

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: P332122-927

Luminaire Tested: **S123DIW-S560D460U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332122-927  
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-S560D460U927-4F0-1E-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: 3334.2 lumens  
Efficiency: N/A  
Efficacy: 110.4 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

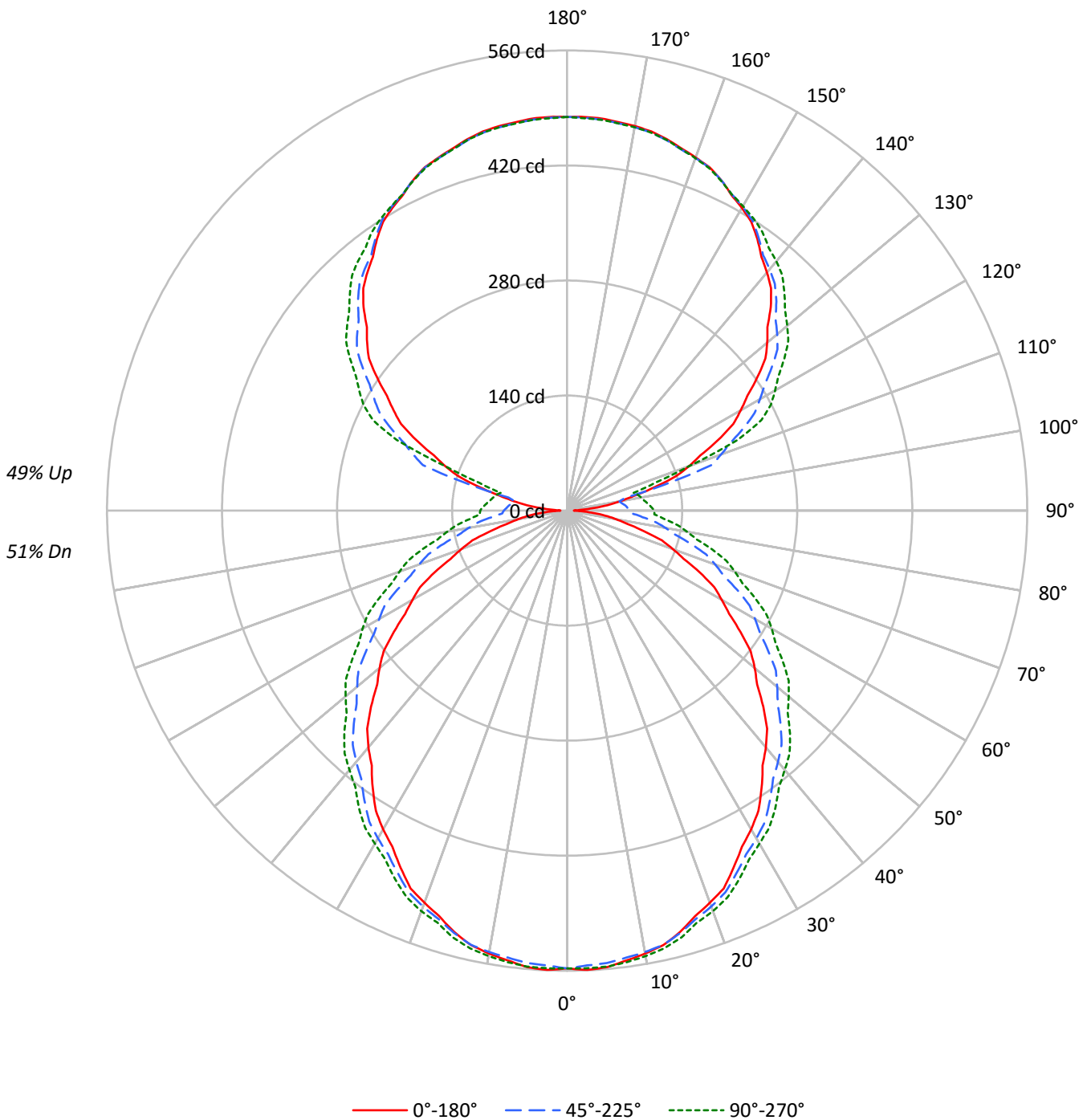
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332122-927

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### Luminous Intensity Polar Plot





