

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: P332814-927

Luminaire Tested: **S124DIW-S1020D770U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332814-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D770U927-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5445.6 lumens
Efficiency: N/A
Efficacy: 101.6 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

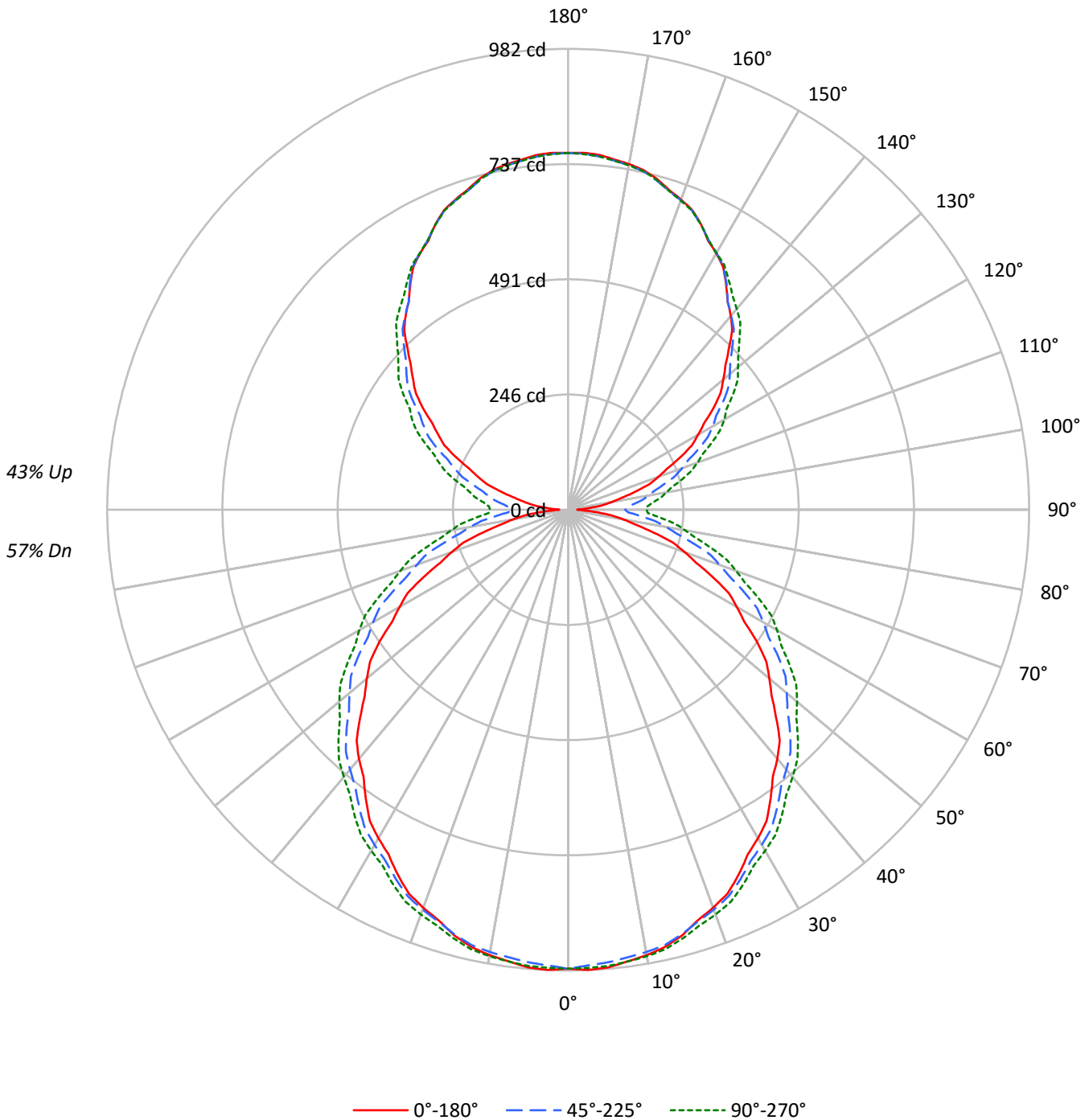
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	80	75	72	69	63	61	59	53	52	50	45
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	41	37
3	81	71	63	56	75	66	59	53	57	51	47	48	44	41	40	37	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	34	36	32	30	26
5	68	55	47	40	62	52	44	38	45	39	34	38	33	30	32	29	26	22
6	62	50	41	35	57	46	39	33	40	34	29	34	30	26	29	25	22	19
7	57	45	36	31	53	42	34	29	36	30	26	31	26	23	27	23	20	17
8	53	40	32	27	49	38	31	26	33	27	23	29	24	20	24	20	18	15
9	50	37	29	24	46	35	28	23	30	25	20	26	22	18	22	19	16	14
10	46	34	26	21	43	32	25	20	28	22	18	24	20	16	21	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7896	7896	7896
5°	7920	7717	7739
10°	7872	7591	7585
15°	7802	7444	7404
20°	7695	7284	7227
25°	7575	7102	7034
30°	7445	6922	6835
35°	7299	6739	6660
40°	7181	6564	6478
45°	7007	6402	6322
50°	6859	6215	6158
55°	6707	6040	5964
60°	6469	5816	5788
65°	6208	5578	5571
70°	5894	5303	5319
75°	5453	5001	5089
80°	4964	4711	4865
85°	4347	4456	4735



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.6	1.7
10°-20°	265.4	4.9
20°-30°	401.3	7.4
30°-40°	485.5	8.9
40°-50°	513.3	9.4
50°-60°	483.1	8.9
60°-70°	400.8	7.4
70°-80°	281.5	5.2
80°-90°	161.4	3.0
90°-100°	144.6	2.7
100°-110°	218.5	4.0
110°-120°	299.1	5.5
120°-130°	358.9	6.6
130°-140°	384.8	7.1
140°-150°	369.2	6.8
150°-160°	308.6	5.7
160°-170°	205.3	3.8
170°-180°	71.9	1.3
0°-30°	759.3	13.9
0°-40°	1244.8	22.9
0°-60°	2241.1	41.2
0°-90°	3084.8	56.6
90°-120°	662.2	12.2
90°-150°	1775.1	32.6
90°-180°	2361.0	43.4
0°-180°	5445.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	978	978	978	978	978	
5°	979	976	968	976	976	93
15°	939	940	936	946	945	264
25°	859	865	868	880	882	395
35°	751	764	776	790	794	470
45°	626	647	668	686	692	484
55°	491	514	546	568	575	437
65°	340	375	412	438	448	336
75°	188	229	275	304	315	200
85°	58	104	153	185	197	62
90°	19	70	121	155	167	14
95°	50	91	140	170	181	51
105°	147	170	212	240	252	156
