

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: P332393-935

Luminaire Tested: **S123RDIW-S340D460U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332393-935
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: S123RDIW-S340D460U935-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2495.1 lumens
Efficiency: N/A
Efficacy: 108.5 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

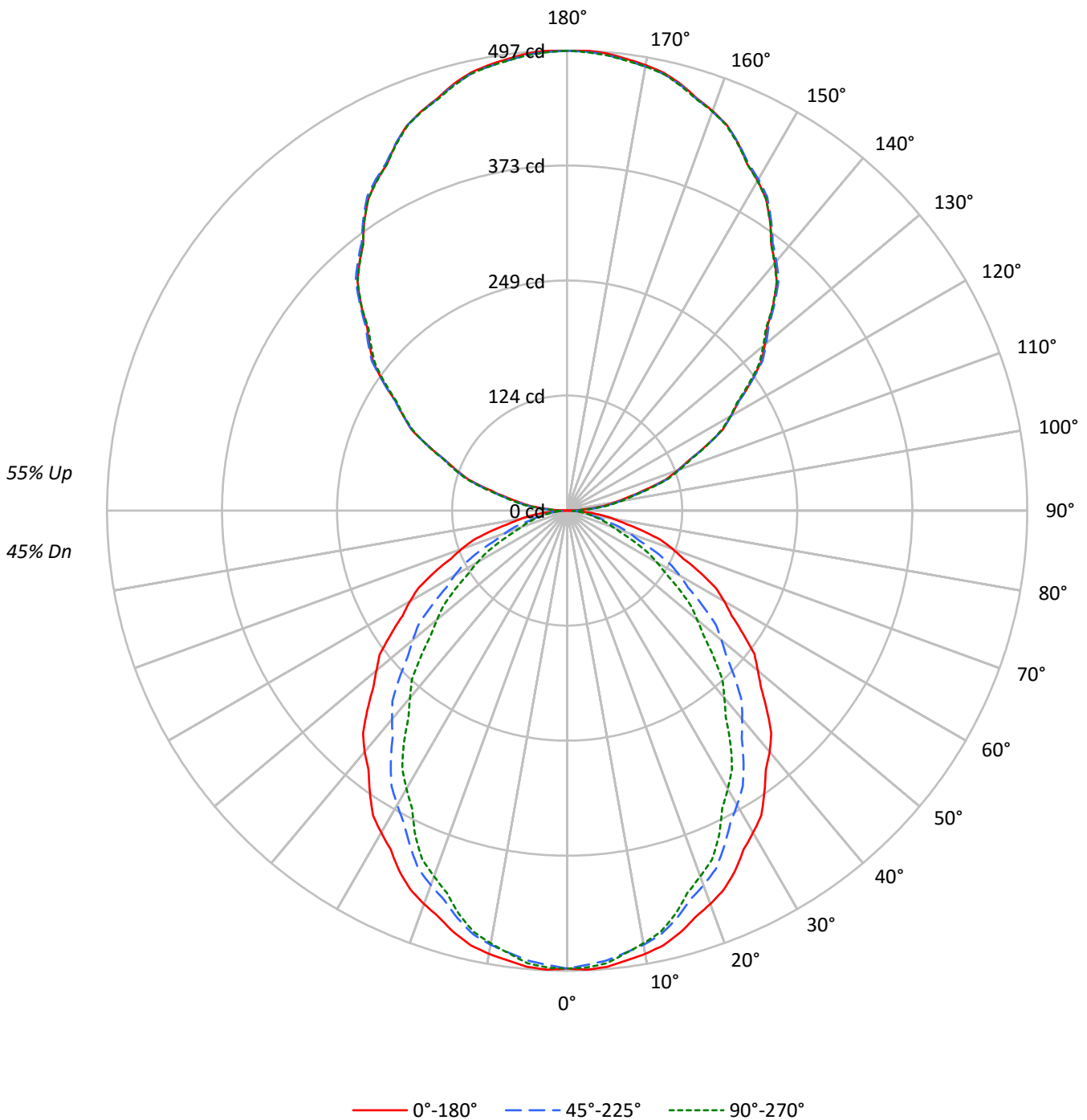
Input Watts (W): 23
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45				
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44	38				
2	88	81	75	70	81	75	70	65	62	59	56	51	49	46	41	39	37	33				
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32	28				
4	74	64	56	50	68	59	52	47	49	44	40	41	37	34	33	30	28	24				
5	68	57	49	43	62	52	45	40	44	39	35	37	33	30	29	27	24	21				
6	63	51	43	37	57	47	40	35	40	35	31	33	29	26	27	24	22	19				
7	58	46	38	33	53	43	36	31	36	31	27	30	26	23	25	22	19	17				
8	54	42	34	29	49	39	32	27	33	28	24	28	24	21	23	20	17	15				
9	50	38	31	26	46	35	29	24	30	25	21	25	21	19	21	18	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	19	16	14	12				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5324	5324	5324
5°	5344	5271	5302
10°	5314	5205	5187
15°	5258	5084	5029
20°	5179	4931	4816
25°	5099	4760	4608
30°	4992	4561	4313
35°	4882	4365	4043
40°	4780	4131	3710
45°	4647	3902	3408
50°	4501	3641	3069
55°	4352	3342	2755
60°	4215	3023	2409
65°	4037	2677	2063
70°	3811	2247	1668
75°	3489	1768	1568
80°	3106	1568	1438
85°	2631	1383	1284



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.5	1.9
10°-20°	129.2	5.2
20°-30°	186.1	7.5
30°-40°	209.6	8.4
40°-50°	200.5	8.0
50°-60°	164.2	6.6
60°-70°	110.8	4.4
70°-80°	55.7	2.2
80°-90°	16.2	0.6
90°-100°	32.4	1.3
100°-110°	96.8	3.9
110°-120°	164.7	6.6
120°-130°	216.7	8.7
130°-140°	243.5	9.8
140°-150°	239.4	9.6
150°-160°	201.5	8.1
160°-170°	134.2	5.4
170°-180°	47.0	1.9
0°-30°	361.8	14.5
0°-40°	571.4	22.9
0°-60°	936.2	37.5
0°-90°	1118.9	44.8
90°-120°	293.9	11.8
90°-150°	993.5	39.8
90°-180°	1376.0	55.1
0°-180°	2495.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	495	495	495	495	495	
5°	495	492	488	491	491	47
15°	472	467	456	454	451	133
25°	429	419	401	393	388	197
35°	372	356	332	315	308	232
45°	305	286	256	234	224	235
55°	232	211	178	156	147	208
65°	158	136	105	86	81	157
