

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: P331468-927

Luminaire Tested: **S122DIW-S290D435U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331468-927  
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-S290D435U927-4F0-1E-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: 2138.2 lumens  
Efficiency: N/A  
Efficacy: 93.0 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

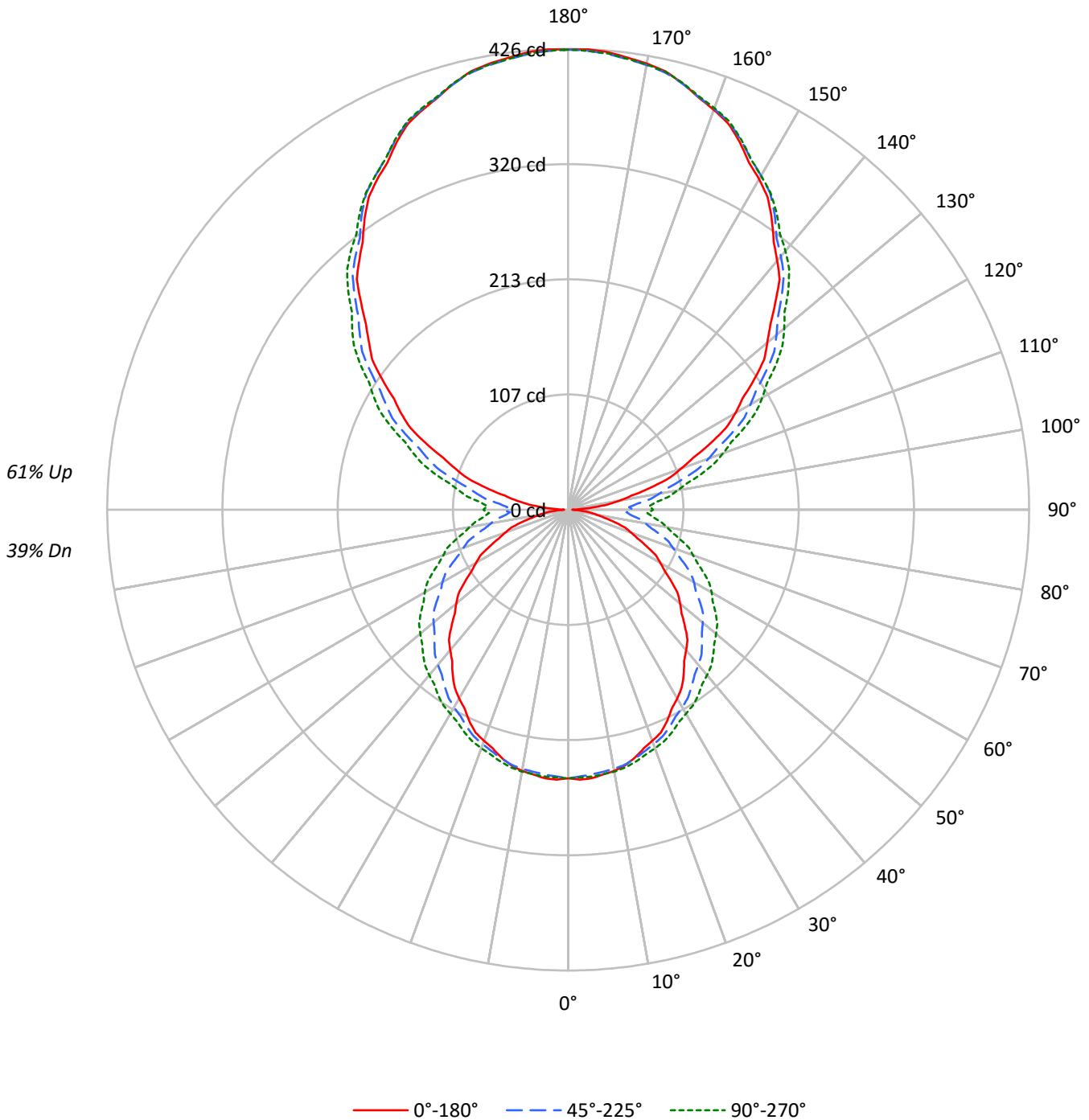
Input Watts (W): 23  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4009	4009	4009
5°	4030	3859	3845
10°	4004	3746	3703
15°	3948	3624	3554
20°	3878	3495	3410
25°	3809	3371	3279
30°	3712	3242	3150
35°	3615	3118	3059
40°	3511	3013	2965
45°	3413	2919	2886
50°	3309	2833	2810
55°	3196	2741	2731
60°	3061	2646	2648
65°	2922	2534	2548
70°	2764	2415	2440
75°	2564	2299	2342
80°	2245	2177	2240
85°	1945	2073	2163



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	23.5	1.1
10°-20°	67.5	3.2
20°-30°	102.2	4.8
30°-40°	124.5	5.8
40°-50°	134.0	6.3
50°-60°	130.1	6.1
60°-70°	113.6	5.3
70°-80°	87.5	4.1
80°-90°	60.4	2.8
90°-100°	67.4	3.2
100°-110°	113.2	5.3
110°-120°	162.6	7.6
120°-130°	199.0	9.3
130°-140°	215.7	10.1
140°-150°	207.9	9.7
150°-160°	173.7	8.1
160°-170°	115.2	5.4
170°-180°	40.3	1.9
0°-30°	193.2	9.0
0°-40°	317.8	14.9
0°-60°	581.9	27.2
0°-90°	843.3	39.4
90°-120°	343.2	16.1
90°-150°	965.8	45.2
90°-180°	1295.0	60.6
0°-180°	2138.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	248	248	248	248	248	
5°	249	248	246	248	248	24
15°	238	238	238	241	241	67
25°	216	218	222	226	227	99
35°	186	192	199	207	210	116
45°	153	162	175	186	190	118
55°	117	130	149	161	166	105
65°	80	98	119	133	138	79
75°	44	65	88	102	108	47
85°	13	35	58	73	78	14
90°	4	29	60	73	78	3
95°	22	42	64	77	82	24
105°	79	91	110	123	127	84
115°	145	152	167	177	180	143
125°	210	213	223	232	235	187
135°	271	275	279	286	288	209
145°	328	331	333	335	336	205
155°	375	376	377	379	378	173
165°	408	408	408	410	408	115
175°	425	424	423	425	423	40
180°	425	425	425	425	425	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	249.8	249.5	249.4	249.1	249.0	248.7	248.2	247.8	247.3	246.8	247.2
5°	249.1	248.8	248.6	248.3	248.0	247.7	247.2	246.8	246.3	245.8	246.3
