

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: P332122-935

Luminaire Tested: **S123DIW-S560D460U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332122-935  
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-S560D460U935-4F0-1E-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: 3623.8 lumens  
Efficiency: N/A  
Efficacy: 120.0 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

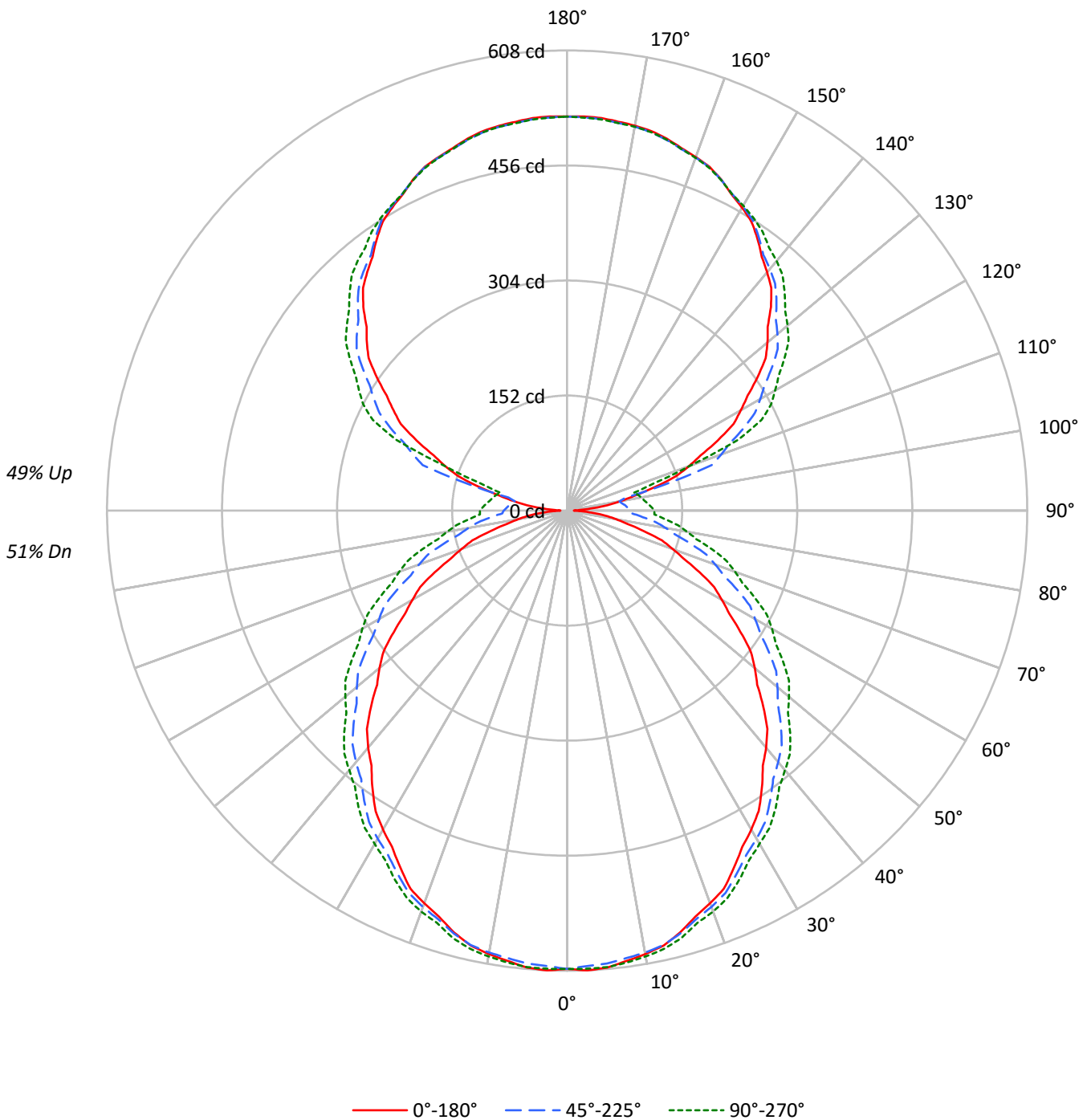
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332122-935

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### Luminous Intensity Polar Plot





TEST NUMBER: P332122-935

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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°	6518	6518	6518
5°	6537	6352	6357
10°	6480	6207	6175
15°	6395	6040	5978
20°	6277	5850	5760
25°	6129	5632	5532
30°	5977	5436	5300
35°	5809	5228	5116
40°	5647	5038	4917
45°	5468	4857	4759
50°	5291	4678	4584
55°	5097	4494	4428
60°	4906	4308	4266
65°	4710	4109	4076
70°	4418	3885	3878
75°	4048	3629	3679
80°	3620	3378	3451
85°	3222	3204	3317



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	57.4	1.6
10°-20°	163.6	4.5
20°-30°	244.7	6.8
30°-40°	292.2	8.1
40°-50°	305.8	8.4
50°-60°	286.9	7.9
60°-70°	239.6	6.6
70°-80°	171.5	4.7
80°-90°	103.7	2.9
90°-100°	83.1	2.3
100°-110°	137.4	3.8
110°-120°	248.2	6.8
120°-130°	293.9	8.1
130°-140°	302.9	8.4
140°-150°	277.4	7.7
150°-160°	222.4	6.1
160°-170°	143.5	4.0
170°-180°	49.5	1.4
0°-30°	465.7	12.9
0°-40°	758.0	20.9
0°-60°	1350.7	37.3
0°-90°	1865.5	51.5
90°-120°	468.6	12.9
90°-150°	1342.9	37.1
90°-180°	1758.0	48.5
0°-180°	3623.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	606	606	606	606	606	
5°	606	605	601	606	606	57
15°	577	579	578	585	584	162
25°	521	527	530	538	538	240
35°	448	459	468	477	480	280
45°	367	383	399	411	417	283
55°	280	302	325	342	348	250
65°	193	219	248	267	274	191
75°	105	136	169	190	198	112
85°	32	65	100	122	129	34
90°	9	45	84	107	115	7
95°	31	42	77	100	107	35
105°	120	139	134	87	91	128
115°	220	231	257	276	284	217
125°	307	311	330	345	351	274
135°	381	383	391	404	406	293
145°	438	441	441	447	450	274
155°	482	482	482	484	482	222
165°	509	508	507	510	508	144
175°	521	519	519	522	519	50
180°	521	521	521	521	521	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5
