

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: P332123-930

Luminaire Tested: **S123DIW-S560D460U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332123-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S560D460U930-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3231.1 lumens
Efficiency: N/A
Efficacy: 107.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: General Diffuse

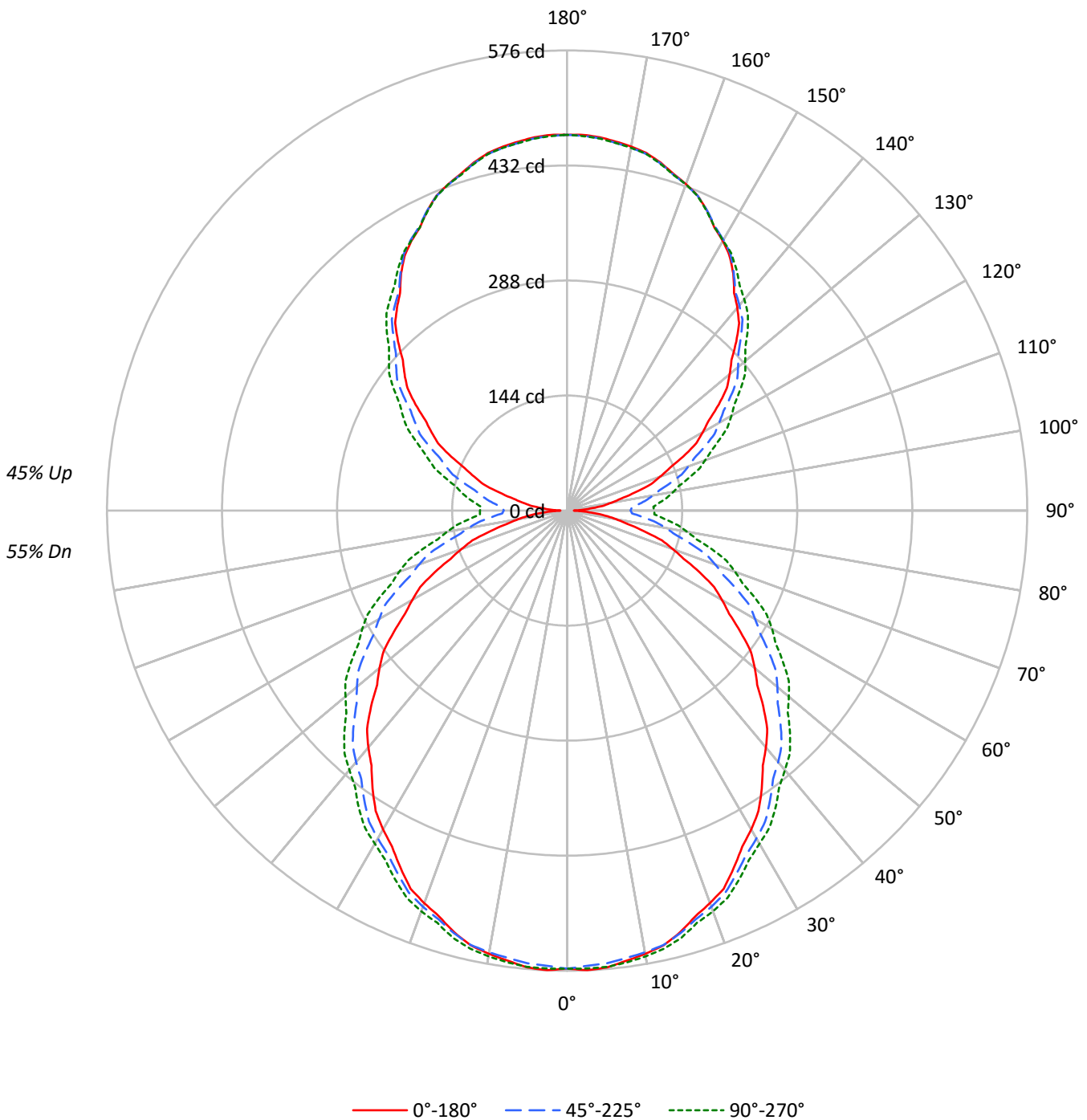
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60	55
1	98	93	88	85	90	86	82	79	74	71	68	62	60	58	52	50	49	44
2	88	80	74	68	82	75	69	64	64	59	56	54	51	48	45	42	40	36
3	80	70	62	56	74	65	58	53	56	51	46	47	43	40	39	36	34	30
4	73	62	54	47	68	58	50	44	50	44	39	42	37	34	35	32	29	25
5	67	55	47	40	62	51	44	38	44	38	34	38	33	29	31	28	25	22
6	62	49	41	35	57	46	38	33	40	34	29	34	29	25	28	25	22	19
7	57	45	36	30	53	42	34	29	36	30	26	31	26	22	26	22	19	17
8	53	40	32	27	49	38	31	25	33	27	23	28	23	20	24	20	17	15
9	49	37	29	24	46	35	27	23	30	24	20	26	21	18	22	18	15	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	20	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6171	6171	6171
5°	6191	6015	6019
10°	6135	5878	5848
15°	6056	5720	5660
20°	5943	5540	5454
25°	5804	5333	5238
30°	5660	5147	5019
35°	5500	4950	4844
40°	5347	4771	4656
45°	5177	4599	4506
50°	5010	4430	4341
55°	4826	4256	4193
60°	4646	4080	4040
65°	4462	3891	3859
70°	4185	3680	3673
75°	3832	3437	3484
80°	3426	3199	3268
85°	3052	3034	3143



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	54.4	1.7
10°-20°	154.9	4.8
20°-30°	231.7	7.2
30°-40°	276.7	8.6
40°-50°	289.5	9.0
50°-60°	271.7	8.4
60°-70°	226.9	7.0
70°-80°	162.4	5.0
80°-90°	98.2	3.0
90°-100°	91.4	2.8
100°-110°	136.3	4.2
110°-120°	185.8	5.8
120°-130°	222.2	6.9
130°-140°	238.3	7.4
140°-150°	228.3	7.1
150°-160°	190.8	5.9
160°-170°	127.0	3.9
170°-180°	44.5	1.4
0°-30°	441.0	13.6
0°-40°	717.7	22.2
0°-60°	1279.0	39.6
0°-90°	1766.5	54.7
90°-120°	413.5	12.8
90°-150°	1102.3	34.1
90°-180°	1465.0	45.3
0°-180°	3231.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	573	573	573	573	573	
5°	574	573	569	574	573	54
15°	546	548	548	554	553	154
25°	493	499	502	509	510	227
35°	425	435	443	452	455	266
45°	347	362	378	389	395	268
55°	265	286	308	324	330	237
65°	183	208	235	253	260	181
75°	99	129	160	180	188	106
85°	31	62	95	115	122	32
90°	8	43	79	101	109	7
95°	29	56	89	109	116	30
