

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: P332413-940

Luminaire Tested: **S123RDIW-S560D460U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332413-940  
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-S560D460U940-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 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: 3329.4 lumens  
Efficiency: N/A  
Efficacy: 110.2 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

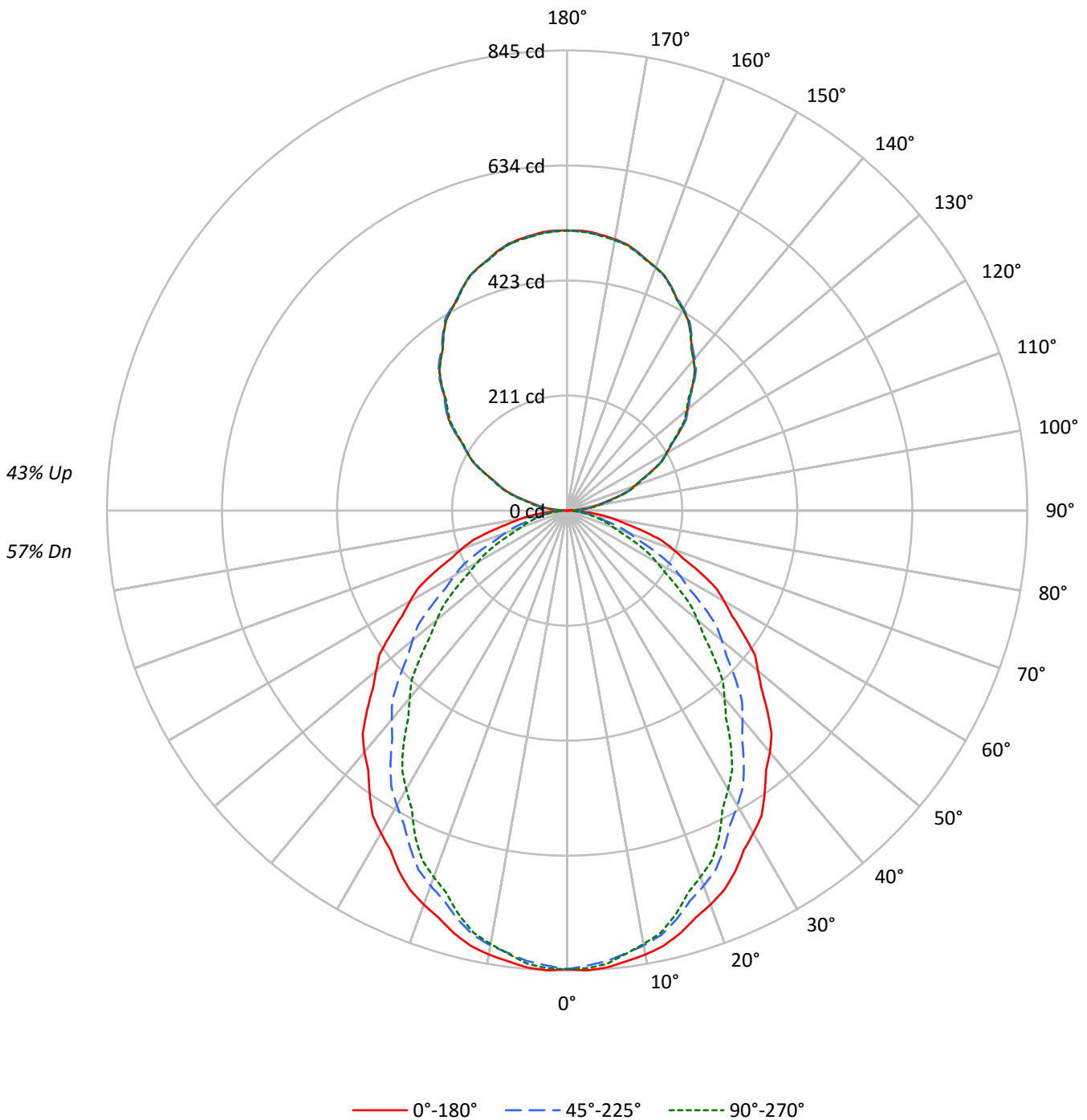
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63	57
1	100	96	92	88	93	89	86	83	77	75	73	66	64	63	56	55	54	49
2	91	84	78	73	85	78	73	69	68	64	61	59	56	53	50	48	46	42
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	42	39	36
4	76	66	58	52	71	62	55	49	54	48	44	47	42	39	40	37	34	31
5	70	59	51	45	65	55	48	43	48	43	38	42	38	34	36	33	30	27
6	65	53	45	39	60	50	43	37	44	38	34	38	34	30	33	29	27	24
7	60	48	40	34	56	45	38	33	40	34	30	35	30	27	30	27	24	21
8	56	44	36	31	52	41	34	29	36	31	27	32	27	24	28	24	21	19
9	52	40	32	27	49	38	31	26	33	28	24	29	25	22	26	22	19	17
10	49	37	30	25	46	35	28	24	31	25	22	27	23	20	24	20	18	16

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	9065	9065	9065
5°	9100	8975	9027
10°	9049	8862	8833
15°	8952	8655	8564
20°	8818	8395	8200
25°	8679	8105	7845
30°	8499	7768	7343
35°	8311	7432	6884
40°	8140	7035	6315
45°	7913	6645	5801
50°	7663	6199	5228
55°	7409	5692	4692
60°	7175	5147	4103
65°	6872	4559	3512
70°	6493	3827	2839
75°	5939	3011	2670
80°	5294	2672	2455
85°	4471	2359	2186



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	79.1	2.4
10°-20°	220.1	6.6
20°-30°	316.9	9.5
30°-40°	356.9	10.7
40°-50°	341.4	10.3
50°-60°	279.6	8.4
60°-70°	188.7	5.7
70°-80°	94.9	2.9
80°-90°	26.6	0.8
90°-100°	33.5	1.0
100°-110°	100.3	3.0
110°-120°	170.6	5.1
120°-130°	224.4	6.7
130°-140°	252.2	7.6
140°-150°	247.9	7.4
150°-160°	208.7	6.3
160°-170°	138.9	4.2
170°-180°	48.7	1.5
0°-30°	616.0	18.5
0°-40°	972.9	29.2
0°-60°	1594.0	47.9
0°-90°	1904.2	57.2
90°-120°	304.4	9.1
90°-150°	1029.0	30.9
90°-180°	1425.0	42.8
0°-180°	3329.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	842	842	842	842	842	
5°	842	839	831	836	835	80
15°	803	795	777	773	768	226
25°	731	713	682	668	660	336
35°	632	607	566	537	524	396
45°	520	488	436	399	381	401
55°	395	360	303	265	250	354
65°	270	231	179	147	138	267
