

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: NEO-RAY

Report Number: P331468-935

Luminaire Tested: **S122DIW-S290D435U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331468-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S290D435U935-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 435 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2324.0 lumens  
Efficiency: N/A  
Efficacy: 101.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

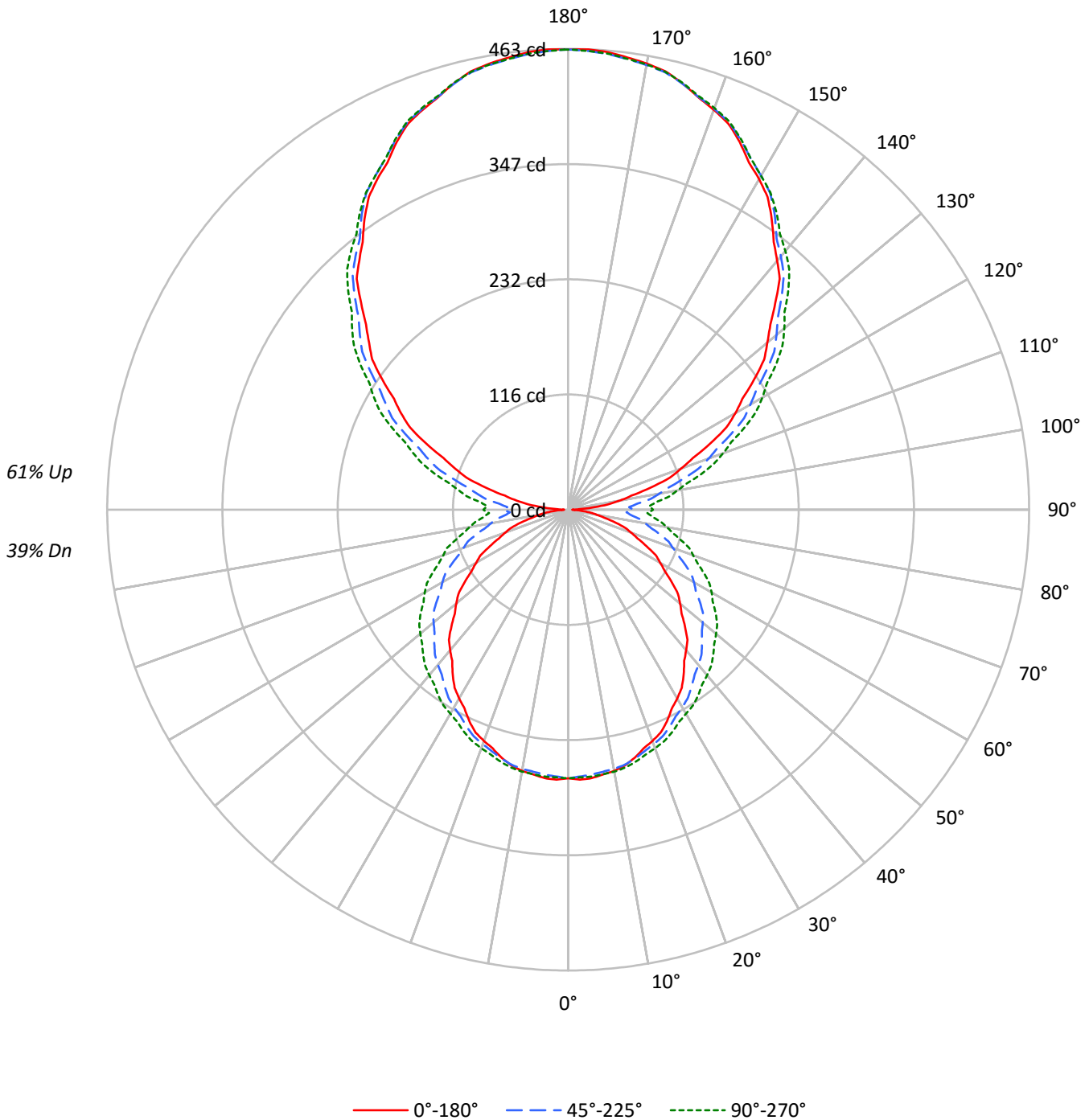
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	94	89	85	81	85	81	78	74	66	63	61	52	50	49	39	38	37	31
2	85	77	71	65	77	70	65	60	57	53	50	45	42	40	34	32	30	25
3	77	68	60	54	70	62	55	50	50	45	41	39	36	33	29	27	25	20
4	71	60	51	45	64	54	47	42	44	39	35	35	31	28	26	23	21	17
5	65	53	44	38	58	48	41	35	39	34	30	31	27	24	23	21	18	15
6	59	47	39	33	54	43	36	30	35	30	26	28	24	21	21	18	16	13
7	55	42	34	29	50	39	32	27	32	26	22	25	21	18	19	16	14	11
8	51	38	31	25	46	35	28	23	29	24	20	23	19	16	18	15	12	10
9	47	35	27	22	43	32	25	21	26	21	17	21	17	14	16	13	11	9
10	44	32	25	20	40	29	23	18	24	19	16	19	16	13	15	12	10	8

