

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: P332123-840

Luminaire Tested: **S123DIW-S560D460U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332123-840
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-S560D460U840-4F0-1E-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: 4002.2 lumens
Efficiency: N/A
Efficacy: 132.5 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

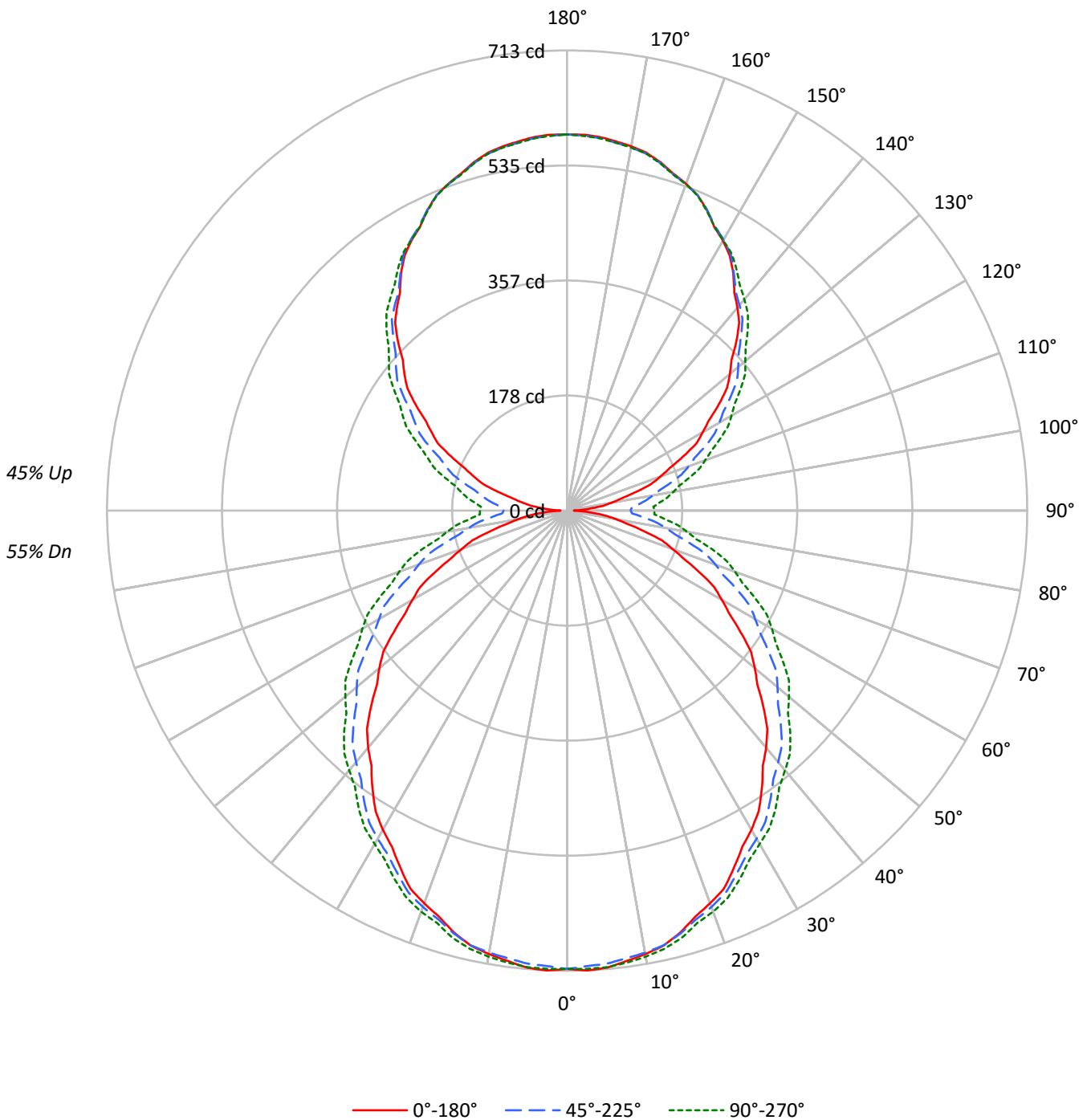
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	7643	7643	7643
5°	7667	7451	7455
10°	7599	7280	7244
15°	7501	7084	7012
20°	7361	6862	6756
25°	7189	6606	6489
30°	7011	6375	6216
35°	6812	6132	6000
40°	6623	5910	5767
45°	6414	5697	5582
50°	6206	5488	5378
55°	5978	5271	5194
60°	5753	5053	5005
65°	5525	4819	4780
70°	5183	4558	4549
75°	4746	4256	4316
80°	4241	3962	4047
85°	3780	3757	3892



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.3	1.7
10°-20°	191.9	4.8
20°-30°	287.0	7.2
30°-40°	342.8	8.6
40°-50°	358.6	9.0
50°-60°	336.5	8.4
60°-70°	281.1	7.0
70°-80°	201.1	5.0
80°-90°	121.7	3.0
90°-100°	113.2	2.8
100°-110°	168.9	4.2
110°-120°	230.1	5.7
120°-130°	275.2	6.9
130°-140°	295.1	7.4
140°-150°	282.8	7.1
150°-160°	236.4	5.9
160°-170°	157.3	3.9
170°-180°	55.1	1.4
0°-30°	546.3	13.6
0°-40°	889.0	22.2
0°-60°	1584.2	39.6
0°-90°	2188.0	54.7
90°-120°	512.2	12.8
90°-150°	1365.4	34.1
90°-180°	1814.0	45.3
0°-180°	4002.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	710	710	710	710	710	
5°	711	709	705	710	710	67
15°	677	679	678	686	685	191
25°	611	619	621	631	631	282
35°	526	538	548	560	563	329
45°	430	449	468	482	489	332
55°	328	354	381	401	408	294
65°	227	257	291	313	322	224
75°	123	160	198	223	233	131
85°	38	77	118	143	152	40
90°	10	53	98	125	135	9
95°	36	69	110	135	144	37
105°	109	130	166	187	196	117
115°	198	210	236	254	261	196
125°	287	289	310	324	328	256
135°	371	373	381	392	396	286
145°	449	449	450	456	457	280
155°	513	513	514	515	512	236
165°	559	557	557	560	557	157
175°	581	580	579	582	579	55
180°	583	583	583	583	583	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	713.3	712.9	712.5	712.0	711.6	710.8	709.7	708.6	707.5	706.4	707.5
5°	710.9	710.5	710.2	709.9	709.5	708.8	707.8	706.8	705.8	704.7	706.1
