

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: P332124-930

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332124-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
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-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3394.9 lumens
Efficiency: N/A
Efficacy: 112.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

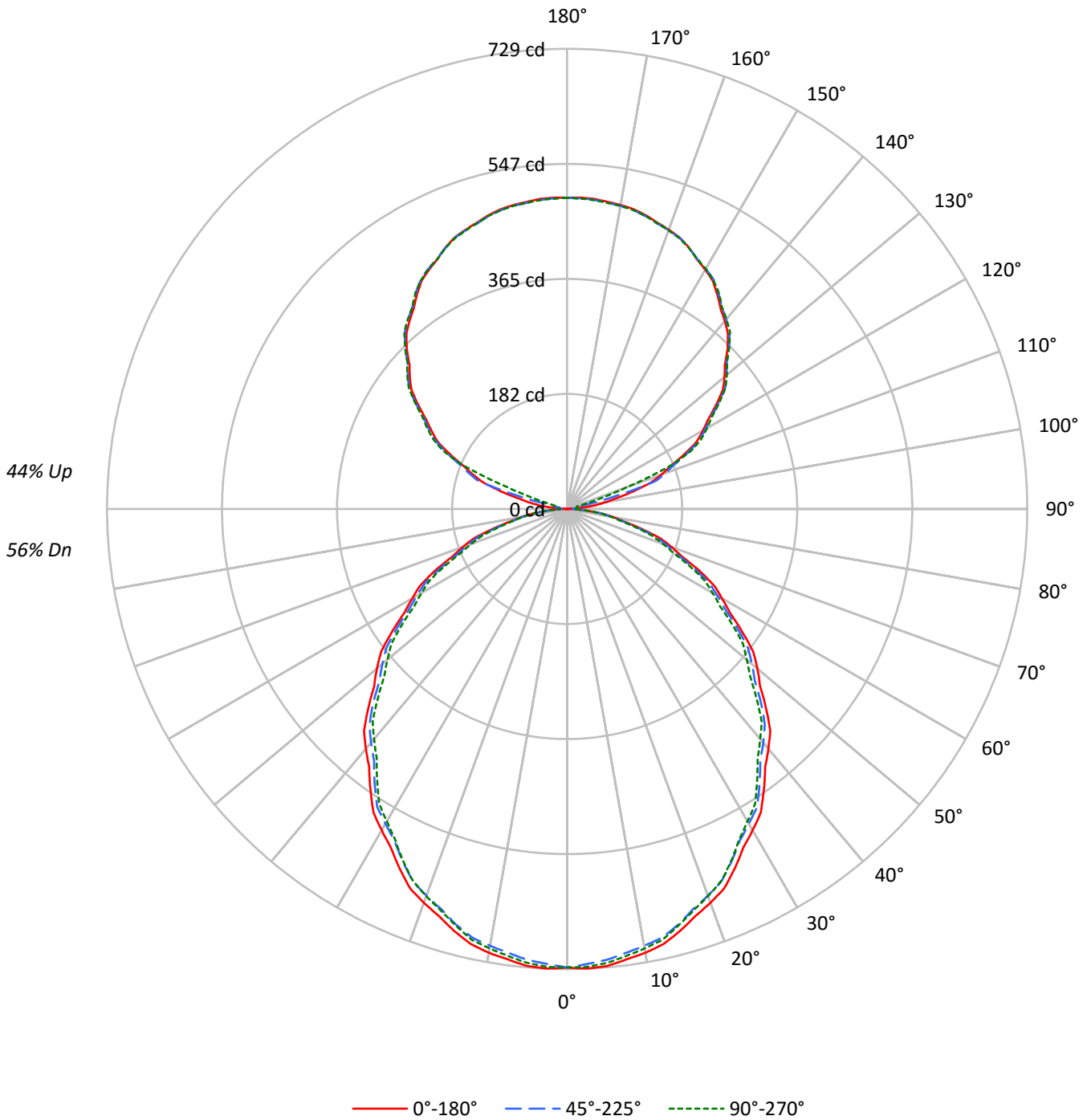
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	73	73	73	61	61	61	56
1	99	95	91	87	92	88	85	82	76	73	71	65	63	61	54	53	52	47
2	90	83	76	71	83	77	71	67	66	62	59	57	54	51	48	45	43	39
3	82	73	65	59	76	68	61	56	59	53	49	50	46	43	42	39	37	33
4	75	64	56	50	70	60	53	47	52	46	42	45	40	37	38	34	32	28
5	69	57	49	43	64	54	46	41	47	41	36	40	35	32	34	30	28	25
6	64	51	43	37	59	48	41	35	42	36	32	36	32	28	31	27	24	22
7	59	46	38	33	55	44	36	31	38	32	28	33	28	25	28	24	22	19
8	55	42	34	29	51	40	32	28	35	29	25	30	25	22	26	22	19	17
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	18	15
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7819	7819	7819
5°	7854	7747	7800
10°	7803	7679	7726
15°	7710	7592	7608
20°	7605	7468	7475
25°	7462	7321	7305
30°	7305	7157	7102
35°	7139	6984	6893
40°	6968	6792	6687
45°	6779	6616	6454
50°	6589	6400	6223
55°	6341	6176	5988
60°	6090	5916	5726
65°	5871	5631	5456
70°	5542	5306	5070
75°	5065	4882	4675
80°	4568	4376	4339
85°	4001	3853	3705



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.4	2.0
10°-20°	193.2	5.7
20°-30°	285.4	8.4
30°-40°	333.3	9.8
40°-50°	335.1	9.9
50°-60°	294.4	8.7
60°-70°	219.3	6.5
70°-80°	124.9	3.7
80°-90°	37.2	1.1
90°-100°	17.9	0.5
100°-110°	85.4	2.5
110°-120°	205.2	6.0
120°-130°	261.3	7.7
130°-140°	279.2	8.2
140°-150°	261.1	7.7
150°-160°	210.6	6.2
160°-170°	135.9	4.0
170°-180°	46.8	1.4
0°-30°	547.0	16.1
0°-40°	880.3	25.9
0°-60°	1509.9	44.5
0°-90°	1891.4	55.7
90°-120°	308.6	9.1
90°-150°	1110.2	32.7
90°-180°	1504.0	44.3
0°-180°	3394.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	726	726	726	726	726	
5°	727	724	717	723	722	69
15°	692	689	681	686	683	195
25°	628	624	616	617	615	289
35°	543	539	532	528	525	340
45°	445	442	435	427	424	344
55°	338	337	329	322	319	303
65°	230	227	221	216	214	227
75°	122	119	117	114	112	130
85°	32	31	31	30	30	36
90°	0	4	9	10	11	3
95°	22	8	11	14	14	28