75°	143	110	72	66	64	152
85°	36	22	19	18	18	41
90°	0	4	10	11	12	3
95°	24	27	30	31	32	27
105°	91	92	95	95	96	97
115°	172	173	172	172	172	170
125°	251	252	252	250	248	224
135°	326	328	328	327	326	251
145°	396	396	398	397	396	247
155°	453	453	453	455	452	208
165°	493	492	492	494	492	139
175°	513	512	512	514	511	49
180°	514	514	514	514	514	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2
2.5°	845.0	844.5	844.0	843.5	843.0	842.0	840.6	839.1	837.7	836.2	837.6
5°	842.2	841.5	840.7	840.0	839.2	837.9	836.1	834.3	832.4	830.6	832.0
7.5°	834.5	833.7	832.8	832.0	831.2	829.6	827.2	824.8	822.4	820.1	820.8
10°	827.9	826.8	825.7	824.7	823.7	821.7	819.0	816.3	813.5	810.8	810.9
12.5°	818.6	817.4	816.2	815.0	813.9	811.6	808.2	804.9	801.6	798.3	798.2
15°	803.3	801.6	800.0	798.3	796.7	793.6	789.4	785.2	780.9	776.7	775.9
17.5°	784.0	782.1	780.2	778.2	776.2	772.6	767.1	761.8	756.3	751.0	749.4
20°	769.8	767.4	765.0	762.5	760.1	756.0	750.2	744.5	738.7	732.9	730.9
22.5°	753.9	751.2	748.4	745.6	742.8	738.3	732.2	726.0	720.0	713.8	711.3
25°	730.8	727.1	723.3	719.5	715.7	710.3	703.3	696.3	689.4	682.4	679.2
27.5°	702.8	698.7	694.5	690.3	686.1	680.1	672.3	664.6	656.8	649.1	644.6
30°	683.8	679.2	674.7	670.1	665.6	659.0	650.5	642.0	633.5	625.0	619.8
32.5°	664.6	659.5	654.3	649.2	644.0	636.9	627.9	618.9	609.9	600.9	595.3
35°	632.5	627.1	621.6	616.2	610.6	603.2	593.8	584.4	575.0	565.6	559.0
37.5°	600.0	594.0	587.9	581.8	575.7	567.7	557.6	547.6	537.5	527.4	520.0
40°	579.3	572.6	565.9	559.2	552.5	543.8	533.1	522.3	511.5	500.7	492.8
42.5°	555.7	549.0	542.4	535.7	529.1	520.1	509.0	497.8	486.7	475.5	466.9
45°	519.8	513.0	506.1	499.4	492.5	483.2	471.5	459.9	448.2	436.5	427.8
47.5°	483.8	476.4	468.9	461.4	453.9	444.3	432.6	420.9	409.2	397.5	388.2
50°	457.6	450.5	443.4	436.2	429.1	419.4	407.1	394.8	382.5	370.2	360.8
52.5°	434.2	426.4	418.7	410.9	403.2	393.2	381.0	368.9	356.7	344.6	334.7
55°	394.8	387.4	380.0	372.5	365.1	354.9	342.0	329.1	316.2	303.3	294.4
57.5°	358.5	350.4	342.2	334.1	326.0	315.5	302.6	289.6	276.6	263.7	255.4
60°	333.3	325.0	316.6	308.3	300.0	289.4	276.9	264.3	251.6	239.1	230.9
62.5°	308.2	299.9	291.5	283.1	274.8	264.3	251.7	239.2	226.5	213.9	206.3
65°	269.8	261.4	253.2	244.8	236.4	226.3	214.5	202.7	190.8	179.0	171.6
67.5°	231.4	223.0	214.5	206.1	197.7	187.8	176.4	165.1	153.7	142.3	136.8