7.5°	704.0	704.0	704.1	704.2	704.3	703.8	702.8	701.8	700.7	699.7	701.5
10°	697.8	698.1	698.4	698.8	699.1	698.9	698.0	697.2	696.3	695.5	697.2
12.5°	690.3	690.8	691.4	691.8	692.3	692.3	691.7	691.1	690.4	689.8	691.5
15°	676.9	677.4	677.9	678.4	678.9	679.1	678.9	678.7	678.6	678.4	680.1
17.5°	659.8	660.9	662.0	663.0	664.0	664.5	664.4	664.3	664.3	664.2	665.7
20°	647.5	648.5	649.5	650.6	651.6	652.3	652.7	653.0	653.3	653.7	655.2
22.5°	634.5	635.5	636.5	637.6	638.6	639.3	639.9	640.4	640.9	641.3	643.3
25°	611.2	612.9	614.6	616.3	618.0	619.1	619.7	620.2	620.7	621.2	623.4
27.5°	587.6	589.6	591.6	593.5	595.4	596.9	598.0	599.2	600.3	601.4	603.3
30°	570.9	573.1	575.3	577.6	579.9	581.7	583.0	584.4	585.7	587.1	589.3
32.5°	552.3	554.8	557.3	559.9	562.4	564.5	566.3	568.0	569.9	571.7	573.9
35°	526.0	528.8	531.5	534.3	537.0	539.6	541.8	544.0	546.2	548.5	551.1
37.5°	498.2	501.3	504.3	507.5	510.6	513.5	516.2	519.0	521.7	524.5	527.5
40°	479.6	482.7	485.8	488.9	492.0	495.2	498.7	502.1	505.5	509.0	511.9
42.5°	459.2	463.0	466.8	470.5	474.3	478.0	481.6	485.1	488.8	492.3	495.5
45°	430.1	434.2	438.4	442.5	446.6	450.8	455.1	459.4	463.7	468.0	471.3
47.5°	399.6	404.3	409.0	413.6	418.3	423.1	428.1	432.9	437.9	442.8	446.5
50°	379.8	384.7	389.4	394.3	399.1	404.1	409.5	414.9	420.1	425.5	429.4
52.5°	358.8	363.9	369.0	374.1	379.1	384.7	390.5	396.4	402.2	408.2	412.2
55°	328.0	333.7	339.3	345.0	350.7	356.6	362.8	369.0	375.2	381.3	386.0
57.5°	298.0	303.9	309.8	315.7	321.6	328.0	334.8	341.5	348.3	355.1	359.7
60°	276.9	283.2	289.3	295.5	301.6	308.3	315.4	322.4	329.4	336.5	341.3
62.5°	257.1	263.5	269.8	276.1	282.5	289.3	296.8	304.3	311.7	319.2	324.0
65°	226.6	233.4	240.0	246.8	253.5	260.6	268.2	275.7	283.3	290.8	296.0
67.5°	195.7	202.9	210.0	217.0	224.2	231.6	239.3	247.0	254.7	262.4	268.0
70°	174.1	181.5	188.8	196.2	203.6	211.5	219.6	227.9	236.2	244.5	249.9
72.5°	154.2	161.7	169.1	176.4	183.8	191.8	200.3	208.8	217.3	225.9	231.6
75°	123.0	131.1	139.2	147.2	155.3	163.7	172.3	180.9	189.5	198.0	203.7
77.5°	95.7	103.9	112.1	120.2	128.4	136.7	145.4	154.1	162.8	171.5	177.4
80°	76.5	85.0	93.4	101.9	110.3	119.0	127.8	136.8	145.8	154.7	160.6
82.5°	59.9	68.5	77.0	85.5	94.1	102.9	112.0	121.1	130.2	139.3	145.1
85°	37.9	46.5	55.1	63.7	72.3	81.1	90.3	99.4	108.5	117.5	123.4