2.5°	608.1	607.8	607.4	607.0	606.7	606.1	605.1	604.2	603.2	602.3	603.2
5°	606.1	605.8	605.5	605.3	604.9	604.3	603.5	602.6	601.8	600.8	602.0
7.5°	600.2	600.2	600.3	600.4	600.5	600.0	599.2	598.3	597.4	596.6	598.1
10°	595.0	595.2	595.5	595.8	596.1	595.9	595.1	594.4	593.7	593.0	594.4
12.5°	588.6	589.0	589.4	589.8	590.2	590.2	589.7	589.2	588.7	588.1	589.5
15°	577.1	577.6	578.0	578.4	578.9	579.0	578.9	578.7	578.6	578.4	579.9
17.5°	562.6	563.4	564.4	565.2	566.1	566.5	566.5	566.4	566.4	566.3	567.6
20°	552.1	552.9	553.8	554.7	555.5	556.1	556.5	556.7	557.0	557.3	558.6
22.5°	541.0	541.8	542.7	543.6	544.5	545.1	545.5	546.0	546.4	546.7	548.5
25°	521.1	522.5	524.0	525.5	526.9	527.9	528.3	528.7	529.2	529.6	531.5
27.5°	501.0	502.7	504.4	506.0	507.6	508.9	509.9	510.8	511.8	512.7	514.4
30°	486.7	488.6	490.5	492.5	494.4	495.9	497.1	498.3	499.4	500.6	502.4
32.5°	470.9	473.0	475.2	477.3	479.5	481.3	482.8	484.3	485.9	487.4	489.3
35°	448.5	450.8	453.1	455.6	457.9	460.0	461.9	463.8	465.7	467.6	469.8
37.5°	424.7	427.4	430.0	432.7	435.3	437.8	440.1	442.5	444.8	447.2	449.7
40°	408.9	411.6	414.2	416.8	419.5	422.2	425.2	428.1	431.0	433.9	436.4
42.5°	391.5	394.8	398.0	401.1	404.4	407.5	410.6	413.6	416.7	419.7	422.5
45°	366.7	370.2	373.8	377.3	380.7	384.4	388.1	391.7	395.4	399.0	401.8
47.5°	340.7	344.7	348.7	352.7	356.6	360.8	365.0	369.1	373.3	377.5	380.6
50°	323.8	328.0	332.0	336.1	340.3	344.6	349.1	353.7	358.2	362.7	366.1
52.5°	305.9	310.2	314.6	318.9	323.2	328.0	332.9	337.9	342.9	348.0	351.5
55°	279.7	284.5	289.3	294.1	299.0	304.0	309.4	314.6	319.9	325.1	329.1
57.5°	254.1	259.1	264.2	269.1	274.2	279.7	285.4	291.2	297.0	302.7	306.7
60°	236.1	241.4	246.7	251.9	257.2	262.9	268.9	274.9	280.9	286.9	291.0
62.5°	219.2	224.6	230.1	235.4	240.8	246.7	253.0	259.4	265.8	272.2	276.2
65°	193.2	199.0	204.7	210.4	216.1	222.2	228.7	235.1	241.5	248.0	252.4
67.5°	166.9	173.0	179.0	185.0	191.1	197.4	204.1	210.6	217.1	223.7	228.5
70°	148.4	154.7	161.0	167.3	173.6	180.3	187.3	194.3	201.4	208.4	213.1
72.5°	131.5	137.8	144.1	150.4	156.7	163.5	170.7	178.1	185.3	192.6	197.4
75°	104.9	111.8	118.6	125.5	132.4	139.6	146.9	154.2	161.5	168.8	173.7
77.5°	81.6	88.6	95.6	102.5	109.4	116.6	124.0	131.4	138.8	146.2	151.3
