

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: P332123-935

Luminaire Tested: **S123DIW-S560D460U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332123-935  
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: S123DIW-S560D460U935-4F0-1E-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: 3412.3 lumens  
Efficiency: N/A  
Efficacy: 113.0 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

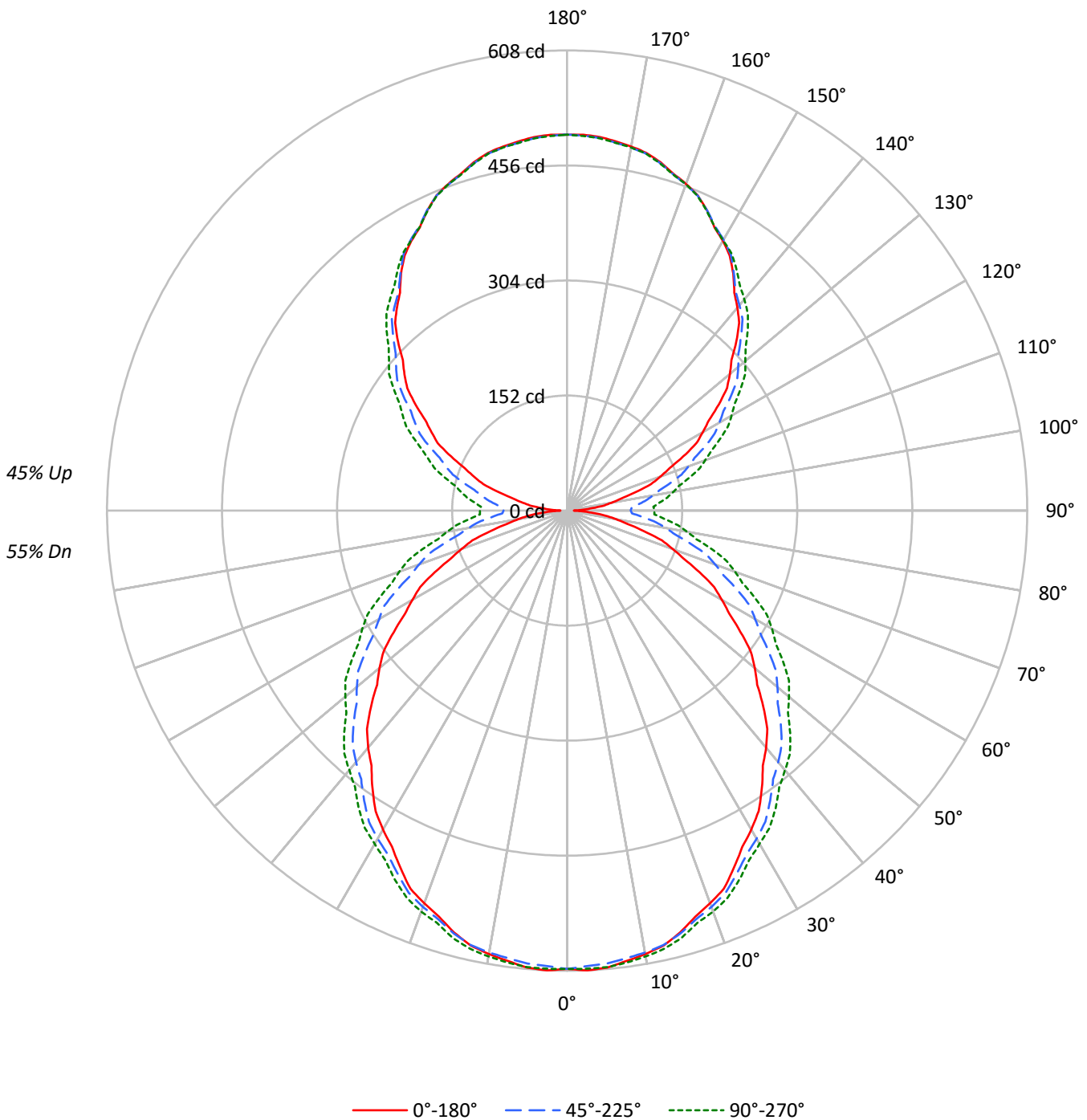
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	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	1.7
10°-20°	163.6	4.8
20°-30°	244.7	7.2
30°-40°	292.2	8.6
40°-50°	305.8	9.0
50°-60°	286.9	8.4
60°-70°	239.6	7.0
70°-80°	171.5	5.0
80°-90°	103.7	3.0
90°-100°	96.5	2.8
100°-110°	144.0	4.2
110°-120°	196.2	5.7
120°-130°	234.7	6.9
130°-140°	251.6	7.4
140°-150°	241.1	7.1
150°-160°	201.5	5.9
160°-170°	134.2	3.9
170°-180°	47.0	1.4
0°-30°	465.7	13.6
0°-40°	758.0	22.2
0°-60°	1350.7	39.6
0°-90°	1865.5	54.7
90°-120°	436.7	12.8
90°-150°	1164.1	34.1
90°-180°	1547.0	45.3
0°-180°	3412.3	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°	30	59	94	115	123	32
105°	93	110	142	159	167	99
115°	169	179	201	217	222	167
125°	245	247	264	276	280	218
135°	316	318	325	335	338	244
145°	383	383	384	389	390	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°	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	85.9	90.9
90°	9.0	17.0	25.1	33.1	41.2	49.5	58.1	66.7	75.3	83.9	89.2
92.5°	17.5	24.5	31.6	38.7	45.7	53.3	61.3	69.3	77.3	85.3	90.4
95°	30.3	36.6	43.0	49.2	55.5	62.7	70.5	78.4	86.3	94.2	99.1
97.5°	47.4	53.0	58.5	64.1	69.8	76.3	83.6	91.0	98.3	105.7	110.5
100°	59.0	64.2	69.4	74.6	79.8	86.0	93.2	100.4	107.5	114.8	119.2
102.5°	72.5	77.1	81.6	86.1	90.7	96.5	103.8	110.9	118.1	125.3	129.7
105°	93.1	96.8	100.5	104.2	107.8	113.2	120.3	127.3	134.5	141.5	145.7
107.5°	116.3	119.4	122.5	125.6	128.7	133.4	139.7	145.9	152.2	158.5	162.7
110°	130.8	133.5	136.4	139.2	142.0	146.5	152.5	158.5	164.5	170.6	174.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	146.4	148.6	150.9	153.2	155.5	159.5	165.1	170.7	176.4	182.1	186.2
115°	169.1	171.2	173.1	175.2	177.2	180.7	185.9	191.0	196.0	201.2	204.7
117.5°	192.5	193.8	195.1	196.3	197.6	200.6	205.3	210.1	214.7	219.5	223.0
120°	206.7	207.9	209.2	210.4	211.7	214.6	219.0	223.3	227.7	232.1	235.5
122.5°	222.0	222.7	223.5	224.3	225.1	227.6	232.0	236.3	240.7	245.1	248.1
125°	244.7	245.0	245.2	245.5	245.7	247.9	251.9	256.1	260.1	264.2	266.9
127.5°	266.2	266.7	267.0	267.4	267.9	269.8	273.0	276.4	279.7	283.0	285.4
130°	280.6	281.1	281.6	282.2	282.8	284.4	287.1	289.7	292.4	295.1	297.5
132.5°	294.4	295.1	295.8	296.4	297.0	298.5	300.7	302.8	305.0	307.1	309.4
135°	316.2	316.6	316.9	317.3	317.7	318.7	320.2	321.7	323.2	324.8	327.0
137.5°	336.4	336.7	337.0	337.3	337.6	338.4	339.5	340.6	341.7	342.9	344.8
140°	349.9	350.3	350.8	351.2	351.6	352.1	352.6	353.2	353.7	354.2	356.3
142.5°	362.7	363.0	363.3	363.6	363.9	364.2	364.5	364.7	365.0	365.2	367.0
145°	382.6	382.7	382.7	382.7	382.7	382.9	383.1	383.4	383.7	383.9	385.0
147.5°	399.5	399.8	400.1	400.4	400.7	401.0	401.2	401.5	401.7	402.0	402.3
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°	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	113.9	115.4
90°	94.5	99.9	105.2	108.7	110.3	112.0	113.7	115.3
92.5°	95.6	100.7	105.9	109.1	110.3	111.6	112.8	114.0
95°	103.9	108.8	113.7	116.9	118.4	119.9	121.3	122.8
97.5°	115.3	120.0	124.8	127.9	129.3	130.8	132.2	133.6
100°	123.7	128.3	132.8	135.9	137.5	139.1	140.8	142.4
102.5°	134.1	138.4	142.8	145.8	147.2	148.7	150.1	151.5
105°	149.7	153.9	158.0	160.7	162.2	163.8	165.2	166.7
107.5°	166.9	171.2	175.4	178.1	179.3	180.5	181.6	182.8
110°	178.9	183.0	187.2	189.8	190.8	191.7	192.8	193.8