75°	84	64	42	39	38	89
85°	21	13	11	10	10	24
90°	0	4	9	11	12	2
95°	23	26	29	30	30	26
105°	88	89	92	92	93	94
115°	166	167	166	167	166	164
125°	243	244	243	242	240	216
135°	315	317	317	315	314	243
145°	382	383	384	384	382	239
155°	437	437	438	439	437	201
165°	476	475	475	477	475	134
175°	496	494	494	496	494	47
180°	497	497	497	497	497	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6
2.5°	496.3	495.9	495.7	495.4	495.2	494.6	493.7	492.8	492.0	491.1	491.9
5°	494.6	494.2	493.8	493.4	492.8	492.1	491.0	490.0	488.9	487.8	488.6
7.5°	490.1	489.6	489.1	488.6	488.2	487.2	485.9	484.5	483.0	481.6	482.1
10°	486.2	485.6	485.0	484.4	483.7	482.6	481.0	479.4	477.8	476.2	476.3
12.5°	480.8	480.1	479.4	478.7	478.0	476.6	474.7	472.8	470.8	468.8	468.7
15°	471.8	470.8	469.8	468.8	467.9	466.1	463.6	461.2	458.7	456.2	455.7
17.5°	460.5	459.3	458.2	457.0	455.9	453.7	450.6	447.4	444.3	441.1	440.1
20°	452.1	450.7	449.3	447.9	446.4	444.0	440.7	437.2	433.9	430.5	429.3
22.5°	442.8	441.2	439.5	437.9	436.3	433.7	430.1	426.5	422.8	419.2	417.8
25°	429.3	427.1	424.8	422.6	420.3	417.2	413.1	409.0	404.8	400.8	398.9
27.5°	412.8	410.4	407.9	405.4	402.9	399.5	394.9	390.3	385.7	381.2	378.6
30°	401.6	398.9	396.2	393.6	390.9	387.0	382.0	377.0	372.0	367.0	364.0
32.5°	390.4	387.3	384.3	381.3	378.2	374.1	368.8	363.5	358.3	352.9	349.7
35°	371.5	368.2	365.1	361.9	358.7	354.3	348.8	343.2	337.7	332.2	328.4
37.5°	352.4	348.8	345.3	341.7	338.1	333.4	327.5	321.6	315.7	309.8	305.5
40°	340.2	336.3	332.3	328.5	324.5	319.3	313.1	306.7	300.4	294.0	289.5
42.5°	326.4	322.4	318.6	314.6	310.7	305.5	298.9	292.4	285.9	279.3	274.2
45°	305.3	301.3	297.3	293.3	289.2	283.8	277.0	270.1	263.2	256.3	251.2
47.5°	284.2	279.8	275.3	271.0	266.6	261.0	254.1	247.2	240.4	233.5	228.0
50°	268.8	264.6	260.5	256.2	252.0	246.3	239.1	231.9	224.6	217.4	211.9
52.5°	255.0	250.5	245.9	241.3	236.8	230.9	223.8	216.6	209.5	202.3	196.7
55°	231.9	227.5	223.2	218.8	214.4	208.4	200.9	193.3	185.7	178.1	173.0
57.5°	210.5	205.8	201.0	196.2	191.5	185.3	177.7	170.0	162.5	154.9	150.0
60°	195.8	190.9	186.0	181.1	176.2	170.0	162.6	155.2	147.8	140.4	135.6
62.5°	181.0	176.1	171.2	166.3	161.4	155.2	147.8	140.4	133.0	125.6	121.1
65°	158.5	153.6	148.7	143.8	138.9	132.9	126.0	119.0	112.1	105.1	100.7
67.5°	136.0	131.0	126.0	121.1	116.1	110.3	103.6	96.9	90.2	83.6	80.3