7.5°	246.8	246.6	246.4	246.3	246.1	245.9	245.5	245.2	244.8	244.4	245.0
10°	245.1	244.9	244.8	244.6	244.5	244.2	244.0	243.8	243.5	243.3	243.9
12.5°	242.2	242.2	242.2	242.3	242.3	242.2	242.1	241.9	241.7	241.5	242.2
15°	237.5	237.7	237.8	238.0	238.1	238.2	238.2	238.2	238.2	238.2	238.9
17.5°	231.5	231.8	232.1	232.5	232.8	233.1	233.4	233.6	233.9	234.2	234.9
20°	227.4	227.8	228.2	228.6	229.0	229.4	229.7	230.0	230.4	230.7	231.6
22.5°	223.2	223.6	224.0	224.5	225.0	225.5	225.9	226.3	226.8	227.2	228.1
25°	215.9	216.5	217.1	217.6	218.2	218.8	219.5	220.2	220.9	221.7	222.6
27.5°	207.3	208.2	209.1	210.0	211.0	211.8	212.6	213.5	214.4	215.2	216.4
30°	201.5	202.6	203.6	204.6	205.7	206.8	207.8	208.8	209.8	210.9	212.1
32.5°	195.2	196.4	197.5	198.7	199.9	201.1	202.3	203.5	204.8	206.0	207.5
35°	186.1	187.4	188.8	190.1	191.5	192.9	194.5	196.0	197.5	199.0	200.7
37.5°	176.1	177.7	179.3	180.9	182.4	184.2	186.2	188.1	190.0	192.0	194.0
40°	169.5	171.3	173.0	174.8	176.5	178.5	180.6	182.8	185.0	187.1	189.2
42.5°	163.2	164.9	166.7	168.4	170.2	172.3	174.8	177.3	179.7	182.2	184.5
45°	152.6	154.7	156.9	159.1	161.2	163.7	166.5	169.3	172.1	174.9	177.4
47.5°	142.1	144.5	146.9	149.2	151.5	154.4	157.6	160.9	164.2	167.5	170.1
50°	135.0	137.4	139.9	142.4	144.9	147.9	151.5	155.1	158.7	162.3	165.0
52.5°	128.0	130.6	133.2	135.9	138.5	141.6	145.4	149.2	153.0	156.9	159.6
55°	116.9	119.9	122.7	125.6	128.5	132.0	136.2	140.3	144.5	148.6	151.5
57.5°	106.0	109.2	112.5	115.7	119.0	122.7	127.0	131.2	135.5	139.7	142.8
60°	98.2	101.7	105.1	108.5	112.0	116.0	120.6	125.1	129.7	134.2	137.3
62.5°	91.3	94.9	98.5	102.0	105.6	109.6	114.2	118.7	123.3	127.9	131.1
65°	79.9	83.8	87.7	91.7	95.5	99.9	104.6	109.3	114.1	118.7	122.1
67.5°	69.4	73.5	77.6	81.7	85.8	90.2	95.1	99.9	104.7	109.6	112.9
70°	61.9	66.1	70.2	74.4	78.5	83.1	88.0	93.0	98.0	102.9	106.4
72.5°	55.0	59.3	63.5	67.8	72.2	76.8	81.8	86.8	91.9	96.9	100.3
75°	44.3	48.7	53.2	57.7	62.2	66.9	72.1	77.2	82.3	87.5	90.9
77.5°	33.9	38.6	43.3	47.9	52.7	57.6	62.8	68.0	73.2	78.3	81.8
80°	27.0	31.8	36.8	41.6	46.5	51.6	56.7	61.9	67.1	72.3	75.7
82.5°	21.2	26.1	30.9	35.6	40.5	45.6	50.8	56.1	61.3	66.5	69.9
85°	13.0	17.9	22.9	27.8	32.8	37.8	42.9	48.1	53.2	58.3	61.6