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	190.3	194.4	198.5	201.2	202.4	203.7	205.0	206.2
115°	208.4	212.0	215.6	217.9	219.0	220.1	221.2	222.3
117.5°	226.4	229.9	233.4	235.6	236.4	237.4	238.2	239.2
120°	238.8	242.0	245.3	247.4	248.2	249.1	249.9	250.8
122.5°	251.2	254.3	257.3	259.2	259.9	260.7	261.5	262.3
125°	269.7	272.4	275.1	276.8	277.5	278.2	278.9	279.6
127.5°	287.8	290.2	292.7	294.2	294.8	295.4	296.0	296.6
130°	299.9	302.4	304.8	306.2	306.4	306.7	306.9	307.2
132.5°	311.6	313.8	316.1	317.5	318.0	318.6	319.1	319.6
135°	329.3	331.7	333.9	335.4	335.9	336.5	337.0	337.6
137.5°	346.8	348.7	350.7	351.9	352.2	352.7	353.1	353.4
140°	358.4	360.5	362.7	363.8	363.9	364.0	364.1	364.3
142.5°	368.9	370.8	372.7	373.8	374.0	374.3	374.5	374.8
145°	386.1	387.2	388.3	388.9	389.2	389.4	389.7	389.9
147.5°	402.7	403.0	403.4	403.6	403.6	403.6	403.6	403.6
150°	413.2	413.2	413.2	413.1	412.8	412.7	412.4	412.2
152.5°	423.4	423.6	423.8	423.6	423.3	422.8	422.4	422.1
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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