

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: P332503-930

Luminaire Tested: **S124DIP-S350D590U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332503-930
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: S124DIP-S350D590U930-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2844.7 lumens
Efficiency: N/A
Efficacy: 111.1 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: Semi-Indirect

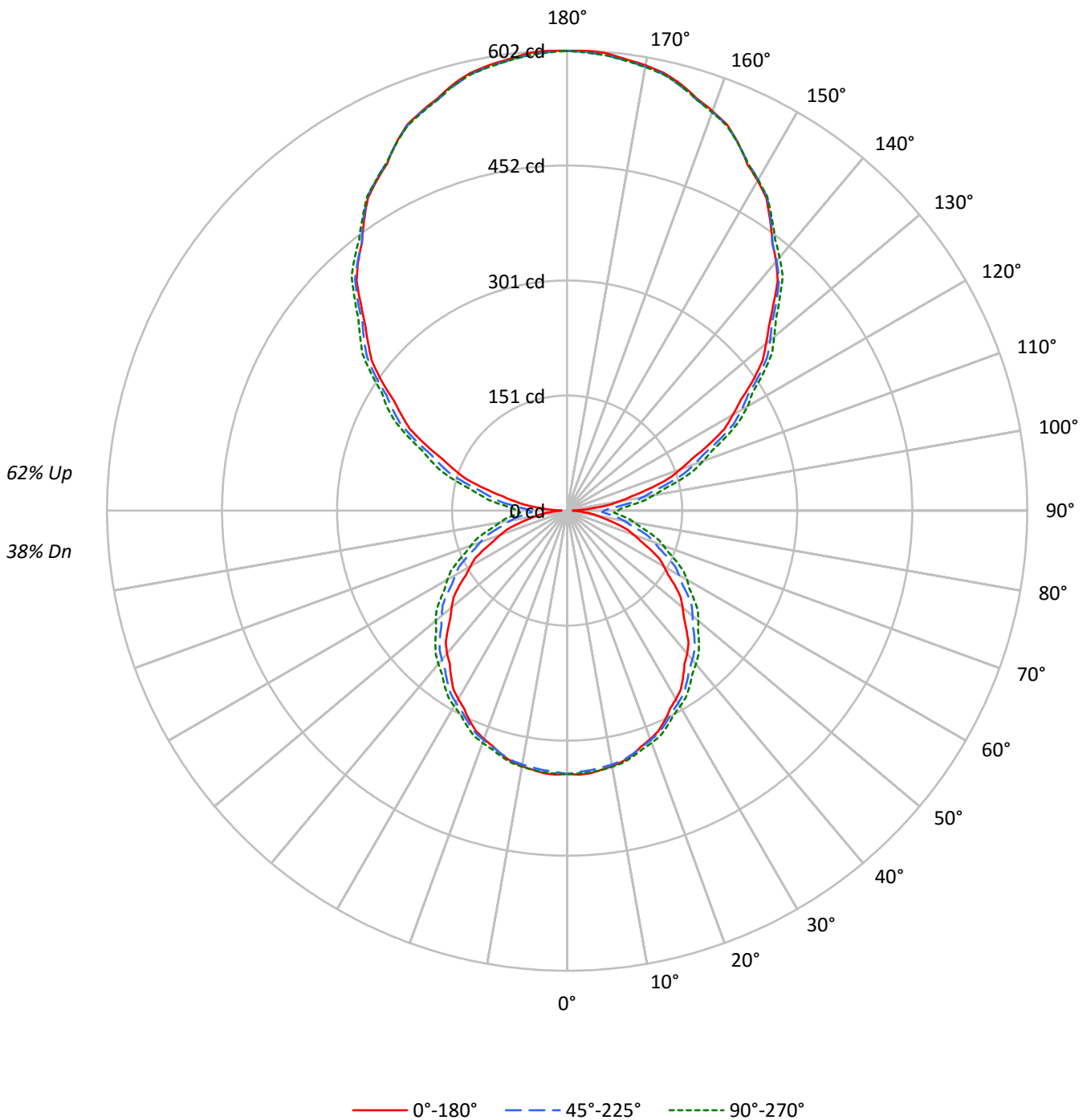
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	94	90	86	82	85	82	78	75	66	64	61	52	50	49	39	38	37	31
2	86	78	72	66	77	71	65	61	57	53	50	45	42	40	34	32	30	25
3	78	68	61	55	70	62	56	50	50	46	42	40	36	33	30	27	25	21
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	24	22	18
5	65	53	45	39	59	49	41	36	40	34	30	31	27	24	24	21	19	15
6	60	48	40	34	54	43	36	31	36	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	19	17	14	12
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	18	15	13	10
9	47	35	28	23	43	32	26	21	27	22	18	21	17	15	16	14	12	9
10	44	32	25	20	40	30	23	19	24	19	16	20	16	13	15	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2782	2782	2782
5°	2791	2719	2726
10°	2774	2675	2673
15°	2749	2623	2608
20°	2711	2566	2547
25°	2669	2503	2478
30°	2623	2439	2408
35°	2571	2374	2347
40°	2530	2313	2282
45°	2468	2256	2228
50°	2417	2190	2169
55°	2363	2129	2101
60°	2280	2049	2039
65°	2187	1965	1962
70°	2076	1868	1874
75°	1922	1763	1793
80°	1750	1660	1713
85°	1534	1571	1669



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.6	1.1
10°-20°	93.5	3.3
20°-30°	141.4	5.0
30°-40°	171.1	6.0
40°-50°	180.8	6.4
50°-60°	170.2	6.0
60°-70°	141.2	5.0
70°-80°	99.2	3.5
80°-90°	57.9	2.0
90°-100°	73.0	2.6
100°-110°	142.1	5.0
110°-120°	215.9	7.6
120°-130°	272.3	9.6
130°-140°	299.3	10.5
140°-150°	291.0	10.2
150°-160°	244.0	8.6
160°-170°	162.4	5.7
170°-180°	56.9	2.0
0°-30°	267.5	9.4
0°-40°	438.6	15.4
0°-60°	789.6	27.8
0°-90°	1087.9	38.2
90°-120°	431.0	15.2
90°-150°	1293.5	45.5
90°-180°	1757.0	61.8
0°-180°	2844.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	345	344	341	344	344	33
15°	331	331	330	333	333	93
25°	303	305	306	310	311	139
35°	265	269	273	278	280	166
45°	221	228	235	242	244	171
55°	173	181	193	200	203	154
65°	120	132	145	154	158	119
75°	66	81	97	107	111	71
85°	20	37	54	65	70	22
90°	8	28	48	62	66	6
95°	33	50	69	80	84	35
