

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: P332717-840

Luminaire Tested: **S124DIW-S350D470U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332717-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D470U840-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3349.7 lumens
Efficiency: N/A
Efficacy: 145.6 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

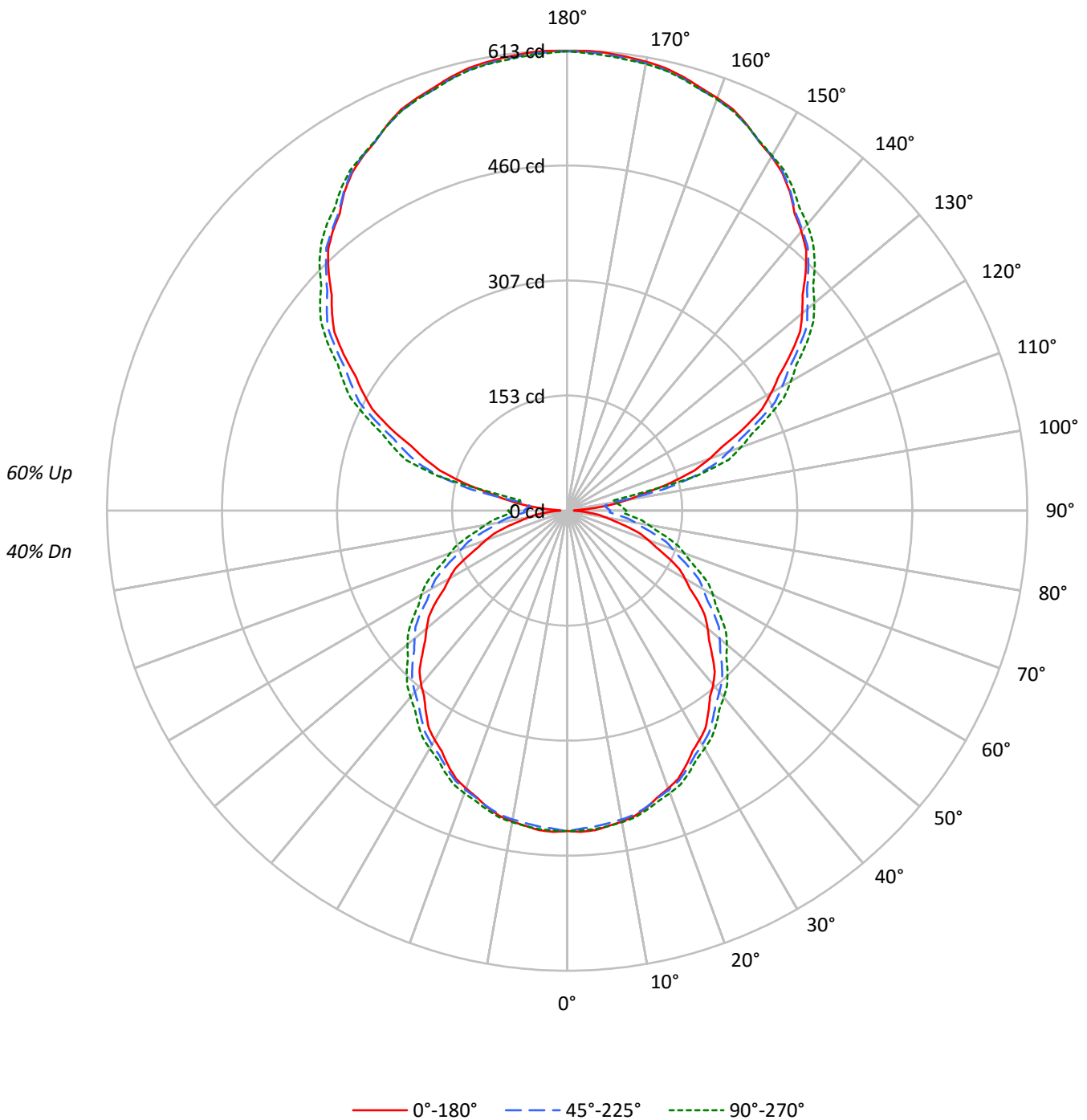
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332717-840

CATALOG NUMBER: S124DIW-S350D470U840-4F0-1E-UDD-D

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	78	78	78	62	62	62	47	47	47	40
1	95	90	86	82	86	82	79	75	67	64	62	53	51	50	40	39	38	32
2	86	78	72	66	78	71	66	61	58	54	51	46	43	41	35	33	31	26
3	78	68	61	55	71	62	56	51	51	46	42	40	37	34	31	28	26	22
4	71	60	52	46	64	55	48	43	45	40	36	36	32	29	27	25	22	18
5	65	54	45	39	59	49	42	36	40	35	31	32	28	25	24	22	19	16
6	60	48	40	34	54	44	37	31	36	31	26	29	25	22	22	19	17	14
7	55	43	35	29	50	39	32	27	33	27	23	26	22	19	20	17	15	12
8	51	39	31	26	47	36	29	24	30	24	20	24	20	17	18	16	13	11
9	48	35	28	23	43	33	26	21	27	22	18	22	18	15	17	14	12	10
10	45	32	25	20	40	30	23	19	25	20	16	20	16	14	16	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3446	3446	3446
5°	3457	3367	3378
10°	3435	3313	3310
15°	3404	3249	3231
20°	3358	3179	3155
25°	3306	3100	3070
30°	3249	3021	2983
35°	3185	2941	2907
40°	3134	2865	2828
45°	3058	2793	2759
50°	2994	2713	2687
55°	2928	2636	2603
60°	2824	2538	2526
65°	2708	2435	2431
70°	2572	2315	2320
75°	2379	2183	2220
80°	2166	2057	2123
85°	1893	1946	2065



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.4	1.2
10°-20°	115.8	3.5
20°-30°	175.1	5.2
30°-40°	211.9	6.3
40°-50°	224.0	6.7
50°-60°	210.8	6.3
60°-70°	174.9	5.2
70°-80°	122.9	3.7
80°-90°	71.2	2.1
90°-100°	62.2	1.9
100°-110°	164.0	4.9
110°-120°	275.8	8.2
120°-130°	335.6	10.0
130°-140°	351.7	10.5
140°-150°	325.2	9.7
150°-160°	261.4	7.8
160°-170°	168.6	5.0
170°-180°	58.1	1.7
0°-30°	331.4	9.9
0°-40°	543.2	16.2
0°-60°	978.1	29.2
0°-90°	1347.0	40.2
90°-120°	501.9	15.0
90°-150°	1514.4	45.2
90°-180°	2003.0	59.8
0°-180°	3349.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	427	427	427	427	427	
5°	427	426	422	426	426	41
15°	410	410	409	413	412	115
25°	375	378	379	384	385	173
35°	328	334	338	345	347	205
45°	273	282	292	299	302	211
55°	214	224	238	248	251	191