87.5°	7.1	12.1	17.0	22.0	26.9	32.2	37.6	43.1	48.6	54.0	57.3
90°	4.0	9.6	15.1	20.8	26.3	32.6	39.5	46.3	53.2	60.0	63.1
92.5°	9.7	14.7	19.7	24.8	29.8	34.9	40.3	45.6	51.0	56.3	59.5
95°	21.5	26.1	30.7	35.2	39.8	44.5	49.5	54.4	59.4	64.3	67.4
97.5°	36.6	40.6	44.7	48.7	52.8	57.3	62.2	67.1	72.0	76.9	79.9
100°	48.1	51.7	55.3	58.9	62.5	66.6	71.4	76.0	80.8	85.5	88.5
102.5°	59.9	63.1	66.3	69.5	72.7	76.7	81.3	86.0	90.6	95.3	98.2
105°	79.0	81.5	84.1	86.7	89.2	92.6	97.0	101.2	105.6	109.9	112.9
107.5°	98.5	100.8	103.0	105.2	107.4	110.5	114.5	118.4	122.4	126.4	129.1
110°	110.9	113.0	115.0	117.2	119.2	122.2	126.1	130.1	134.0	137.9	140.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	124.7	126.5	128.3	130.2	132.0	134.8	138.4	142.0	145.7	149.4	151.7
115°	145.0	146.4	147.7	149.1	150.4	152.8	156.3	159.7	163.2	166.6	168.9
117.5°	164.9	166.1	167.3	168.5	169.8	171.8	174.7	177.5	180.5	183.3	185.4
120°	178.4	179.4	180.3	181.3	182.2	183.9	186.6	189.1	191.6	194.2	196.5
122.5°	190.8	191.6	192.5	193.4	194.3	196.1	198.6	201.1	203.7	206.3	208.3
125°	209.6	210.3	211.0	211.8	212.5	214.0	216.3	218.6	220.9	223.2	225.2
127.5°	228.3	229.2	230.0	230.8	231.6	233.0	234.7	236.5	238.3	240.0	241.8
130°	240.1	241.1	242.0	243.0	243.9	245.2	246.7	248.2	249.7	251.3	253.0
132.5°	253.3	254.1	254.8	255.6	256.4	257.5	258.7	260.1	261.4	262.8	264.3
135°	270.6	271.5	272.4	273.2	274.1	275.0	276.0	276.9	277.9	278.8	280.5
137.5°	289.2	289.9	290.6	291.3	292.0	292.6	293.2	293.7	294.3	294.9	296.3
140°	300.4	301.0	301.7	302.3	302.9	303.6	304.1	304.7	305.2	305.8	307.0
142.5°	311.9	312.5	313.1	313.8	314.4	314.9	315.2	315.5	315.8	316.2	317.2
145°	328.0	328.6	329.2	329.7	330.3	330.8	331.3	331.8	332.2	332.7	333.3
147.5°	342.8	343.4	344.1	344.8	345.5	345.9	346.3	346.6	346.9	347.2	347.5
150°	352.8	353.3	353.8	354.3	354.7	355.1	355.5	355.8	356.1	356.4	356.6
152.5°	361.7	362.2	362.7	363.1	363.6	364.1	364.4	364.8	365.2	365.6	365.9
155°	375.0	375.3	375.5	375.8	376.0	376.3	376.5	376.8	377.0	377.2	377.6
157.5°	386.5	386.7	386.8	387.0	387.1	387.2	387.4	387.5	387.7	387.9	388.4
160°	393.4	393.6	393.7	393.9	394.0	394.1	394.2	394.3	394.3	394.4	394.9
162.5°	399.7	399.7	399.7	399.7	399.8	399.9	400.0	400.1	400.1	400.2	400.7