105°	112	120	136	147	152	119
115°	205	209	220	228	230	202
125°	297	297	306	312	313	265
135°	382	384	387	392	393	295
145°	463	464	465	467	467	290
155°	530	530	530	531	530	244
165°	577	576	575	577	576	163
175°	600	598	598	600	598	57
180°	601	601	601	601	601	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	345.8	345.6	345.4	345.2	345.0	344.6	344.1	343.6	343.0	342.4	342.9
5°	345.0	344.7	344.5	344.2	344.0	343.6	342.9	342.3	341.8	341.1	341.9
7.5°	342.1	341.9	341.8	341.6	341.4	341.1	340.6	340.1	339.7	339.2	339.9
10°	339.6	339.5	339.4	339.3	339.2	339.0	338.6	338.1	337.7	337.3	338.0
12.5°	336.2	336.1	336.1	336.1	336.1	336.0	335.7	335.4	335.1	334.8	335.5
15°	330.7	330.8	330.9	331.0	331.1	331.0	330.7	330.4	330.2	330.0	330.7
17.5°	323.3	323.5	323.8	324.0	324.2	324.4	324.3	324.2	324.2	324.2	325.0
20°	318.0	318.2	318.5	318.8	319.0	319.2	319.3	319.4	319.4	319.5	320.4
22.5°	312.1	312.4	312.7	313.1	313.4	313.6	313.8	314.0	314.1	314.3	315.1
25°	302.6	303.0	303.6	304.1	304.6	305.0	305.2	305.5	305.7	306.1	307.0
27.5°	291.9	292.7	293.4	294.2	294.9	295.5	295.9	296.3	296.7	297.1	297.9
30°	284.8	285.5	286.2	286.8	287.6	288.2	288.8	289.3	290.0	290.6	291.6
32.5°	277.1	277.9	278.8	279.6	280.4	281.1	281.8	282.4	283.2	283.8	284.9
35°	264.7	265.8	266.8	267.8	268.9	269.8	270.7	271.5	272.4	273.2	274.4
37.5°	252.3	253.5	254.7	255.8	257.1	258.1	259.3	260.3	261.4	262.4	263.7
40°	244.3	245.4	246.5	247.6	248.7	249.9	251.1	252.3	253.5	254.7	256.0
42.5°	235.1	236.3	237.5	238.8	240.0	241.3	242.8	244.2	245.6	247.0	248.4
45°	220.7	222.3	224.0	225.6	227.2	228.9	230.5	232.1	233.7	235.4	236.8
47.5°	207.1	208.8	210.4	212.1	213.8	215.6	217.4	219.4	221.3	223.1	224.6
50°	197.2	199.1	201.0	202.8	204.7	206.6	208.6	210.4	212.3	214.2	215.9
52.5°	187.4	189.2	191.1	193.0	194.9	196.9	199.0	201.2	203.3	205.5	207.2
55°	172.9	174.7	176.5	178.3	180.1	182.3	184.8	187.4	190.0	192.6	194.3
57.5°	156.8	159.0	161.2	163.5	165.7	168.0	170.6	173.2	175.7	178.3	180.3
60°	146.3	148.5	150.7	153.0	155.2	157.7	160.5	163.4	166.2	169.0	171.0
62.5°	136.1	138.5	141.0	143.4	145.8	148.5	151.2	154.1	156.9	159.8	161.8
65°	119.6	122.4	125.1	127.8	130.6	133.5	136.3	139.3	142.2	145.1	147.2
67.5°	103.8	106.7	109.7	112.6	115.4	118.5	121.6	124.7	127.8	130.9	133.1
70°	93.0	95.9	98.8	101.7	104.7	107.8	111.0	114.3	117.6	120.8	123.1