65°	148	164	180	191	196	147
75°	82	100	120	133	138	87
85°	25	46	67	81	86	27
90°	9	33	57	73	79	6
95°	31	33	52	67	72	37
105°	142	155	174	189	178	149
115°	260	266	281	292	295	256
125°	364	365	376	386	390	325
135°	450	449	454	462	467	346
145°	518	519	519	522	525	323
155°	567	567	566	568	567	261
165°	598	596	596	599	595	169
175°	612	609	610	613	608	58
180°	612	612	612	612	612	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	428.4	428.1	427.9	427.6	427.4	426.9	426.3	425.6	424.9	424.1	424.7
5°	427.4	427.0	426.7	426.4	426.1	425.6	424.7	424.0	423.3	422.5	423.4
7.5°	423.7	423.5	423.3	423.1	422.9	422.5	421.9	421.3	420.7	420.1	421.0
10°	420.6	420.5	420.4	420.3	420.2	419.9	419.4	418.8	418.3	417.8	418.7
12.5°	416.5	416.4	416.4	416.4	416.4	416.2	415.8	415.5	415.1	414.8	415.6
15°	409.6	409.8	409.9	410.0	410.1	410.0	409.6	409.3	409.0	408.7	409.6
17.5°	400.4	400.7	401.0	401.3	401.6	401.8	401.7	401.6	401.6	401.5	402.5
20°	393.8	394.2	394.6	394.9	395.2	395.4	395.5	395.6	395.7	395.8	396.9
22.5°	386.6	387.0	387.4	387.8	388.2	388.5	388.7	388.9	389.1	389.3	390.3
25°	374.8	375.4	376.1	376.7	377.3	377.8	378.1	378.4	378.7	379.1	380.2
27.5°	361.5	362.5	363.5	364.4	365.3	366.0	366.5	367.0	367.5	368.0	369.0
30°	352.7	353.7	354.5	355.3	356.2	357.0	357.7	358.4	359.2	359.9	361.1
32.5°	343.3	344.3	345.3	346.3	347.3	348.2	349.0	349.8	350.7	351.5	352.8
35°	327.9	329.2	330.4	331.7	333.1	334.2	335.3	336.3	337.4	338.4	339.9
37.5°	312.6	314.0	315.5	316.9	318.4	319.7	321.1	322.4	323.8	325.1	326.6
40°	302.6	304.0	305.4	306.7	308.1	309.5	311.0	312.6	314.0	315.5	317.1
42.5°	291.1	292.7	294.2	295.8	297.3	298.9	300.7	302.5	304.2	305.9	307.7
45°	273.4	275.4	277.4	279.4	281.4	283.5	285.5	287.5	289.5	291.5	293.4
47.5°	256.5	258.6	260.6	262.8	264.8	267.0	269.3	271.8	274.1	276.4	278.2
50°	244.3	246.6	248.9	251.3	253.6	255.9	258.3	260.6	263.0	265.3	267.4
52.5°	232.1	234.4	236.7	239.0	241.4	243.9	246.5	249.2	251.9	254.6	256.7
55°	214.2	216.4	218.6	220.9	223.1	225.8	228.9	232.2	235.3	238.5	240.7
57.5°	194.2	196.9	199.7	202.5	205.2	208.1	211.4	214.5	217.6	220.9	223.4
60°	181.2	183.9	186.7	189.5	192.2	195.3	198.8	202.4	205.8	209.3	211.8
62.5°	168.5	171.6	174.6	177.6	180.6	183.9	187.3	190.9	194.4	197.9	200.4
65°	148.1	151.6	155.0	158.3	161.8	165.3	168.8	172.5	176.1	179.8	182.4
67.5°	128.6	132.2	135.8	139.5	143.0	146.7	150.7	154.5	158.3	162.2	164.9
