

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: P332137-930

Luminaire Tested: **S123DIW-S560D1030U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332137-930  
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-S560D1030U930-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4806.4 lumens  
Efficiency: N/A  
Efficacy: 106.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

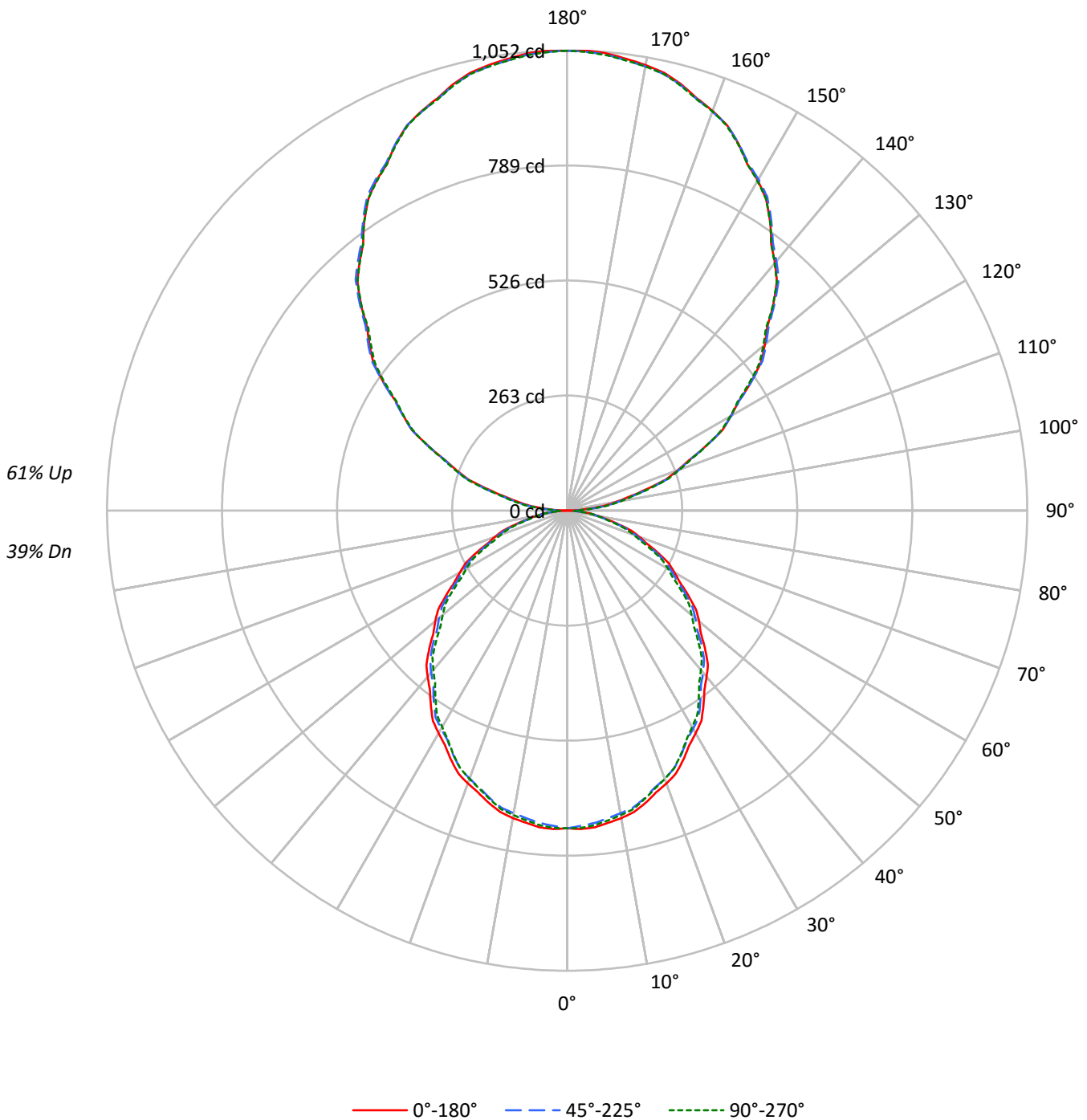
Input Watts (W): 45.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	95	91	87	84	87	83	80	77	68	65	63	54	52	51	41	40	39	33
2	87	79	73	68	79	72	67	63	59	56	52	47	45	42	36	34	33	28
3	79	70	63	57	72	64	57	52	52	48	44	42	38	36	32	30	28	23
4	72	62	54	48	65	56	50	44	46	41	37	37	33	31	28	26	24	20
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	26	23	21	17
6	61	49	41	35	55	45	38	33	37	32	28	30	26	23	23	20	18	15
7	56	44	36	31	51	41	34	29	34	28	25	27	23	20	21	18	16	14
8	52	40	33	27	47	37	30	25	31	25	22	25	21	18	19	17	15	12
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13	11
10	45	33	26	22	41	31	25	20	26	21	17	21	17	15	17	14	12	10

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

	0°	45°	90°
0°	7819	7819	7819
5°	7854	7747	7800
10°	7803	7679	7726
15°	7710	7592	7608
20°	7605	7468	7475
25°	7462	7321	7305
30°	7305	7157	7102
35°	7139	6984	6893
40°	6968	6792	6687
45°	6779	6616	6454
50°	6589	6400	6223
55°	6341	6176	5988
60°	6090	5916	5726
65°	5871	5631	5456
70°	5542	5306	5070
75°	5065	4882	4675
80°	4568	4376	4339
85°	4001	3853	3705



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.4	1.4
10°-20°	193.2	4.0
20°-30°	285.4	5.9
30°-40°	333.3	6.9
40°-50°	335.1	7.0
50°-60°	294.4	6.1
60°-70°	219.3	4.6
70°-80°	124.9	2.6
80°-90°	39.0	0.8
90°-100°	68.5	1.4
100°-110°	205.0	4.3
110°-120°	348.7	7.3
120°-130°	458.7	9.5
130°-140°	515.5	10.7
140°-150°	506.8	10.5
150°-160°	426.6	8.9
160°-170°	284.0	5.9
170°-180°	99.4	2.1
0°-30°	547.0	11.4
0°-40°	880.3	18.3
0°-60°	1509.9	31.4
0°-90°	1893.1	39.4
90°-120°	622.2	12.9
90°-150°	2103.2	43.8
90°-180°	2913.0	60.6
0°-180°	4806.4	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	726	726	726	726	726	
5°	727	724	717	723	722	69
15°	692	689	681	686	683	195
25°	628	624	616	617	615	289
35°	543	539	532	528	525	340
45°	445	442	435	427	424	344
55°	338	337	329	322	319	303
65°	230	227	221	216	214	227
75°	122	119	117	114	112	130
85°	32	31	31	30	30	36
90°	1	9	20	23	25	5