70°	206.3	198.0	189.9	181.7	173.5	164.1	153.5	142.9	132.2	121.6	116.3
72.5°	181.1	173.1	165.0	156.9	148.8	140.0	130.4	120.6	111.0	101.4	97.0
75°	142.8	135.5	128.2	120.9	113.6	105.8	97.5	89.1	80.8	72.4	70.9
77.5°	107.8	101.2	94.6	88.0	81.4	75.4	70.1	64.7	59.3	53.9	53.1
80°	85.4	79.2	72.9	66.7	60.5	55.8	52.6	49.4	46.2	43.1	42.5
82.5°	64.1	58.7	53.3	48.0	42.5	39.1	37.6	36.2	34.7	33.2	32.7
85°	36.2	32.9	29.5	26.2	22.8	21.0	20.5	20.1	19.6	19.1	18.8
87.5°	13.2	12.0	10.9	9.7	8.6	8.1	8.4	8.6	8.8	9.0	9.0
90°	0.4	1.3	2.2	3.1	4.0	5.0	6.2	7.4	8.6	9.7	10.1
92.5°	9.8	10.4	11.0	11.6	12.2	12.8	13.6	14.2	14.9	15.5	15.8
95°	23.8	24.4	25.1	25.8	26.4	27.0	27.7	28.4	29.2	29.9	30.2
97.5°	42.4	42.8	43.2	43.8	44.2	44.7	45.2	45.7	46.3	46.8	47.2
100°	54.9	55.5	56.0	56.5	57.1	57.6	58.1	58.5	58.9	59.4	59.7
102.5°	69.5	69.8	70.2	70.4	70.8	71.2	71.9	72.4	73.0	73.7	73.9
105°	91.0	91.1	91.3	91.5	91.7	92.1	92.9	93.7	94.5	95.3	95.3
107.5°	115.8	115.9	116.0	116.1	116.3	116.5	116.8	117.1	117.4	117.8	118.1
110°	131.3	131.5	131.7	131.9	132.1	132.2	132.4	132.6	132.8	133.0	133.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	147.5	147.6	147.8	147.8	147.9	148.0	148.0	148.1	148.1	148.1	148.6
115°	171.7	172.0	172.3	172.5	172.8	172.9	172.7	172.5	172.4	172.2	172.3
117.5°	196.2	196.4	196.5	196.7	196.9	196.8	196.6	196.4	196.2	195.9	195.9
120°	211.3	211.9	212.4	212.9	213.5	213.6	213.1	212.7	212.2	211.8	211.7
122.5°	227.2	227.6	228.0	228.4	228.7	228.8	228.6	228.4	228.2	227.9	227.7
125°	251.4	251.6	251.9	252.2	252.4	252.4	252.3	252.1	251.9	251.7	251.4
127.5°	273.7	274.2	274.8	275.4	276.0	276.2	276.0	275.7	275.5	275.4	274.8
130°	288.6	289.3	290.0	290.7	291.4	291.6	291.3	291.1	290.8	290.5	290.2
132.5°	303.4	304.1	304.9	305.6	306.3	306.6	306.3	306.1	305.9	305.8	305.3
135°	326.1	326.6	327.2	327.7	328.2	328.5	328.4	328.3	328.2	328.1	327.8
137.5°	347.1	347.6	348.0	348.5	348.9	349.3	349.5	349.7	350.0	350.2	349.8
140°	361.7	362.1	362.6	363.0	363.5	363.7	363.8	363.9	364.0	364.1	364.0
142.5°	375.0	375.4	375.9	376.3	376.7	377.0	377.2	377.4	377.6	377.6	377.6
145°	395.7	395.8	396.0	396.2	396.4	396.5	396.8	397.1	397.3	397.6	397.5
147.5°	413.8	414.0	414.4	414.6	415.0	415.3	415.5	415.8	416.1	416.3	416.3
150°	426.3	426.5	426.7	426.9	427.0	427.2	427.4	427.6	427.8	427.9	427.9
152.5°	436.7	436.9	437.2	437.4	437.7	437.8	437.9	438.1	438.2	438.3	438.5