72.5°	82.5	85.5	88.5	91.5	94.4	97.7	101.1	104.6	108.0	111.5	113.7
75°	66.4	69.5	72.7	75.9	79.1	82.4	86.1	89.7	93.3	96.9	99.3
77.5°	51.4	54.7	58.0	61.4	64.7	68.3	72.1	75.9	79.7	83.4	85.9
80°	42.1	45.5	48.9	52.3	55.8	59.4	63.2	66.9	70.7	74.5	77.0
82.5°	32.8	36.4	39.9	43.5	47.0	50.7	54.5	58.3	62.0	65.9	68.5
85°	20.5	24.1	27.6	31.2	34.9	38.6	42.5	46.3	50.1	54.1	56.6
87.5°	11.7	15.4	19.2	22.9	26.6	30.4	34.3	38.2	42.2	46.1	48.8
90°	7.6	12.1	16.7	21.3	25.8	30.4	34.9	39.4	43.9	48.4	51.5
92.5°	15.8	20.2	24.6	29.0	33.3	37.7	42.0	46.2	50.5	54.8	57.6
95°	32.9	36.7	40.4	44.2	47.9	51.9	56.2	60.4	64.7	68.9	71.5
97.5°	53.3	56.5	59.7	62.9	66.0	69.8	74.1	78.4	82.8	87.1	89.7
100°	69.4	72.0	74.6	77.3	79.9	83.4	87.6	92.0	96.2	100.4	103.0
102.5°	86.4	88.5	90.7	92.8	94.9	98.1	102.2	106.3	110.4	114.5	117.1
105°	111.9	113.7	115.4	117.2	119.1	121.8	125.4	129.0	132.6	136.2	138.6
107.5°	139.2	140.7	142.3	143.7	145.3	147.6	150.7	153.7	156.8	159.9	162.2
110°	157.4	158.9	160.3	161.7	163.1	165.3	168.1	171.0	174.0	176.8	178.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	176.5	177.6	178.7	179.9	180.9	182.8	185.5	188.2	190.9	193.6	195.4
115°	205.0	205.9	206.6	207.4	208.1	209.8	212.3	214.9	217.4	220.0	221.8
117.5°	232.4	232.8	233.4	234.0	234.5	235.9	238.4	240.8	243.2	245.6	247.0
120°	250.2	250.9	251.6	252.3	252.9	254.4	256.5	258.7	260.9	263.1	264.2
122.5°	269.2	269.5	269.6	269.9	270.1	271.3	273.5	275.7	277.9	280.1	281.4
125°	296.9	296.8	296.7	296.5	296.4	297.4	299.5	301.5	303.6	305.7	307.0
127.5°	322.1	322.4	322.6	322.8	323.0	323.9	325.4	326.9	328.3	329.8	331.2
130°	339.7	339.9	340.1	340.4	340.6	341.4	342.8	344.1	345.5	346.8	348.2
132.5°	357.9	358.1	358.2	358.3	358.5	359.1	360.0	361.1	362.1	363.1	364.4
135°	381.6	382.2	382.9	383.4	384.1	384.7	385.3	385.9	386.5	387.1	388.2
137.5°	407.8	408.1	408.2	408.5	408.6	409.0	409.4	409.9	410.3	410.8	411.8
140°	425.3	425.4	425.6	425.7	425.8	425.9	426.0	426.1	426.2	426.2	427.3
142.5°	441.0	441.2	441.4	441.6	441.7	441.8	441.6	441.6	441.4	441.2	442.2
145°	463.1	463.4	463.7	464.1	464.4	464.6	464.7	464.8	464.9	465.0	465.5
147.5°	485.0	485.4	485.8	486.2	486.7	486.8	486.7	486.7	486.6	486.5	486.5
150°	498.4	498.7	499.0	499.4	499.7	499.9	499.9	499.9	499.9	499.9	499.9
152.5°	510.8	510.9	511.2	511.4	511.7	511.8	511.9	512.0	512.1	512.2	512.4
155°	530.1	530.1	530.1	530.1	530.1	530.0	529.9	529.9	529.8	529.6	530.0