95°	49	55	61	64	64	55
105°	186	188	195	195	197	199
115°	351	353	352	353	352	347
125°	514	516	515	511	508	458
135°	667	671	671	667	666	513
145°	809	810	813	812	809	505
155°	926	926	927	930	924	426
165°	1008	1006	1006	1010	1005	284
175°	1049	1046	1046	1050	1045	100
180°	1052	1052	1052	1052	1052	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4
2.5°	728.8	728.4	728.0	727.5	727.1	726.2	725.0	723.7	722.6	721.4	722.4
5°	726.9	726.3	725.5	724.9	724.1	723.1	721.5	720.0	718.5	717.0	718.4
7.5°	719.8	719.2	718.4	717.8	717.1	715.9	714.4	712.7	711.2	709.6	710.9
10°	713.9	713.1	712.5	711.8	711.1	709.8	708.0	706.2	704.4	702.6	703.8
12.5°	705.9	705.2	704.7	704.1	703.5	702.4	700.7	699.0	697.3	695.6	696.5
15°	691.9	691.5	690.9	690.3	689.7	688.6	686.8	685.0	683.1	681.3	682.5
17.5°	675.9	675.1	674.4	673.7	672.9	671.7	669.9	668.1	666.3	664.5	665.3
20°	663.9	663.1	662.2	661.4	660.6	659.3	657.5	655.7	653.8	652.0	652.6
22.5°	650.4	649.5	648.7	647.9	647.0	645.7	643.9	642.1	640.3	638.5	639.0
25°	628.3	627.5	626.6	625.8	624.9	623.6	621.8	620.0	618.2	616.4	616.5
27.5°	604.7	603.9	603.1	602.3	601.4	600.1	598.1	596.2	594.3	592.3	592.4
30°	587.7	587.0	586.3	585.6	584.9	583.6	581.6	579.7	577.8	575.8	575.8
32.5°	570.7	569.8	568.8	567.9	567.0	565.8	564.4	562.8	561.3	559.9	559.1
35°	543.3	542.5	541.7	540.9	540.1	538.7	536.9	535.1	533.3	531.5	530.7
37.5°	515.4	514.3	513.2	512.2	511.1	509.7	507.8	506.1	504.2	502.4	501.4
40°	495.9	495.0	494.2	493.4	492.5	491.1	489.2	487.3	485.3	483.4	482.2
42.5°	476.4	475.5	474.5	473.5	472.6	471.2	469.2	467.3	465.4	463.4	462.3
45°	445.3	444.7	444.2	443.6	443.0	441.9	440.1	438.3	436.5	434.6	433.0
47.5°	414.4	413.6	412.9	412.1	411.2	409.9	408.3	406.6	404.9	403.2	401.5
50°	393.5	392.7	392.1	391.3	390.7	389.5	387.6	385.8	384.0	382.2	380.7
52.5°	371.5	371.0	370.6	370.1	369.6	368.4	366.5	364.6	362.6	360.8	359.5
55°	337.9	337.7	337.6	337.5	337.3	336.3	334.5	332.7	330.9	329.1	327.6
57.5°	305.9	305.4	304.9	304.5	304.0	303.0	301.6	300.2	298.7	297.3	296.0
60°	282.9	282.7	282.7	282.5	282.3	281.4	279.8	278.1	276.5	274.8	273.5
62.5°	262.4	262.0	261.7	261.4	261.0	260.0	258.3	256.7	254.9	253.3	252.1
65°	230.5	229.8	229.1	228.4	227.7	226.7	225.3	223.9	222.5	221.1	220.0
67.5°	196.6	196.0	195.3	194.8	194.1	193.3	192.2	191.2	190.1	189.1	188.2
70°	176.1	175.3	174.5	173.7	172.8	171.9	171.1	170.3	169.4	168.6	167.6