70°	121.1	116.3	111.5	106.7	101.9	96.3	90.1	83.9	77.7	71.4	68.3
72.5°	106.4	101.7	96.9	92.1	87.4	82.2	76.5	70.9	65.2	59.5	57.0
75°	83.9	79.6	75.3	71.0	66.7	62.2	57.3	52.3	47.4	42.5	41.7
77.5°	63.3	59.4	55.5	51.7	47.9	44.3	41.2	38.0	34.9	31.7	31.3
80°	50.1	46.5	42.9	39.2	35.6	32.8	30.9	29.0	27.1	25.3	25.0
82.5°	37.6	34.4	31.3	28.2	25.0	23.0	22.1	21.3	20.4	19.5	19.2
85°	21.3	19.3	17.3	15.4	13.4	12.3	12.1	11.8	11.5	11.2	11.0
87.5°	7.7	7.1	6.5	5.9	5.3	5.2	5.3	5.6	5.9	6.0	6.0
90°	0.4	1.3	2.2	3.0	3.9	4.8	5.9	7.1	8.3	9.4	9.7
92.5°	9.5	10.1	10.6	11.2	11.8	12.4	13.1	13.7	14.4	15.0	15.2
95°	23.0	23.6	24.2	24.9	25.5	26.1	26.8	27.5	28.2	28.8	29.2
97.5°	40.9	41.3	41.8	42.3	42.7	43.1	43.7	44.2	44.7	45.2	45.5
100°	53.0	53.6	54.1	54.6	55.1	55.6	56.1	56.5	56.9	57.3	57.6
102.5°	67.1	67.4	67.8	68.0	68.4	68.8	69.4	69.9	70.5	71.1	71.4
105°	87.8	88.0	88.2	88.3	88.5	88.9	89.7	90.5	91.3	92.0	92.0
107.5°	111.8	111.9	112.0	112.1	112.3	112.4	112.8	113.0	113.4	113.7	114.0
110°	126.8	127.0	127.2	127.3	127.5	127.7	127.9	128.0	128.2	128.4	128.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	142.4	142.5	142.7	142.8	142.8	142.9	142.9	143.0	143.0	143.0	143.4
115°	165.8	166.1	166.3	166.6	166.9	166.9	166.8	166.6	166.4	166.3	166.3
117.5°	189.4	189.6	189.8	189.9	190.1	190.0	189.9	189.6	189.4	189.2	189.2
120°	204.1	204.6	205.1	205.6	206.1	206.2	205.8	205.3	204.9	204.5	204.4
122.5°	219.4	219.7	220.2	220.5	220.8	220.9	220.8	220.5	220.3	220.1	219.8
125°	242.7	243.0	243.2	243.5	243.7	243.7	243.6	243.4	243.2	243.1	242.7
127.5°	264.2	264.8	265.4	265.9	266.5	266.7	266.5	266.2	266.0	265.9	265.4
130°	278.6	279.3	280.0	280.7	281.4	281.5	281.3	281.0	280.8	280.5	280.2
132.5°	292.9	293.6	294.4	295.1	295.8	296.0	295.8	295.6	295.4	295.2	294.8
135°	314.9	315.4	315.9	316.4	316.9	317.2	317.1	317.0	316.9	316.8	316.5
137.5°	335.2	335.6	336.0	336.5	336.9	337.3	337.4	337.7	337.9	338.1	337.8
140°	349.2	349.7	350.1	350.5	350.9	351.2	351.3	351.4	351.5	351.5	351.5
142.5°	362.1	362.5	362.9	363.3	363.8	364.0	364.2	364.4	364.5	364.6	364.5
145°	382.0	382.2	382.4	382.5	382.7	382.9	383.1	383.4	383.7	383.9	383.8
147.5°	399.5	399.8	400.1	400.4	400.7	401.0	401.2	401.5	401.7	402.0	402.0
150°	411.6	411.8	412.0	412.2	412.3	412.5	412.7	412.8	413.0	413.2	413.2
152.5°	421.6	421.9	422.1	422.3	422.6	422.8	422.8	423.0	423.1	423.2	423.4