87.5°	20.7	29.4	38.2	47.0	55.7	64.6	73.6	82.7	91.7	100.8	106.6
90°	10.5	20.0	29.4	38.9	48.3	58.1	68.2	78.3	88.3	98.4	104.6
92.5°	20.5	28.8	37.1	45.3	53.6	62.5	71.9	81.3	90.7	100.1	106.0
95°	35.5	42.9	50.4	57.8	65.1	73.5	82.7	92.0	101.2	110.5	116.2
97.5°	55.5	62.1	68.7	75.2	81.9	89.5	98.1	106.7	115.3	124.0	129.6
100°	69.2	75.3	81.4	87.6	93.6	100.9	109.4	117.8	126.1	134.6	139.9
102.5°	85.0	90.4	95.7	101.0	106.3	113.2	121.7	130.1	138.6	146.9	152.1
105°	109.2	113.5	117.9	122.2	126.4	132.8	141.1	149.4	157.7	166.0	170.9
107.5°	136.4	140.1	143.7	147.3	151.0	156.4	163.8	171.2	178.5	185.9	190.9
110°	153.4	156.6	160.0	163.3	166.5	171.8	178.8	185.9	193.0	200.1	204.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	171.7	174.3	177.0	179.7	182.4	187.0	193.7	200.3	206.9	213.6	218.4
115°	198.3	200.8	203.1	205.5	207.8	212.0	218.0	224.0	229.9	236.0	240.1
117.5°	225.8	227.3	228.8	230.2	231.8	235.3	240.9	246.4	251.9	257.4	261.6
120°	242.5	243.9	245.4	246.8	248.3	251.7	256.8	262.0	267.1	272.3	276.2
122.5°	260.3	261.3	262.2	263.1	264.0	267.0	272.1	277.2	282.4	287.5	291.0
125°	287.0	287.3	287.6	287.9	288.2	290.7	295.5	300.3	305.1	309.8	313.1
127.5°	312.3	312.8	313.2	313.7	314.2	316.4	320.2	324.2	328.0	331.9	334.8
130°	329.1	329.7	330.3	331.0	331.6	333.6	336.7	339.8	343.0	346.1	348.9
132.5°	345.3	346.1	346.9	347.6	348.4	350.1	352.6	355.2	357.7	360.2	362.8
135°	370.8	371.3	371.7	372.1	372.6	373.8	375.6	377.3	379.1	380.9	383.5
137.5°	394.6	394.9	395.3	395.7	396.0	396.9	398.2	399.5	400.8	402.1	404.5
140°	410.4	410.9	411.4	411.9	412.4	412.9	413.5	414.2	414.9	415.5	417.9
142.5°	425.4	425.8	426.2	426.5	426.9	427.2	427.5	427.8	428.1	428.3	430.5
145°	448.8	448.9	448.9	448.9	448.9	449.1	449.4	449.7	450.0	450.3	451.6
147.5°	468.6	468.9	469.3	469.6	470.0	470.3	470.6	470.9	471.2	471.5	471.9
150°	482.8	483.0	483.2	483.4	483.6	483.8	484.0	484.2	484.4	484.6	484.6
152.5°	494.5	494.8	495.1	495.3	495.6	495.8	495.9	496.1	496.2	496.3	496.6
155°	513.0	513.0	513.0	513.0	513.0	513.1	513.2	513.3	513.4	513.5	513.9
157.5°	528.8	528.7	528.6	528.4	528.3	528.3	528.4	528.5	528.5	528.6	529.0
160°	538.7	538.5	538.3	538.1	537.9	537.8	537.8	537.8	537.8	537.8	538.3
162.5°	547.4	547.1	546.8	546.5	546.3	546.2	546.2	546.3	546.4	546.5	547.0