80°	65.3	72.5	79.6	86.9	94.0	101.4	109.0	116.7	124.3	131.9	136.9
82.5°	51.1	58.4	65.6	72.9	80.2	87.7	95.5	103.2	111.0	118.7	123.7
85°	32.3	39.6	47.0	54.3	61.6	69.1	77.0	84.7	92.5	100.2	105.2
87.5°	17.7	25.1	32.5	40.0	47.5	55.1	62.8	70.5	78.2	85.8	90.9
90°	9.0	17.0	25.1	33.1	41.2	49.4	58.0	66.6	75.3	83.8	89.1
92.5°	15.2	21.4	27.7	33.9	40.2	47.4	55.6	63.8	72.0	80.2	85.6
95°	30.8	33.1	35.2	37.5	39.6	44.8	52.9	61.0	69.1	77.3	82.4
97.5°	53.9	57.4	61.0	64.7	68.2	70.3	71.0	71.6	72.3	73.0	78.1
100°	71.3	77.7	84.1	90.6	96.9	96.8	90.1	83.5	76.8	70.2	75.1
102.5°	91.2	96.7	102.1	107.6	113.0	111.8	103.8	95.7	87.6	79.6	81.7
105°	120.5	125.0	129.5	134.0	138.4	139.9	138.4	137.1	135.6	134.1	123.0
107.5°	150.8	154.6	158.3	162.1	165.8	171.3	178.5	185.7	193.0	200.1	192.9
110°	171.1	174.4	177.7	181.1	184.3	189.4	196.2	203.0	209.8	216.6	217.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	190.9	193.6	196.5	199.2	202.0	206.7	213.3	219.8	226.4	233.0	236.8
115°	219.6	221.8	224.1	226.4	228.6	232.8	238.8	244.9	251.0	257.0	261.4
117.5°	247.8	249.5	251.2	253.0	254.7	258.2	263.6	268.9	274.2	279.7	283.8
120°	264.9	266.4	267.9	269.4	271.0	274.2	279.3	284.4	289.6	294.6	298.7
122.5°	282.8	283.9	284.9	285.9	286.9	289.9	294.8	299.7	304.7	309.6	313.3
125°	306.8	307.5	308.2	308.8	309.5	312.2	316.8	321.4	326.0	330.5	333.8
127.5°	330.6	331.1	331.7	332.3	332.8	335.0	339.0	342.9	346.8	350.8	354.0
130°	345.5	346.0	346.6	347.1	347.7	349.6	352.8	356.1	359.4	362.7	365.8
132.5°	359.2	359.8	360.5	361.2	361.8	363.4	366.1	368.7	371.3	373.9	376.9
135°	380.8	381.2	381.5	381.9	382.3	383.4	385.4	387.4	389.3	391.2	394.2
137.5°	399.2	399.8	400.3	400.9	401.4	402.2	403.3	404.4	405.4	406.6	409.3
140°	411.0	411.6	412.1	412.6	413.1	413.8	414.5	415.2	415.9	416.6	419.0
142.5°	422.5	422.9	423.4	423.7	424.1	424.5	424.8	425.2	425.5	425.9	428.1
145°	438.5	439.0	439.5	439.9	440.4	440.7	440.8	441.0	441.2	441.3	442.7
147.5°	453.0	453.4	453.7	454.2	454.5	454.9	455.0	455.2	455.4	455.6	456.1
150°	462.3	462.5	462.8	463.0	463.3	463.5	463.6	463.8	464.0	464.2	464.3
152.5°	470.6	470.7	470.9	471.0	471.1	471.2	471.3	471.4	471.5	471.7	471.9
155°	482.3	482.2	482.0	481.9	481.7	481.6	481.7	481.8	481.9	482.0	482.4
157.5°	491.5	491.5	491.5	491.5	491.5	491.4	491.3	491.2	491.1	491.0	491.5
