

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: P332122-940

Luminaire Tested: **S123DIW-S560D460U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332122-940
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-S560D460U940-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3753.1 lumens
Efficiency: N/A
Efficacy: 124.3 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

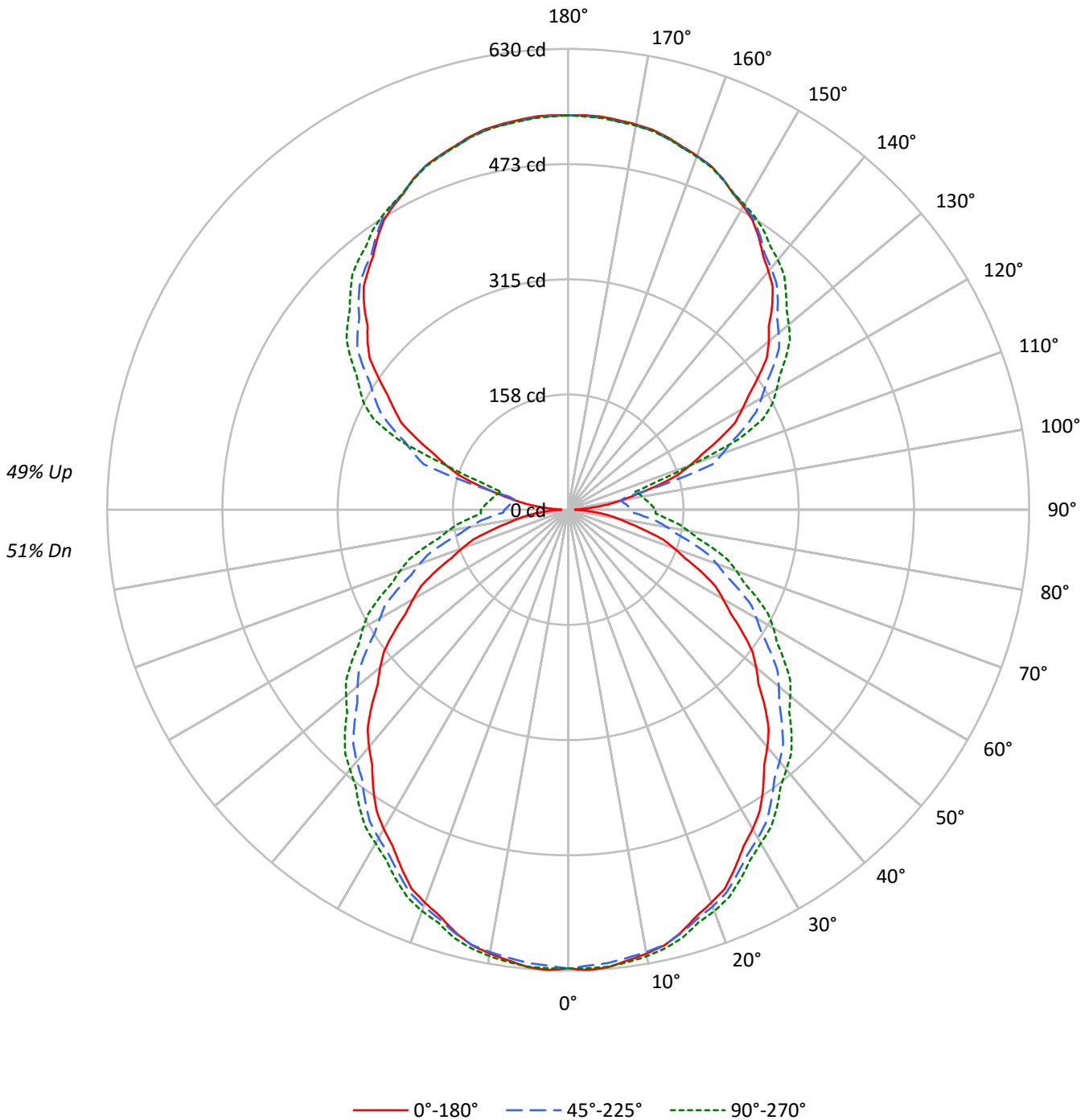
Input Watts (W): 30.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332122-940

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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	107	107	107	107	99	99	99	99	84	84	84		70	70	70		57	57	57	51
1	97	92	88	84	89	85	81	78	72	69	67		60	58	56		49	48	46	41
2	88	80	73	68	81	74	68	63	63	58	54		52	49	46		43	40	38	34
3	80	70	62	56	73	65	58	52	55	50	45		46	42	39		37	35	32	28
4	73	62	53	47	67	57	50	44	49	43	38		41	36	33		33	30	27	24
5	67	55	46	40	61	51	43	38	43	37	33		36	32	28		30	26	24	20
6	62	49	41	35	57	46	38	33	39	33	29		33	28	25		27	23	21	18
7	57	44	36	30	52	41	34	28	35	29	25		30	25	22		25	21	18	16
8	53	40	32	27	49	37	30	25	32	26	22		27	23	19		23	19	16	14
9	49	37	29	24	45	34	27	22	29	24	20		25	20	17		21	17	15	13
10	46	33	26	21	42	31	25	20	27	22	18		23	19	16		19	16	13	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6750	6750	6750
5°	6771	6579	6584
10°	6710	6428	6396
15°	6624	6256	6191
20°	6501	6059	5966
25°	6348	5833	5729
30°	6191	5629	5489
35°	6016	5414	5298
40°	5848	5218	5093
45°	5664	5030	4929
50°	5480	4845	4748
55°	5278	4654	4586
60°	5080	4461	4419
65°	4879	4255	4221
70°	4575	4025	4016
75°	4191	3760	3810
80°	3748	3499	3575
85°	3332	3319	3435



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	1.6
10°-20°	169.5	4.5
20°-30°	253.4	6.8
30°-40°	302.7	8.1
40°-50°	316.7	8.4
50°-60°	297.2	7.9
60°-70°	248.2	6.6
70°-80°	177.6	4.7
80°-90°	107.4	2.9
90°-100°	86.0	2.3
100°-110°	142.3	3.8
110°-120°	257.0	6.8
120°-130°	304.4	8.1
130°-140°	313.7	8.4
140°-150°	287.3	7.7
150°-160°	230.4	6.1
160°-170°	148.7	4.0
170°-180°	51.2	1.4
0°-30°	482.3	12.9
0°-40°	785.0	20.9
0°-60°	1398.8	37.3
0°-90°	1932.0	51.5
90°-120°	485.4	12.9
90°-150°	1390.9	37.1
90°-180°	1821.0	48.5
0°-180°	3753.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	627	627	627	627	627	
5°	628	626	622	627	627	59
15°	598	600	599	605	605	168
25°	540	546	548	557	557	249
35°	464	475	484	494	497	290
45°	380	396	413	426	432	293
