

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: P332135-840

Luminaire Tested: **S123DIW-S560D1030U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332135-840
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-S560D1030U840-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP 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: 5998.8 lumens
Efficiency: N/A
Efficacy: 132.7 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: Semi-Indirect

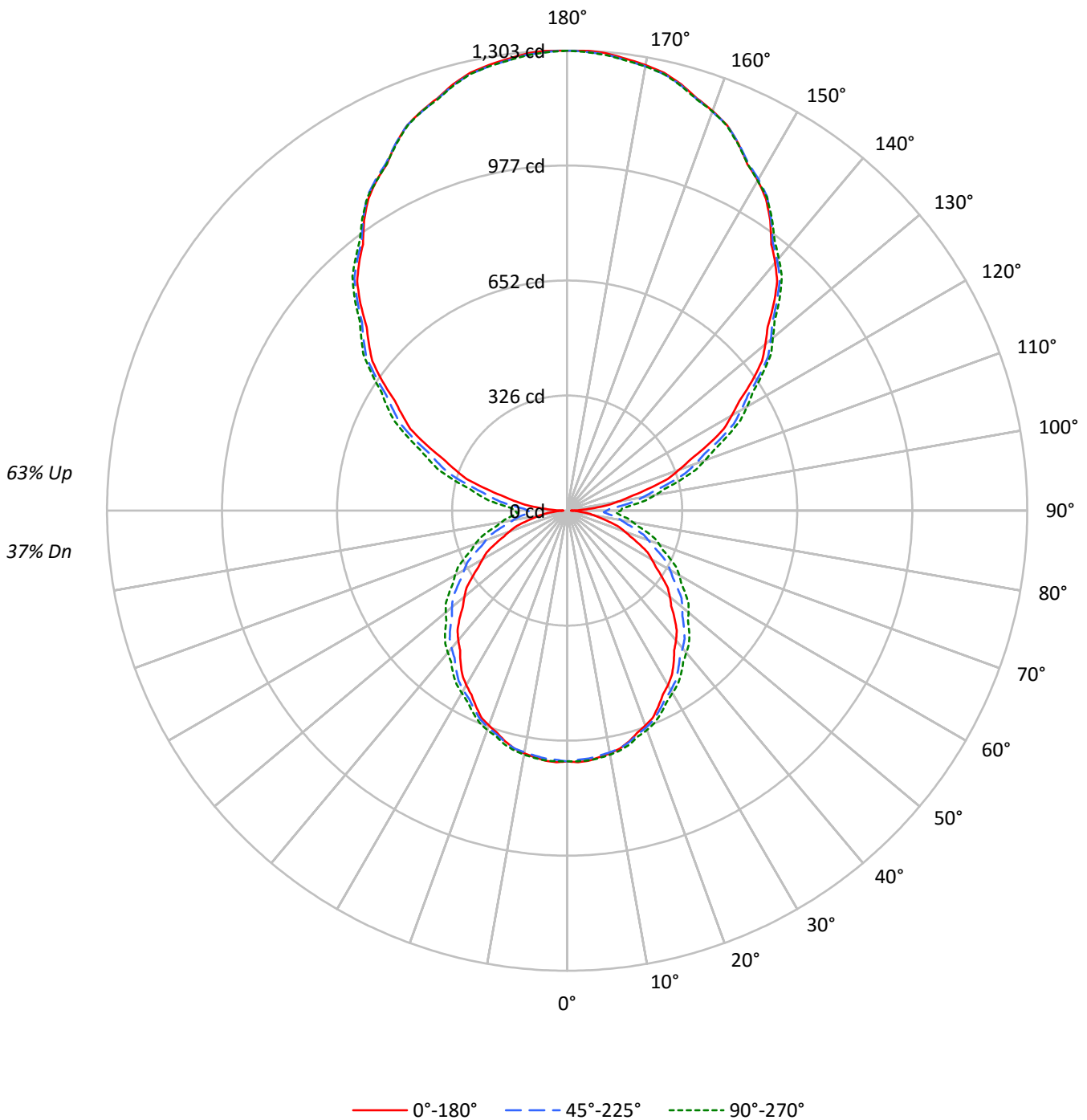
Input Watts (W): 45.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	104	104	104	104	94	94	94	94	76	76	76	59	59	59	44	44	44
1	94	89	85	82	85	81	77	74	65	63	60	51	49	48	37	36	35
2	85	78	71	66	77	70	65	60	57	53	49	44	41	39	32	31	29
3	78	68	60	55	70	62	55	50	50	45	41	39	35	33	28	26	24
4	71	60	52	46	64	54	47	42	44	39	35	34	31	28	25	23	21
5	65	53	45	39	58	48	41	36	39	34	30	31	27	24	23	20	18
6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16
7	55	43	35	29	50	39	32	27	32	26	23	25	21	18	19	16	14
8	51	39	31	26	46	35	28	24	29	24	20	23	19	16	17	14	12
9	47	35	28	23	43	32	26	21	26	21	18	21	17	14	16	13	11
10	44	32	25	20	40	29	23	19	24	19	16	19	16	13	15	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7643	7643	7643
5°	7667	7451	7455
10°	7599	7280	7244
15°	7501	7084	7012
20°	7361	6862	6756
25°	7189	6606	6489
30°	7011	6375	6216
35°	6812	6132	6000
40°	6623	5910	5767
45°	6414	5697	5582
50°	6206	5488	5378
55°	5978	5271	5194
60°	5753	5053	5005
65°	5525	4819	4780
70°	5183	4558	4549
75°	4746	4256	4316
80°	4241	3962	4047
85°	3780	3757	3892



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.3	1.1
10°-20°	191.9	3.2
20°-30°	287.0	4.8
30°-40°	342.8	5.7
40°-50°	358.6	6.0
50°-60°	336.5	5.6
60°-70°	281.1	4.7
70°-80°	201.1	3.4
80°-90°	123.8	2.1
90°-100°	160.1	2.7
100°-110°	309.3	5.2
110°-120°	468.9	7.8
120°-130°	589.2	9.8
130°-140°	648.0	10.8
140°-150°	629.7	10.5
150°-160°	528.4	8.8
160°-170°	351.8	5.9
170°-180°	123.2	2.1
0°-30°	546.3	9.1
0°-40°	889.0	14.8
0°-60°	1584.2	26.4
0°-90°	2190.2	36.5
90°-120°	938.2	15.6
90°-150°	2805.3	46.8
90°-180°	3809.0	63.5
0°-180°	5998.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	710	710	710	710	710	
5°	711	709	705	710	710	67
15°	677	679	678	686	685	191
25°	611	619	621	631	631	282
35°	526	538	548	560	563	329
45°	430	449	468	482	489	332
55°	328	354	381	401	408	294