115°	263	274	307	329	337	260
125°	378	378	404	422	428	337
135°	484	488	495	511	516	374
145°	586	587	588	594	596	367
155°	670	670	670	672	670	308
165°	730	728	727	730	728	206
175°	759	756	756	759	756	72
180°	760	760	760	760	760	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	981.6	981.0	980.4	979.9	979.2	978.2	976.6	975.1	973.5	971.9	973.3
5°	979.1	978.4	977.7	977.0	976.3	975.0	973.4	971.6	969.9	968.2	970.2
7.5°	970.8	970.4	969.9	969.6	969.1	968.2	966.8	965.4	963.9	962.5	964.7
10°	963.8	963.6	963.4	963.1	962.9	962.1	960.9	959.7	958.5	957.3	959.5
12.5°	954.2	954.2	954.1	954.0	954.0	953.5	952.8	951.9	951.1	950.2	952.3
15°	938.7	938.9	939.1	939.4	939.6	939.4	938.7	937.9	937.2	936.4	938.7
17.5°	917.4	918.1	918.9	919.6	920.4	920.6	920.4	920.4	920.2	920.0	922.3
20°	902.5	903.2	904.0	904.7	905.5	905.9	906.2	906.4	906.7	906.9	909.3
22.5°	885.8	886.8	887.7	888.7	889.5	890.3	890.7	891.1	891.5	892.0	894.5
25°	858.7	860.2	861.6	863.1	864.5	865.6	866.3	867.1	867.8	868.5	871.2
27.5°	828.5	830.6	832.7	834.9	837.0	838.7	839.8	840.9	842.0	843.1	845.7
30°	808.3	810.2	812.2	814.1	816.1	817.9	819.6	821.3	823.0	824.7	827.4
32.5°	786.4	788.8	791.1	793.4	795.7	797.9	799.8	801.7	803.6	805.5	808.5
35°	751.4	754.3	757.2	760.1	763.0	765.7	768.2	770.6	773.0	775.5	778.9
37.5°	716.1	719.5	722.8	726.2	729.5	732.7	735.7	738.7	741.8	744.8	748.2
40°	693.3	696.5	699.7	702.8	706.0	709.2	712.6	716.1	719.5	722.9	726.5
42.5°	667.0	670.6	674.1	677.7	681.2	685.0	689.0	693.0	697.0	701.0	705.0
45°	626.5	631.1	635.7	640.4	645.0	649.6	654.3	658.9	663.5	668.1	672.2
47.5°	587.7	592.5	597.2	602.1	606.8	611.9	617.2	622.6	628.0	633.3	637.5
50°	559.7	565.1	570.4	575.8	581.1	586.5	591.8	597.1	602.5	607.8	612.8
52.5°	531.6	537.0	542.3	547.7	553.1	558.8	564.9	571.1	577.2	583.4	588.2
55°	490.7	495.8	500.9	506.0	511.1	517.3	524.7	532.0	539.2	546.5	551.4
57.5°	444.9	451.2	457.6	463.9	470.2	477.0	484.3	491.5	498.8	506.0	511.8
60°	415.1	421.4	427.8	434.1	440.5	447.6	455.7	463.7	471.7	479.7	485.3
62.5°	386.2	393.1	400.1	406.9	413.8	421.3	429.4	437.4	445.4	453.4	459.1
65°	339.5	347.3	355.1	362.9	370.7	378.7	387.0	395.3	403.5	411.9	417.9
67.5°	294.6	302.9	311.2	319.5	327.7	336.3	345.2	354.0	362.9	371.8	378.0
70°	264.0	272.3	280.5	288.8	297.1	305.9	315.1	324.3	333.6	342.9	349.4
72.5°	234.2	242.6	251.1	259.6	268.1	277.2	287.0	296.8	306.7	316.6	322.9
