6	425.2	426.8
32.5°	321.3	346.8	365.6	387.5	402.4	418.3	420.5	421.8
35°	308.2	335.1	356.0	379.8	396.1	411.4	413.1	414.4
37.5°	294.0	322.3	345.2	371.1	387.1	401.8	403.3	404.8
40°	279.3	309.0	333.0	360.4	376.4	390.0	391.7	392.7
42.5°	264.5	294.2	320.0	347.9	363.8	376.9	377.8	378.9
45°	249.5	278.8	305.4	334.0	349.7	362.0	362.3	363.2
47.5°	234.2	262.9	289.3	318.1	333.6	344.8	345.2	345.9
50°	218.9	247.1	272.2	301.0	316.1	328.0	326.4	327.1
52.5°	203.8	230.4	256.0	282.5	297.5	308.0	308.4	307.0
55°	189.0	214.0	237.6	263.1	277.4	285.5	285.3	285.8
57.5°	174.0	197.5	219.2	242.5	256.4	264.1	265.7	263.8
60°	158.8	180.9	200.2	221.3	234.8	241.2	243.1	241.3
62.5°	143.6	163.9	181.5	199.9	212.3	220.3	220.1	218.2
65°	128.5	146.9	162.5	178.2	189.0	197.0	196.6	194.8
67.5°	114.5	129.6	143.7	156.4	165.8	171.3	173.1	171.0
70°	99.0	112.1	124.5	134.7	142.5	147.4	149.2	147.3
72.5°	83.6	94.7	103.4	113.2	119.2	123.3	125.2	123.4
75°	68.4	77.5	84.6	92.2	96.4	99.9	102.1	100.3
77.5°	53.6	60.6	66.3	71.9	76.7	77.5	79.4	78.2
80°	39.5	44.6	48.7	52.4	55.9	56.2	57.8	57.1
82.5°	26.3	29.7	30.8	34.6	36.9	36.5	38.0	37.5
85°	13.9	16.0	17.9	19.0	20.3	19.1	20.5	19.9
87.5°	4.7	4.9	4.3	6.1	6.7	5.7	6.5	6.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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