72.5°	154.7	154.0	153.4	152.8	152.2	151.4	150.5	149.5	148.5	147.7	146.8
75°	121.8	121.2	120.7	120.1	119.6	119.1	118.6	118.2	117.8	117.4	116.8
77.5°	92.7	92.4	92.0	91.8	91.5	91.1	90.6	90.1	89.5	89.0	88.6
80°	73.7	73.3	72.9	72.5	72.0	71.7	71.4	71.1	70.8	70.6	70.4
82.5°	55.2	55.1	55.0	55.0	54.9	54.8	54.8	54.7	54.6	54.6	54.3
85°	32.4	32.2	32.0	31.6	31.4	31.2	31.2	31.2	31.2	31.2	31.0
87.5°	13.1	13.2	13.2	13.3	13.3	13.5	13.9	14.2	14.6	14.9	15.0
90°	0.8	2.7	4.5	6.4	8.2	10.3	12.6	15.1	17.4	19.8	20.5
92.5°	20.0	21.2	22.5	23.7	24.9	26.3	27.6	29.0	30.3	31.7	32.3
95°	48.8	50.0	51.3	52.6	53.9	55.3	56.7	58.2	59.7	61.1	61.9
97.5°	86.6	87.5	88.5	89.4	90.4	91.4	92.5	93.5	94.6	95.6	96.5
100°	112.3	113.4	114.5	115.6	116.8	117.7	118.7	119.6	120.5	121.4	122.0
102.5°	142.1	142.8	143.4	144.1	144.7	145.6	146.8	148.1	149.3	150.5	151.1
105°	185.9	186.2	186.6	186.9	187.4	188.3	190.0	191.6	193.3	194.9	194.9
107.5°	236.8	236.9	237.2	237.4	237.6	238.1	238.7	239.4	240.0	240.7	241.2
110°	268.5	268.8	269.2	269.5	269.9	270.3	270.7	271.0	271.4	271.7	272.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	301.5	301.7	301.9	302.1	302.4	302.5	302.6	302.6	302.7	302.8	303.7
115°	351.1	351.6	352.1	352.7	353.3	353.4	352.9	352.6	352.2	351.9	352.0
117.5°	401.0	401.3	401.7	402.0	402.4	402.4	401.9	401.4	400.9	400.5	400.4
120°	432.0	433.1	434.2	435.3	436.4	436.5	435.5	434.6	433.7	432.8	432.6
122.5°	464.4	465.2	466.0	466.8	467.6	467.7	467.3	466.8	466.4	465.9	465.4
125°	513.8	514.3	514.9	515.4	516.0	516.1	515.7	515.4	514.9	514.6	513.9
127.5°	559.4	560.5	561.7	562.9	564.0	564.4	564.0	563.6	563.2	562.8	561.8
130°	589.8	591.3	592.7	594.2	595.7	596.1	595.6	595.0	594.4	593.9	593.1
132.5°	620.1	621.6	623.1	624.6	626.1	626.6	626.1	625.7	625.3	624.9	624.0
135°	666.6	667.6	668.8	669.8	671.0	671.4	671.2	671.1	670.9	670.7	669.9
137.5°	709.6	710.5	711.3	712.2	713.2	713.9	714.4	714.9	715.3	715.8	715.0
140°	739.2	740.2	741.1	742.0	742.9	743.5	743.6	743.9	744.0	744.2	744.0
142.5°	766.4	767.3	768.2	769.1	770.1	770.6	770.9	771.3	771.7	772.0	771.8
145°	808.6	809.0	809.3	809.8	810.1	810.6	811.1	811.7	812.2	812.8	812.6
147.5°	845.6	846.3	846.9	847.7	848.3	848.9	849.4	849.9	850.4	850.9	850.9
150°	871.4	871.8	872.1	872.5	872.9	873.3	873.6	874.0	874.3	874.7	874.7
152.5°	892.6	893.1	893.6	894.1	894.6	895.0	895.2	895.4	895.7	895.9	896.2
155°	925.9	925.9	925.9	925.9	925.9	926.0	926.2	926.4	926.6	926.8	927.5