55°	290	312	337	354	361	259
65°	200	227	257	277	284	198
75°	109	141	175	197	206	116
85°	33	68	104	126	134	35
90°	9	47	87	111	119	7
95°	32	44	80	103	111	36
105°	125	144	139	90	94	132
115°	227	239	266	286	294	225
125°	318	322	342	357	363	284
135°	394	396	405	418	421	304
145°	454	456	457	463	466	284
155°	500	499	499	501	499	230
165°	527	526	525	528	526	149
175°	539	537	538	540	537	51
180°	539	539	539	539	539	



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CATALOG NUMBER: S123DIW-S560D460U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	629.8	629.5	629.1	628.7	628.3	627.7	626.7	625.7	624.7	623.8	624.7
5°	627.8	627.4	627.1	626.9	626.5	625.9	625.0	624.1	623.2	622.2	623.5
7.5°	621.6	621.6	621.7	621.8	621.9	621.4	620.5	619.6	618.8	617.9	619.4
10°	616.2	616.4	616.7	617.1	617.3	617.2	616.4	615.6	614.8	614.1	615.6
12.5°	609.6	610.0	610.5	610.8	611.3	611.3	610.7	610.2	609.7	609.1	610.6
15°	597.7	598.2	598.6	599.1	599.5	599.7	599.5	599.3	599.2	599.1	600.6
17.5°	582.6	583.5	584.5	585.4	586.3	586.7	586.7	586.6	586.6	586.5	587.8
20°	571.8	572.7	573.5	574.4	575.3	576.0	576.3	576.6	576.8	577.2	578.5
22.5°	560.3	561.2	562.0	563.0	563.9	564.5	565.0	565.4	565.9	566.2	568.0
25°	539.7	541.2	542.7	544.2	545.7	546.7	547.2	547.6	548.0	548.5	550.5
27.5°	518.9	520.6	522.4	524.1	525.8	527.1	528.1	529.1	530.0	531.0	532.7
30°	504.1	506.0	508.0	510.1	512.0	513.6	514.8	516.0	517.2	518.4	520.3
32.5°	487.7	489.9	492.1	494.4	496.6	498.5	500.1	501.6	503.2	504.8	506.8
35°	464.5	466.9	469.3	471.8	474.2	476.4	478.4	480.4	482.3	484.3	486.6
37.5°	439.9	442.6	445.3	448.1	450.8	453.4	455.8	458.3	460.7	463.2	465.7
40°	423.5	426.2	429.0	431.7	434.4	437.3	440.3	443.4	446.4	449.4	452.0
42.5°	405.5	408.8	412.1	415.4	418.8	422.0	425.3	428.4	431.6	434.7	437.6
45°	379.8	383.4	387.1	390.7	394.3	398.1	401.9	405.6	409.5	413.2	416.2
47.5°	352.8	357.0	361.1	365.2	369.3	373.6	378.0	382.3	386.6	391.0	394.2
50°	335.4	339.7	343.8	348.1	352.4	356.9	361.6	366.3	371.0	375.7	379.2
52.5°	316.8	321.3	325.8	330.3	334.7	339.7	344.8	350.0	355.2	360.4	364.0
55°	289.6	294.6	299.6	304.6	309.7	314.9	320.4	325.8	331.3	336.7	340.8
57.5°	263.1	268.3	273.6	278.7	284.0	289.6	295.6	301.6	307.6	313.5	317.6
60°	244.5	250.0	255.5	260.9	266.4	272.2	278.5	284.7	290.9	297.1	301.4
62.5°	227.0	232.6	238.3	243.8	249.4	255.5	262.1	268.7	275.3	281.9	286.1
65°	200.1	206.1	212.0	217.9	223.8	230.2	236.8	243.4	250.1	256.8	261.4