65°	227	257	291	313	322	224
75°	123	160	198	223	233	131
85°	38	77	118	143	152	40
90°	11	59	112	141	152	11
95°	69	107	152	179	188	74
105°	236	258	299	320	330	253
115°	439	452	477	496	502	434
125°	639	643	662	674	676	570
135°	827	833	840	849	852	637
145°	1002	1004	1007	1012	1011	626
155°	1147	1147	1148	1151	1145	528
165°	1249	1246	1246	1252	1245	352
175°	1299	1296	1295	1301	1294	123
180°	1302	1302	1302	1302	1302	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	713.3	712.9	712.5	712.0	711.6	710.8	709.7	708.6	707.5	706.4	707.5
5°	710.9	710.5	710.2	709.9	709.5	708.8	707.8	706.8	705.8	704.7	706.1
7.5°	704.0	704.0	704.1	704.2	704.3	703.8	702.8	701.8	700.7	699.7	701.5
10°	697.8	698.1	698.4	698.8	699.1	698.9	698.0	697.2	696.3	695.5	697.2
12.5°	690.3	690.8	691.4	691.8	692.3	692.3	691.7	691.1	690.4	689.8	691.5
15°	676.9	677.4	677.9	678.4	678.9	679.1	678.9	678.7	678.6	678.4	680.1
17.5°	659.8	660.9	662.0	663.0	664.0	664.5	664.4	664.3	664.3	664.2	665.7
20°	647.5	648.5	649.5	650.6	651.6	652.3	652.7	653.0	653.3	653.7	655.2
22.5°	634.5	635.5	636.5	637.6	638.6	639.3	639.9	640.4	640.9	641.3	643.3
25°	611.2	612.9	614.6	616.3	618.0	619.1	619.7	620.2	620.7	621.2	623.4
27.5°	587.6	589.6	591.6	593.5	595.4	596.9	598.0	599.2	600.3	601.4	603.3
30°	570.9	573.1	575.3	577.6	579.9	581.7	583.0	584.4	585.7	587.1	589.3
32.5°	552.3	554.8	557.3	559.9	562.4	564.5	566.3	568.0	569.9	571.7	573.9
35°	526.0	528.8	531.5	534.3	537.0	539.6	541.8	544.0	546.2	548.5	551.1
37.5°	498.2	501.3	504.3	507.5	510.6	513.5	516.2	519.0	521.7	524.5	527.5
40°	479.6	482.7	485.8	488.9	492.0	495.2	498.7	502.1	505.5	509.0	511.9
42.5°	459.2	463.0	466.8	470.5	474.3	478.0	481.6	485.1	488.8	492.3	495.5
45°	430.1	434.2	438.4	442.5	446.6	450.8	455.1	459.4	463.7	468.0	471.3
47.5°	399.6	404.3	409.0	413.6	418.3	423.1	428.1	432.9	437.9	442.8	446.5
50°	379.8	384.7	389.4	394.3	399.1	404.1	409.5	414.9	420.1	425.5	429.4
52.5°	358.8	363.9	369.0	374.1	379.1	384.7	390.5	396.4	402.2	408.2	412.2
55°	328.0	333.7	339.3	345.0	350.7	356.6	362.8	369.0	375.2	381.3	386.0
57.5°	298.0	303.9	309.8	315.7	321.6	328.0	334.8	341.5	348.3	355.1	359.7
60°	276.9	283.2	289.3	295.5	301.6	308.3	315.4	322.4	329.4	336.5	341.3
62.5°	257.1	263.5	269.8	276.1	282.5	289.3	296.8	304.3	311.7	319.2	324.0
65°	226.6	233.4	240.0	246.8	253.5	260.6	268.2	275.7	283.3	290.8	296.0