105°	88	105	134	151	158	94
115°	160	169	190	205	210	159
125°	232	234	250	261	265	207
135°	299	301	308	317	320	231
145°	362	362	364	368	369	226
155°	414	414	415	416	413	191
165°	451	450	450	452	450	127
175°	469	468	468	470	467	45
180°	470	470	470	470	470	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	575.8	575.5	575.2	574.8	574.5	573.9	573.0	572.1	571.2	570.3	571.2
5°	574.0	573.6	573.4	573.2	572.8	572.3	571.4	570.6	569.8	568.9	570.1
7.5°	568.3	568.3	568.4	568.5	568.6	568.2	567.4	566.6	565.7	564.9	566.3
10°	563.4	563.6	563.9	564.2	564.4	564.3	563.5	562.9	562.1	561.5	562.9
12.5°	557.3	557.7	558.2	558.5	558.9	558.9	558.4	557.9	557.4	556.9	558.2
15°	546.5	546.9	547.3	547.7	548.1	548.3	548.1	548.0	547.9	547.7	549.1
17.5°	532.7	533.5	534.4	535.2	536.1	536.5	536.4	536.3	536.3	536.2	537.4
20°	522.8	523.6	524.4	525.2	526.0	526.6	526.9	527.2	527.4	527.7	529.0
22.5°	512.3	513.1	513.9	514.8	515.6	516.2	516.6	517.0	517.4	517.7	519.3
25°	493.4	494.8	496.2	497.6	499.0	499.9	500.3	500.7	501.1	501.5	503.3
27.5°	474.4	476.0	477.6	479.2	480.7	481.9	482.8	483.7	484.6	485.5	487.1
30°	460.9	462.7	464.5	466.4	468.1	469.6	470.7	471.8	472.9	474.0	475.7
32.5°	445.9	447.9	450.0	452.0	454.0	455.8	457.2	458.6	460.1	461.5	463.3
35°	424.7	426.9	429.1	431.4	433.6	435.6	437.4	439.2	441.0	442.8	444.9
37.5°	402.2	404.7	407.2	409.7	412.2	414.6	416.8	419.0	421.2	423.5	425.8
40°	387.2	389.7	392.2	394.7	397.2	399.8	402.6	405.4	408.1	410.9	413.3
42.5°	370.7	373.8	376.8	379.8	382.9	385.9	388.8	391.7	394.6	397.5	400.1
45°	347.2	350.6	353.9	357.3	360.5	363.9	367.5	370.9	374.4	377.8	380.5
47.5°	322.6	326.4	330.2	333.9	337.7	341.6	345.6	349.5	353.5	357.5	360.4
50°	306.6	310.5	314.4	318.3	322.2	326.3	330.6	334.9	339.2	343.5	346.7
52.5°	289.7	293.8	297.9	302.0	306.1	310.5	315.3	320.0	324.7	329.5	332.8
55°	264.8	269.4	273.9	278.5	283.2	287.9	292.9	297.9	302.9	307.9	311.6
57.5°	240.6	245.3	250.1	254.9	259.7	264.8	270.3	275.7	281.2	286.7	290.4
60°	223.6	228.6	233.6	238.6	243.5	248.9	254.6	260.3	266.0	271.7	275.6
62.5°	207.6	212.7	217.8	222.9	228.0	233.6	239.6	245.6	251.7	257.7	261.5
65°	183.0	188.4	193.8	199.3	204.6	210.4	216.5	222.6	228.7	234.8	239.0
67.5°	158.0	163.8	169.5	175.2	181.0	186.9	193.2	199.4	205.6	211.8	216.4
70°	140.6	146.5	152.5	158.4	164.4	170.7	177.3	184.0	190.7	197.4	201.8
72.5°	124.5	130.5	136.5	142.4	148.4	154.8	161.7	168.6	175.5	182.4	186.9
