

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: P331475-930

Luminaire Tested: **S122DIW-S290D710U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331475-930
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-S290D710U930-4F0-1E-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: 3293.4 lumens
Efficiency: N/A
Efficacy: 108.3 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

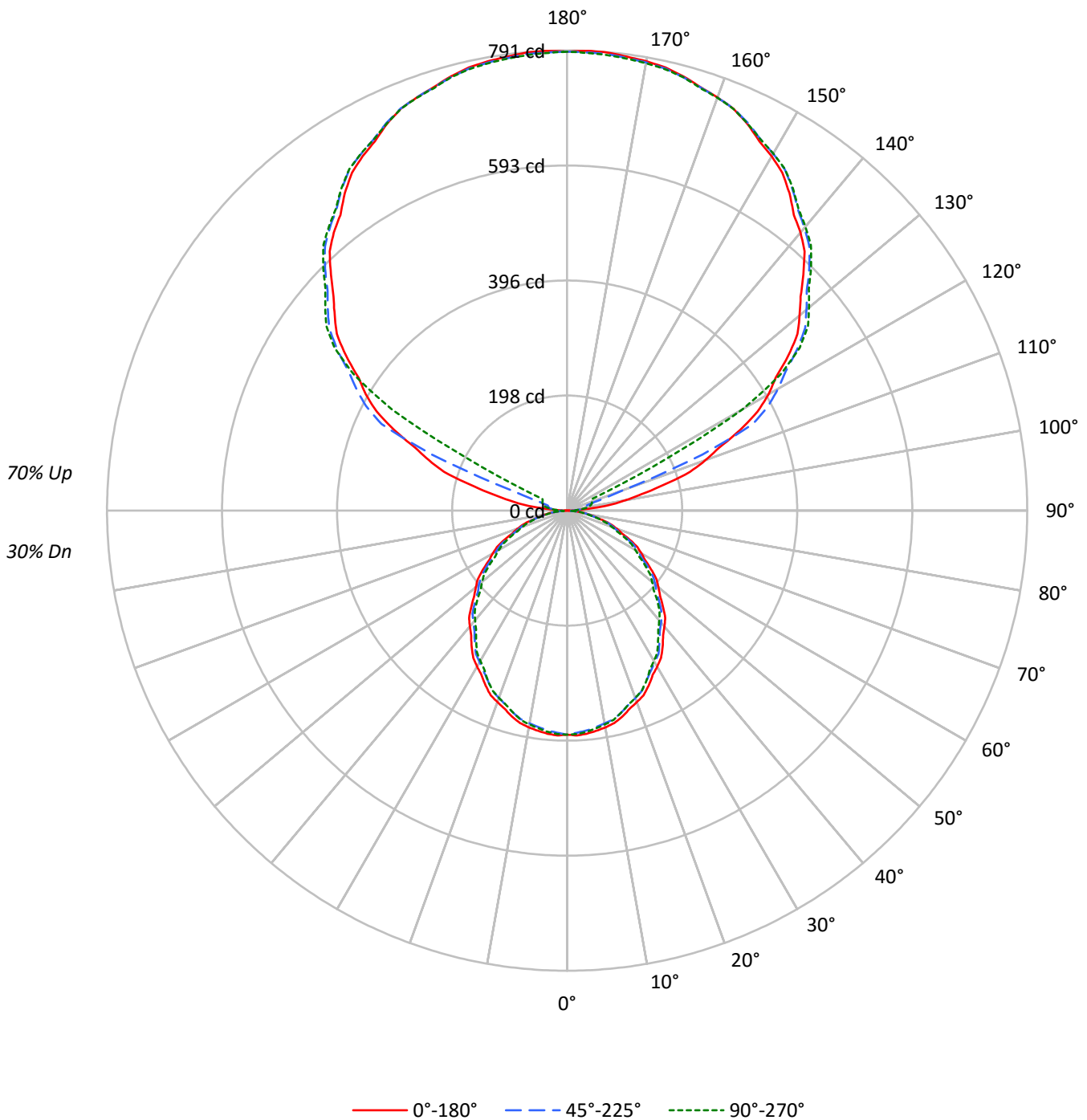
Input Watts (W): 30.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6218	6218	6218
5°	6242	6152	6190
10°	6205	6091	6120
15°	6128	6011	6006
20°	6019	5893	5887
25°	5911	5747	5747
30°	5774	5614	5565
35°	5643	5452	5373
40°	5480	5292	5191
45°	5318	5133	5005
50°	5144	4968	4793
55°	4963	4777	4597
60°	4760	4543	4379
65°	4542	4317	4118
70°	4263	4036	3843
75°	3880	3718	3624
80°	3440	3347	3171
85°	2816	2668	2408



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	1.1
10°-20°	101.9	3.1
20°-30°	149.8	4.5
30°-40°	174.0	5.3
40°-50°	173.8	5.3
50°-60°	151.6	4.6
60°-70°	112.1	3.4
70°-80°	63.5	1.9
80°-90°	19.0	0.6
90°-100°	26.3	0.8
100°-110°	96.5	2.9
110°-120°	257.9	7.8
120°-130°	425.7	12.9
130°-140°	452.8	13.7
140°-150°	420.8	12.8
150°-160°	338.4	10.3
160°-170°	218.0	6.6
170°-180°	75.1	2.3
0°-30°	287.9	8.7
0°-40°	461.9	14.0
0°-60°	787.3	23.9
0°-90°	981.9	29.8
90°-120°	380.7	11.6
90°-150°	1680.1	51.0
90°-180°	2312.0	70.2
0°-180°	3293.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	385	385	385	385	385	
5°	385	384	380	382	382	37
15°	367	364	360	361	359	103
25°	332	329	323	323	323	153
35°	286	282	277	274	273	179
45°	233	230	225	221	219	180
55°	176	174	170	165	163	158
65°	119	117	113	110	108	118
75°	62	61	60	58	58	66
85°	15	15	14	13	13	17
90°	1	7	11	14	15	2
95°	37	20	22	25	24	45
105°	174	181	35	41	43	185
115°	328	338	352	100	47	323
125°	464	472	482	486	488	414
135°	574	583	588	594	593	443
145°	666	666	675	679	676	416
155°	733	729	735	738	734	338
165°	773	770	771	775	771	218
175°	790	787	788	791	786	75
180°	789	789	789	789	789	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	386.9	386.6	386.3	386.0	385.6	385.1	384.4	383.7	382.9	382.2	382.9
5°	385.1	384.8	384.5	384.2	383.8	383.3	382.4	381.5	380.5	379.6	380.3