67.5°	172.8	179.1	185.4	191.6	198.0	204.5	211.3	218.1	224.9	231.7	236.7
70°	153.7	160.2	166.7	173.3	179.8	186.7	193.9	201.3	208.6	215.9	220.7
72.5°	136.2	142.8	149.3	155.8	162.3	169.3	176.8	184.4	191.9	199.5	204.5
75°	108.6	115.7	122.9	130.0	137.1	144.5	152.1	159.7	167.3	174.9	179.9
77.5°	84.5	91.8	99.0	106.1	113.3	120.7	128.4	136.1	143.7	151.4	156.7
80°	67.6	75.1	82.5	90.0	97.4	105.0	112.9	120.8	128.8	136.6	141.8
82.5°	52.9	60.5	67.9	75.5	83.1	90.9	98.9	106.9	114.9	123.0	128.1
85°	33.4	41.0	48.7	56.3	63.8	71.6	79.7	87.7	95.8	103.8	109.0
87.5°	18.3	25.9	33.7	41.5	49.2	57.1	65.0	73.0	81.0	88.9	94.2
90°	9.3	17.6	25.9	34.2	42.6	51.2	60.1	69.0	77.9	86.8	92.3
92.5°	15.8	22.2	28.7	35.1	41.6	49.1	57.6	66.1	74.5	83.1	88.6
95°	31.9	34.2	36.5	38.8	41.0	46.4	54.8	63.2	71.6	80.1	85.3
97.5°	55.8	59.5	63.2	67.0	70.6	72.9	73.6	74.2	74.9	75.6	80.9
100°	73.8	80.5	87.1	93.8	100.4	100.2	93.4	86.5	79.5	72.7	77.8
102.5°	94.4	100.1	105.8	111.5	117.1	115.7	107.5	99.2	90.8	82.5	84.6
105°	124.8	129.5	134.1	138.8	143.3	144.9	143.4	142.0	140.4	138.9	127.4
107.5°	156.2	160.2	164.0	167.9	171.7	177.5	184.9	192.3	199.8	207.2	199.7
110°	177.2	180.6	184.0	187.5	190.9	196.2	203.2	210.3	217.3	224.4	225.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	197.7	200.5	203.5	206.3	209.2	214.1	220.9	227.7	234.5	241.3	245.2
115°	227.4	229.7	232.1	234.4	236.7	241.1	247.4	253.6	259.9	266.2	270.7
117.5°	256.6	258.4	260.2	262.0	263.8	267.4	273.0	278.5	284.0	289.6	293.9
120°	274.4	275.9	277.5	279.0	280.6	284.0	289.3	294.5	299.9	305.1	309.3
122.5°	292.9	294.0	295.1	296.1	297.1	300.2	305.3	310.4	315.6	320.7	324.5
125°	317.7	318.4	319.1	319.9	320.6	323.3	328.1	332.9	337.6	342.3	345.7
127.5°	342.4	343.0	343.6	344.1	344.6	347.0	351.1	355.1	359.2	363.3	366.6
130°	357.8	358.4	358.9	359.4	360.1	362.0	365.4	368.8	372.2	375.6	378.8
132.5°	372.0	372.6	373.4	374.1	374.7	376.4	379.2	381.8	384.6	387.3	390.4
135°	394.4	394.8	395.1	395.6	395.9	397.1	399.1	401.2	403.2	405.2	408.2
137.5°	413.5	414.0	414.6	415.2	415.7	416.5	417.7	418.8	419.9	421.1	423.9
140°	425.7	426.2	426.8	427.3	427.8	428.6	429.3	430.0	430.7	431.4	434.0
142.5°	437.6	438.0	438.5	438.8	439.3	439.6	440.0	440.3	440.7	441.0	443.4
145°	454.1	454.7	455.1	455.6	456.1	456.4	456.6	456.7	456.9	457.1	458.5
147.5°	469.1	469.6	469.9	470.4	470.7	471.1	471.3	471.4	471.6	471.8	472.3
150°	478.8	479.0	479.3	479.6	479.8	480.0	480.2	480.4	480.5	480.7	480.9