157.5°	546.5	546.3	546.1	545.9	545.8	545.6	545.6	545.6	545.6	545.5	545.8
160°	556.1	556.0	556.0	555.9	555.7	555.6	555.5	555.5	555.3	555.2	555.5
162.5°	565.1	564.8	564.5	564.3	564.0	563.8	563.7	563.6	563.5	563.4	563.9
165°	577.1	576.7	576.4	576.2	575.8	575.6	575.4	575.2	574.9	574.8	575.4
167.5°	586.3	585.9	585.4	585.0	584.6	584.3	584.3	584.4	584.4	584.4	585.1
170°	591.5	591.0	590.4	590.0	589.4	589.2	589.3	589.4	589.5	589.6	590.3
172.5°	595.2	594.8	594.4	593.9	593.5	593.3	593.3	593.3	593.3	593.4	594.0
175°	600.3	599.8	599.3	598.8	598.3	597.9	597.9	597.8	597.6	597.5	598.3
177.5°	602.0	601.6	601.2	600.8	600.3	600.1	600.1	600.1	600.1	600.1	600.7
180°	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	343.4	343.9	344.4	344.5	344.5	344.5	344.4	344.3
5°	342.5	343.2	343.9	344.2	344.1	344.0	343.9	343.8
7.5°	340.7	341.4	342.3	342.6	342.5	342.4	342.3	342.3
10°	338.8	339.6	340.4	340.7	340.6	340.6	340.5	340.4
12.5°	336.2	337.0	337.6	337.9	337.9	337.9	337.9	337.9
15°	331.5	332.2	333.0	333.4	333.3	333.2	333.1	333.0
17.5°	325.7	326.5	327.3	327.7	327.6	327.5	327.5	327.4
20°	321.2	322.1	322.9	323.4	323.4	323.4	323.4	323.4
22.5°	316.0	316.8	317.7	318.2	318.4	318.5	318.6	318.8
25°	307.9	308.8	309.8	310.3	310.4	310.5	310.5	310.6
27.5°	298.8	299.7	300.6	301.1	301.2	301.3	301.3	301.5
30°	292.4	293.4	294.3	294.9	295.1	295.3	295.5	295.6
32.5°	285.9	287.1	288.1	288.8	288.9	289.1	289.3	289.4
35°	275.7	276.8	278.0	278.8	279.0	279.2	279.6	279.8
37.5°	264.9	266.0	267.3	268.1	268.3	268.6	268.9	269.1
40°	257.3	258.5	259.8	260.7	261.0	261.4	261.7	262.0
42.5°	249.8	251.3	252.7	253.6	253.8	254.0	254.4	254.6
45°	238.3	239.8	241.2	242.1	242.6	243.0	243.4	243.9
47.5°	226.2	227.6	229.2	230.2	230.7	231.2	231.7	232.3
50°	217.6	219.3	221.0	222.2	222.7	223.1	223.7	224.2
52.5°	209.0	210.7	212.4	213.5	214.0	214.5	215.1	215.6
55°	196.0	197.7	199.4	200.6	201.1	201.5	202.1	202.6
57.5°	182.4	184.4	186.5	187.7	188.2	188.7	189.1	189.6
60°	173.0	175.0	176.9	178.2	179.0	179.6	180.3	181.0
62.5°	163.7	165.7	167.6	169.0	169.7	170.3	171.0	171.7
65°	149.4	151.6	153.7	155.1	155.8	156.5	157.2	157.8
67.5°	135.3	137.5	139.7	141.1	141.8	142.4	143.1	143.8
70°	125.4	127.8	130.0	131.5	132.1	132.7	133.3	133.9
72.5°	116.0	118.3	120.5	122.0	122.6	123.3	124.0	124.7
75°	101.7	104.0	106.5	108.0	108.8	109.6	110.4	111.1