7.5°	381.8	381.2	380.7	380.3	379.8	379.0	378.1	377.2	376.3	375.4	376.0
10°	378.5	378.0	377.4	376.8	376.2	375.4	374.5	373.5	372.5	371.5	372.1
12.5°	374.1	373.6	373.1	372.5	372.0	371.3	370.3	369.3	368.4	367.4	367.8
15°	366.6	366.2	365.7	365.2	364.7	363.9	362.8	361.7	360.7	359.6	360.0
17.5°	357.2	356.7	356.2	355.7	355.2	354.4	353.4	352.2	351.1	350.1	350.4
20°	350.3	349.8	349.4	348.9	348.4	347.6	346.4	345.3	344.1	343.0	343.2
22.5°	343.6	342.8	342.2	341.4	340.8	339.9	338.8	337.7	336.6	335.6	335.6
25°	331.8	331.2	330.5	329.9	329.2	328.2	326.8	325.4	324.0	322.6	322.8
27.5°	318.5	318.0	317.3	316.7	316.2	315.3	314.2	313.1	312.0	310.9	310.6
30°	309.7	309.0	308.3	307.7	307.0	306.1	304.8	303.6	302.3	301.1	300.8
32.5°	300.1	299.6	299.1	298.6	298.1	297.1	295.8	294.6	293.3	292.0	291.5
35°	286.3	285.4	284.6	283.8	283.0	281.9	280.6	279.3	278.0	276.6	276.1
37.5°	270.7	269.9	269.2	268.5	267.7	266.8	265.5	264.2	262.8	261.5	260.9
40°	260.0	259.3	258.7	258.0	257.4	256.4	255.0	253.7	252.4	251.1	250.4
42.5°	249.6	249.0	248.3	247.7	247.0	246.0	244.7	243.4	242.1	240.8	239.9
45°	232.9	232.4	231.8	231.2	230.6	229.8	228.5	227.3	226.1	224.8	223.9
47.5°	216.4	215.8	215.3	214.7	214.2	213.3	212.0	210.8	209.5	208.1	207.2
50°	204.8	204.4	204.0	203.6	203.2	202.4	201.2	200.1	198.9	197.8	196.7
52.5°	193.6	193.0	192.5	191.9	191.4	190.5	189.5	188.4	187.3	186.2	185.2
55°	176.3	175.8	175.3	174.8	174.3	173.6	172.6	171.6	170.6	169.7	168.6
57.5°	159.0	158.6	158.2	157.8	157.4	156.6	155.6	154.5	153.4	152.3	151.3
60°	147.4	147.1	146.8	146.4	146.1	145.4	144.2	143.1	141.9	140.7	139.8
62.5°	136.2	135.6	135.1	134.6	134.0	133.3	132.4	131.6	130.7	129.8	128.9
65°	118.9	118.4	117.9	117.4	116.9	116.3	115.4	114.6	113.8	113.0	112.2
67.5°	101.3	100.9	100.5	100.1	99.8	99.2	98.4	97.7	96.9	96.2	95.6
70°	90.3	90.0	89.7	89.4	89.0	88.5	87.8	87.1	86.3	85.5	85.0
72.5°	79.1	78.8	78.4	78.1	77.8	77.4	76.9	76.5	76.0	75.5	74.9
75°	62.2	62.0	61.9	61.7	61.6	61.3	60.9	60.4	60.0	59.6	59.1
77.5°	47.1	46.8	46.6	46.3	46.0	45.7	45.6	45.4	45.2	45.1	44.8
80°	37.0	36.9	36.9	36.8	36.7	36.6	36.4	36.3	36.1	36.0	35.7
82.5°	27.6	27.6	27.6	27.5	27.5	27.4	27.3	27.2	27.1	27.1	26.7