TEST NUMBER: P332122-927

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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°	5997	5997	5997
5°	6015	5845	5849
10°	5961	5711	5682
15°	5884	5558	5501
20°	5774	5383	5300
25°	5639	5182	5090
30°	5500	5002	4877
35°	5344	4810	4707
40°	5195	4636	4524
45°	5031	4469	4378
50°	4868	4304	4219
55°	4689	4134	4074
60°	4513	3964	3925
65°	4335	3780	3750
70°	4066	3576	3568
75°	3724	3338	3386
80°	3326	3109	3176
85°	2963	2948	3053



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.8	1.6
10°-20°	150.5	4.5
20°-30°	225.2	6.8
30°-40°	268.9	8.1
40°-50°	281.3	8.4
50°-60°	264.0	7.9
60°-70°	220.5	6.6
70°-80°	157.8	4.7
80°-90°	95.4	2.9
90°-100°	76.4	2.3
100°-110°	126.4	3.8
110°-120°	228.4	6.8
120°-130°	270.5	8.1
130°-140°	278.7	8.4
140°-150°	255.3	7.7
150°-160°	204.6	6.1
160°-170°	132.1	4.0
170°-180°	45.5	1.4
0°-30°	428.5	12.9
0°-40°	697.4	20.9
0°-60°	1242.7	37.3
0°-90°	1716.4	51.5
90°-120°	431.2	12.9
90°-150°	1235.6	37.1
90°-180°	1618.0	48.5
0°-180°	3334.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	558	556	553	557	557	53
15°	531	533	532	538	538	149
25°	479	485	487	495	495	221
35°	413	422	430	439	442	258
45°	337	352	367	378	384	260
55°	257	277	299	315	320	230
65°	178	202	228	246	252	176
75°	96	125	155	175	183	103
85°	30	60	92	112	119	31
90°	8	42	77	98	106	6
95°	28	39	71	92	98	32
105°	111	128	123	80	84	117
115°	202	212	236	254	261	199
125°	282	286	304	317	323	252
135°	350	352	360	371	374	270
145°	404	405	406	412	414	252
155°	444	443	444	445	443	204
165°	468	467	467	469	467	132
175°	479	477	478	480	477	46
180°	479	479	479	479	479	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	559.5	559.2	558.9	558.5	558.2	557.6	556.7	555.9	555.0	554.1	555.0
5°	557.7	557.4	557.1	556.9	556.6	556.0	555.2	554.4	553.7	552.8	553.9
7.5°	552.2	552.2	552.3	552.4	552.5	552.1	551.3	550.5	549.7	548.9	550.2
10°	547.4	547.6	547.9	548.2	548.4	548.3	547.6	546.9	546.2	545.6	546.9
12.5°	541.5	541.9	542.3	542.6	543.0	543.0	542.6	542.1	541.6	541.1	542.4
15°	531.0	531.4	531.8	532.2	532.6	532.7	532.6	532.4	532.3	532.2	533.5
17.5°	517.6	518.4	519.3	520.1	520.9	521.3	521.2	521.1	521.1	521.0	522.2
20°	507.9	508.7	509.5	510.3	511.1	511.7	512.0	512.2	512.5	512.8	514.0
22.5°	497.7	498.5	499.3	500.2	501.0	501.5	501.9	502.3	502.7	503.0	504.6
25°	479.4	480.8	482.1	483.5	484.8	485.7	486.1	486.5	486.9	487.3	489.0
27.5°	461.0	462.5	464.1	465.6	467.1	468.3	469.1	470.0	470.9	471.7	473.2
30°	447.8	449.6	451.3	453.1	454.9	456.3	457.3	458.4	459.5	460.6	462.2
32.5°	433.2	435.2	437.2	439.2	441.2	442.8	444.3	445.6	447.0	448.5	450.2
35°	412.6	414.8	416.9	419.1	421.3	423.3	425.0	426.7	428.5	430.2	432.3
37.5°	390.8	393.2	395.6	398.1	400.5	402.8	405.0	407.1	409.2	411.5	413.8
40°	376.2	378.7	381.1	383.5	386.0	388.5	391.2	393.9	396.6	399.3	401.6
42.5°	360.2	363.2	366.1	369.1	372.1	374.9	377.8	380.6	383.4	386.2	388.7
45°	337.4	340.6	343.9	347.1	350.3	353.6	357.0	360.4	363.8	367.1	369.7
47.5°	313.5	317.2	320.8	324.5	328.1	331.9	335.8	339.6	343.5	347.4	350.2