70°	115.2	118.8	122.4	126.0	129.7	133.5	137.5	141.6	145.6	149.7	152.5
72.5°	102.2	105.9	109.6	113.3	116.9	121.0	125.2	129.6	133.8	138.1	140.9
75°	82.2	86.1	90.1	94.0	98.0	102.1	106.6	111.1	115.5	120.0	123.0
77.5°	63.6	67.8	71.9	76.0	80.2	84.6	89.3	94.0	98.7	103.3	106.3
80°	52.1	56.4	60.6	64.8	69.1	73.5	78.3	82.9	87.6	92.3	95.4
82.5°	40.6	45.0	49.5	53.9	58.3	62.8	67.6	72.2	76.9	81.6	84.8
85°	25.3	29.8	34.2	38.7	43.2	47.8	52.6	57.4	62.1	67.0	70.1
87.5°	14.4	19.0	23.5	28.1	32.6	37.4	42.1	47.0	51.8	56.6	59.8
90°	9.0	14.3	19.8	25.1	30.5	35.9	41.2	46.7	52.0	57.4	61.1
92.5°	13.0	17.0	20.8	24.6	28.6	33.2	38.6	43.9	49.4	54.7	58.4
95°	31.4	31.4	31.5	31.5	31.6	33.8	38.3	42.7	47.2	51.7	55.1
97.5°	59.1	64.2	69.5	74.6	79.8	78.9	71.8	64.7	57.8	50.7	53.5
100°	80.3	84.9	89.5	94.1	98.7	96.0	86.1	76.2	66.3	56.5	57.6
102.5°	104.5	108.3	112.0	115.7	119.6	122.5	124.7	126.9	129.3	131.5	115.5
105°	142.1	144.8	147.5	150.3	153.0	156.6	161.1	165.4	169.9	174.3	177.9
107.5°	177.7	179.8	181.9	183.9	185.9	189.1	193.6	198.0	202.4	206.8	209.8
110°	201.6	203.3	205.1	206.9	208.7	211.8	216.1	220.5	224.8	229.0	231.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	224.6	226.4	228.3	230.1	232.1	234.9	238.7	242.6	246.4	250.2	252.6
115°	260.0	261.4	262.6	263.9	265.1	267.4	270.7	274.0	277.3	280.6	283.2
117.5°	292.5	293.5	294.5	295.4	296.4	298.6	301.9	305.4	308.7	312.1	314.3
120°	314.1	314.8	315.5	316.3	317.0	318.8	321.8	324.8	327.8	330.7	333.1
122.5°	334.6	334.9	335.2	335.5	335.8	337.5	340.5	343.6	346.7	349.7	351.9
125°	363.5	363.8	364.1	364.4	364.7	366.1	368.5	370.9	373.4	375.9	378.2
127.5°	391.2	391.2	391.2	391.2	391.2	392.4	395.0	397.5	400.0	402.4	404.3
130°	408.8	408.8	408.8	408.8	408.8	409.7	411.7	413.7	415.8	417.8	419.8
132.5°	425.3	425.4	425.4	425.5	425.6	426.5	428.2	429.9	431.7	433.4	435.4
135°	449.5	449.4	449.3	449.2	449.1	449.6	450.7	451.9	453.0	454.2	456.1
137.5°	471.3	471.3	471.2	471.2	471.1	471.5	472.3	473.1	473.9	474.7	476.5
140°	485.6	485.7	485.8	485.9	486.0	486.3	486.6	486.9	487.2	487.5	489.2
142.5°	498.1	498.4	498.8	499.1	499.5	499.7	499.7	499.8	499.8	499.9	501.3
145°	517.7	517.9	518.1	518.3	518.5	518.6	518.6	518.6	518.6	518.6	519.3
147.5°	533.3	533.7	534.2	534.7	535.1	535.3	535.2	535.1	535.0	534.9	535.1
150°	544.6	544.9	545.2	545.5	545.8	545.9	545.8	545.7	545.6	545.5	545.5
152.5°	553.8	554.1	554.4	554.7	555.0	555.0	554.9	554.7	554.5	554.3	554.5
