

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: P331469-935

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331469-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
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-F
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 435 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2526.5 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: General Diffuse

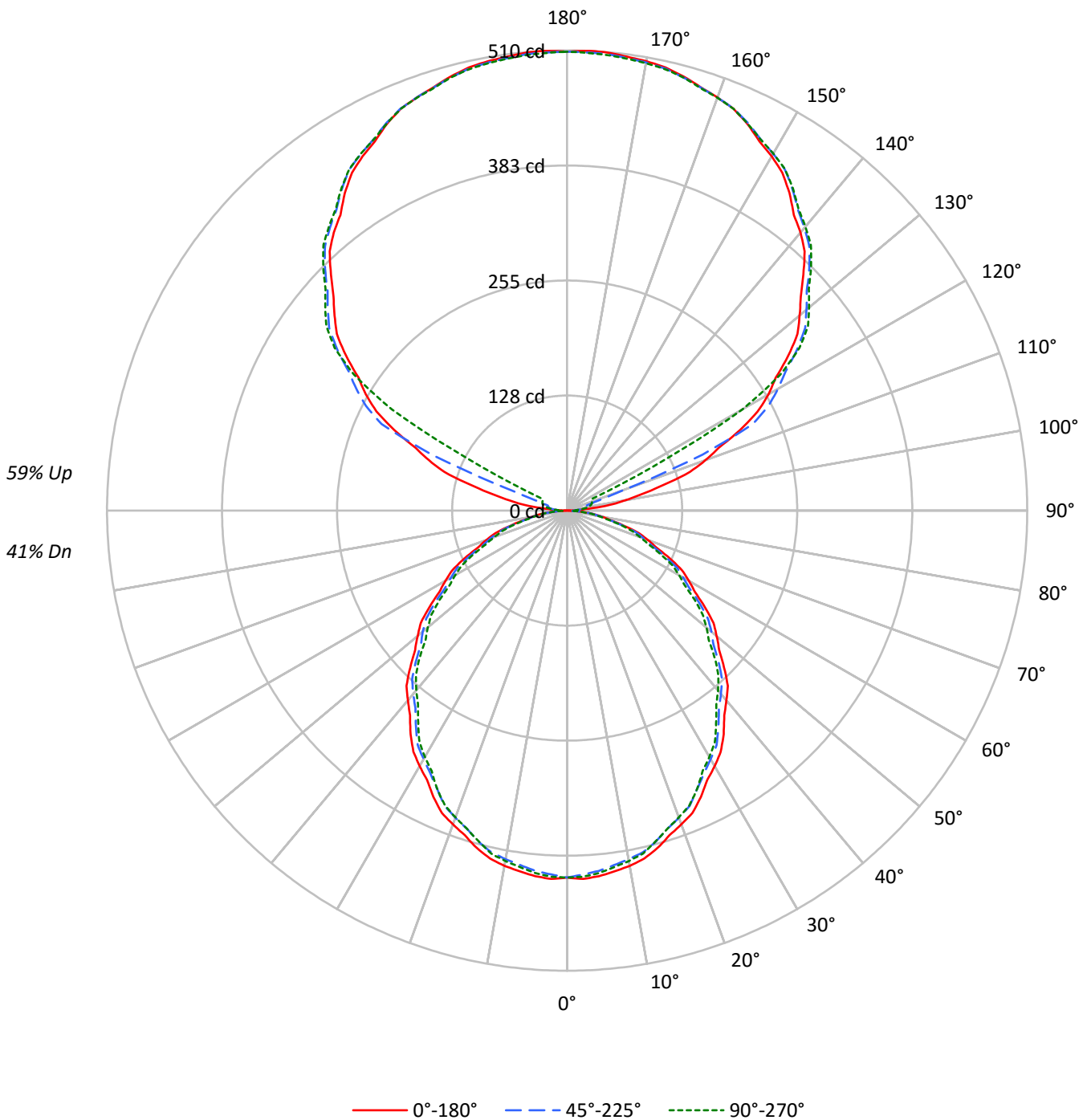
Input Watts (W): 23
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	96	96	96	96	78	78	78	62	62	62	48	48	48	41
1	96	91	88	84	87	84	80	77	69	66	64	55	53	52	42	41	40	35
2	87	80	74	69	79	73	68	63	60	56	53	48	46	43	37	36	34	29
3	80	70	63	57	72	64	58	53	53	48	45	43	39	37	33	31	29	24
4	73	62	54	48	66	57	50	45	47	42	38	38	34	31	29	27	25	21
5	67	55	47	41	61	51	44	38	42	37	33	34	30	27	27	24	22	18
6	61	49	42	36	56	45	38	33	38	32	28	31	27	24	24	21	19	16
7	57	45	37	31	52	41	34	29	34	29	25	28	24	21	22	19	17	14
8	53	40	33	28	48	37	30	26	31	26	22	26	22	19	20	17	15	13
9	49	37	30	25	45	34	27	23	29	23	20	23	20	17	19	16	14	11
10	46	34	27	22	42	31	25	21	26	21	18	22	18	15	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6567	6567	6567
5°	6592	6498	6536
10°	6555	6432	6465
15°	6472	6349	6342
20°	6357	6223	6216
25°	6242	6070	6070
30°	6096	5929	5876
35°	5960	5757	5673
40°	5788	5590	5482
45°	5617	5421	5286
50°	5433	5247	5061
55°	5239	5044	4856
60°	5028	4799	4624
65°	4795	4558	4348
70°	4504	4263	4060
75°	4099	3924	3830
80°	3636	3533	3347
85°	2964	2816	2538



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	1.5
10°-20°	107.6	4.3
20°-30°	158.2	6.3
30°-40°	183.8	7.3
40°-50°	183.6	7.3
50°-60°	160.1	6.3
60°-70°	118.4	4.7
70°-80°	67.0	2.7
80°-90°	19.3	0.8
90°-100°	17.0	0.7
100°-110°	62.2	2.5
110°-120°	166.3	6.6
120°-130°	274.5	10.9
130°-140°	291.9	11.6
140°-150°	271.3	10.7
150°-160°	218.2	8.6
160°-170°	140.6	5.6
170°-180°	48.4	1.9
0°-30°	304.1	12.0
0°-40°	487.8	19.3
0°-60°	831.5	32.9
0°-90°	1036.1	41.0
90°-120°	245.5	9.7
90°-150°	1083.3	42.9
90°-180°	1490.0	59.0
0°-180°	2526.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	407	407	407	407	407	
5°	407	405	401	404	403	39
15°	387	385	380	381	379	109
25°	350	347	341	341	341	161
35°	302	298	292	290	288	189
45°	246	243	237	233	232	190
55°	186	184	179	175	172	166