165°	558.8	558.5	558.2	557.8	557.5	557.4	557.4	557.4	557.4	557.4	558.1
167.5°	567.8	567.4	567.0	566.6	566.2	566.0	566.1	566.2	566.3	566.3	567.0
170°	573.0	572.6	572.2	571.8	571.4	571.2	571.2	571.2	571.2	571.2	571.9
172.5°	577.0	576.6	576.2	575.8	575.3	575.1	575.1	575.1	575.1	575.1	575.8
175°	581.2	580.8	580.4	580.0	579.6	579.4	579.4	579.4	579.4	579.4	580.0
177.5°	583.0	582.6	582.3	582.0	581.7	581.5	581.5	581.5	581.5	581.5	582.0
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	708.6	709.7	710.8	711.3	711.1	711.0	710.9	710.7
5°	707.5	708.8	710.2	710.8	710.6	710.4	710.3	710.1
7.5°	703.2	704.9	706.7	707.4	707.2	707.0	706.8	706.6
10°	698.9	700.6	702.4	703.0	702.7	702.4	702.0	701.7
12.5°	693.1	694.6	696.2	696.8	696.5	696.1	695.8	695.5
15°	681.9	683.6	685.3	686.1	685.9	685.7	685.6	685.4
17.5°	667.3	668.8	670.3	671.1	670.8	670.6	670.3	670.0
20°	656.8	658.3	659.8	660.8	660.9	661.1	661.3	661.4
22.5°	645.2	647.2	649.1	650.1	649.9	649.8	649.7	649.6
25°	625.6	627.9	630.2	631.3	631.3	631.3	631.3	631.3
27.5°	605.2	607.1	609.0	610.2	610.3	610.4	610.6	610.7
30°	591.3	593.3	595.4	596.4	596.4	596.4	596.4	596.4
32.5°	576.0	578.2	580.5	581.8	582.2	582.6	583.0	583.4
35°	553.6	556.2	558.8	560.4	561.1	561.8	562.5	563.2
37.5°	530.3	533.2	536.1	538.0	538.5	539.0	539.6	540.1
40°	514.8	517.8	520.7	522.5	523.2	523.9	524.5	525.2
42.5°	498.7	501.9	505.1	507.2	508.2	509.1	510.1	511.0
45°	474.5	477.8	481.1	483.4	484.7	486.1	487.6	488.9
47.5°	450.2	453.8	457.5	459.9	460.9	462.0	463.1	464.1
50°	433.3	437.4	441.3	443.8	445.0	446.3	447.5	448.7
52.5°	416.4	420.4	424.5	427.3	428.8	430.2	431.7	433.2
55°	390.6	395.3	399.9	402.9	404.3	405.7	407.1	408.5
57.5°	364.5	369.1	373.8	376.9	378.5	380.1	381.7	383.3
60°	346.2	350.9	355.8	359.1	361.0	362.8	364.8	366.7
62.5°	328.8	333.7	338.4	341.7	343.5	345.2	347.0	348.7
65°	301.1	306.3	311.5	315.0	316.7	318.4	320.1	321.8
67.5°	273.7	279.3	285.0	288.5	289.9	291.3	292.9	294.3
70°	255.5	260.9	266.5	270.0	271.8	273.5	275.2	276.9
72.5°	237.1	242.8	248.4	252.2	253.9	255.6	257.3	259.0
75°	209.3	215.1	220.8	224.6	226.6	228.7	230.8	232.9
77.5°	183.4	189.3	195.3	199.1	200.8	202.3	203.9	205.5
80°	166.4	172.3	178.1	181.9	183.6	185.3	187.0	188.7
82.5°	151.0	156.7	162.6	166.4	168.1	169.9	171.6	173.3