157.5°	954.4	954.1	953.9	953.7	953.5	953.4	953.6	953.7	953.9	954.0	954.8
160°	972.2	971.8	971.4	971.1	970.7	970.5	970.5	970.5	970.5	970.5	971.4
162.5°	988.1	987.6	987.0	986.5	986.0	985.8	985.9	986.1	986.3	986.4	987.3
165°	1008.5	1008.0	1007.5	1006.9	1006.3	1006.1	1006.1	1006.1	1006.1	1006.1	1007.1
167.5°	1024.9	1024.2	1023.4	1022.7	1022.0	1021.7	1021.8	1022.0	1022.1	1022.2	1023.4
170°	1034.1	1033.4	1032.7	1031.9	1031.2	1030.9	1030.9	1030.9	1030.9	1030.9	1032.1
172.5°	1041.4	1040.6	1039.9	1039.2	1038.4	1038.1	1038.1	1038.1	1038.1	1038.1	1039.3
175°	1049.0	1048.3	1047.6	1046.8	1046.1	1045.7	1045.7	1045.7	1045.7	1045.7	1046.8
177.5°	1052.1	1051.6	1051.0	1050.4	1049.8	1049.5	1049.5	1049.5	1049.5	1049.5	1050.4
180°	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	726.4	726.4	726.4	726.4	726.4	726.4	726.4	726.4
2.5°	723.6	724.6	725.8	726.3	726.2	726.0	725.9	725.9
5°	719.7	721.1	722.5	723.1	722.8	722.5	722.3	721.9
7.5°	712.1	713.3	714.6	715.1	714.9	714.8	714.6	714.4
10°	705.1	706.4	707.6	708.1	707.8	707.5	707.3	706.9
12.5°	697.4	698.4	699.3	699.6	699.4	699.3	699.1	699.0
15°	683.6	684.7	685.8	685.9	685.1	684.3	683.5	682.7
17.5°	666.1	666.8	667.6	667.8	667.6	667.2	666.9	666.6
20°	653.1	653.7	654.2	654.3	653.9	653.5	653.1	652.6
22.5°	639.4	639.8	640.3	640.3	639.8	639.2	638.7	638.1
25°	616.7	616.9	616.9	616.9	616.4	616.0	615.6	615.1
27.5°	592.6	592.6	592.7	592.6	592.0	591.5	590.9	590.4
30°	575.8	575.8	575.8	575.4	574.4	573.4	572.4	571.4
32.5°	558.3	557.5	556.7	556.0	555.5	555.1	554.5	554.0
35°	529.8	529.0	528.2	527.4	526.7	526.0	525.3	524.6
37.5°	500.3	499.4	498.4	497.7	497.3	496.8	496.4	495.9
40°	481.2	480.0	479.0	478.1	477.5	477.0	476.5	475.9
42.5°	461.2	460.1	458.9	458.1	457.5	457.1	456.5	455.9
45°	431.4	429.7	428.0	426.8	426.2	425.4	424.8	424.0
47.5°	399.9	398.3	396.6	395.5	394.9	394.3	393.7	393.1
50°	379.2	377.6	376.1	375.0	374.1	373.2	372.4	371.6
52.5°	358.2	356.9	355.6	354.4	353.6	352.8	352.0	351.1
55°	326.0	324.6	323.0	321.9	321.2	320.5	319.8	319.1
57.5°	294.6	293.2	291.9	290.7	289.9	289.2	288.4	287.6
60°	272.3	271.1	269.8	268.8	268.2	267.4	266.8	266.0
62.5°	250.8	249.6	248.3	247.4	247.0	246.5	246.1	245.6
65°	218.8	217.8	216.6	215.9	215.5	215.1	214.7	214.2
67.5°	187.2	186.2	185.2	184.4	183.8	183.3	182.7	182.1
70°	166.6	165.8	164.8	163.9	163.2	162.5	161.8	161.1
72.5°	145.9	145.0	144.2	143.6	143.2	142.8	142.5	142.1
75°	116.0	115.4	114.6	114.1	113.7	113.2	112.8	112.4