160°	497.1	497.0	496.9	496.8	496.7	496.6	496.5	496.5	496.4	496.3	496.8
162.5°	502.3	502.1	501.9	501.7	501.4	501.3	501.2	501.1	501.0	500.9	501.5
165°	508.7	508.4	508.2	507.9	507.6	507.5	507.4	507.3	507.2	507.1	507.8
167.5°	513.7	513.3	513.0	512.6	512.3	512.1	512.1	512.1	512.1	512.1	512.8
170°	516.4	516.1	515.7	515.4	515.1	514.9	514.9	514.9	514.9	514.9	515.6
172.5°	518.2	517.9	517.5	517.0	516.6	516.4	516.5	516.6	516.7	516.7	517.4
175°	520.6	520.2	519.8	519.4	518.9	518.8	518.8	518.9	519.0	519.1	519.7
177.5°	521.2	520.9	520.6	520.2	519.9	519.8	519.9	519.9	520.0	520.0	520.6
180°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5
2.5°	604.2	605.1	606.1	606.5	606.3	606.2	606.1	606.0
5°	603.2	604.3	605.5	606.1	605.9	605.7	605.6	605.5
7.5°	599.5	601.0	602.5	603.1	603.0	602.8	602.6	602.4
10°	595.9	597.4	598.8	599.3	599.1	598.8	598.5	598.2
12.5°	590.9	592.2	593.6	594.1	593.8	593.5	593.2	593.0
15°	581.3	582.8	584.3	585.0	584.8	584.6	584.5	584.4
17.5°	568.9	570.2	571.5	572.1	571.9	571.7	571.5	571.3
20°	560.0	561.3	562.6	563.4	563.4	563.6	563.8	563.9
22.5°	550.1	551.8	553.5	554.2	554.1	554.1	554.0	553.9
25°	533.4	535.4	537.3	538.2	538.2	538.2	538.2	538.2
27.5°	516.0	517.6	519.3	520.2	520.3	520.4	520.6	520.6
30°	504.1	505.8	507.6	508.5	508.5	508.5	508.5	508.5
32.5°	491.1	493.0	494.9	496.0	496.4	496.7	497.1	497.4
35°	472.0	474.2	476.4	477.8	478.4	479.0	479.6	480.2
37.5°	452.1	454.6	457.1	458.7	459.1	459.5	460.0	460.5
40°	438.9	441.4	443.9	445.5	446.1	446.7	447.2	447.8
42.5°	425.2	427.9	430.7	432.4	433.3	434.0	434.9	435.7
45°	404.6	407.3	410.2	412.2	413.3	414.5	415.7	416.8
47.5°	383.8	386.9	390.0	392.1	393.0	393.9	394.9	395.7
50°	369.5	372.9	376.3	378.4	379.4	380.5	381.5	382.5
52.5°	355.0	358.4	362.0	364.3	365.6	366.8	368.1	369.4
55°	333.0	337.0	341.0	343.5	344.7	345.9	347.1	348.3
57.5°	310.7	314.7	318.7	321.3	322.7	324.1	325.5	326.8
60°	295.2	299.2	303.3	306.2	307.8	309.4	311.0	312.6
62.5°	280.3	284.5	288.5	291.4	292.8	294.3	295.8	297.3
65°	256.8	261.1	265.6	268.5	270.0	271.5	272.9	274.4
67.5°	233.3	238.2	243.0	246.0	247.2	248.4	249.7	250.9
70°	217.8	222.5	227.2	230.2	231.7	233.2	234.6	236.1
72.5°	202.2	207.0	211.8	215.0	216.5	217.9	219.4	220.8
75°	178.5	183.4	188.2	191.5	193.2	195.0	196.7	198.5
77.5°	156.4	161.4	166.5	169.8	171.2	172.5	173.8	175.2