75°	99.3	105.8	112.3	118.9	125.4	132.2	139.1	146.0	153.0	159.9	164.4
77.5°	77.3	83.9	90.5	97.0	103.6	110.4	117.4	124.4	131.4	138.4	143.2
80°	61.8	68.6	75.4	82.3	89.0	96.0	103.2	110.5	117.7	124.9	129.6
82.5°	48.3	55.3	62.1	69.1	76.0	83.1	90.4	97.8	105.1	112.4	117.2
85°	30.6	37.5	44.5	51.4	58.4	65.5	72.9	80.2	87.6	94.9	99.6
87.5°	16.7	23.7	30.8	37.9	45.0	52.2	59.4	66.8	74.0	81.4	86.1
90°	8.5	16.1	23.7	31.4	39.0	46.9	55.0	63.2	71.3	79.4	84.5
92.5°	16.6	23.2	29.9	36.6	43.3	50.5	58.0	65.6	73.2	80.8	85.6
95°	28.7	34.7	40.7	46.6	52.6	59.4	66.8	74.3	81.7	89.2	93.8
97.5°	44.8	50.1	55.4	60.7	66.1	72.2	79.2	86.2	93.1	100.1	104.6
100°	55.8	60.8	65.7	70.7	75.6	81.4	88.3	95.1	101.8	108.7	112.9
102.5°	68.6	73.0	77.3	81.5	85.9	91.4	98.2	105.0	111.9	118.6	122.8
105°	88.1	91.6	95.1	98.7	102.1	107.2	113.9	120.6	127.3	134.0	137.9
107.5°	110.1	113.1	116.0	119.0	121.9	126.3	132.2	138.2	144.1	150.1	154.1
110°	123.8	126.5	129.1	131.8	134.4	138.7	144.4	150.1	155.8	161.5	165.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	138.6	140.7	142.9	145.0	147.2	151.0	156.4	161.7	167.1	172.4	176.3
115°	160.1	162.1	164.0	165.9	167.8	171.1	176.0	180.8	185.6	190.5	193.9
117.5°	182.3	183.5	184.7	185.9	187.1	190.0	194.4	198.9	203.3	207.8	211.2
120°	195.8	196.9	198.1	199.3	200.5	203.2	207.3	211.5	215.6	219.8	223.0
122.5°	210.2	210.9	211.7	212.4	213.1	215.6	219.6	223.8	228.0	232.1	235.0
125°	231.7	232.0	232.2	232.4	232.7	234.7	238.6	242.5	246.3	250.1	252.7
127.5°	252.1	252.5	252.8	253.2	253.6	255.4	258.5	261.7	264.8	268.0	270.3
130°	265.7	266.2	266.7	267.3	267.7	269.3	271.8	274.3	276.9	279.4	281.7
132.5°	278.8	279.4	280.1	280.6	281.3	282.7	284.7	286.7	288.8	290.8	292.9
135°	299.4	299.8	300.1	300.4	300.8	301.7	303.2	304.6	306.1	307.5	309.7
137.5°	318.5	318.8	319.1	319.4	319.7	320.4	321.5	322.5	323.6	324.7	326.5
140°	331.3	331.7	332.2	332.6	333.0	333.4	333.9	334.4	334.9	335.4	337.4
142.5°	343.4	343.7	344.1	344.3	344.6	344.9	345.1	345.4	345.6	345.8	347.6
145°	362.3	362.4	362.4	362.4	362.4	362.6	362.8	363.1	363.3	363.5	364.6
147.5°	378.3	378.5	378.9	379.1	379.4	379.7	379.9	380.2	380.4	380.7	381.0
150°	389.8	390.0	390.1	390.3	390.4	390.6	390.8	390.9	391.1	391.3	391.3
152.5°	399.3	399.5	399.7	399.9	400.1	400.3	400.4	400.6	400.6	400.7	400.9
155°	414.2	414.2	414.2	414.2	414.2	414.3	414.3	414.4	414.5	414.6	414.9