165°	408.1	408.0	407.9	407.8	407.7	407.7	407.7	407.7	407.7	407.7	408.3
167.5°	415.1	414.9	414.6	414.4	414.2	414.0	414.0	414.0	414.0	414.0	414.5
170°	418.8	418.6	418.4	418.1	417.9	417.7	417.6	417.6	417.5	417.4	418.0
172.5°	421.4	421.2	421.0	420.7	420.5	420.3	420.3	420.2	420.1	420.0	420.6
175°	424.6	424.4	424.1	423.9	423.7	423.4	423.3	423.1	422.9	422.8	423.3
177.5°	425.9	425.7	425.5	425.3	425.1	424.9	424.8	424.7	424.5	424.5	424.8
180°	425.3	425.3	425.3	425.3	425.3	425.3	425.3	425.3	425.3	425.3	425.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	247.5	247.8	248.1	248.3	248.1	248.0	247.9	247.7
5°	246.8	247.2	247.7	247.9	247.8	247.7	247.6	247.6
7.5°	245.6	246.1	246.8	247.0	246.9	246.8	246.8	246.7
10°	244.5	245.2	245.8	246.1	246.1	246.0	245.9	245.8
12.5°	242.8	243.4	244.1	244.4	244.3	244.2	244.2	244.1
15°	239.6	240.4	241.1	241.5	241.4	241.3	241.2	241.1
17.5°	235.7	236.4	237.1	237.5	237.5	237.5	237.5	237.5
20°	232.4	233.3	234.2	234.6	234.6	234.6	234.6	234.6
22.5°	229.0	229.9	230.8	231.2	231.4	231.5	231.6	231.8
25°	223.6	224.6	225.5	226.1	226.3	226.6	226.8	227.0
27.5°	217.6	218.9	220.1	220.8	220.9	221.1	221.3	221.5
30°	213.4	214.8	216.0	216.7	217.0	217.2	217.5	217.7
32.5°	208.9	210.4	211.9	212.9	213.3	213.7	214.1	214.5
35°	202.6	204.3	206.0	207.2	207.8	208.3	208.9	209.5
37.5°	195.9	197.9	199.9	201.1	201.7	202.3	202.9	203.4
40°	191.3	193.4	195.4	196.9	197.6	198.3	199.0	199.7
42.5°	186.8	189.0	191.3	192.8	193.5	194.2	195.0	195.7
45°	179.8	182.4	184.8	186.5	187.3	188.1	188.9	189.6
47.5°	172.7	175.2	177.8	179.6	180.5	181.3	182.2	183.1
50°	167.7	170.5	173.2	175.0	175.9	176.7	177.6	178.5
52.5°	162.4	165.2	167.9	169.8	170.8	171.7	172.7	173.6
55°	154.4	157.2	160.2	162.1	163.1	164.2	165.2	166.3
57.5°	145.9	149.0	152.1	154.2	155.3	156.3	157.3	158.4
60°	140.3	143.4	146.4	148.5	149.6	150.7	151.9	153.0
62.5°	134.4	137.6	140.9	143.0	144.0	145.0	146.2	147.2
65°	125.3	128.6	131.9	134.0	135.1	136.1	137.1	138.2
67.5°	116.1	119.5	122.8	125.0	126.0	127.1	128.3	129.4
70°	109.8	113.2	116.7	118.9	119.9	120.8	121.8	122.7
72.5°	103.6	107.0	110.4	112.6	113.8	114.9	116.1	117.2
75°	94.3	97.8	101.2	103.5	104.5	105.5	106.5	107.6
77.5°	85.2	88.6	92.1	94.3	95.5	96.6	97.7	98.8
80°	79.1	82.4	85.8	88.0	89.1	90.2	91.3	92.4