80°	141.9	146.9	151.9	155.1	156.5	158.0	159.5	160.9
82.5°	128.7	133.6	138.6	141.9	143.4	144.8	146.3	147.7
85°	110.2	115.2	120.2	123.4	124.8	126.3	127.8	129.2
87.5°	96.0	101.1	106.1	109.3	110.9	112.4	113.8	115.4
90°	94.5	99.8	105.1	108.6	110.2	111.8	113.5	115.1
92.5°	91.0	96.4	101.9	105.3	106.8	108.2	109.7	111.2
95°	87.6	92.7	97.9	101.2	102.6	104.1	105.6	107.0
97.5°	83.1	88.2	93.2	96.5	98.1	99.6	101.2	102.7
100°	80.0	85.0	89.9	93.2	94.7	96.3	97.8	99.4
102.5°	83.7	85.7	87.6	89.5	91.1	92.7	94.4	96.0
105°	111.9	100.8	89.7	84.9	86.4	87.9	89.4	90.9
107.5°	185.6	178.4	171.2	162.5	152.3	142.2	132.0	121.7
110°	218.6	219.6	220.6	215.5	204.4	193.3	182.1	171.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	240.5	244.3	248.0	249.2	247.9	246.6	245.3	244.0
115°	265.8	270.1	274.5	277.4	279.0	280.5	282.0	283.5
117.5°	288.0	292.1	296.4	299.0	300.2	301.4	302.6	303.8
120°	302.7	306.8	310.8	313.4	314.4	315.5	316.5	317.5
122.5°	317.1	320.8	324.6	327.0	328.0	329.2	330.3	331.3
125°	337.1	340.4	343.5	345.8	347.0	348.2	349.4	350.6
127.5°	357.1	360.2	363.4	365.5	366.3	367.1	367.9	368.8
130°	368.9	372.0	375.1	377.1	377.8	378.5	379.2	380.0
132.5°	380.0	383.0	386.0	387.9	388.7	389.3	390.1	390.9
135°	397.1	399.9	402.9	404.5	405.0	405.4	406.0	406.4
137.5°	412.1	414.7	417.5	419.1	419.7	420.3	420.9	421.4
140°	421.6	424.1	426.7	428.3	428.9	429.4	430.0	430.5
142.5°	430.3	432.6	434.8	436.2	436.7	437.2	437.6	438.2
145°	444.0	445.4	446.8	447.7	448.3	448.9	449.4	450.0
147.5°	456.6	457.1	457.6	458.0	458.1	458.2	458.3	458.5
150°	464.5	464.7	464.9	465.0	465.0	465.0	465.1	465.1
152.5°	472.3	472.5	472.9	472.9	472.5	472.2	471.8	471.5
155°	482.8	483.3	483.7	483.6	483.1	482.6	482.1	481.6
157.5°	492.1	492.6	493.1	493.0	492.3	491.7	491.0	490.3
160°	497.3	497.8	498.3	498.3	497.7	497.1	496.5	495.9
162.5°	502.1	502.7	503.3	503.3	502.7	502.2	501.7	501.2
165°	508.5	509.2	509.9	509.9	509.3	508.8	508.2	507.6
167.5°	513.5	514.1	514.8	514.8	514.1	513.5	512.8	512.1
170°	516.3	516.9	517.6	517.6	516.9	516.3	515.6	514.9
172.5°	518.1	518.8	519.4	519.4	518.7	517.9	517.2	516.4
175°	520.3	520.9	521.5	521.5	520.8	520.1	519.4	518.8
177.5°	521.2	521.7	522.3	522.2	521.5	520.8	520.1	519.4
180°	520.6	520.6	520.6	520.6	520.6	520.6	520.6	520.6

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