105°	109	111	80	19	16	116
115°	205	207	210	214	215	202
125°	289	291	293	294	294	258
135°	359	362	363	364	363	277
145°	415	417	418	419	419	259
155°	457	456	456	458	456	210
165°	482	481	480	483	481	136
175°	493	491	492	494	491	47
180°	493	493	493	493	493	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4
2.5°	728.8	728.4	728.0	727.5	727.1	726.2	725.0	723.7	722.6	721.4	722.4
5°	726.9	726.3	725.5	724.9	724.1	723.1	721.5	720.0	718.5	717.0	718.4
7.5°	719.8	719.2	718.4	717.8	717.1	715.9	714.4	712.7	711.2	709.6	710.9
10°	713.9	713.1	712.5	711.8	711.1	709.8	708.0	706.2	704.4	702.6	703.8
12.5°	705.9	705.2	704.7	704.1	703.5	702.4	700.7	699.0	697.3	695.6	696.5
15°	691.9	691.5	690.9	690.3	689.7	688.6	686.8	685.0	683.1	681.3	682.5
17.5°	675.9	675.1	674.4	673.7	672.9	671.7	669.9	668.1	666.3	664.5	665.3
20°	663.9	663.1	662.2	661.4	660.6	659.3	657.5	655.7	653.8	652.0	652.6
22.5°	650.4	649.5	648.7	647.9	647.0	645.7	643.9	642.1	640.3	638.5	639.0
25°	628.3	627.5	626.6	625.8	624.9	623.6	621.8	620.0	618.2	616.4	616.5
27.5°	604.7	603.9	603.1	602.3	601.4	600.1	598.1	596.2	594.3	592.3	592.4
30°	587.7	587.0	586.3	585.6	584.9	583.6	581.6	579.7	577.8	575.8	575.8
32.5°	570.7	569.8	568.8	567.9	567.0	565.8	564.4	562.8	561.3	559.9	559.1
35°	543.3	542.5	541.7	540.9	540.1	538.7	536.9	535.1	533.3	531.5	530.7
37.5°	515.4	514.3	513.2	512.2	511.1	509.7	507.8	506.1	504.2	502.4	501.4
40°	495.9	495.0	494.2	493.4	492.5	491.1	489.2	487.3	485.3	483.4	482.2
42.5°	476.4	475.5	474.5	473.5	472.6	471.2	469.2	467.3	465.4	463.4	462.3
45°	445.3	444.7	444.2	443.6	443.0	441.9	440.1	438.3	436.5	434.6	433.0
47.5°	414.4	413.6	412.9	412.1	411.2	409.9	408.3	406.6	404.9	403.2	401.5
50°	393.5	392.7	392.1	391.3	390.7	389.5	387.6	385.8	384.0	382.2	380.7
52.5°	371.5	371.0	370.6	370.1	369.6	368.4	366.5	364.6	362.6	360.8	359.5
55°	337.9	337.7	337.6	337.5	337.3	336.3	334.5	332.7	330.9	329.1	327.6
57.5°	305.9	305.4	304.9	304.5	304.0	303.0	301.6	300.2	298.7	297.3	296.0
60°	282.9	282.7	282.7	282.5	282.3	281.4	279.8	278.1	276.5	274.8	273.5
62.5°	262.4	262.0	261.7	261.4	261.0	260.0	258.3	256.7	254.9	253.3	252.1
65°	230.5	229.8	229.1	228.4	227.7	226.7	225.3	223.9	222.5	221.1	220.0
67.5°	196.6	196.0	195.3	194.8	194.1	193.3	192.2	191.2	190.1	189.1	188.2
70°	176.1	175.3	174.5	173.7	172.8	171.9	171.1	170.3	169.4	168.6	167.6