50°	297.9	301.7	305.5	309.3	313.1	317.0	321.2	325.4	329.5	333.7	336.8
52.5°	281.5	285.4	289.5	293.4	297.4	301.7	306.3	310.9	315.5	320.2	323.4
55°	257.3	261.7	266.2	270.6	275.1	279.7	284.6	289.5	294.3	299.1	302.8
57.5°	233.8	238.4	243.0	247.6	252.3	257.3	262.6	267.9	273.2	278.5	282.2
60°	217.2	222.1	227.0	231.8	236.6	241.9	247.4	252.9	258.4	264.0	267.8
62.5°	201.7	206.7	211.7	216.6	221.6	227.0	232.8	238.7	244.5	250.4	254.1
65°	177.8	183.1	188.3	193.6	198.8	204.5	210.4	216.3	222.2	228.1	232.2
67.5°	153.5	159.1	164.7	170.2	175.9	181.6	187.7	193.8	199.8	205.8	210.2
70°	136.6	142.4	148.1	153.9	159.7	165.9	172.3	178.8	185.3	191.8	196.1
72.5°	121.0	126.8	132.6	138.4	144.2	150.4	157.1	163.8	170.5	177.2	181.6
75°	96.5	102.8	109.2	115.5	121.8	128.4	135.1	141.9	148.6	155.3	159.8
77.5°	75.1	81.5	87.9	94.3	100.7	107.3	114.1	120.9	127.7	134.5	139.2
80°	60.0	66.7	73.3	79.9	86.5	93.3	100.3	107.3	114.4	121.4	126.0
82.5°	47.0	53.7	60.4	67.1	73.8	80.7	87.9	95.0	102.1	109.2	113.8
85°	29.7	36.4	43.3	50.0	56.7	63.6	70.8	78.0	85.1	92.2	96.8
87.5°	16.2	23.1	29.9	36.8	43.7	50.7	57.8	64.9	71.9	79.0	83.7
90°	8.2	15.6	23.1	30.4	37.9	45.5	53.4	61.3	69.2	77.1	82.0
92.5°	14.0	19.7	25.5	31.2	37.0	43.6	51.2	58.7	66.2	73.8	78.7
95°	28.4	30.4	32.4	34.5	36.4	41.2	48.6	56.2	63.6	71.1	75.8
97.5°	49.6	52.8	56.2	59.5	62.7	64.7	65.4	65.9	66.5	67.2	71.9
100°	65.6	71.5	77.4	83.3	89.2	89.0	82.9	76.8	70.7	64.6	69.1
102.5°	83.9	89.0	94.0	99.0	104.0	102.8	95.5	88.1	80.6	73.3	75.2
105°	110.9	115.0	119.1	123.3	127.3	128.7	127.4	126.1	124.8	123.4	113.2
107.5°	138.8	142.3	145.7	149.2	152.6	157.6	164.2	170.9	177.5	184.1	177.4
110°	157.4	160.4	163.5	166.6	169.6	174.3	180.5	186.8	193.1	199.3	200.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	175.6	178.2	180.8	183.3	185.8	190.2	196.2	202.2	208.3	214.4	217.9
115°	202.0	204.1	206.2	208.3	210.3	214.2	219.8	225.3	230.9	236.5	240.5
117.5°	228.0	229.6	231.2	232.7	234.3	237.6	242.5	247.4	252.3	257.3	261.1
120°	243.8	245.1	246.5	247.9	249.3	252.3	257.0	261.7	266.4	271.1	274.8
122.5°	260.2	261.2	262.1	263.1	264.0	266.7	271.2	275.8	280.4	284.9	288.3
125°	282.3	282.9	283.5	284.2	284.8	287.2	291.4	295.7	299.9	304.1	307.1
127.5°	304.2	304.7	305.2	305.7	306.2	308.2	311.9	315.4	319.1	322.7	325.7
130°	317.9	318.4	318.9	319.3	319.9	321.6	324.6	327.6	330.7	333.7	336.5
132.5°	330.5	331.1	331.7	332.3	332.9	334.4	336.8	339.2	341.7	344.0	346.8
135°	350.4	350.7	351.0	351.4	351.7	352.8	354.6	356.4	358.2	360.0	362.7
137.5°	367.3	367.8	368.3	368.8	369.3	370.0	371.1	372.1	373.0	374.1	376.6
140°	378.2	378.7	379.1	379.6	380.1	380.7	381.4	382.0	382.6	383.3	385.6
142.5°	388.7	389.1	389.5	389.8	390.2	390.5	390.9	391.2	391.5	391.8	393.9
145°	403.5	403.9	404.3	404.7	405.2	405.4	405.6	405.8	405.9	406.1	407.3
147.5°	416.8	417.2	417.5	417.9	418.2	418.5	418.7	418.8	419.0	419.1	419.6
150°	425.3	425.6	425.8	426.0	426.3	426.4	426.6	426.7	426.9	427.1	427.2
152.5°	433.0	433.1	433.2	433.3	433.5	433.6	433.6	433.7	433.8	434.0	434.2
155°	443.8	443.6	443.5	443.4	443.2	443.1	443.2	443.3	443.4	443.5	443.9