85°	15.2	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.4	14.2
87.5°	5.5	5.6	5.7	5.9	6.0	6.1	6.2	6.3	6.4	6.4	6.4
90°	0.6	2.0	3.3	4.7	6.1	7.3	8.4	9.4	10.4	11.4	12.1
92.5°	11.5	11.4	11.3	11.2	11.0	11.3	11.7	12.2	12.7	13.2	13.5
95°	37.1	32.9	28.7	24.5	20.4	18.7	19.6	20.5	21.4	22.3	22.9
97.5°	73.6	61.8	50.1	38.2	26.4	21.6	23.6	25.7	27.7	29.8	30.3
100°	101.0	83.6	66.3	48.9	31.6	23.9	26.1	28.2	30.4	32.5	33.5
102.5°	131.2	127.5	123.8	120.1	116.4	105.6	87.6	69.5	51.4	33.4	34.7
105°	173.5	177.3	181.2	184.9	188.7	173.3	138.7	104.0	69.5	34.8	36.2
107.5°	221.8	224.9	228.0	231.0	234.1	214.8	173.3	131.8	90.3	48.8	47.3
110°	252.8	255.5	258.2	260.8	263.5	246.5	209.9	173.2	136.6	99.9	87.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	282.1	284.5	286.8	289.1	291.5	288.1	279.1	270.0	261.0	251.9	205.7
115°	328.2	330.4	332.5	334.7	336.8	339.5	342.7	345.8	348.9	352.1	293.4
117.5°	369.4	371.8	374.2	376.6	379.0	381.3	383.5	385.7	387.8	390.0	375.9
120°	399.5	401.5	403.3	405.2	407.2	409.2	411.5	413.8	416.0	418.3	419.9
122.5°	425.1	427.1	429.1	431.1	433.1	435.4	437.8	440.3	442.8	445.3	446.2
125°	464.0	465.7	467.3	469.0	470.6	472.6	475.1	477.4	479.9	482.2	483.1
127.5°	499.3	501.1	503.0	504.8	506.6	508.4	510.2	512.0	513.8	515.6	516.9
130°	521.6	523.7	525.7	527.7	529.8	531.5	532.9	534.3	535.7	537.1	538.5
132.5°	544.5	546.3	548.0	549.7	551.4	552.9	554.3	555.7	557.2	558.6	559.7
135°	574.2	576.2	578.2	580.2	582.3	583.9	585.1	586.2	587.3	588.5	589.7
137.5°	604.2	605.6	607.1	608.5	609.8	611.2	612.5	613.8	615.1	616.4	617.7
140°	623.9	624.8	625.8	626.9	627.9	629.1	630.5	631.9	633.2	634.7	635.9
142.5°	640.3	641.2	642.1	643.0	643.9	645.1	646.8	648.4	650.0	651.6	652.6
145°	666.1	665.9	665.9	665.7	665.5	666.6	668.7	670.9	673.0	675.2	676.1
147.5°	688.5	688.1	687.6	687.1	686.6	687.5	689.6	691.7	693.8	695.9	696.7
150°	703.2	702.3	701.4	700.5	699.6	700.2	702.2	704.3	706.3	708.3	709.1
152.5°	715.5	714.5	713.5	712.5	711.5	712.0	714.0	715.8	717.8	719.7	720.5
155°	733.4	732.3	731.2	730.0	728.9	729.0	730.6	732.1	733.6	735.2	735.9
157.5°	747.5	746.5	745.5	744.5	743.6	743.6	744.7	745.8	746.8	747.9	748.8
160°	755.7	754.9	754.2	753.4	752.6	752.6	753.4	754.2	754.9	755.7	756.4