72.5°	154.7	154.0	153.4	152.8	152.2	151.4	150.5	149.5	148.5	147.7	146.8
75°	121.8	121.2	120.7	120.1	119.6	119.1	118.6	118.2	117.8	117.4	116.8
77.5°	92.7	92.4	92.0	91.8	91.5	91.1	90.6	90.1	89.5	89.0	88.6
80°	73.7	73.3	72.9	72.5	72.0	71.7	71.4	71.1	70.8	70.6	70.4
82.5°	55.2	55.1	55.0	55.0	54.9	54.8	54.8	54.7	54.6	54.6	54.3
85°	32.4	32.2	32.0	31.6	31.4	31.2	31.2	31.2	31.2	31.2	31.0
87.5°	13.0	12.9	12.7	12.6	12.4	12.3	12.5	12.6	12.6	12.7	12.7
90°	0.3	1.1	2.0	2.8	3.6	4.6	5.6	6.7	7.7	8.8	9.1
92.5°	6.8	6.6	6.4	6.1	5.9	6.2	7.0	7.7	8.6	9.4	9.9
95°	22.3	19.0	15.7	12.3	9.0	7.7	8.6	9.5	10.4	11.3	11.9
97.5°	44.9	43.4	41.9	40.4	38.9	35.2	29.4	23.5	17.7	11.8	12.5
100°	61.9	63.5	65.1	66.8	68.4	62.9	50.2	37.5	24.8	12.1	12.7
102.5°	81.2	82.4	83.6	84.8	85.9	79.6	65.7	51.9	38.0	24.1	22.1
105°	109.2	110.1	111.0	111.9	112.8	109.5	102.2	94.9	87.6	80.2	65.8
107.5°	138.6	139.3	140.1	140.7	141.5	142.4	143.6	144.7	145.9	147.0	136.5
110°	158.2	158.9	159.6	160.2	160.9	161.6	162.5	163.4	164.3	165.2	162.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	177.0	177.6	178.1	178.7	179.4	180.1	181.0	181.9	182.8	183.7	183.7
115°	204.7	205.2	205.7	206.2	206.7	207.3	208.1	208.8	209.5	210.3	211.1
117.5°	231.6	232.3	232.8	233.4	234.1	234.6	234.9	235.3	235.7	236.0	236.7
120°	248.3	249.1	249.8	250.5	251.3	251.8	252.0	252.3	252.5	252.7	253.4
122.5°	265.4	266.0	266.5	267.2	267.7	268.2	268.6	268.8	269.1	269.5	269.9
125°	288.6	289.3	289.9	290.6	291.2	291.7	292.0	292.4	292.7	293.0	293.2
127.5°	311.2	311.9	312.5	313.2	313.8	314.3	314.7	315.1	315.5	315.9	316.2
130°	325.3	326.0	326.6	327.3	327.9	328.4	328.7	329.1	329.4	329.6	330.0
132.5°	338.8	339.4	340.1	340.7	341.4	341.8	342.1	342.3	342.6	342.8	343.2
135°	359.3	359.8	360.3	360.8	361.3	361.7	362.0	362.3	362.6	363.0	363.2
137.5°	376.9	377.6	378.1	378.8	379.4	379.8	380.0	380.2	380.3	380.5	380.9
140°	388.7	389.1	389.6	390.1	390.6	390.9	391.2	391.4	391.7	391.9	392.2
142.5°	399.5	400.0	400.5	401.0	401.5	401.8	402.0	402.3	402.5	402.8	403.0
145°	414.7	415.2	415.8	416.4	416.9	417.3	417.4	417.6	417.8	417.9	418.1
147.5°	428.9	429.3	429.7	430.1	430.4	430.7	430.9	431.0	431.2	431.4	431.5
150°	437.7	438.0	438.2	438.5	438.7	438.9	439.0	439.2	439.4	439.5	439.7
152.5°	445.6	445.7	445.9	446.0	446.1	446.2	446.3	446.4	446.5	446.6	446.9
155°	456.7	456.6	456.4	456.3	456.2	456.1	456.2	456.2	456.3	456.4	456.8