82.5°	73.3	76.7	80.0	82.2	83.3	84.4	85.4	86.4
85°	65.0	68.4	71.8	74.0	75.1	76.2	77.3	78.4
87.5°	60.5	63.8	66.9	69.1	70.1	71.2	72.2	73.3
90°	66.1	69.2	72.2	74.2	75.3	76.4	77.4	78.4
92.5°	62.7	65.8	69.0	71.1	72.0	73.0	74.0	74.9
95°	70.4	73.4	76.5	78.4	79.2	80.0	80.8	81.6
97.5°	82.9	85.8	88.7	90.7	91.6	92.5	93.5	94.4
100°	91.4	94.4	97.4	99.3	100.1	100.8	101.6	102.4
102.5°	101.2	104.2	107.1	109.0	109.8	110.6	111.4	112.2
105°	115.8	118.7	121.8	123.7	124.5	125.4	126.3	127.1
107.5°	131.9	134.7	137.4	139.0	139.6	140.1	140.6	141.1
110°	143.0	145.6	148.1	149.7	150.4	151.0	151.6	152.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	154.1	156.5	158.8	160.3	161.1	161.8	162.5	163.2
115°	171.2	173.6	175.9	177.4	178.0	178.6	179.3	179.9
117.5°	187.7	189.8	192.0	193.4	193.9	194.6	195.1	195.7
120°	198.7	200.9	203.2	204.6	205.3	205.9	206.5	207.2
122.5°	210.2	212.2	214.2	215.5	216.0	216.7	217.2	217.8
125°	227.1	229.0	230.9	232.3	232.9	233.5	234.2	234.8
127.5°	243.4	245.2	246.8	248.0	248.3	248.8	249.3	249.7
130°	254.8	256.5	258.3	259.4	259.7	260.0	260.3	260.6
132.5°	265.8	267.3	268.8	269.7	270.1	270.5	270.8	271.2
135°	282.1	283.7	285.3	286.3	286.7	287.1	287.5	287.9
137.5°	297.7	299.1	300.5	301.3	301.6	301.7	302.0	302.2
140°	308.3	309.7	310.9	311.6	311.8	312.0	312.1	312.3
142.5°	318.3	319.4	320.4	321.1	321.2	321.2	321.4	321.5
145°	333.8	334.4	334.9	335.3	335.3	335.4	335.5	335.6
147.5°	347.7	347.9	348.2	348.2	348.1	348.0	347.9	347.8
150°	356.9	357.1	357.4	357.4	357.1	356.9	356.6	356.4
152.5°	366.1	366.5	366.8	366.8	366.5	366.1	365.9	365.6
155°	378.0	378.4	378.8	378.9	378.7	378.4	378.2	378.0
157.5°	388.9	389.4	390.0	390.1	389.7	389.3	389.0	388.6
160°	395.4	395.9	396.3	396.4	396.1	395.8	395.5	395.1
162.5°	401.2	401.8	402.3	402.4	402.0	401.6	401.2	400.9
165°	408.8	409.4	410.0	410.0	409.6	409.2	408.8	408.4
167.5°	415.1	415.7	416.2	416.3	415.8	415.4	415.0	414.6
170°	418.5	419.1	419.6	419.7	419.2	418.7	418.3	417.8
172.5°	421.1	421.7	422.2	422.2	421.8	421.3	420.8	420.3
175°	423.9	424.5	425.0	425.1	424.6	424.1	423.7	423.2
177.5°	425.2	425.6	426.0	426.0	425.6	425.2	424.8	424.5
180°	425.3	425.3	425.3	425.3	425.3	425.3	425.3	425.3

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