162.5°	763.0	762.2	761.5	760.7	759.9	759.9	760.5	761.2	761.9	762.5	763.4
165°	772.8	772.0	771.3	770.5	769.7	769.6	770.0	770.3	770.7	771.1	772.0
167.5°	780.1	779.3	778.6	777.8	777.1	776.9	777.2	777.6	778.0	778.3	779.2
170°	784.2	783.4	782.7	782.0	781.1	780.9	781.1	781.5	781.7	782.0	782.9
172.5°	786.9	786.2	785.5	784.6	783.9	783.7	783.9	784.2	784.4	784.6	785.5
175°	790.5	789.6	788.7	787.8	786.9	786.6	786.8	787.2	787.4	787.7	788.6
177.5°	791.1	790.4	789.6	789.0	788.2	787.9	788.0	788.1	788.2	788.3	789.0
180°	788.8	788.8	788.8	788.8	788.8	788.8	788.8	788.8	788.8	788.8	788.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	383.5	384.2	384.8	385.1	385.0	384.8	384.7	384.6
5°	381.0	381.6	382.3	382.5	382.4	382.2	382.0	381.9
7.5°	376.7	377.3	378.0	378.2	378.1	377.8	377.6	377.5
10°	372.8	373.5	374.1	374.3	374.1	373.8	373.6	373.3
12.5°	368.3	368.7	369.2	369.3	369.2	368.9	368.8	368.6
15°	360.3	360.6	360.9	360.9	360.5	360.1	359.7	359.3
17.5°	350.8	351.2	351.6	351.6	351.1	350.8	350.4	350.0
20°	343.5	343.7	344.0	343.9	343.6	343.2	342.9	342.6
22.5°	335.7	335.7	335.7	335.7	335.5	335.3	335.1	334.9
25°	322.9	323.1	323.3	323.3	323.1	322.9	322.8	322.6
27.5°	310.4	310.1	309.9	309.6	309.2	308.8	308.4	308.0
30°	300.6	300.4	300.1	299.9	299.5	299.2	298.9	298.5
32.5°	291.1	290.6	290.2	289.8	289.4	289.1	288.8	288.5
35°	275.7	275.2	274.7	274.3	273.9	273.5	273.0	272.6
37.5°	260.2	259.7	259.0	258.5	258.1	257.7	257.4	257.0
40°	249.6	248.9	248.2	247.6	247.3	247.0	246.6	246.3
42.5°	239.1	238.3	237.5	236.8	236.4	235.9	235.5	235.1
45°	223.0	222.1	221.2	220.5	220.2	219.9	219.6	219.2
47.5°	206.3	205.3	204.3	203.6	203.2	202.7	202.2	201.7
50°	195.5	194.3	193.1	192.4	192.0	191.6	191.2	190.8
52.5°	184.3	183.4	182.4	181.6	181.1	180.6	180.0	179.4
55°	167.6	166.6	165.7	165.0	164.6	164.1	163.7	163.3
57.5°	150.3	149.4	148.4	147.7	147.5	147.2	146.8	146.5
60°	138.9	138.0	137.1	136.6	136.3	136.1	135.8	135.6
62.5°	128.1	127.3	126.5	125.9	125.6	125.2	124.9	124.6
65°	111.5	110.7	110.0	109.4	109.0	108.6	108.2	107.8
67.5°	95.1	94.5	93.9	93.4	93.1	92.8	92.5	92.1
70°	84.4	83.8	83.2	82.8	82.5	82.1	81.8	81.4
72.5°	74.4	73.8	73.2	72.7	72.5	72.2	72.0	71.7
75°	58.6	58.1	57.6	57.5	57.6	57.8	58.0	58.1