77.5°	88.1	87.6	87.2	86.9	86.9	86.9	86.9	86.9
80°	70.3	70.1	70.0	70.0	70.0	70.0	70.0	70.0
82.5°	54.1	53.8	53.6	53.4	53.3	53.2	53.1	53.0
85°	30.7	30.4	30.1	30.0	30.0	30.0	30.0	30.0
87.5°	15.0	15.1	15.1	15.2	15.2	15.3	15.4	15.4
90°	21.3	22.0	22.7	23.3	23.6	24.1	24.4	24.8
92.5°	32.9	33.5	34.1	34.2	34.0	33.8	33.6	33.3
95°	62.6	63.3	64.1	64.4	64.4	64.4	64.4	64.4
97.5°	97.3	98.2	99.1	99.4	99.3	99.3	99.2	99.1
100°	122.5	123.1	123.6	124.1	124.4	124.8	125.1	125.6
102.5°	151.6	152.1	152.7	153.0	152.9	152.8	152.7	152.6
105°	194.9	194.9	194.9	195.1	195.5	195.8	196.2	196.6
107.5°	241.9	242.5	243.0	243.2	243.0	242.8	242.6	242.3
110°	273.2	273.9	274.7	274.8	274.5	274.1	273.8	273.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	304.6	305.4	306.3	306.7	306.6	306.6	306.6	306.5
115°	352.2	352.5	352.6	352.6	352.5	352.2	352.0	351.9
117.5°	400.4	400.3	400.3	400.0	399.5	399.0	398.4	397.9
120°	432.4	432.3	432.1	431.8	431.5	431.0	430.7	430.3
122.5°	464.9	464.4	464.0	463.4	462.9	462.4	461.9	461.4
125°	513.1	512.4	511.7	510.9	510.2	509.5	508.7	508.0
127.5°	560.8	559.8	558.7	557.7	556.9	556.1	555.2	554.4
130°	592.4	591.7	590.9	590.0	588.6	587.3	586.1	584.8
132.5°	623.2	622.3	621.4	620.5	619.5	618.5	617.5	616.5
135°	669.2	668.5	667.7	667.2	666.8	666.5	666.1	665.8
137.5°	714.3	713.5	712.7	712.0	711.3	710.6	709.9	709.2
140°	743.9	743.6	743.5	742.7	741.4	740.2	738.9	737.6
142.5°	771.6	771.4	771.3	770.6	769.6	768.7	767.7	766.7
145°	812.4	812.2	812.0	811.5	810.8	810.1	809.3	808.6
147.5°	850.9	850.9	850.9	850.4	849.3	848.2	847.1	846.0
150°	874.7	874.7	874.7	874.2	873.1	872.0	870.9	869.8
152.5°	896.4	896.7	897.1	896.7	895.8	894.8	893.8	892.9
155°	928.2	929.0	929.7	929.4	928.1	926.8	925.6	924.3
157.5°	955.5	956.3	957.1	957.0	955.9	955.0	953.9	952.8
160°	972.4	973.3	974.2	974.3	973.5	972.8	972.1	971.3
162.5°	988.2	989.1	990.1	989.9	988.8	987.6	986.4	985.2
165°	1008.3	1009.3	1010.5	1010.4	1009.1	1007.8	1006.5	1005.3
167.5°	1024.5	1025.6	1026.8	1026.8	1025.6	1024.5	1023.4	1022.2
170°	1033.4	1034.7	1036.0	1036.0	1034.7	1033.4	1032.1	1030.9
172.5°	1040.4	1041.5	1042.7	1042.6	1041.3	1040.0	1038.7	1037.5
175°	1047.9	1049.0	1050.1	1050.0	1048.7	1047.4	1046.2	1044.9
177.5°	1051.2	1052.1	1053.0	1053.0	1051.9	1050.9	1049.9	1048.9
180°	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5

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