75°	188.4	197.4	206.4	215.4	224.4	234.0	244.2	254.4	264.7	274.9	281.7
77.5°	145.7	155.2	164.8	174.3	183.9	193.9	204.7	215.4	226.1	236.8	243.7
80°	119.4	129.1	138.9	148.6	158.4	168.6	179.3	190.0	200.7	211.4	218.7
82.5°	93.1	103.2	113.4	123.5	133.6	144.0	154.7	165.4	176.2	186.9	194.3
85°	58.1	68.3	78.5	88.7	98.9	109.6	120.5	131.4	142.4	153.4	160.7
87.5°	32.8	43.0	53.2	63.5	73.7	84.2	95.1	105.9	116.8	127.7	134.9
90°	19.3	30.5	41.7	52.8	64.0	75.3	86.8	98.3	109.9	121.4	129.2
92.5°	29.2	39.6	50.1	60.4	70.9	81.7	92.8	104.1	115.3	126.4	133.8
95°	49.5	58.7	68.0	77.2	86.3	96.4	107.3	118.2	129.0	140.0	146.9
97.5°	74.5	82.4	90.2	98.1	105.9	115.3	126.3	137.3	148.2	159.1	166.0
100°	94.3	101.2	108.1	114.9	121.8	130.6	141.2	151.9	162.6	173.2	180.1
102.5°	116.0	121.8	127.5	133.2	139.0	147.1	157.5	167.9	178.2	188.5	195.4
105°	146.9	151.9	156.9	161.8	166.8	174.1	183.6	193.1	202.7	212.2	218.7
107.5°	181.3	185.4	189.6	193.8	197.9	204.3	212.9	221.5	230.0	238.7	245.0
110°	204.0	207.6	211.3	215.0	218.6	224.7	233.1	241.5	249.9	258.3	263.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	227.5	230.6	233.7	236.8	239.8	245.3	253.2	261.1	269.0	276.9	282.3
115°	262.9	265.1	267.3	269.5	271.7	276.6	284.1	291.6	299.1	306.7	311.9
117.5°	297.3	298.7	300.1	301.5	302.9	307.2	314.3	321.3	328.4	335.5	340.1
120°	319.4	320.7	321.9	323.2	324.5	328.4	335.1	341.7	348.4	355.1	359.3
122.5°	343.4	343.8	344.1	344.5	344.8	348.2	354.7	361.2	367.7	374.2	378.7
125°	377.7	377.5	377.2	377.0	376.8	379.6	385.6	391.5	397.4	403.5	407.8
127.5°	409.6	409.8	409.9	410.0	410.2	412.5	417.0	421.4	425.9	430.4	434.5
130°	431.3	431.4	431.6	431.7	431.9	434.0	437.8	441.7	445.6	449.5	453.6
132.5°	454.4	454.4	454.5	454.5	454.6	456.1	459.1	462.1	465.1	468.1	472.1
135°	483.7	484.5	485.3	486.1	486.9	488.1	489.8	491.5	493.2	494.9	498.5
137.5°	516.9	517.0	517.1	517.2	517.4	517.9	519.0	520.0	521.1	522.1	525.3
140°	539.0	539.0	539.0	539.1	539.1	539.2	539.4	539.7	540.0	540.2	543.2
142.5°	558.3	558.6	558.7	559.0	559.2	559.2	558.9	558.6	558.4	558.2	560.9
145°	586.1	586.4	586.7	586.9	587.2	587.4	587.6	587.7	587.8	588.0	589.3
147.5°	613.9	614.3	614.7	615.0	615.4	615.5	615.4	615.3	615.2	615.1	615.2
150°	630.8	631.1	631.4	631.6	631.9	632.1	632.1	632.1	632.1	632.1	632.1
152.5°	645.9	646.2	646.4	646.7	647.0	647.1	647.2	647.4	647.5	647.5	647.8
155°	670.3	670.3	670.3	670.3	670.3	670.2	670.0	669.9	669.8	669.7	670.2