67.5°	195.7	202.9	210.0	217.0	224.2	231.6	239.3	247.0	254.7	262.4	268.0
70°	174.1	181.5	188.8	196.2	203.6	211.5	219.6	227.9	236.2	244.5	249.9
72.5°	154.2	161.7	169.1	176.4	183.8	191.8	200.3	208.8	217.3	225.9	231.6
75°	123.0	131.1	139.2	147.2	155.3	163.7	172.3	180.9	189.5	198.0	203.7
77.5°	95.7	103.9	112.1	120.2	128.4	136.7	145.4	154.1	162.8	171.5	177.4
80°	76.5	85.0	93.4	101.9	110.3	119.0	127.8	136.8	145.8	154.7	160.6
82.5°	59.9	68.5	77.0	85.5	94.1	102.9	112.0	121.1	130.2	139.3	145.1
85°	37.9	46.5	55.1	63.7	72.3	81.1	90.3	99.4	108.5	117.5	123.4
87.5°	20.8	29.8	38.8	47.9	56.9	66.0	75.4	84.7	94.1	103.5	109.5
90°	11.1	21.8	32.5	43.1	53.8	65.0	76.9	88.6	100.3	112.0	118.8
92.5°	34.2	43.3	52.5	61.6	70.8	80.5	90.8	101.1	111.5	121.8	128.2
95°	68.9	77.2	85.4	93.7	102.1	111.3	121.6	131.8	142.1	152.3	158.5
97.5°	114.8	122.0	129.3	136.5	143.7	152.0	161.4	170.8	180.2	189.5	195.6
100°	146.1	153.0	159.9	166.7	173.6	181.5	190.6	199.7	208.6	217.7	223.4
102.5°	182.3	188.1	193.9	199.7	205.4	212.9	222.2	231.5	240.8	250.0	255.5
105°	236.4	241.0	245.6	250.1	254.7	261.8	271.1	280.6	290.0	299.4	304.3
107.5°	298.5	302.3	306.1	309.8	313.6	319.4	327.2	335.1	343.0	350.7	356.1
110°	337.2	340.7	344.3	347.8	351.3	356.8	364.2	371.4	378.8	386.1	391.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	378.1	380.9	383.7	386.6	389.3	394.0	400.8	407.5	414.1	420.9	426.3
115°	438.7	441.4	444.1	447.0	449.7	453.9	459.7	465.3	471.1	476.9	481.2
117.5°	500.3	502.1	503.8	505.5	507.3	510.7	515.9	521.2	526.3	531.6	535.6
120°	538.2	540.4	542.6	544.8	547.0	550.5	555.0	559.6	564.1	568.6	572.3
122.5°	578.2	579.8	581.2	582.6	584.1	587.2	592.0	596.8	601.6	606.4	609.7
125°	638.7	639.3	640.1	640.8	641.5	644.0	648.5	653.1	657.6	662.2	664.9
127.5°	695.2	696.5	697.7	699.0	700.3	702.8	706.4	710.0	713.7	717.3	719.4
130°	732.9	734.5	736.1	737.8	739.4	741.6	744.4	747.1	749.9	752.7	755.0
132.5°	769.8	771.6	773.5	775.2	777.0	779.0	781.2	783.6	785.8	788.0	790.0
135°	827.2	828.4	829.6	830.8	831.9	833.4	835.1	836.7	838.4	840.0	842.2
137.5°	880.2	881.2	882.2	883.2	884.2	885.6	887.3	888.9	890.5	892.2	893.9
140°	916.5	917.6	918.8	919.9	921.0	921.9	922.7	923.4	924.1	924.9	927.3
142.5°	950.0	951.0	952.0	953.0	954.0	954.7	955.2	955.8	956.3	956.8	958.9
145°	1002.4	1002.7	1003.0	1003.2	1003.5	1004.0	1004.7	1005.4	1006.0	1006.7	1007.8
147.5°	1047.4	1048.2	1049.0	1050.0	1050.8	1051.5	1052.1	1052.8	1053.4	1054.0	1054.4