77.5°	88.3	90.7	93.2	94.8	95.6	96.4	97.3	98.1
80°	79.7	82.2	84.8	86.4	87.1	87.8	88.5	89.1
82.5°	71.1	73.8	76.4	78.1	78.8	79.6	80.4	81.1
85°	59.2	61.7	64.3	66.0	66.9	67.8	68.6	69.5
87.5°	51.4	54.0	56.6	58.3	59.0	59.8	60.7	61.5
90°	54.6	57.7	60.9	62.9	63.8	64.7	65.6	66.4
92.5°	60.3	63.1	66.0	67.8	68.6	69.4	70.2	70.9
95°	74.2	76.8	79.4	81.1	81.9	82.7	83.4	84.2
97.5°	92.3	94.9	97.5	99.2	100.0	100.7	101.4	102.2
100°	105.5	108.0	110.6	112.1	112.8	113.3	113.9	114.5
102.5°	119.6	122.1	124.7	126.4	127.1	127.8	128.6	129.4
105°	141.0	143.5	145.9	147.7	148.7	149.7	150.7	151.6
107.5°	164.6	167.1	169.4	171.0	171.5	172.1	172.8	173.3
110°	180.3	182.1	183.9	185.3	186.3	187.3	188.3	189.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	197.2	199.1	201.0	202.3	203.0	203.7	204.6	205.3
115°	223.6	225.3	227.1	228.2	228.7	229.2	229.8	230.2
117.5°	248.5	249.9	251.4	252.3	252.8	253.2	253.7	254.2
120°	265.5	266.7	267.8	268.9	269.8	270.7	271.6	272.5
122.5°	282.8	284.2	285.6	286.3	286.7	286.9	287.1	287.4
125°	308.4	309.9	311.3	312.2	312.5	312.8	313.1	313.4
127.5°	332.5	333.8	335.2	336.1	336.5	336.9	337.3	337.7
130°	349.5	350.9	352.2	352.9	353.0	353.1	353.3	353.4
132.5°	365.7	366.9	368.2	369.0	369.3	369.7	370.1	370.4
135°	389.5	390.6	391.8	392.5	392.6	392.9	393.1	393.3
137.5°	412.8	413.8	414.7	415.5	416.0	416.5	416.9	417.4
140°	428.3	429.3	430.3	431.0	431.3	431.6	431.9	432.3
142.5°	443.2	444.1	445.1	445.7	446.1	446.4	446.8	447.1
145°	465.9	466.3	466.7	466.8	466.9	466.9	467.0	467.0
147.5°	486.5	486.4	486.4	486.5	486.7	486.8	487.1	487.2
150°	499.9	499.9	499.9	499.9	499.7	499.6	499.5	499.5
152.5°	512.7	512.9	513.1	513.1	512.9	512.6	512.3	512.1
155°	530.4	530.8	531.3	531.3	530.8	530.4	530.0	529.6
157.5°	546.2	546.5	546.8	546.7	546.4	546.1	545.7	545.4
160°	555.9	556.1	556.4	556.4	555.9	555.3	554.8	554.3
162.5°	564.5	565.1	565.7	565.7	565.2	564.6	564.1	563.6
165°	576.0	576.6	577.2	577.3	576.9	576.5	576.1	575.7
167.5°	585.6	586.3	586.9	586.9	586.3	585.6	585.0	584.3
170°	590.8	591.5	592.1	592.1	591.3	590.6	589.9	589.1
172.5°	594.8	595.5	596.1	596.1	595.4	594.7	593.9	593.3
175°	599.0	599.7	600.4	600.4	599.7	599.0	598.3	597.5
177.5°	601.3	601.9	602.4	602.4	601.8	601.1	600.4	599.7
180°	601.3	601.3	601.3	601.3	601.3	601.3	601.3	601.3

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