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.6	1.1
10°-20°	73.3	3.2
20°-30°	111.1	4.8
30°-40°	135.3	5.8
40°-50°	145.6	6.3
50°-60°	141.4	6.1
60°-70°	123.5	5.3
70°-80°	95.1	4.1
80°-90°	65.6	2.8
90°-100°	73.2	3.2
100°-110°	123.1	5.3
110°-120°	176.7	7.6
120°-130°	216.3	9.3
130°-140°	234.5	10.1
140°-150°	225.9	9.7
150°-160°	188.8	8.1
160°-170°	125.2	5.4
170°-180°	43.8	1.9
0°-30°	210.0	9.0
0°-40°	345.4	14.9
0°-60°	632.4	27.2
0°-90°	916.6	39.4
90°-120°	373.0	16.0
90°-150°	1049.7	45.2
90°-180°	1407.0	60.5
0°-180°	2324.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	4	32	65	80	85	4
95°	23	46	70	84	89	26
105°	86	99	119	133	138	91
115°	158	165	181	192	196	156
125°	228	232	243	252	255	204
135°	294	298	303	311	313	227
145°	356	359	362	364	365	223
155°	408	409	410	412	411	188
165°	444	443	443	446	444	125
175°	462	460	460	462	460	44
180°	462	462	462	462	462	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.7	13.2	18.5	23.9	29.3	35.0	40.9	46.8	52.8	58.7	62.3
90°	4.3	10.4	16.4	22.6	28.6	35.4	42.9	50.4	57.8	65.3	68.6
92.5°	10.5	16.0	21.4	26.9	32.4	38.0	43.8	49.6	55.4	61.2	64.7
95°	23.4	28.3	33.3	38.2	43.2	48.4	53.8	59.2	64.6	69.9	73.3
97.5°	39.8	44.2	48.6	53.0	57.3	62.3	67.6	72.9	78.3	83.6	86.8
100°	52.3	56.2	60.1	64.0	67.9	72.4	77.6	82.7	87.8	92.9	96.2
102.5°	65.1	68.5	72.1	75.5	79.0	83.3	88.3	93.4	98.5	103.6	106.8
105°	85.8	88.6	91.4	94.2	96.9	100.7	105.4	110.0	114.8	119.4	122.7
107.5°	107.1	109.5	111.9	114.3	116.8	120.1	124.4	128.7	133.0	137.4	140.3
110°	120.5	122.8	125.0	127.3	129.6	132.9	137.1	141.4	145.6	149.9	152.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	135.5	137.5	139.5	141.5	143.4	146.5	150.4	154.4	158.3	162.4	164.9
115°	157.6	159.1	160.6	162.0	163.5	166.1	169.9	173.6	177.4	181.1	183.6
117.5°	179.2	180.6	181.8	183.1	184.5	186.8	189.9	193.0	196.1	199.2	201.6
120°	193.9	194.9	196.0	197.0	198.0	199.9	202.8	205.5	208.3	211.1	213.5
122.5°	207.3	208.3	209.2	210.2	211.2	213.1	215.9	218.6	221.4	224.2	226.4
125°	227.8	228.6	229.4	230.1	230.9	232.6	235.1	237.6	240.1	242.6	244.8
127.5°	248.1	249.1	249.9	250.9	251.8	253.2	255.1	257.1	259.0	260.9	262.8
130°	261.0	262.0	263.0	264.1	265.1	266.5	268.1	269.8	271.4	273.1	275.0
132.5°	275.3	276.1	277.0	277.8	278.6	279.8	281.2	282.7	284.1	285.6	287.2
135°	294.1	295.1	296.0	297.0	297.9	298.9	300.0	301.0	302.0	303.1	304.9
137.5°	314.4	315.1	315.8	316.6	317.4	318.1	318.7	319.3	319.9	320.5	322.0
140°	326.5	327.2	327.9	328.6	329.2	329.9	330.5	331.1	331.7	332.3	333.7
142.5°	339.0	339.7	340.4	341.0	341.7	342.2	342.6	342.9	343.3	343.6	344.7
145°	356.5	357.1	357.7	358.3	359.0	359.6	360.1	360.6	361.1	361.6	362.2
147.5°	372.6	373.2	374.0	374.7	375.5	376.0	376.3	376.7	377.0	377.4	377.6
150°	383.5	384.0	384.5	385.0	385.6	386.0	386.3	386.7	387.0	387.4	387.6
152.5°	393.1	393.6	394.2	394.7	395.2	395.7	396.1	396.5	396.9	397.4	397.7
155°	407.6	407.9	408.1	408.5	408.7	409.0	409.2	409.5	409.7	410.0	410.4
157.5°	420.1	420.3	420.4	420.6	420.8	420.9	421.0	421.2	421.4	421.5	422.1
160°	427.6	427.7	427.9	428.1	428.3	428.3	428.4	428.5	428.6	428.7	429.2
162.5°	434.4	434.5	434.5	434.5	434.5	434.6	434.7	434.8	434.9	435.0	435.5
165°	443.5	443.4	443.3	443.2	443.2	443.2	443.2	443.2	443.2	443.2	443.8
167.5°	451.2	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.6
170°	455.2	455.0	454.7	454.4	454.2	454.0	453.9	453.8	453.7	453.7	454.3
172.5°	458.1	457.8	457.5	457.3	457.0	456.8	456.8	456.7	456.6	456.5	457.1
175°	461.5	461.2	461.0	460.7	460.5	460.2	460.0	459.9	459.7	459.5	460.1
177.5°	462.9	462.7	462.4	462.3	462.0	461.8	461.8	461.6	461.4	461.3	461.8
180°	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	65.8	69.3	72.8	75.1	76.2	77.4	78.5	79.6
90°	71.9	75.2	78.5	80.7	81.9	83.0	84.1	85.2
92.5°	68.1	71.5	75.0	77.2	78.3	79.4	80.4	81.5
95°	76.5	79.8	83.2	85.2	86.1	87.0	87.8	88.7
97.5°	90.1	93.2	96.4	98.6	99.5	100.6	101.6	102.6
100°	99.4	102.6	105.8	107.9	108.7	109.6	110.5	111.3
102.5°	109.9	113.2	116.4	118.5	119.3	120.2	121.1	121.9
105°	125.9	129.1	132.3	134.4	135.3	136.3	137.2	138.2
107.5°	143.4	146.4	149.4	151.1	151.7	152.2	152.8	153.3
110°	155.4	158.3	161.0	162.7	163.4	164.1	164.8	165.5