150°	1079.3	1079.8	1080.3	1080.8	1081.2	1081.7	1082.1	1082.6	1083.0	1083.5	1083.5
152.5°	1105.6	1106.2	1106.8	1107.5	1108.1	1108.5	1108.8	1109.1	1109.4	1109.6	1110.0
155°	1146.9	1146.9	1146.9	1146.9	1146.9	1147.0	1147.2	1147.5	1147.7	1147.9	1148.8
157.5°	1182.1	1181.8	1181.5	1181.2	1181.0	1180.9	1181.1	1181.3	1181.5	1181.6	1182.7
160°	1204.2	1203.8	1203.3	1202.9	1202.3	1202.1	1202.1	1202.1	1202.1	1202.1	1203.3
162.5°	1223.9	1223.2	1222.5	1221.9	1221.3	1221.0	1221.2	1221.4	1221.6	1221.8	1222.9
165°	1249.2	1248.5	1247.9	1247.2	1246.5	1246.2	1246.2	1246.2	1246.2	1246.2	1247.5
167.5°	1269.5	1268.6	1267.7	1266.8	1265.9	1265.5	1265.7	1265.9	1266.1	1266.2	1267.6
170°	1280.9	1280.0	1279.1	1278.2	1277.3	1276.9	1276.9	1276.9	1276.9	1276.9	1278.4
172.5°	1289.9	1289.0	1288.1	1287.2	1286.3	1285.9	1285.9	1285.9	1285.9	1285.9	1287.3
175°	1299.4	1298.5	1297.6	1296.7	1295.8	1295.3	1295.3	1295.3	1295.3	1295.3	1296.7
177.5°	1303.2	1302.5	1301.8	1301.0	1300.3	1300.0	1300.0	1300.0	1300.0	1300.0	1301.0
180°	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	710.1	710.1	710.1	710.1	710.1	710.1	710.1	710.1
2.5°	708.6	709.7	710.8	711.3	711.1	711.0	710.9	710.7
5°	707.5	708.8	710.2	710.8	710.6	710.4	710.3	710.1
7.5°	703.2	704.9	706.7	707.4	707.2	707.0	706.8	706.6
10°	698.9	700.6	702.4	703.0	702.7	702.4	702.0	701.7
12.5°	693.1	694.6	696.2	696.8	696.5	696.1	695.8	695.5
15°	681.9	683.6	685.3	686.1	685.9	685.7	685.6	685.4
17.5°	667.3	668.8	670.3	671.1	670.8	670.6	670.3	670.0
20°	656.8	658.3	659.8	660.8	660.9	661.1	661.3	661.4
22.5°	645.2	647.2	649.1	650.1	649.9	649.8	649.7	649.6
25°	625.6	627.9	630.2	631.3	631.3	631.3	631.3	631.3
27.5°	605.2	607.1	609.0	610.2	610.3	610.4	610.6	610.7
30°	591.3	593.3	595.4	596.4	596.4	596.4	596.4	596.4
32.5°	576.0	578.2	580.5	581.8	582.2	582.6	583.0	583.4
35°	553.6	556.2	558.8	560.4	561.1	561.8	562.5	563.2
37.5°	530.3	533.2	536.1	538.0	538.5	539.0	539.6	540.1
40°	514.8	517.8	520.7	522.5	523.2	523.9	524.5	525.2
42.5°	498.7	501.9	505.1	507.2	508.2	509.1	510.1	511.0
45°	474.5	477.8	481.1	483.4	484.7	486.1	487.6	488.9
47.5°	450.2	453.8	457.5	459.9	460.9	462.0	463.1	464.1
50°	433.3	437.4	441.3	443.8	445.0	446.3	447.5	448.7
52.5°	416.4	420.4	424.5	427.3	428.8	430.2	431.7	433.2
55°	390.6	395.3	399.9	402.9	404.3	405.7	407.1	408.5
57.5°	364.5	369.1	373.8	376.9	378.5	380.1	381.7	383.3