155°	453.0	453.0	453.0	453.0	453.0	453.1	453.2	453.3	453.3	453.4	453.8
157.5°	466.9	466.8	466.7	466.5	466.5	466.5	466.5	466.6	466.6	466.7	467.1
160°	475.6	475.5	475.3	475.1	474.9	474.8	474.8	474.8	474.8	474.8	475.3
162.5°	483.4	483.1	482.9	482.6	482.4	482.3	482.3	482.4	482.5	482.6	483.0
165°	493.4	493.1	492.8	492.6	492.3	492.2	492.2	492.2	492.2	492.2	492.8
167.5°	501.4	501.1	500.7	500.3	500.0	499.8	499.9	500.0	500.1	500.1	500.7
170°	506.0	505.6	505.2	504.9	504.5	504.4	504.4	504.4	504.4	504.4	505.0
172.5°	509.5	509.2	508.8	508.5	508.0	507.8	507.8	507.8	507.8	507.8	508.5
175°	513.2	512.8	512.5	512.1	511.8	511.6	511.6	511.6	511.6	511.6	512.1
177.5°	514.8	514.4	514.2	513.9	513.6	513.4	513.4	513.4	513.4	513.4	513.9
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	842.2	842.2	842.2	842.2	842.2	842.2	842.2	842.2
2.5°	838.9	840.3	841.6	842.1	841.9	841.6	841.4	841.2
5°	833.3	834.7	836.1	836.6	836.3	836.0	835.7	835.4
7.5°	821.6	822.3	823.1	823.2	822.7	822.2	821.7	821.2
10°	811.1	811.3	811.4	811.1	810.4	809.6	808.9	808.1
12.5°	798.1	798.0	797.9	797.4	796.5	795.6	794.8	793.9
15°	775.2	774.4	773.6	772.7	771.6	770.6	769.5	768.5
17.5°	747.8	746.2	744.5	743.0	741.4	739.8	738.2	736.6
20°	729.0	727.0	725.1	723.2	721.3	719.5	717.6	715.9
22.5°	708.9	706.4	704.0	701.9	700.2	698.5	696.8	695.1
25°	676.0	672.8	669.7	667.2	665.6	663.9	662.2	660.5
27.5°	640.2	635.8	631.3	627.9	625.3	622.8	620.2	617.6
30°	614.7	609.5	604.4	600.6	598.2	595.8	593.3	590.8
32.5°	589.7	584.0	578.4	574.3	571.8	569.2	566.6	564.1
35°	552.5	546.0	539.5	534.8	532.1	529.4	526.6	523.9
37.5°	512.6	505.2	497.8	492.5	489.1	485.7	482.3	478.9
40°	484.9	477.0	469.1	463.4	459.9	456.5	453.0	449.4
42.5°	458.3	449.7	441.0	435.2	432.0	428.9	425.8	422.7
45°	419.2	410.5	401.9	395.7	392.1	388.4	384.8	381.1
47.5°	378.7	369.3	359.9	353.6	350.4	347.1	343.8	340.5
50°	351.4	342.0	332.6	326.1	322.6	319.1	315.7	312.2
52.5°	325.0	315.2	305.4	299.0	295.9	292.7	289.6	286.5
55°	285.7	276.9	268.0	262.2	259.1	256.1	253.1	250.0
57.5°	247.0	238.7	230.4	225.0	222.4	219.8	217.2	214.6
60°	222.7	214.5	206.3	200.9	198.3	195.7	193.1	190.6
62.5°	198.5	190.8	183.1	177.9	175.2	172.5	169.8	167.1
65°	164.1	156.7	149.2	144.6	143.0	141.3	139.6	137.9
67.5°	131.3	125.6	120.1	116.5	114.7	112.9	111.1	109.3
70°	110.9	105.7	100.3	96.8	95.1	93.5	91.8	90.2
72.5°	92.6	88.4	84.0	81.5	80.8	80.1	79.4	78.6