157.5°	452.3	452.2	452.2	452.2	452.2	452.1	452.0	451.9	451.9	451.8	452.3
160°	457.3	457.2	457.2	457.1	457.0	456.9	456.9	456.8	456.7	456.6	457.1
162.5°	462.2	462.0	461.8	461.6	461.4	461.2	461.1	461.1	461.0	460.9	461.4
165°	468.0	467.8	467.5	467.3	467.1	466.9	466.8	466.8	466.7	466.6	467.2
167.5°	472.6	472.3	472.0	471.7	471.3	471.2	471.2	471.2	471.2	471.2	471.8
170°	475.2	474.8	474.5	474.2	473.9	473.7	473.7	473.7	473.7	473.7	474.4
172.5°	476.8	476.5	476.1	475.7	475.3	475.2	475.2	475.3	475.4	475.4	476.0
175°	479.0	478.6	478.2	477.8	477.4	477.3	477.4	477.4	477.5	477.6	478.2
177.5°	479.6	479.3	479.0	478.6	478.3	478.2	478.3	478.3	478.4	478.5	479.0
180°	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	557.1	557.1	557.1	557.1	557.1	557.1	557.1	557.1
2.5°	555.9	556.7	557.6	558.0	557.9	557.8	557.7	557.5
5°	555.0	556.0	557.1	557.6	557.5	557.3	557.2	557.1
7.5°	551.6	552.9	554.4	554.9	554.8	554.6	554.4	554.3
10°	548.3	549.6	551.0	551.4	551.2	551.0	550.6	550.4
12.5°	543.7	544.9	546.1	546.6	546.4	546.1	545.8	545.6
15°	534.9	536.2	537.6	538.2	538.1	537.9	537.8	537.7
17.5°	523.5	524.7	525.9	526.4	526.2	526.0	525.9	525.6
20°	515.2	516.4	517.6	518.3	518.4	518.6	518.7	518.8
22.5°	506.1	507.7	509.2	509.9	509.8	509.8	509.7	509.6
25°	490.8	492.6	494.3	495.2	495.2	495.2	495.2	495.2
27.5°	474.8	476.3	477.8	478.6	478.7	478.8	479.0	479.0
30°	463.8	465.4	467.1	467.9	467.9	467.9	467.9	467.9
32.5°	451.9	453.6	455.3	456.4	456.7	457.0	457.3	457.6
35°	434.3	436.3	438.3	439.6	440.1	440.7	441.2	441.8
37.5°	416.0	418.3	420.6	422.0	422.4	422.8	423.3	423.7
40°	403.9	406.2	408.4	409.9	410.4	411.0	411.5	412.0
42.5°	391.2	393.7	396.2	397.8	398.6	399.3	400.1	400.8
45°	372.2	374.8	377.4	379.2	380.2	381.4	382.5	383.5
47.5°	353.2	356.0	358.9	360.8	361.6	362.4	363.3	364.1
50°	339.9	343.1	346.2	348.2	349.1	350.1	351.0	352.0
52.5°	326.6	329.8	333.0	335.2	336.4	337.5	338.7	339.8
55°	306.4	310.1	313.7	316.1	317.2	318.2	319.3	320.4
57.5°	285.9	289.5	293.2	295.6	296.9	298.2	299.4	300.7
60°	271.6	275.3	279.1	281.7	283.2	284.6	286.1	287.6
62.5°	257.9	261.7	265.5	268.1	269.4	270.8	272.2	273.5
65°	236.2	240.3	244.4	247.1	248.4	249.8	251.1	252.5
67.5°	214.7	219.1	223.6	226.3	227.4	228.5	229.7	230.8
70°	200.4	204.7	209.1	211.8	213.2	214.5	215.9	217.2
72.5°	186.0	190.4	194.9	197.8	199.2	200.5	201.8	203.2
75°	164.2	168.7	173.2	176.2	177.8	179.4	181.0	182.7
77.5°	143.9	148.5	153.2	156.2	157.5	158.7	159.9	161.2
80°	130.6	135.1	139.7	142.7	144.0	145.4	146.7	148.1
82.5°	118.4	122.9	127.5	130.6	131.9	133.2	134.6	135.9
85°	101.4	106.0	110.6	113.5	114.9	116.2	117.6	118.9
87.5°	88.3	93.0	97.6	100.6	102.0	103.4	104.7	106.2
90°	86.9	91.8	96.7	99.9	101.4	102.9	104.4	105.9
92.5°	83.7	88.7	93.7	96.9	98.2	99.6	100.9	102.3
95°	80.6	85.3	90.1	93.1	94.4	95.8	97.1	98.5
97.5°	76.4	81.1	85.8	88.8	90.2	91.7	93.1	94.5
100°	73.6	78.2	82.7	85.7	87.1	88.6	90.0	91.4
102.5°	77.0	78.8	80.6	82.3	83.8	85.3	86.8	88.3
105°	103.0	92.8	82.5	78.1	79.5	80.9	82.2	83.7
107.5°	170.8	164.1	157.5	149.5	140.1	130.8	121.4	112.0
110°	201.1	202.0	203.0	198.3	188.1	177.8	167.5	157.3