85°	129.3	135.1	141.0	144.7	146.4	148.1	149.9	151.6
87.5°	112.6	118.6	124.4	128.3	130.1	131.8	133.6	135.3
90°	110.9	117.1	123.4	127.4	129.4	131.4	133.3	135.2
92.5°	112.1	118.2	124.2	127.9	129.4	130.9	132.3	133.7
95°	121.9	127.6	133.4	137.1	138.9	140.6	142.3	144.0
97.5°	135.2	140.8	146.3	150.0	151.7	153.4	155.0	156.7
100°	145.1	150.5	155.7	159.4	161.3	163.2	165.1	167.0
102.5°	157.2	162.4	167.5	171.0	172.7	174.4	176.0	177.7
105°	175.6	180.5	185.3	188.5	190.3	192.1	193.8	195.5
107.5°	195.8	200.8	205.7	208.8	210.3	211.7	213.0	214.4
110°	209.8	214.7	219.5	222.6	223.8	224.9	226.1	227.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	223.2	228.0	232.9	236.0	237.4	238.9	240.4	241.9
115°	244.4	248.6	252.9	255.6	256.9	258.1	259.4	260.7
117.5°	265.6	269.6	273.8	276.3	277.3	278.4	279.4	280.5
120°	280.0	283.9	287.7	290.1	291.1	292.2	293.2	294.2
122.5°	294.6	298.2	301.7	304.0	304.9	305.8	306.7	307.6
125°	316.3	319.5	322.7	324.7	325.5	326.3	327.1	327.9
127.5°	337.6	340.4	343.3	345.1	345.8	346.5	347.2	347.9
130°	351.7	354.7	357.5	359.1	359.4	359.7	360.0	360.3
132.5°	365.5	368.1	370.7	372.3	372.9	373.7	374.3	374.9
135°	386.3	389.0	391.6	393.3	393.9	394.7	395.3	396.0
137.5°	406.8	409.0	411.3	412.7	413.1	413.6	414.1	414.5
140°	420.4	422.8	425.4	426.7	426.8	427.0	427.1	427.3
142.5°	432.7	434.9	437.2	438.4	438.7	439.0	439.3	439.6
145°	452.8	454.1	455.4	456.2	456.5	456.8	457.1	457.3
147.5°	472.3	472.7	473.1	473.3	473.3	473.3	473.3	473.3
150°	484.6	484.6	484.6	484.5	484.2	484.0	483.7	483.4
152.5°	496.7	496.9	497.1	496.9	496.4	495.9	495.4	495.0
155°	514.3	514.7	515.1	514.9	514.2	513.5	512.8	512.1
157.5°	529.5	529.9	530.3	530.2	529.7	529.1	528.5	528.0
160°	538.8	539.3	539.8	539.8	539.4	539.0	538.6	538.2
162.5°	547.5	548.1	548.6	548.5	547.9	547.1	546.5	545.8
165°	558.7	559.3	559.9	559.8	559.1	558.4	557.6	556.9
167.5°	567.6	568.3	568.9	568.9	568.3	567.6	567.0	566.3
170°	572.6	573.3	574.0	574.0	573.3	572.6	571.9	571.2
172.5°	576.4	577.0	577.6	577.6	576.9	576.2	575.5	574.8
175°	580.6	581.2	581.8	581.8	581.1	580.4	579.7	579.0
177.5°	582.5	583.0	583.4	583.4	582.8	582.3	581.7	581.1
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6

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