

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: P331475-935

Luminaire Tested: **S122DIW-S290D710U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331475-935  
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-S290D710U935-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 710 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3478.1 lumens  
Efficiency: N/A  
Efficacy: 114.4 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: Semi-Indirect

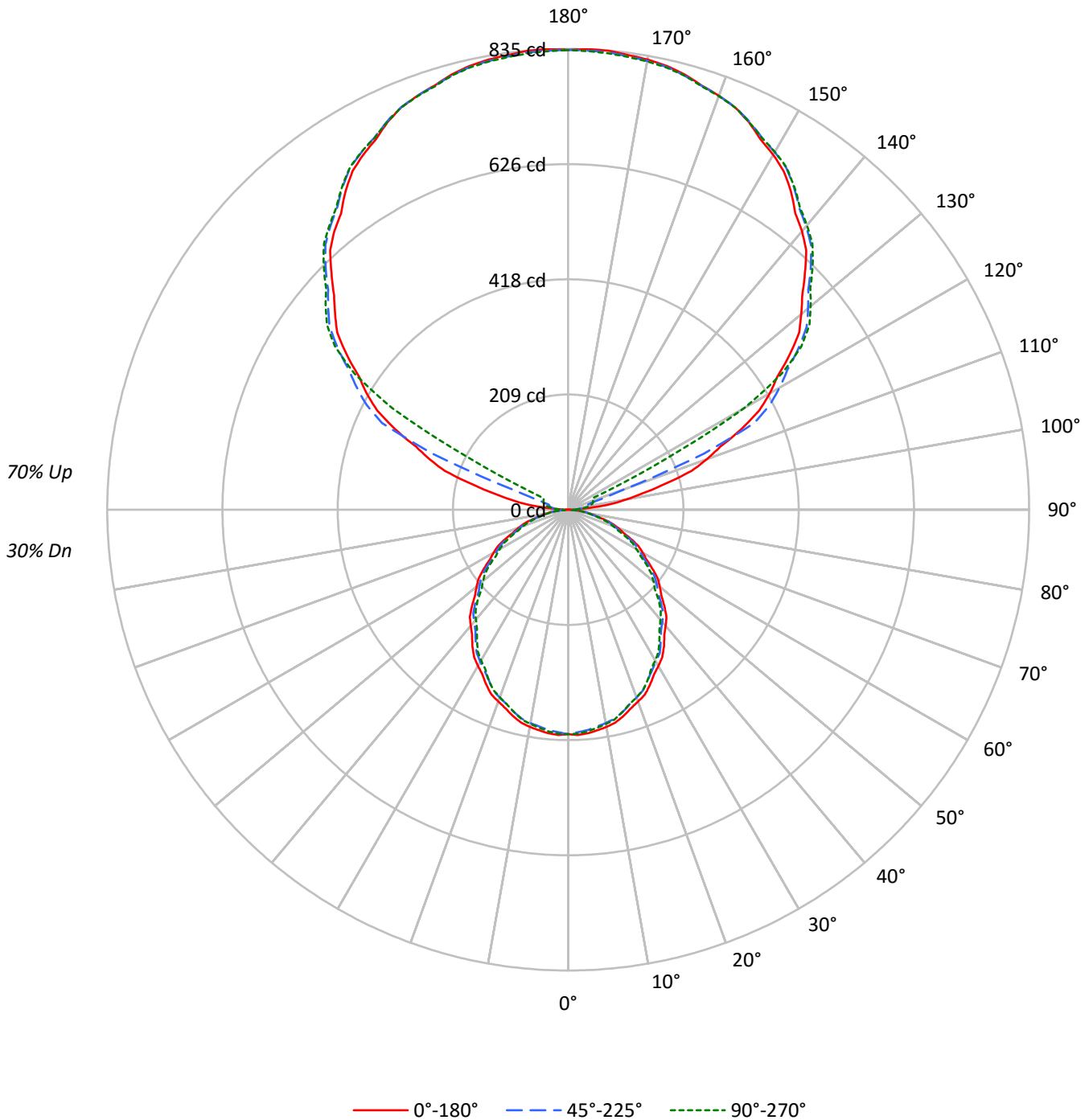
Input Watts (W): 30.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38	30
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	32	25
2	85	78	72	67	76	70	65	61	55	52	49	42	39	37	29	28	27	21
3	77	68	61	56	69	61	55	51	49	44	41	37	34	32	26	24	23	18
4	71	60	53	47	63	54	48	43	43	38	35	33	30	27	23	21	20	15
5	65	54	46	40	58	48	42	37	39	34	30	29	26	23	21	19	17	13
6	60	48	40	34	53	43	37	32	35	30	26	26	23	20	19	17	15	12
7	55	43	35	30	49	39	32	28	31	26	23	24	21	18	17	15	13	10
8	51	39	32	26	46	35	29	24	28	24	20	22	18	16	16	13	12	9
9	47	36	28	23	42	32	26	22	26	21	18	20	17	14	15	12	11	8
10	44	32	25	21	40	29	23	19	24	19	16	18	15	13	13	11	10	8