65°	126	123	119	116	114	124
75°	66	65	63	61	61	70
85°	16	16	15	14	14	18
90°	0	4	7	9	10	2
95°	24	13	14	16	16	29
105°	112	117	22	26	28	120
115°	212	218	227	65	30	208
125°	299	304	311	313	315	267
135°	370	376	379	383	382	286
145°	430	429	435	438	436	269
155°	473	470	474	476	473	218
165°	498	496	497	500	497	141
175°	510	507	508	510	507	48
180°	509	509	509	509	509	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7
2.5°	408.6	408.3	407.9	407.6	407.3	406.7	406.0	405.2	404.4	403.6	404.3
5°	406.7	406.4	406.0	405.7	405.4	404.8	403.8	402.9	401.8	400.9	401.6
7.5°	403.2	402.6	402.1	401.6	401.1	400.3	399.3	398.3	397.4	396.4	397.1
10°	399.8	399.2	398.6	398.0	397.3	396.5	395.5	394.4	393.4	392.3	393.0
12.5°	395.0	394.5	394.0	393.4	392.9	392.1	391.1	390.0	389.0	388.0	388.4
15°	387.2	386.7	386.2	385.6	385.1	384.4	383.1	382.0	380.9	379.8	380.1
17.5°	377.2	376.7	376.2	375.7	375.1	374.3	373.2	372.0	370.8	369.7	370.1
20°	370.0	369.5	368.9	368.4	367.9	367.0	365.8	364.6	363.4	362.2	362.5
22.5°	362.8	362.1	361.4	360.6	359.9	359.0	357.8	356.6	355.5	354.4	354.4
25°	350.4	349.7	349.0	348.4	347.7	346.6	345.1	343.6	342.2	340.7	340.9
27.5°	336.4	335.8	335.1	334.5	333.9	332.9	331.8	330.6	329.5	328.3	328.0
30°	327.0	326.3	325.6	324.9	324.2	323.2	321.9	320.6	319.3	318.0	317.7
32.5°	316.9	316.4	315.9	315.3	314.8	313.7	312.4	311.1	309.7	308.3	307.8
35°	302.4	301.4	300.6	299.7	298.9	297.7	296.4	295.0	293.6	292.1	291.6
37.5°	285.9	285.1	284.3	283.5	282.8	281.7	280.3	279.0	277.5	276.1	275.5
40°	274.6	273.9	273.2	272.5	271.8	270.8	269.3	267.9	266.6	265.2	264.4
42.5°	263.6	262.9	262.3	261.6	260.9	259.8	258.4	257.0	255.6	254.3	253.4
45°	246.0	245.4	244.8	244.2	243.6	242.6	241.3	240.0	238.8	237.4	236.4
47.5°	228.5	227.9	227.4	226.8	226.2	225.2	223.9	222.6	221.2	219.8	218.8
50°	216.3	215.9	215.4	215.0	214.6	213.7	212.5	211.3	210.1	208.9	207.7
52.5°	204.4	203.8	203.3	202.7	202.1	201.2	200.1	199.0	197.8	196.7	195.6
55°	186.1	185.6	185.1	184.6	184.1	183.3	182.3	181.2	180.2	179.2	178.1
57.5°	167.9	167.5	167.0	166.6	166.2	165.4	164.3	163.2	162.0	160.8	159.8
60°	155.7	155.3	155.0	154.6	154.3	153.5	152.3	151.1	149.8	148.6	147.7
62.5°	143.8	143.2	142.7	142.2	141.5	140.8	139.8	139.0	138.0	137.1	136.1
65°	125.5	125.0	124.5	124.0	123.5	122.8	121.9	121.1	120.2	119.3	118.5