157.5°	465.5	465.4	465.4	465.4	465.4	465.3	465.2	465.1	465.0	465.0	465.5
160°	470.7	470.6	470.5	470.4	470.3	470.3	470.2	470.1	470.0	469.9	470.4
162.5°	475.6	475.5	475.2	475.1	474.8	474.7	474.6	474.5	474.4	474.3	474.9
165°	481.7	481.4	481.2	480.9	480.7	480.5	480.5	480.4	480.3	480.2	480.9
167.5°	486.4	486.1	485.8	485.4	485.1	484.9	484.9	484.9	484.9	484.9	485.6
170°	489.0	488.7	488.4	488.0	487.7	487.5	487.5	487.5	487.5	487.5	488.2
172.5°	490.7	490.4	490.0	489.6	489.2	489.0	489.1	489.2	489.3	489.3	489.9
175°	493.0	492.6	492.2	491.8	491.4	491.2	491.3	491.4	491.5	491.5	492.1
177.5°	493.6	493.3	492.9	492.6	492.3	492.2	492.3	492.3	492.4	492.4	492.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4
2.5°	723.6	724.6	725.8	726.3	726.2	726.0	725.9	725.9
5°	719.7	721.1	722.5	723.1	722.8	722.5	722.3	721.9
7.5°	712.1	713.3	714.6	715.1	714.9	714.8	714.6	714.4
10°	705.1	706.4	707.6	708.1	707.8	707.5	707.3	706.9
12.5°	697.4	698.4	699.3	699.6	699.4	699.3	699.1	699.0
15°	683.6	684.7	685.8	685.9	685.1	684.3	683.5	682.7
17.5°	666.1	666.8	667.6	667.8	667.6	667.2	666.9	666.6
20°	653.1	653.7	654.2	654.3	653.9	653.5	653.1	652.6
22.5°	639.4	639.8	640.3	640.3	639.8	639.2	638.7	638.1
25°	616.7	616.9	616.9	616.9	616.4	616.0	615.6	615.1
27.5°	592.6	592.6	592.7	592.6	592.0	591.5	590.9	590.4
30°	575.8	575.8	575.8	575.4	574.4	573.4	572.4	571.4
32.5°	558.3	557.5	556.7	556.0	555.5	555.1	554.5	554.0
35°	529.8	529.0	528.2	527.4	526.7	526.0	525.3	524.6
37.5°	500.3	499.4	498.4	497.7	497.3	496.8	496.4	495.9
40°	481.2	480.0	479.0	478.1	477.5	477.0	476.5	475.9
42.5°	461.2	460.1	458.9	458.1	457.5	457.1	456.5	455.9
45°	431.4	429.7	428.0	426.8	426.2	425.4	424.8	424.0
47.5°	399.9	398.3	396.6	395.5	394.9	394.3	393.7	393.1
50°	379.2	377.6	376.1	375.0	374.1	373.2	372.4	371.6
52.5°	358.2	356.9	355.6	354.4	353.6	352.8	352.0	351.1
55°	326.0	324.6	323.0	321.9	321.2	320.5	319.8	319.1
57.5°	294.6	293.2	291.9	290.7	289.9	289.2	288.4	287.6
60°	272.3	271.1	269.8	268.8	268.2	267.4	266.8	266.0
62.5°	250.8	249.6	248.3	247.4	247.0	246.5	246.1	245.6
65°	218.8	217.8	216.6	215.9	215.5	215.1	214.7	214.2
67.5°	187.2	186.2	185.2	184.4	183.8	183.3	182.7	182.1
70°	166.6	165.8	164.8	163.9	163.2	162.5	161.8	161.1
72.5°	145.9	145.0	144.2	143.6	143.2	142.8	142.5	142.1
75°	116.0	115.4	114.6	114.1	113.7	113.2	112.8	112.4