**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	1.1
10°-20°	107.6	3.1
20°-30°	158.2	4.5
30°-40°	183.8	5.3
40°-50°	183.6	5.3
50°-60°	160.1	4.6
60°-70°	118.4	3.4
70°-80°	67.0	1.9
80°-90°	20.1	0.6
90°-100°	27.8	0.8
100°-110°	101.9	2.9
110°-120°	272.4	7.8
120°-130°	449.6	12.9
130°-140°	478.2	13.7
140°-150°	444.4	12.8
150°-160°	357.3	10.3
160°-170°	230.3	6.6
170°-180°	79.3	2.3
0°-30°	304.1	8.7
0°-40°	487.8	14.0
0°-60°	831.5	23.9
0°-90°	1036.9	29.8
90°-120°	402.1	11.6
90°-150°	1774.3	51.0
90°-180°	2441.0	70.2
0°-180°	3478.1	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°	1	7	12	15	16	3
95°	39	21	24	26	26	48
105°	183	191	37	43	46	196
115°	347	357	372	106	49	341
125°	490	498	509	513	515	437
135°	606	616	622	627	626	468
145°	703	703	713	717	714	440
155°	775	770	776	779	775	357
165°	816	813	814	818	814	230
175°	835	831	832	835	830	79
180°	833	833	833	833	833	



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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°	5.8	5.9	6.0	6.2	6.4	6.5	6.5	6.6	6.7	6.8	6.7
90°	0.6	2.1	3.5	5.0	6.5	7.7	8.9	9.9	11.0	12.1	12.7
92.5°	12.1	12.1	11.9	11.8	11.6	11.9	12.4	12.9	13.4	13.9	14.3
95°	39.2	34.8	30.3	25.9	21.5	19.7	20.7	21.6	22.6	23.5	24.2
97.5°	77.7	65.3	52.9	40.4	27.9	22.8	25.0	27.1	29.3	31.4	32.0
100°	106.7	88.3	70.0	51.7	33.3	25.2	27.6	29.8	32.1	34.4	35.4
102.5°	138.5	134.7	130.7	126.8	123.0	111.5	92.5	73.4	54.3	35.3	36.7
105°	183.2	187.3	191.3	195.3	199.3	183.0	146.5	109.9	73.4	36.8	38.2
107.5°	234.2	237.5	240.7	243.9	247.2	226.9	183.0	139.2	95.3	51.5	49.9
110°	267.0	269.8	272.7	275.4	278.3	260.3	221.6	182.9	144.2	105.5	92.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	297.9	300.4	302.9	305.3	307.8	304.3	294.7	285.2	275.6	266.0	217.2
115°	346.6	348.9	351.1	353.4	355.7	358.5	361.9	365.2	368.5	371.9	309.9
117.5°	390.1	392.6	395.2	397.7	400.3	402.7	405.0	407.3	409.6	411.9	396.9
120°	421.9	424.0	425.9	427.9	430.0	432.1	434.5	437.0	439.4	441.8	443.4
122.5°	448.9	451.1	453.1	455.3	457.4	459.8	462.4	465.0	467.6	470.3	471.2
125°	490.0	491.8	493.5	495.2	497.0	499.1	501.7	504.2	506.8	509.3	510.2
127.5°	527.3	529.2	531.2	533.0	535.0	536.9	538.8	540.7	542.6	544.5	545.9
130°	550.9	553.0	555.2	557.3	559.5	561.3	562.7	564.2	565.7	567.2	568.7
132.5°	575.1	576.9	578.7	580.5	582.3	583.9	585.4	586.9	588.4	589.9	591.1
135°	606.4	608.5	610.6	612.8	614.9	616.6	617.9	619.1	620.3	621.5	622.8
137.5°	638.1	639.6	641.1	642.6	644.0	645.5	646.9	648.2	649.6	651.0	652.3
140°	658.8	659.9	660.9	662.0	663.1	664.3	665.8	667.3	668.7	670.3	671.5
142.5°	676.1	677.1	678.1	679.1	680.0	681.3	683.0	684.8	686.4	688.1	689.2
145°	703.4	703.3	703.2	703.0	702.8	704.0	706.2	708.5	710.8	713.1	714.0
147.5°	727.1	726.7	726.2	725.7	725.1	726.0	728.2	730.5	732.7	734.9	735.7
150°	742.6	741.7	740.7	739.8	738.8	739.4	741.6	743.7	745.9	748.0	748.8
152.5°	755.6	754.6	753.5	752.4	751.4	751.9	754.0	756.0	758.0	760.1	760.9
155°	774.6	773.4	772.1	770.9	769.7	769.9	771.5	773.1	774.7	776.4	777.1
157.5°	789.4	788.3	787.3	786.3	785.3	785.3	786.4	787.6	788.7	789.8	790.7
160°	798.1	797.2	796.4	795.7	794.8	794.8	795.7	796.4	797.2	798.1	798.8
162.5°	805.7	804.9	804.2	803.3	802.5	802.5	803.1	803.9	804.6	805.3	806.2
165°	816.1	815.3	814.5	813.7	812.9	812.7	813.1	813.5	813.9	814.3	815.3
167.5°	823.8	823.0	822.3	821.4	820.6	820.4	820.8	821.1	821.6	821.9	822.9
170°	828.2	827.3	826.6	825.8	824.9	824.7	824.9	825.3	825.5	825.8	826.7
172.5°	831.0	830.3	829.5	828.6	827.9	827.6	827.9	828.1	828.4	828.6	829.6
175°	834.8	833.9	832.9	832.0	831.0	830.7	831.0	831.3	831.6	831.8	832.8
177.5°	835.4	834.7	833.9	833.2	832.4	832.1	832.2	832.3	832.4	832.5	833.3
180°	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0