157.5°	426.9	426.8	426.7	426.6	426.5	426.5	426.6	426.6	426.6	426.7	427.1
160°	434.9	434.7	434.6	434.4	434.2	434.1	434.1	434.1	434.1	434.1	434.6
162.5°	442.0	441.7	441.5	441.2	441.1	441.0	441.0	441.1	441.2	441.2	441.6
165°	451.1	450.9	450.6	450.4	450.1	450.0	450.0	450.0	450.0	450.0	450.5
167.5°	458.4	458.1	457.8	457.5	457.1	457.0	457.1	457.1	457.2	457.2	457.8
170°	462.6	462.3	461.9	461.6	461.3	461.1	461.1	461.1	461.1	461.1	461.7
172.5°	465.9	465.5	465.2	464.9	464.5	464.3	464.3	464.3	464.3	464.3	464.9
175°	469.2	468.9	468.6	468.2	467.9	467.7	467.7	467.7	467.7	467.7	468.2
177.5°	470.7	470.3	470.1	469.9	469.6	469.4	469.4	469.4	469.4	469.4	469.9
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	573.3	573.3	573.3	573.3	573.3	573.3	573.3	573.3
2.5°	572.1	573.0	573.9	574.3	574.1	574.1	574.0	573.8
5°	571.2	572.3	573.4	573.9	573.7	573.6	573.5	573.3
7.5°	567.7	569.1	570.5	571.1	571.0	570.8	570.6	570.5
10°	564.3	565.7	567.0	567.5	567.3	567.0	566.7	566.5
12.5°	559.5	560.8	562.1	562.6	562.3	562.0	561.7	561.5
15°	550.5	551.9	553.3	553.9	553.8	553.6	553.5	553.3
17.5°	538.7	540.0	541.2	541.8	541.5	541.4	541.2	541.0
20°	530.3	531.5	532.7	533.5	533.5	533.7	533.9	533.9
22.5°	520.9	522.5	524.1	524.8	524.7	524.6	524.6	524.5
25°	505.1	507.0	508.7	509.6	509.6	509.6	509.6	509.6
27.5°	488.6	490.2	491.7	492.6	492.7	492.8	492.9	493.0
30°	477.4	479.0	480.7	481.5	481.5	481.5	481.5	481.5
32.5°	465.0	466.8	468.6	469.7	470.0	470.3	470.7	471.0
35°	446.9	449.1	451.1	452.4	453.0	453.6	454.1	454.7
37.5°	428.1	430.5	432.8	434.3	434.7	435.1	435.6	436.0
40°	415.6	418.0	420.4	421.8	422.4	423.0	423.5	424.0
42.5°	402.6	405.2	407.8	409.4	410.3	411.0	411.8	412.5
45°	383.1	385.7	388.4	390.3	391.3	392.5	393.6	394.7
47.5°	363.5	366.4	369.3	371.3	372.1	373.0	373.9	374.7
50°	349.8	353.1	356.3	358.3	359.3	360.3	361.3	362.2
52.5°	336.1	339.4	342.8	345.0	346.2	347.3	348.5	349.8
55°	315.4	319.1	322.9	325.3	326.4	327.5	328.6	329.8
57.5°	294.2	298.0	301.7	304.3	305.6	306.9	308.2	309.5
60°	279.5	283.3	287.2	289.9	291.5	292.9	294.5	296.0
62.5°	265.5	269.4	273.2	275.9	277.3	278.7	280.1	281.5
65°	243.1	247.3	251.5	254.3	255.7	257.1	258.4	259.8
67.5°	220.9	225.5	230.1	232.9	234.1	235.2	236.4	237.6
70°	206.3	210.7	215.2	218.0	219.4	220.8	222.2	223.6
72.5°	191.4	196.0	200.6	203.6	205.0	206.4	207.7	209.1
75°	169.0	173.7	178.2	181.3	183.0	184.7	186.3	188.0