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	167.5	170.0	172.6	174.3	175.0	175.8	176.6	177.4
115°	186.1	188.6	191.1	192.8	193.5	194.2	194.8	195.5
117.5°	204.0	206.3	208.7	210.2	210.8	211.5	212.1	212.7
120°	215.9	218.3	220.8	222.4	223.1	223.8	224.5	225.2
122.5°	228.5	230.7	232.8	234.2	234.8	235.5	236.1	236.7
125°	246.8	248.9	251.0	252.4	253.1	253.8	254.5	255.2
127.5°	264.6	266.5	268.3	269.5	269.9	270.4	271.0	271.4
130°	276.9	278.8	280.8	281.9	282.2	282.6	282.9	283.3
132.5°	288.9	290.5	292.1	293.1	293.5	293.9	294.4	294.8
135°	306.6	308.3	310.0	311.2	311.6	312.0	312.5	312.9
137.5°	323.6	325.1	326.6	327.5	327.8	328.0	328.2	328.5
140°	335.1	336.6	337.9	338.7	338.9	339.1	339.2	339.4
142.5°	345.9	347.2	348.3	349.0	349.0	349.1	349.3	349.4
145°	362.8	363.4	364.0	364.4	364.5	364.5	364.6	364.7
147.5°	377.9	378.2	378.4	378.5	378.3	378.2	378.2	378.0
150°	387.9	388.1	388.4	388.4	388.1	387.9	387.6	387.4
152.5°	398.0	398.3	398.6	398.6	398.3	398.0	397.7	397.4
155°	410.9	411.3	411.7	411.8	411.6	411.3	411.0	410.8
157.5°	422.7	423.3	423.9	424.0	423.5	423.1	422.8	422.3
160°	429.7	430.2	430.8	430.8	430.5	430.2	429.8	429.5
162.5°	436.1	436.7	437.3	437.4	437.0	436.5	436.1	435.8
165°	444.4	445.0	445.6	445.7	445.2	444.8	444.4	443.9
167.5°	451.2	451.8	452.4	452.5	451.9	451.5	451.1	450.6
170°	454.9	455.5	456.1	456.2	455.6	455.1	454.6	454.1
172.5°	457.7	458.3	458.9	458.9	458.4	457.9	457.4	456.8
175°	460.7	461.3	461.9	462.0	461.5	461.0	460.5	459.9
177.5°	462.2	462.5	463.0	463.0	462.5	462.2	461.8	461.3
180°	462.3	462.3	462.3	462.3	462.3	462.3	462.3	462.3

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