152.5°	487.4	487.5	487.7	487.8	487.9	488.0	488.1	488.2	488.3	488.5	488.7
155°	499.5	499.4	499.2	499.1	498.9	498.8	498.9	499.0	499.1	499.2	499.6
157.5°	509.1	509.0	509.0	509.0	509.0	508.9	508.8	508.7	508.6	508.5	509.1
160°	514.8	514.7	514.6	514.5	514.4	514.3	514.2	514.2	514.1	514.0	514.5
162.5°	520.2	520.0	519.8	519.6	519.3	519.2	519.1	519.0	518.9	518.8	519.4
165°	526.8	526.6	526.3	526.0	525.8	525.6	525.5	525.4	525.3	525.2	525.9
167.5°	532.0	531.6	531.3	530.9	530.6	530.4	530.4	530.4	530.4	530.4	531.1
170°	534.8	534.5	534.1	533.8	533.4	533.2	533.2	533.2	533.2	533.2	534.0
172.5°	536.7	536.4	535.9	535.5	535.0	534.8	534.9	535.0	535.1	535.1	535.8
175°	539.2	538.8	538.3	537.9	537.4	537.3	537.3	537.4	537.5	537.6	538.2
177.5°	539.8	539.5	539.1	538.8	538.4	538.3	538.4	538.4	538.5	538.6	539.1
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	627.1	627.1	627.1	627.1	627.1	627.1	627.1	627.1
2.5°	625.7	626.7	627.7	628.1	627.9	627.9	627.8	627.6
5°	624.7	625.9	627.1	627.7	627.5	627.3	627.2	627.1
7.5°	620.9	622.4	624.0	624.6	624.5	624.3	624.1	623.9
10°	617.2	618.7	620.2	620.7	620.5	620.2	619.8	619.6
12.5°	612.0	613.3	614.7	615.3	615.0	614.7	614.4	614.1
15°	602.1	603.6	605.1	605.8	605.6	605.5	605.4	605.2
17.5°	589.2	590.6	591.9	592.5	592.3	592.1	591.9	591.7
20°	580.0	581.3	582.6	583.4	583.5	583.7	583.9	584.0
22.5°	569.7	571.5	573.2	574.0	573.9	573.8	573.7	573.6
25°	552.4	554.5	556.4	557.4	557.4	557.4	557.4	557.4
27.5°	534.4	536.1	537.8	538.8	538.9	539.0	539.1	539.2
30°	522.1	523.9	525.8	526.6	526.6	526.6	526.6	526.6
32.5°	508.6	510.6	512.6	513.7	514.1	514.4	514.8	515.1
35°	488.8	491.2	493.4	494.8	495.4	496.1	496.7	497.3
37.5°	468.2	470.8	473.4	475.0	475.5	475.9	476.4	476.9
40°	454.6	457.2	459.8	461.4	462.0	462.6	463.2	463.8
42.5°	440.3	443.2	446.0	447.8	448.7	449.5	450.4	451.2
45°	419.0	421.9	424.8	426.9	428.0	429.3	430.5	431.7
47.5°	397.5	400.7	403.9	406.1	407.0	408.0	408.9	409.8
50°	382.6	386.2	389.7	391.9	393.0	394.0	395.1	396.2
52.5°	367.7	371.2	374.9	377.3	378.6	379.9	381.2	382.5
55°	344.9	349.0	353.1	355.8	357.0	358.2	359.4	360.7
57.5°	321.8	325.9	330.0	332.8	334.2	335.6	337.1	338.5
60°	305.7	309.9	314.1	317.1	318.8	320.4	322.1	323.8
62.5°	290.3	294.6	298.8	301.8	303.3	304.8	306.4	307.9
65°	265.9	270.5	275.1	278.1	279.6	281.2	282.7	284.2
67.5°	241.7	246.6	251.6	254.8	256.0	257.3	258.6	259.8
70°	225.6	230.4	235.3	238.4	240.0	241.5	243.0	244.5
72.5°	209.4	214.4	219.4	222.7	224.2	225.7	227.2	228.7