155°	437.4	437.4	437.4	437.4	437.4	437.5	437.6	437.6	437.7	437.8	438.2
157.5°	450.8	450.7	450.6	450.5	450.4	450.4	450.5	450.6	450.6	450.6	451.0
160°	459.3	459.1	458.9	458.7	458.6	458.5	458.5	458.5	458.5	458.5	458.9
162.5°	466.7	466.5	466.2	466.0	465.8	465.7	465.7	465.8	465.9	466.0	466.4
165°	476.4	476.1	475.9	475.6	475.4	475.3	475.3	475.3	475.3	475.3	475.8
167.5°	484.1	483.8	483.5	483.1	482.8	482.6	482.7	482.8	482.8	482.8	483.5
170°	488.5	488.2	487.8	487.5	487.2	487.0	487.0	487.0	487.0	487.0	487.6
172.5°	492.0	491.6	491.3	490.9	490.5	490.3	490.3	490.3	490.3	490.3	490.9
175°	495.5	495.2	494.8	494.5	494.1	494.0	494.0	494.0	494.0	494.0	494.5
177.5°	497.1	496.7	496.5	496.2	495.9	495.8	495.8	495.8	495.8	495.8	496.2
180°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	494.6	494.6	494.6	494.6	494.6	494.6	494.6	494.6
2.5°	492.7	493.4	494.3	494.6	494.5	494.3	494.1	494.0
5°	489.5	490.3	491.0	491.4	491.2	491.0	490.9	490.7
7.5°	482.6	483.0	483.5	483.5	483.2	482.9	482.6	482.3
10°	476.4	476.5	476.6	476.4	476.0	475.5	475.0	474.6
12.5°	468.7	468.6	468.6	468.3	467.8	467.3	466.7	466.2
15°	455.2	454.8	454.3	453.8	453.2	452.5	451.9	451.3
17.5°	439.2	438.2	437.3	436.4	435.4	434.5	433.6	432.7
20°	428.2	427.0	425.9	424.7	423.6	422.6	421.5	420.4
22.5°	416.4	414.9	413.5	412.2	411.2	410.3	409.2	408.3
25°	397.0	395.2	393.3	391.8	390.9	389.9	388.9	388.0
27.5°	376.0	373.4	370.8	368.8	367.2	365.8	364.3	362.7
30°	361.0	358.0	355.0	352.8	351.3	349.9	348.4	347.0
32.5°	346.3	343.0	339.7	337.3	335.8	334.3	332.8	331.3
35°	324.5	320.6	316.8	314.1	312.5	310.9	309.3	307.7
37.5°	301.1	296.7	292.4	289.2	287.2	285.2	283.3	281.3
40°	284.8	280.2	275.5	272.2	270.1	268.1	266.0	264.0
42.5°	269.1	264.2	259.1	255.6	253.7	251.9	250.1	248.2
45°	246.2	241.1	236.0	232.4	230.3	228.2	226.0	223.9
47.5°	222.4	216.9	211.4	207.7	205.8	203.9	201.9	200.0
50°	206.4	200.9	195.4	191.6	189.5	187.4	185.4	183.3
52.5°	190.9	185.1	179.4	175.6	173.7	171.9	170.1	168.2
55°	167.8	162.6	157.5	153.9	152.2	150.4	148.6	146.8
57.5°	145.1	140.2	135.3	132.1	130.6	129.1	127.6	126.1
60°	130.8	126.0	121.1	118.0	116.5	114.9	113.5	111.9
62.5°	116.6	112.1	107.5	104.4	102.9	101.3	99.7	98.2
65°	96.3	92.0	87.6	85.0	83.9	83.0	82.1	81.0
67.5°	77.1	73.8	70.5	68.4	67.3	66.3	65.3	64.2
70°	65.2	62.1	58.9	56.9	55.9	54.9	53.9	53.0
72.5°	54.4	51.9	49.3	47.9	47.4	47.0	46.7	46.2