155°	567.0	567.1	567.2	567.3	567.4	567.3	567.0	566.7	566.4	566.1	566.5
157.5°	578.3	578.2	578.1	578.1	578.0	577.8	577.5	577.1	576.8	576.5	577.0
160°	584.9	584.6	584.3	584.0	583.7	583.5	583.4	583.3	583.2	583.1	583.7
162.5°	590.8	590.4	590.0	589.6	589.3	589.0	588.9	588.8	588.7	588.5	589.2
165°	598.1	597.6	597.1	596.6	596.1	595.9	595.9	595.9	595.9	595.9	596.7
167.5°	604.0	603.5	603.0	602.5	601.9	601.6	601.6	601.5	601.5	601.4	602.3
170°	607.3	606.7	606.1	605.5	604.9	604.6	604.7	604.8	604.9	605.0	605.8
172.5°	609.6	608.9	608.3	607.7	607.1	606.8	606.9	607.0	607.1	607.2	608.0
175°	611.9	611.3	610.7	610.1	609.5	609.3	609.4	609.5	609.6	609.7	610.6
177.5°	613.0	612.5	611.9	611.3	610.8	610.6	610.7	610.9	611.0	611.2	611.8
180°	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	426.9	426.9	426.9	426.9	426.9	426.9	426.9	426.9
2.5°	425.4	426.0	426.6	426.8	426.8	426.7	426.6	426.5
5°	424.2	425.1	426.0	426.4	426.3	426.1	426.0	425.9
7.5°	422.0	422.9	423.9	424.3	424.2	424.1	424.0	423.9
10°	419.7	420.6	421.6	422.0	421.9	421.8	421.7	421.6
12.5°	416.5	417.4	418.2	418.6	418.6	418.6	418.6	418.5
15°	410.6	411.5	412.5	412.9	412.8	412.7	412.6	412.5
17.5°	403.4	404.5	405.5	405.9	405.8	405.7	405.7	405.6
20°	397.9	399.0	400.0	400.6	400.6	400.6	400.6	400.6
22.5°	391.4	392.4	393.5	394.2	394.4	394.5	394.7	394.9
25°	381.4	382.5	383.7	384.4	384.5	384.6	384.7	384.8
27.5°	370.1	371.2	372.3	372.9	373.0	373.1	373.2	373.4
30°	362.2	363.5	364.6	365.3	365.5	365.8	366.0	366.2
32.5°	354.2	355.6	356.9	357.7	357.9	358.1	358.3	358.5
35°	341.4	342.8	344.4	345.3	345.6	345.9	346.3	346.6
37.5°	328.1	329.5	331.0	332.0	332.3	332.6	333.1	333.4
40°	318.7	320.2	321.8	322.9	323.3	323.8	324.2	324.6
42.5°	309.4	311.2	313.0	314.1	314.4	314.7	315.1	315.4
45°	295.2	297.0	298.8	299.9	300.5	301.0	301.5	302.1
47.5°	280.1	282.0	283.9	285.1	285.8	286.4	287.0	287.7
50°	269.5	271.7	273.8	275.2	275.8	276.4	277.1	277.7
52.5°	258.8	260.9	263.1	264.5	265.1	265.7	266.4	267.0
55°	242.8	244.9	247.0	248.4	249.0	249.6	250.3	251.0
57.5°	225.9	228.4	231.0	232.5	233.1	233.7	234.3	234.9
60°	214.3	216.7	219.1	220.8	221.7	222.5	223.4	224.2
62.5°	202.8	205.2	207.6	209.3	210.2	211.0	211.9	212.7
65°	185.0	187.7	190.4	192.1	193.0	193.8	194.7	195.5
67.5°	167.6	170.4	173.0	174.8	175.6	176.4	177.2	178.1
70°	155.3	158.2	161.1	162.9	163.6	164.4	165.1	165.8
72.5°	143.7	146.5	149.3	151.1	151.9	152.7	153.6	154.4