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	221.3	224.7	228.1	229.3	228.1	226.9	225.7	224.5
115°	244.5	248.5	252.5	255.2	256.7	258.1	259.4	260.9
117.5°	265.0	268.8	272.7	275.1	276.2	277.3	278.5	279.6
120°	278.5	282.3	286.0	288.4	289.3	290.3	291.2	292.1
122.5°	291.8	295.2	298.7	300.9	301.8	302.9	303.9	304.8
125°	310.1	313.1	316.1	318.1	319.2	320.4	321.5	322.6
127.5°	328.6	331.4	334.4	336.3	337.0	337.8	338.5	339.3
130°	339.5	342.3	345.2	347.0	347.6	348.2	348.9	349.6
132.5°	349.6	352.4	355.1	356.9	357.6	358.2	358.9	359.7
135°	365.4	368.0	370.7	372.2	372.6	373.0	373.5	373.9
137.5°	379.1	381.6	384.1	385.6	386.2	386.7	387.2	387.7
140°	387.9	390.2	392.6	394.0	394.6	395.1	395.6	396.1
142.5°	395.9	398.0	400.1	401.3	401.8	402.3	402.7	403.1
145°	408.5	409.8	411.1	411.9	412.5	413.0	413.5	414.1
147.5°	420.1	420.6	421.0	421.4	421.4	421.6	421.7	421.8
150°	427.4	427.5	427.7	427.9	427.9	427.9	427.9	427.9
152.5°	434.5	434.7	435.1	435.1	434.7	434.4	434.1	433.8
155°	444.3	444.7	445.0	445.0	444.5	444.0	443.5	443.1
157.5°	452.7	453.2	453.7	453.6	453.0	452.4	451.8	451.1
160°	457.6	458.0	458.5	458.5	458.0	457.4	456.9	456.3
162.5°	462.0	462.6	463.0	463.1	462.6	462.1	461.6	461.1
165°	467.9	468.5	469.1	469.1	468.6	468.1	467.5	467.0
167.5°	472.5	473.0	473.6	473.6	473.0	472.5	471.8	471.2
170°	475.0	475.6	476.3	476.3	475.6	475.0	474.4	473.7
172.5°	476.7	477.3	477.9	477.9	477.2	476.5	475.9	475.2
175°	478.7	479.3	479.8	479.8	479.2	478.6	477.9	477.3
177.5°	479.5	480.0	480.5	480.5	479.8	479.2	478.6	477.9
180°	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0

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