67.5°	107.0	106.6	106.2	105.7	105.4	104.8	103.9	103.1	102.4	101.6	101.0
70°	95.4	95.1	94.7	94.4	94.0	93.5	92.7	92.0	91.1	90.3	89.7
72.5°	83.5	83.2	82.8	82.5	82.1	81.7	81.2	80.8	80.2	79.7	79.1
75°	65.7	65.5	65.3	65.2	65.0	64.7	64.3	63.8	63.4	62.9	62.4
77.5°	49.8	49.4	49.2	48.9	48.6	48.3	48.1	48.0	47.8	47.6	47.4
80°	39.1	39.0	38.9	38.8	38.7	38.7	38.5	38.3	38.1	38.0	37.7
82.5°	29.1	29.1	29.1	29.0	29.0	28.9	28.8	28.8	28.7	28.6	28.2
85°	16.0	15.9	15.8	15.8	15.7	15.6	15.5	15.4	15.3	15.2	15.0
87.5°	5.7	5.8	5.8	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.8
90°	0.3	1.3	2.2	3.1	4.0	4.7	5.4	6.0	6.7	7.3	7.7
92.5°	7.4	7.3	7.2	7.1	7.1	7.2	7.6	7.9	8.2	8.5	8.8
95°	23.9	21.2	18.5	15.8	13.1	12.1	12.7	13.2	13.8	14.4	14.7
97.5°	47.4	39.9	32.3	24.6	17.0	13.9	15.2	16.5	17.9	19.2	19.5
100°	65.2	53.9	42.7	31.5	20.3	15.4	16.8	18.2	19.5	21.0	21.6
102.5°	84.6	82.2	79.8	77.5	75.1	68.1	56.5	44.9	33.2	21.5	22.4
105°	111.8	114.3	116.8	119.2	121.7	111.8	89.5	67.1	44.8	22.5	23.3
107.5°	143.0	145.0	147.0	149.0	150.9	138.5	111.8	85.0	58.2	31.4	30.5
110°	163.0	164.7	166.4	168.2	169.9	158.9	135.3	111.7	88.0	64.4	56.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	181.8	183.4	184.9	186.4	188.0	185.8	179.9	174.1	168.2	162.5	132.6
115°	211.6	213.0	214.4	215.8	217.1	218.9	220.9	223.0	225.0	227.0	189.2
117.5°	238.2	239.7	241.3	242.8	244.4	245.9	247.3	248.7	250.1	251.5	242.4
120°	257.6	258.8	260.0	261.3	262.5	263.9	265.4	266.8	268.3	269.8	270.7
122.5°	274.1	275.3	276.6	277.9	279.2	280.7	282.3	283.9	285.5	287.1	287.7
125°	299.2	300.2	301.4	302.4	303.4	304.7	306.3	307.9	309.4	311.0	311.5
127.5°	321.9	323.1	324.3	325.5	326.7	327.8	329.0	330.1	331.3	332.4	333.3
130°	336.4	337.7	339.0	340.3	341.6	342.7	343.6	344.5	345.4	346.3	347.2
132.5°	351.1	352.1	353.3	354.4	355.5	356.5	357.4	358.3	359.2	360.2	360.9
135°	370.2	371.5	372.8	374.1	375.5	376.4	377.2	378.0	378.7	379.4	380.2
137.5°	389.6	390.5	391.4	392.4	393.2	394.1	394.9	395.8	396.6	397.4	398.2
140°	402.3	402.9	403.6	404.2	404.8	405.6	406.6	407.4	408.3	409.2	409.9
142.5°	412.8	413.5	414.0	414.6	415.2	416.0	417.0	418.0	419.0	420.1	420.8
145°	429.5	429.4	429.3	429.2	429.1	429.8	431.2	432.6	433.9	435.3	435.9
147.5°	443.9	443.7	443.3	443.1	442.7	443.2	444.6	446.0	447.4	448.8	449.2
150°	453.4	452.8	452.2	451.7	451.1	451.4	452.8	454.1	455.4	456.7	457.2