75°	69.4	67.9	66.3	65.5	65.1	64.8	64.5	64.2
77.5°	52.3	51.5	50.6	50.1	49.8	49.5	49.2	48.9
80°	42.1	41.6	41.2	40.8	40.6	40.2	39.9	39.6
82.5°	32.3	31.8	31.4	31.1	31.0	31.0	30.9	30.9
85°	18.5	18.2	17.9	17.7	17.7	17.7	17.7	17.7
87.5°	8.9	8.9	8.8	8.7	8.6	8.6	8.6	8.5
90°	10.4	10.8	11.1	11.4	11.6	11.8	11.9	12.1
92.5°	16.1	16.4	16.7	16.8	16.7	16.5	16.4	16.3
95°	30.6	30.9	31.3	31.5	31.5	31.5	31.5	31.5
97.5°	47.6	48.1	48.4	48.6	48.6	48.6	48.5	48.5
100°	59.9	60.2	60.5	60.7	60.9	61.1	61.3	61.4
102.5°	74.2	74.5	74.7	74.8	74.8	74.7	74.7	74.6
105°	95.3	95.3	95.3	95.4	95.7	95.9	96.0	96.2
107.5°	118.3	118.6	118.9	119.0	118.9	118.8	118.7	118.6
110°	133.7	134.0	134.4	134.5	134.3	134.1	133.9	133.8





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	149.0	149.5	149.9	150.1	150.0	150.0	150.0	149.9
115°	172.4	172.5	172.5	172.5	172.5	172.4	172.3	172.2
117.5°	195.9	195.8	195.8	195.7	195.5	195.2	194.9	194.7
120°	211.6	211.5	211.4	211.2	211.1	210.9	210.7	210.5
122.5°	227.5	227.2	226.9	226.8	226.5	226.2	226.0	225.7
125°	251.0	250.7	250.3	249.9	249.6	249.2	248.9	248.5
127.5°	274.4	273.8	273.3	272.9	272.5	272.1	271.6	271.3
130°	289.8	289.4	289.1	288.6	288.0	287.4	286.8	286.1
132.5°	304.9	304.4	304.0	303.5	303.1	302.6	302.1	301.6
135°	327.4	327.1	326.7	326.5	326.3	326.1	325.9	325.7
137.5°	349.5	349.1	348.7	348.3	347.9	347.7	347.3	347.0
140°	363.9	363.8	363.7	363.4	362.7	362.1	361.5	360.9
142.5°	377.5	377.4	377.3	377.0	376.6	376.0	375.6	375.1
145°	397.4	397.3	397.3	397.1	396.7	396.4	396.0	395.7
147.5°	416.3	416.3	416.3	416.1	415.5	414.9	414.4	413.8
150°	427.9	427.9	427.9	427.7	427.1	426.6	426.1	425.5
152.5°	438.5	438.7	438.9	438.7	438.3	437.7	437.3	436.8
155°	454.1	454.5	454.9	454.7	454.1	453.4	452.8	452.2
157.5°	467.5	467.9	468.2	468.1	467.7	467.2	466.6	466.2
160°	475.7	476.2	476.6	476.6	476.3	475.9	475.5	475.2
162.5°	483.5	483.9	484.4	484.3	483.8	483.1	482.6	482.0
165°	493.3	493.8	494.4	494.3	493.7	493.0	492.4	491.8
167.5°	501.2	501.8	502.3	502.3	501.8	501.2	500.7	500.1
170°	505.6	506.2	506.8	506.8	506.2	505.6	505.0	504.4
172.5°	509.0	509.5	510.1	510.1	509.4	508.8	508.2	507.6
175°	512.6	513.2	513.7	513.7	513.1	512.5	511.8	511.2
177.5°	514.3	514.8	515.1	515.1	514.6	514.2	513.6	513.1
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4

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