75°	125.9	128.9	131.9	133.8	134.8	135.7	136.7	137.6
77.5°	109.4	112.4	115.4	117.4	118.5	119.5	120.5	121.5
80°	98.7	101.8	105.0	107.0	107.9	108.8	109.6	110.4
82.5°	88.1	91.4	94.6	96.7	97.7	98.6	99.6	100.5
85°	73.3	76.4	79.7	81.8	82.8	83.9	84.9	86.0
87.5°	63.0	66.2	69.4	71.5	72.5	73.4	74.4	75.4
90°	64.7	68.5	72.1	74.5	75.5	76.6	77.7	78.8
92.5°	61.9	65.5	69.2	71.4	72.3	73.2	74.0	74.9
95°	58.6	62.1	65.5	67.9	68.9	70.0	71.0	72.1
97.5°	56.4	59.3	62.1	64.0	65.0	66.0	67.1	68.1
100°	58.8	59.9	61.0	62.0	62.8	63.7	64.5	65.4
102.5°	99.7	83.8	68.0	60.5	61.3	62.1	63.0	63.8
105°	181.5	185.0	188.6	189.0	186.2	183.4	180.6	177.7
107.5°	213.0	216.0	219.0	221.2	222.3	223.5	224.6	225.8
110°	234.4	237.0	239.6	241.6	242.8	243.9	245.0	246.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	254.9	257.2	259.5	261.3	262.6	263.8	265.0	266.2
115°	285.7	288.2	290.7	292.4	293.2	293.9	294.6	295.4
117.5°	316.5	318.6	320.8	322.3	323.2	324.0	324.8	325.6
120°	335.4	337.7	340.0	341.5	342.1	342.8	343.5	344.2
122.5°	354.2	356.4	358.7	360.1	360.6	361.2	361.7	362.3
125°	380.5	382.8	385.2	386.7	387.4	388.2	388.9	389.6
127.5°	406.2	408.0	409.9	411.1	411.7	412.4	413.0	413.6
130°	421.8	423.8	425.9	427.2	427.8	428.4	429.1	429.7
132.5°	437.3	439.2	441.1	442.4	442.9	443.5	444.0	444.6
135°	458.0	459.9	461.8	463.2	464.0	464.8	465.7	466.6
137.5°	478.3	480.0	481.8	482.9	483.4	483.8	484.3	484.8
140°	490.8	492.5	494.2	495.3	496.0	496.7	497.3	497.9
142.5°	502.7	504.2	505.6	506.5	507.1	507.5	508.0	508.5
145°	520.0	520.8	521.5	522.2	522.8	523.4	524.0	524.7
147.5°	535.2	535.4	535.6	535.9	536.3	536.7	537.2	537.7
150°	545.5	545.5	545.5	545.6	545.7	545.8	545.9	546.0
152.5°	554.6	554.8	555.0	555.0	555.0	554.9	554.8	554.8
155°	566.9	567.3	567.7	567.8	567.5	567.2	566.9	566.6
157.5°	577.5	578.0	578.6	578.6	578.0	577.5	577.0	576.5
160°	584.3	584.9	585.5	585.5	584.9	584.3	583.7	583.1
162.5°	589.8	590.4	591.0	591.0	590.3	589.6	588.9	588.2
165°	597.5	598.3	599.2	599.1	598.1	597.2	596.3	595.4
167.5°	603.2	604.1	605.0	604.9	603.9	602.9	601.9	600.9
170°	606.6	607.4	608.3	608.2	607.1	606.1	605.1	604.1
172.5°	608.8	609.7	610.5	610.4	609.3	608.1	607.0	605.9
175°	611.5	612.4	613.3	613.1	611.9	610.7	609.5	608.2
177.5°	612.5	613.1	613.8	613.6	612.7	611.7	610.7	609.8
180°	611.9	611.9	611.9	611.9	611.9	611.9	611.9	611.9

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