152.5°	461.3	460.7	460.0	459.4	458.7	459.1	460.3	461.6	462.8	464.1	464.5
155°	472.9	472.2	471.4	470.7	469.9	470.1	471.1	472.0	473.0	474.0	474.5
157.5°	481.9	481.3	480.7	480.1	479.5	479.5	480.2	480.9	481.6	482.2	482.8
160°	487.2	486.7	486.3	485.8	485.3	485.3	485.8	486.3	486.7	487.2	487.8
162.5°	492.0	491.5	490.9	490.5	490.0	490.0	490.3	490.8	491.2	491.6	492.2
165°	498.3	497.8	497.3	496.8	496.3	496.2	496.5	496.7	497.0	497.1	497.7
167.5°	503.0	502.5	502.0	501.5	501.0	500.9	501.1	501.4	501.6	501.8	502.4
170°	505.7	505.1	504.6	504.2	503.7	503.5	503.7	503.9	504.0	504.2	504.7
172.5°	507.4	507.0	506.4	505.9	505.4	505.3	505.4	505.6	505.8	505.9	506.5
175°	509.7	509.1	508.5	508.0	507.4	507.2	507.4	507.6	507.6	507.8	508.4
177.5°	510.1	509.6	509.1	508.7	508.2	508.0	508.1	508.2	508.2	508.2	508.8
180°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7
2.5°	405.0	405.7	406.4	406.7	406.6	406.4	406.3	406.1
5°	402.3	403.0	403.7	404.0	403.8	403.6	403.5	403.3
7.5°	397.8	398.5	399.2	399.4	399.2	399.0	398.8	398.6
10°	393.7	394.4	395.1	395.3	395.0	394.8	394.5	394.3
12.5°	388.9	389.3	389.9	390.0	389.9	389.6	389.4	389.3
15°	380.5	380.8	381.2	381.2	380.7	380.3	379.9	379.4
17.5°	370.5	370.9	371.3	371.3	370.8	370.5	370.1	369.6
20°	362.7	363.0	363.3	363.2	362.8	362.5	362.1	361.8
22.5°	354.5	354.6	354.6	354.5	354.3	354.0	353.9	353.7
25°	341.0	341.2	341.4	341.4	341.2	341.0	340.9	340.7
27.5°	327.8	327.5	327.3	326.9	326.5	326.1	325.7	325.3
30°	317.5	317.2	316.9	316.7	316.3	316.0	315.6	315.2
32.5°	307.4	306.9	306.4	306.0	305.7	305.3	305.0	304.6
35°	291.1	290.6	290.1	289.6	289.2	288.8	288.3	287.8
37.5°	274.8	274.2	273.5	273.0	272.6	272.2	271.8	271.4
40°	263.6	262.9	262.1	261.5	261.1	260.8	260.5	260.1
42.5°	252.5	251.7	250.8	250.1	249.7	249.2	248.7	248.2
45°	235.5	234.5	233.6	232.9	232.6	232.2	231.9	231.5
47.5°	217.8	216.8	215.8	215.0	214.6	214.0	213.5	213.0
50°	206.5	205.2	204.0	203.2	202.8	202.3	201.9	201.5
52.5°	194.7	193.6	192.6	191.8	191.2	190.7	190.1	189.5
55°	177.0	176.0	175.0	174.3	173.8	173.3	172.9	172.5
57.5°	158.8	157.7	156.7	156.0	155.8	155.4	155.1	154.7
60°	146.7	145.8	144.8	144.2	144.0	143.7	143.4	143.2
62.5°	135.3	134.4	133.5	132.9	132.6	132.2	131.9	131.6
65°	117.7	116.9	116.1	115.5	115.1	114.7	114.3	113.8
67.5°	100.4	99.8	99.2	98.7	98.3	98.0	97.6	97.3
70°	89.1	88.5	87.9	87.5	87.1	86.7	86.4	86.0