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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°	6.6	6.5	6.5	6.5	6.5	6.5	6.4	6.4
90°	13.4	14.0	14.7	15.2	15.5	15.8	16.0	16.3
92.5°	14.7	15.1	15.4	15.7	15.8	15.9	16.1	16.3
95°	24.9	25.5	26.2	26.4	26.3	26.2	26.1	25.9
97.5°	32.5	33.1	33.6	33.9	34.1	34.3	34.4	34.6
100°	36.5	37.5	38.7	39.3	39.6	39.9	40.1	40.4
102.5°	38.1	39.5	40.9	41.8	42.2	42.5	42.9	43.3
105°	39.7	41.2	42.6	43.7	44.2	44.8	45.3	45.8
107.5°	48.5	47.0	45.5	45.0	45.5	46.1	46.6	47.1
110°	78.7	65.3	51.9	45.5	46.0	46.6	47.1	47.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	168.3	119.5	70.6	46.4	46.8	47.3	47.7	48.1
115°	247.9	185.8	123.8	88.0	78.4	68.7	59.1	49.4
117.5°	381.9	366.9	351.9	328.6	296.9	265.2	233.5	201.8
120°	445.1	446.6	448.2	440.0	421.9	403.8	385.7	367.6
122.5°	472.2	473.1	474.2	472.9	469.3	465.8	462.4	458.8
125°	511.2	512.1	513.1	513.8	514.1	514.5	515.0	515.3
127.5°	547.3	548.6	550.0	550.7	550.8	550.9	551.0	551.0
130°	570.2	571.6	573.1	573.8	573.6	573.5	573.3	573.3
132.5°	592.4	593.7	594.9	595.5	595.3	595.2	595.0	595.0
135°	624.1	625.4	626.8	627.3	627.1	626.8	626.5	626.3
137.5°	653.6	654.9	656.3	656.7	656.2	655.7	655.3	654.8
140°	672.7	673.9	675.1	675.4	674.7	674.0	673.3	672.7
142.5°	690.3	691.4	692.5	692.7	692.1	691.4	690.7	690.0
145°	714.9	715.8	716.8	717.0	716.3	715.6	714.9	714.3
147.5°	736.4	737.1	737.8	737.9	737.3	736.8	736.2	735.6
150°	749.6	750.4	751.2	751.3	750.6	749.9	749.2	748.6
152.5°	761.6	762.5	763.3	763.3	762.3	761.5	760.6	759.7
155°	777.9	778.8	779.5	779.4	778.3	777.3	776.2	775.2
157.5°	791.7	792.6	793.5	793.4	792.4	791.3	790.3	789.2
160°	799.6	800.5	801.2	801.2	800.2	799.3	798.4	797.5
162.5°	807.1	808.0	808.9	808.8	807.6	806.5	805.3	804.2
165°	816.2	817.1	818.0	818.0	817.1	816.2	815.3	814.3
167.5°	823.8	824.8	825.6	825.5	824.3	823.1	821.9	820.7
170°	827.7	828.5	829.5	829.4	828.2	827.0	825.8	824.6
172.5°	830.5	831.5	832.4	832.2	831.0	829.8	828.6	827.4
175°	833.7	834.6	835.5	835.3	834.0	832.7	831.3	830.0
177.5°	834.1	834.7	835.5	835.4	834.5	833.4	832.5	831.6
180°	833.0	833.0	833.0	833.0	833.0	833.0	833.0	833.0

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