157.5°	690.9	690.7	690.5	690.2	690.0	689.9	689.8	689.8	689.8	689.8	690.1
160°	703.2	703.1	702.9	702.8	702.7	702.5	702.4	702.3	702.1	702.0	702.4
162.5°	714.5	714.2	713.8	713.4	713.1	712.9	712.7	712.6	712.5	712.3	713.0
165°	729.7	729.3	728.9	728.5	728.1	727.8	727.5	727.2	727.0	726.7	727.5
167.5°	741.2	740.8	740.2	739.7	739.1	738.8	738.9	738.9	738.9	738.9	739.7
170°	747.9	747.2	746.6	745.9	745.3	745.0	745.1	745.3	745.4	745.5	746.3
172.5°	752.6	752.0	751.5	750.9	750.4	750.1	750.1	750.2	750.2	750.2	751.1
175°	759.1	758.4	757.7	757.1	756.5	756.1	755.9	755.7	755.7	755.5	756.5
177.5°	761.1	760.7	760.1	759.6	759.1	758.8	758.8	758.8	758.8	758.8	759.5
180°	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	978.1	978.1	978.1	978.1	978.1	978.1	978.1	978.1
2.5°	974.7	976.0	977.4	977.9	977.8	977.6	977.4	977.2
5°	972.1	974.1	976.0	976.8	976.6	976.4	976.1	975.9
7.5°	966.9	969.1	971.3	972.2	972.0	971.8	971.5	971.3
10°	961.6	963.8	966.1	967.0	966.8	966.5	966.3	966.1
12.5°	954.3	956.2	958.2	959.3	959.2	959.1	959.1	959.0
15°	940.9	943.0	945.2	946.2	945.9	945.7	945.5	945.2
17.5°	924.5	926.8	929.0	930.0	929.8	929.6	929.4	929.2
20°	911.7	914.2	916.6	917.8	917.8	917.8	917.8	917.8
22.5°	896.8	899.3	901.7	903.2	903.6	903.9	904.3	904.7
25°	873.9	876.5	879.2	880.7	881.0	881.2	881.5	881.7
27.5°	848.1	850.6	853.1	854.4	854.8	855.1	855.3	855.6
30°	830.1	832.7	835.4	837.0	837.5	838.0	838.5	839.0
32.5°	811.6	814.7	817.8	819.5	820.0	820.5	820.9	821.5
35°	782.3	785.7	789.1	791.2	791.9	792.6	793.4	794.1
37.5°	751.7	755.2	758.6	760.7	761.5	762.3	763.0	763.8
40°	730.2	733.8	737.5	739.8	740.8	741.7	742.8	743.7
42.5°	709.1	713.1	717.2	719.5	720.3	721.1	721.9	722.6
45°	676.4	680.6	684.7	687.4	688.6	689.8	691.0	692.2
47.5°	641.8	646.1	650.5	653.3	654.7	656.2	657.7	659.2
50°	617.6	622.5	627.3	630.5	632.0	633.4	634.9	636.4
52.5°	593.1	597.9	602.9	605.9	607.4	608.9	610.4	611.8
55°	556.3	561.2	566.0	569.2	570.6	572.1	573.5	575.0
57.5°	517.6	523.4	529.2	532.7	534.1	535.5	536.9	538.2
60°	490.9	496.5	502.1	505.9	507.9	509.8	511.7	513.7
62.5°	464.6	470.2	475.9	479.6	481.6	483.5	485.4	487.4
65°	424.0	430.1	436.2	440.2	442.1	444.1	446.0	448.0
67.5°	384.1	390.3	396.5	400.5	402.4	404.3	406.2	408.1
70°	355.9	362.5	369.1	373.3	374.9	376.7	378.3	380.1
72.5°	329.3	335.6	342.1	346.2	348.1	350.0	351.9	353.8
75°	288.5	295.3	302.1	306.7	308.9	311.1	313.2	315.4