72.5°	78.5	77.9	77.3	76.8	76.5	76.3	76.0	75.7
75°	61.9	61.4	60.9	60.7	60.9	61.0	61.2	61.4
77.5°	47.1	46.8	46.6	46.3	46.1	45.9	45.6	45.4
80°	37.5	37.2	36.9	36.7	36.5	36.3	36.2	36.0
82.5°	27.9	27.6	27.2	27.0	27.0	26.9	26.9	26.9
85°	14.7	14.5	14.2	14.0	13.9	13.9	13.8	13.7
87.5°	5.6	5.5	5.3	5.3	5.3	5.2	5.2	5.1
90°	8.2	8.6	9.0	9.3	9.5	9.6	9.8	9.9
92.5°	9.0	9.2	9.4	9.6	9.6	9.7	9.8	9.9
95°	15.2	15.6	16.0	16.2	16.1	16.0	15.9	15.8
97.5°	19.9	20.2	20.5	20.8	20.8	20.9	21.0	21.1
100°	22.3	22.9	23.6	24.0	24.2	24.4	24.5	24.6
102.5°	23.2	24.1	25.0	25.5	25.7	26.0	26.2	26.4
105°	24.3	25.1	26.1	26.7	26.9	27.3	27.6	28.0
107.5°	29.6	28.7	27.7	27.5	27.8	28.2	28.4	28.8
110°	48.0	39.9	31.7	27.7	28.1	28.4	28.8	29.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	102.8	72.9	43.1	28.3	28.6	28.8	29.1	29.4
115°	151.4	113.5	75.6	53.7	47.9	41.9	36.1	30.1
117.5°	233.2	224.0	214.8	200.6	181.2	161.9	142.6	123.2
120°	271.7	272.7	273.7	268.6	257.6	246.6	235.5	224.5
122.5°	288.3	288.9	289.5	288.7	286.5	284.4	282.2	280.1
125°	312.1	312.7	313.2	313.7	313.9	314.2	314.4	314.6
127.5°	334.2	334.9	335.8	336.2	336.3	336.3	336.4	336.4
130°	348.1	349.0	349.9	350.3	350.3	350.2	350.1	350.0
132.5°	361.7	362.4	363.2	363.5	363.4	363.3	363.3	363.3
135°	381.1	381.9	382.7	383.0	382.9	382.7	382.5	382.4
137.5°	399.1	399.8	400.6	400.9	400.6	400.4	400.1	399.8
140°	410.7	411.5	412.2	412.3	411.9	411.5	411.1	410.7
142.5°	421.5	422.1	422.8	422.9	422.5	422.1	421.7	421.3
145°	436.5	437.0	437.6	437.7	437.3	436.9	436.5	436.1
147.5°	449.6	450.0	450.5	450.5	450.1	449.8	449.4	449.1
150°	457.7	458.1	458.7	458.7	458.3	457.9	457.4	457.1
152.5°	465.0	465.5	466.1	466.0	465.5	464.9	464.3	463.8
155°	475.0	475.4	476.0	475.9	475.2	474.6	473.9	473.3
157.5°	483.4	483.9	484.5	484.4	483.8	483.1	482.5	481.9
160°	488.2	488.7	489.2	489.1	488.6	488.0	487.4	486.9
162.5°	492.8	493.4	493.9	493.8	493.1	492.4	491.7	491.0
165°	498.3	498.9	499.5	499.5	498.9	498.3	497.7	497.1
167.5°	503.0	503.5	504.1	504.0	503.3	502.6	501.8	501.1
170°	505.3	505.9	506.4	506.4	505.7	504.9	504.2	503.4
172.5°	507.0	507.6	508.2	508.2	507.4	506.7	505.9	505.2
175°	509.0	509.5	510.1	510.1	509.2	508.4	507.6	506.8
177.5°	509.2	509.6	510.1	510.1	509.5	508.9	508.2	507.7
180°	508.6	508.6	508.6	508.6	508.6	508.6	508.6	508.6

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