75°	184.9	189.9	194.9	198.3	200.1	202.0	203.8	205.6
77.5°	161.9	167.2	172.5	175.8	177.3	178.6	180.0	181.5
80°	147.0	152.1	157.3	160.6	162.1	163.6	165.1	166.7
82.5°	133.3	138.4	143.6	147.0	148.5	150.0	151.5	153.0
85°	114.1	119.3	124.5	127.8	129.3	130.8	132.3	133.8
87.5°	99.4	104.7	109.9	113.2	114.9	116.4	117.9	119.5
90°	97.8	103.3	108.9	112.4	114.1	115.8	117.5	119.2
92.5°	94.3	99.9	105.5	109.1	110.6	112.1	113.6	115.1
95°	90.7	96.0	101.4	104.8	106.3	107.8	109.3	110.8
97.5°	86.1	91.3	96.6	100.0	101.6	103.2	104.8	106.4
100°	82.8	88.0	93.1	96.5	98.1	99.7	101.3	102.9
102.5°	86.7	88.7	90.8	92.6	94.3	96.0	97.7	99.4
105°	115.9	104.4	92.9	87.9	89.5	91.0	92.6	94.2
107.5°	192.3	184.8	177.3	168.3	157.7	147.2	136.7	126.1
110°	226.4	227.4	228.5	223.2	211.7	200.2	188.6	177.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	249.1	253.0	256.8	258.1	256.7	255.4	254.0	252.7
115°	275.3	279.7	284.3	287.3	288.9	290.5	292.0	293.6
117.5°	298.3	302.6	306.9	309.7	310.9	312.2	313.4	314.7
120°	313.5	317.7	321.9	324.6	325.7	326.7	327.8	328.8
122.5°	328.4	332.3	336.2	338.7	339.7	340.9	342.1	343.1
125°	349.1	352.5	355.8	358.1	359.4	360.6	361.9	363.1
127.5°	369.9	373.1	376.4	378.5	379.3	380.2	381.0	381.9
130°	382.1	385.3	388.5	390.6	391.3	392.0	392.7	393.5
132.5°	393.5	396.6	399.8	401.7	402.5	403.2	404.0	404.8
135°	411.3	414.2	417.2	418.9	419.5	419.9	420.4	420.9
137.5°	426.8	429.5	432.4	434.1	434.7	435.2	435.9	436.4
140°	436.7	439.3	441.9	443.5	444.2	444.7	445.3	445.9
142.5°	445.7	448.0	450.3	451.7	452.3	452.8	453.3	453.8
145°	459.9	461.3	462.7	463.7	464.3	464.9	465.5	466.1
147.5°	472.9	473.4	473.9	474.3	474.4	474.6	474.7	474.8
150°	481.1	481.3	481.4	481.6	481.6	481.6	481.7	481.7
152.5°	489.1	489.4	489.7	489.7	489.4	489.0	488.7	488.3
155°	500.1	500.5	501.0	500.9	500.3	499.8	499.3	498.8
157.5°	509.6	510.1	510.7	510.6	509.9	509.3	508.5	507.8
160°	515.1	515.6	516.1	516.1	515.5	514.9	514.2	513.6
162.5°	520.0	520.7	521.2	521.3	520.7	520.1	519.6	519.1
165°	526.6	527.4	528.1	528.1	527.4	526.9	526.3	525.7
167.5°	531.8	532.4	533.2	533.2	532.4	531.8	531.1	530.4
170°	534.7	535.4	536.1	536.1	535.4	534.7	534.0	533.2
172.5°	536.5	537.3	538.0	538.0	537.2	536.4	535.7	534.8
175°	538.9	539.5	540.1	540.1	539.4	538.7	538.0	537.3
177.5°	539.8	540.3	540.9	540.8	540.1	539.4	538.7	538.0
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2

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