77.5°	44.6	44.4	44.1	43.9	43.6	43.5	43.2	43.0
80°	35.5	35.2	35.0	34.7	34.6	34.4	34.2	34.1
82.5°	26.4	26.1	25.8	25.6	25.6	25.5	25.5	25.5
85°	13.9	13.7	13.5	13.3	13.2	13.1	13.0	13.0
87.5°	6.3	6.2	6.1	6.1	6.1	6.1	6.0	6.0
90°	12.7	13.3	13.9	14.4	14.7	14.9	15.2	15.4
92.5°	13.9	14.3	14.6	14.8	14.9	15.1	15.2	15.4
95°	23.6	24.1	24.8	25.0	24.9	24.8	24.7	24.5
97.5°	30.8	31.3	31.8	32.1	32.3	32.4	32.6	32.8
100°	34.6	35.5	36.6	37.3	37.5	37.7	38.0	38.2
102.5°	36.1	37.4	38.7	39.5	39.9	40.3	40.6	41.0
105°	37.6	39.0	40.4	41.3	41.8	42.4	42.9	43.4
107.5°	45.9	44.5	43.0	42.6	43.1	43.6	44.1	44.6
110°	74.5	61.8	49.2	43.0	43.5	44.1	44.6	45.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	159.4	113.2	66.9	43.9	44.4	44.8	45.2	45.6
115°	234.7	175.9	117.2	83.3	74.2	65.1	55.9	46.8
117.5°	361.7	347.4	333.2	311.1	281.1	251.1	221.1	191.1
120°	421.4	422.9	424.4	416.6	399.5	382.4	365.3	348.1
122.5°	447.1	448.0	449.0	447.8	444.4	441.1	437.8	434.5
125°	484.0	484.9	485.8	486.5	486.8	487.2	487.6	488.0
127.5°	518.2	519.5	520.8	521.5	521.5	521.6	521.7	521.8
130°	539.9	541.3	542.7	543.3	543.2	543.1	542.9	542.8
132.5°	560.9	562.1	563.3	563.9	563.7	563.6	563.5	563.4
135°	591.0	592.2	593.5	594.0	593.8	593.5	593.3	593.0
137.5°	618.9	620.1	621.4	621.8	621.3	620.9	620.5	620.0
140°	637.0	638.1	639.3	639.5	638.9	638.2	637.6	637.0
142.5°	653.6	654.7	655.7	655.9	655.3	654.7	654.0	653.4
145°	676.9	677.8	678.7	678.9	678.2	677.6	676.9	676.4
147.5°	697.3	698.0	698.6	698.7	698.1	697.7	697.1	696.5
150°	709.8	710.6	711.3	711.4	710.8	710.1	709.5	708.9
152.5°	721.2	722.0	722.8	722.8	721.9	721.1	720.2	719.3
155°	736.6	737.4	738.2	738.0	737.0	736.1	735.0	734.0
157.5°	749.7	750.5	751.4	751.3	750.3	749.3	748.4	747.3
160°	757.2	758.0	758.7	758.6	757.7	756.8	756.0	755.1
162.5°	764.3	765.1	766.0	765.9	764.8	763.7	762.5	761.5
165°	772.9	773.7	774.6	774.6	773.7	772.9	772.0	771.1
167.5°	780.1	781.0	781.8	781.7	780.6	779.4	778.3	777.1
170°	783.7	784.6	785.5	785.4	784.2	783.1	782.0	780.8
172.5°	786.4	787.3	788.2	788.1	786.9	785.8	784.6	783.5
175°	789.5	790.3	791.2	791.0	789.7	788.5	787.2	785.9
177.5°	789.8	790.4	791.2	791.1	790.2	789.2	788.3	787.4
180°	788.8	788.8	788.8	788.8	788.8	788.8	788.8	788.8

(END OF REPORT)