77.5°	250.6	257.5	264.4	269.1	271.4	273.8	276.1	278.5
80°	226.0	233.3	240.6	245.2	247.2	249.1	251.0	253.0
82.5°	201.8	209.4	216.8	221.7	223.8	225.9	228.1	230.2
85°	167.9	175.2	182.5	187.4	189.9	192.3	194.7	197.2
87.5°	142.1	149.3	156.5	161.2	163.4	165.6	167.8	170.0
90°	137.0	144.9	152.7	157.7	159.9	162.2	164.4	166.6
92.5°	141.1	148.5	155.8	160.5	162.6	164.7	166.8	168.9
95°	153.9	160.9	167.9	172.4	174.6	176.8	179.0	181.2
97.5°	172.9	179.7	186.6	191.0	193.1	195.2	197.3	199.4
100°	186.9	193.7	200.5	204.8	206.5	208.2	209.9	211.6
102.5°	202.1	208.8	215.6	219.9	221.9	223.9	225.9	227.9
105°	225.1	231.6	238.1	242.6	244.9	247.2	249.5	251.9
107.5°	251.4	257.7	264.1	268.2	269.8	271.6	273.3	275.0
110°	268.9	274.3	279.6	283.4	285.7	288.1	290.4	292.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	287.6	292.9	298.3	302.0	304.0	306.0	308.1	310.1
115°	317.1	322.3	327.6	331.0	332.5	334.1	335.6	337.2
117.5°	344.7	349.4	353.9	357.1	358.8	360.4	362.2	363.8
120°	363.5	367.7	371.9	375.2	377.3	379.5	381.8	384.0
122.5°	383.1	387.5	391.9	394.7	396.0	397.4	398.6	399.9
125°	412.2	416.5	420.9	423.7	424.8	426.0	427.2	428.5
127.5°	438.6	442.8	446.9	449.6	451.1	452.5	454.0	455.4
130°	457.7	461.8	466.0	468.5	469.4	470.4	471.3	472.3
132.5°	475.9	479.9	483.8	486.4	487.7	488.9	490.1	491.4
135°	502.2	505.8	509.5	511.8	512.9	514.0	515.0	516.1
137.5°	528.5	531.7	535.0	537.2	538.5	539.8	541.1	542.4
140°	546.2	549.3	552.3	554.4	555.5	556.5	557.6	558.7
142.5°	563.6	566.4	569.2	571.0	572.0	573.0	574.0	575.0
145°	590.6	591.9	593.3	594.2	594.8	595.4	596.0	596.5
147.5°	615.3	615.4	615.4	615.8	616.5	617.1	617.8	618.5
150°	632.1	632.1	632.1	632.0	631.8	631.7	631.6	631.4
152.5°	648.2	648.5	648.8	648.8	648.5	648.2	647.8	647.5
155°	670.7	671.2	671.8	671.8	671.2	670.7	670.2	669.7
157.5°	690.5	690.9	691.3	691.3	690.9	690.5	690.0	689.5
160°	702.8	703.2	703.6	703.5	702.8	702.1	701.5	700.8
162.5°	713.8	714.5	715.2	715.2	714.5	713.9	713.3	712.6
165°	728.3	729.0	729.8	730.0	729.4	728.9	728.4	727.9
167.5°	740.5	741.2	742.0	742.0	741.2	740.5	739.7	738.8
170°	747.1	747.9	748.7	748.6	747.7	746.8	745.8	745.0
172.5°	752.0	752.9	753.8	753.8	752.8	751.9	751.0	750.1
175°	757.3	758.3	759.1	759.1	758.3	757.3	756.5	755.5
177.5°	760.3	761.0	761.8	761.7	760.8	760.0	759.1	758.4
180°	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2

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