75°	40.7	39.9	38.9	38.4	38.2	38.1	37.9	37.7
77.5°	30.7	30.2	29.8	29.4	29.3	29.1	28.9	28.8
80°	24.7	24.5	24.2	24.0	23.8	23.6	23.4	23.2
82.5°	18.9	18.7	18.4	18.3	18.3	18.2	18.2	18.2
85°	10.8	10.7	10.5	10.4	10.4	10.4	10.4	10.4
87.5°	6.0	6.0	6.0	6.0	5.9	5.9	5.9	5.9
90°	10.1	10.4	10.8	11.0	11.2	11.4	11.5	11.7
92.5°	15.5	15.8	16.1	16.2	16.1	15.9	15.8	15.8
95°	29.5	29.9	30.2	30.4	30.4	30.4	30.4	30.4
97.5°	46.0	46.4	46.8	46.9	46.9	46.9	46.8	46.8
100°	57.9	58.1	58.4	58.6	58.8	59.0	59.2	59.3
102.5°	71.6	71.9	72.2	72.2	72.2	72.2	72.2	72.1
105°	92.0	92.0	92.0	92.1	92.4	92.6	92.7	92.9
107.5°	114.3	114.5	114.8	114.9	114.8	114.7	114.6	114.5
110°	129.1	129.4	129.8	129.8	129.7	129.5	129.3	129.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	143.9	144.3	144.7	144.9	144.8	144.8	144.8	144.7
115°	166.4	166.5	166.6	166.6	166.5	166.4	166.3	166.3
117.5°	189.2	189.1	189.1	189.0	188.7	188.5	188.2	188.0
120°	204.3	204.2	204.1	204.0	203.8	203.6	203.5	203.3
122.5°	219.6	219.4	219.1	219.0	218.7	218.4	218.2	217.9
125°	242.4	242.0	241.7	241.3	241.0	240.6	240.3	240.0
127.5°	264.9	264.4	263.9	263.5	263.1	262.7	262.3	261.9
130°	279.8	279.5	279.1	278.7	278.1	277.5	276.9	276.2
132.5°	294.4	293.9	293.5	293.1	292.7	292.1	291.7	291.2
135°	316.2	315.8	315.5	315.2	315.0	314.9	314.7	314.5
137.5°	337.4	337.1	336.7	336.3	336.0	335.7	335.4	335.0
140°	351.4	351.3	351.2	350.9	350.3	349.7	349.0	348.4
142.5°	364.5	364.4	364.3	364.0	363.6	363.1	362.7	362.1
145°	383.7	383.7	383.6	383.4	383.1	382.7	382.4	382.0
147.5°	402.0	402.0	402.0	401.7	401.2	400.6	400.1	399.6
150°	413.2	413.2	413.2	412.9	412.4	411.9	411.4	410.9
152.5°	423.4	423.6	423.8	423.6	423.2	422.7	422.2	421.8
155°	438.5	438.9	439.2	439.0	438.4	437.8	437.2	436.6
157.5°	451.4	451.8	452.1	452.0	451.6	451.1	450.6	450.1
160°	459.3	459.8	460.2	460.2	459.9	459.5	459.2	458.8
162.5°	466.8	467.3	467.7	467.6	467.1	466.5	466.0	465.4
165°	476.3	476.8	477.3	477.3	476.6	476.0	475.4	474.8
167.5°	484.0	484.5	485.0	485.0	484.5	484.0	483.5	482.8
170°	488.2	488.8	489.4	489.4	488.8	488.2	487.6	487.0
172.5°	491.5	492.0	492.5	492.5	491.9	491.3	490.7	490.1
175°	495.0	495.5	496.0	496.0	495.4	494.8	494.2	493.6
177.5°	496.6	497.1	497.4	497.4	496.9	496.5	495.9	495.4
180°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7

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