77.5°	148.1	152.9	157.7	160.8	162.1	163.3	164.6	165.9
80°	134.4	139.1	143.8	146.8	148.2	149.6	151.0	152.4
82.5°	121.9	126.5	131.3	134.4	135.7	137.1	138.5	139.9
85°	104.4	109.1	113.8	116.8	118.2	119.6	121.0	122.4
87.5°	90.9	95.7	100.4	103.5	105.0	106.4	107.9	109.3
90°	89.5	94.6	99.6	102.9	104.4	106.1	107.6	109.2
92.5°	90.5	95.4	100.3	103.3	104.4	105.7	106.8	107.9
95°	98.4	103.1	107.7	110.7	112.1	113.5	114.9	116.3
97.5°	109.2	113.7	118.1	121.1	122.5	123.8	125.1	126.5
100°	117.2	121.5	125.7	128.7	130.2	131.8	133.3	134.9
102.5°	126.9	131.1	135.3	138.0	139.4	140.8	142.1	143.5
105°	141.8	145.7	149.6	152.2	153.6	155.1	156.5	157.8
107.5°	158.1	162.1	166.1	168.6	169.7	170.9	171.9	173.1
110°	169.4	173.3	177.2	179.7	180.7	181.6	182.5	183.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	180.2	184.1	188.0	190.5	191.7	192.9	194.1	195.3
115°	197.3	200.7	204.2	206.4	207.4	208.4	209.5	210.5
117.5°	214.4	217.7	221.0	223.1	223.9	224.8	225.6	226.5
120°	226.1	229.2	232.3	234.2	235.1	235.9	236.7	237.5
122.5°	237.8	240.8	243.6	245.4	246.1	246.9	247.6	248.3
125°	255.4	258.0	260.5	262.1	262.8	263.4	264.1	264.7
127.5°	272.6	274.8	277.1	278.6	279.2	279.7	280.3	280.9
130°	284.0	286.3	288.6	289.9	290.2	290.4	290.7	290.9
132.5°	295.1	297.2	299.3	300.6	301.1	301.7	302.1	302.6
135°	311.9	314.1	316.2	317.6	318.0	318.6	319.1	319.7
137.5°	328.4	330.2	332.1	333.2	333.5	333.9	334.4	334.7
140°	339.4	341.4	343.4	344.5	344.5	344.7	344.8	345.0
142.5°	349.4	351.1	352.9	353.9	354.2	354.4	354.7	354.9
145°	365.6	366.6	367.7	368.3	368.5	368.8	369.0	369.2
147.5°	381.3	381.6	382.0	382.1	382.1	382.1	382.1	382.1
150°	391.3	391.3	391.3	391.2	390.9	390.8	390.5	390.3
152.5°	401.0	401.1	401.3	401.1	400.8	400.4	400.0	399.7
155°	415.2	415.6	415.9	415.7	415.2	414.6	414.0	413.4
157.5°	427.5	427.8	428.1	428.0	427.6	427.1	426.6	426.2
160°	435.0	435.4	435.8	435.8	435.5	435.1	434.8	434.5
162.5°	442.1	442.5	442.9	442.8	442.3	441.7	441.2	440.7
165°	451.0	451.5	452.0	451.9	451.3	450.8	450.2	449.6
167.5°	458.3	458.8	459.3	459.3	458.8	458.3	457.8	457.2
170°	462.3	462.8	463.4	463.4	462.8	462.3	461.7	461.1
172.5°	465.4	465.9	466.4	466.4	465.8	465.2	464.6	464.1
175°	468.7	469.2	469.7	469.7	469.1	468.6	468.0	467.4
177.5°	470.3	470.7	471.0	471.0	470.5	470.1	469.6	469.1
180°	470.3	470.3	470.3	470.3	470.3	470.3	470.3	470.3

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