77.5°	88.1	87.6	87.2	86.9	86.9	86.9	86.9	86.9
80°	70.3	70.1	70.0	70.0	70.0	70.0	70.0	70.0
82.5°	54.1	53.8	53.6	53.4	53.3	53.2	53.1	53.0
85°	30.7	30.4	30.1	30.0	30.0	30.0	30.0	30.0
87.5°	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.7
90°	9.5	9.8	10.1	10.4	10.5	10.7	10.8	11.0
92.5°	10.4	10.9	11.5	11.7	11.9	12.0	12.1	12.1
95°	12.5	13.0	13.6	13.9	13.9	13.9	13.9	13.9
97.5°	13.1	13.8	14.4	14.8	14.8	14.9	15.0	15.1
100°	13.4	14.0	14.7	15.1	15.2	15.2	15.3	15.4
102.5°	20.1	18.0	16.1	15.1	15.2	15.4	15.5	15.7
105°	51.4	37.0	22.6	15.5	15.7	15.8	16.0	16.1
107.5°	125.9	115.4	104.8	94.1	83.2	72.3	61.5	50.6
110°	159.8	157.1	154.4	147.3	135.7	124.0	112.3	100.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	183.8	183.8	183.8	182.6	180.2	177.7	175.3	172.8
115°	211.9	212.7	213.5	214.1	214.4	214.7	215.1	215.4
117.5°	237.3	238.0	238.6	239.0	239.0	239.1	239.2	239.3
120°	254.0	254.7	255.4	255.7	255.7	255.7	255.7	255.7
122.5°	270.4	270.8	271.3	271.5	271.6	271.7	271.7	271.8
125°	293.3	293.5	293.7	293.8	294.0	294.2	294.3	294.5
127.5°	316.4	316.7	316.9	317.0	316.8	316.7	316.5	316.3
130°	330.3	330.6	330.9	331.0	330.8	330.7	330.5	330.4
132.5°	343.5	343.8	344.1	344.2	344.0	343.7	343.5	343.3
135°	363.5	363.7	363.9	363.9	363.7	363.5	363.2	363.0
137.5°	381.3	381.6	382.0	382.2	382.0	381.9	381.7	381.6
140°	392.6	392.9	393.2	393.3	393.1	393.0	392.8	392.6
142.5°	403.3	403.6	403.8	403.8	403.6	403.4	403.2	402.9
145°	418.2	418.4	418.6	418.7	418.7	418.7	418.7	418.7
147.5°	431.7	431.9	432.0	431.9	431.5	431.1	430.8	430.4
150°	439.9	440.0	440.2	440.2	439.9	439.7	439.4	439.2
152.5°	447.2	447.4	447.8	447.7	447.4	446.9	446.6	446.2
155°	457.2	457.6	458.0	458.0	457.5	457.0	456.5	456.1
157.5°	465.9	466.4	466.9	466.8	466.2	465.6	465.0	464.3
160°	470.9	471.4	471.9	471.9	471.3	470.8	470.2	469.6
162.5°	475.5	476.1	476.5	476.6	476.1	475.6	475.1	474.6
165°	481.5	482.2	482.8	482.8	482.2	481.8	481.2	480.6
167.5°	486.2	486.8	487.5	487.5	486.8	486.2	485.6	484.9
170°	488.9	489.5	490.2	490.2	489.5	488.9	488.2	487.5
172.5°	490.6	491.2	491.9	491.9	491.1	490.4	489.8	489.0
175°	492.7	493.3	493.8	493.8	493.2	492.5	491.9	491.2
177.5°	493.5	494.0	494.6	494.5	493.8	493.2	492.5	491.9
180°	493.0	493.0	493.0	493.0	493.0	493.0	493.0	493.0

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