60°	346.2	350.9	355.8	359.1	361.0	362.8	364.8	366.7
62.5°	328.8	333.7	338.4	341.7	343.5	345.2	347.0	348.7
65°	301.1	306.3	311.5	315.0	316.7	318.4	320.1	321.8
67.5°	273.7	279.3	285.0	288.5	289.9	291.3	292.9	294.3
70°	255.5	260.9	266.5	270.0	271.8	273.5	275.2	276.9
72.5°	237.1	242.8	248.4	252.2	253.9	255.6	257.3	259.0
75°	209.3	215.1	220.8	224.6	226.6	228.7	230.8	232.9
77.5°	183.4	189.3	195.3	199.1	200.8	202.3	203.9	205.5
80°	166.4	172.3	178.1	181.9	183.6	185.3	187.0	188.7
82.5°	151.0	156.7	162.6	166.4	168.1	169.9	171.6	173.3
85°	129.3	135.1	141.0	144.7	146.4	148.1	149.9	151.6
87.5°	115.5	121.6	127.5	131.5	133.3	135.1	136.9	138.8
90°	125.5	132.2	139.0	143.4	145.6	147.8	150.0	152.2
92.5°	134.6	141.1	147.4	151.4	152.7	154.0	155.3	156.6
95°	164.8	171.0	177.2	181.3	183.0	184.7	186.4	188.1
97.5°	201.9	208.0	214.2	218.0	219.6	221.4	223.0	224.6
100°	229.0	234.7	240.3	244.3	246.5	248.6	250.9	253.0
102.5°	261.1	266.6	272.2	275.7	277.3	278.9	280.5	282.3
105°	309.1	313.9	318.7	322.1	324.2	326.2	328.1	330.1
107.5°	361.4	366.8	372.0	375.4	376.6	377.9	379.1	380.3
110°	396.9	402.2	407.6	410.8	411.7	412.6	413.5	414.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	431.7	437.2	442.5	446.0	447.4	448.8	450.3	451.7
115°	485.5	489.9	494.2	497.1	498.2	499.3	500.5	501.6
117.5°	539.7	543.7	547.8	550.2	550.9	551.6	552.3	553.0
120°	576.0	579.8	583.5	585.7	586.5	587.2	587.9	588.8
122.5°	612.9	616.1	619.4	621.3	621.8	622.4	622.9	623.5
125°	667.5	670.2	673.0	674.5	674.8	675.0	675.3	675.6
127.5°	721.5	723.7	725.8	726.9	727.0	727.2	727.3	727.4
130°	757.3	759.7	762.0	763.0	762.4	761.8	761.2	760.7
132.5°	792.0	794.2	796.2	797.2	797.1	797.0	797.0	796.9
135°	844.4	846.6	848.8	850.1	850.5	850.9	851.3	851.7
137.5°	895.8	897.5	899.3	900.1	900.1	900.1	900.1	900.1
140°	929.6	932.0	934.3	935.1	934.4	933.6	932.9	932.2
142.5°	961.0	963.0	965.1	965.9	965.6	965.2	964.8	964.5
145°	1009.1	1010.2	1011.4	1011.8	1011.6	1011.4	1011.2	1010.9
147.5°	1054.8	1055.2	1055.6	1055.5	1054.7	1054.0	1053.3	1052.5
150°	1083.5	1083.5	1083.5	1083.0	1082.0	1081.0	1079.9	1078.8
152.5°	1110.3	1110.8	1111.2	1110.8	1109.6	1108.5	1107.4	1106.3
155°	1149.7	1150.6	1151.5	1151.2	1149.6	1148.0	1146.5	1144.9
157.5°	1183.6	1184.6	1185.5	1185.4	1184.1	1182.9	1181.5	1180.2
160°	1204.5	1205.6	1206.7	1206.8	1205.9	1205.0	1204.1	1203.2
162.5°	1224.1	1225.2	1226.4	1226.2	1224.8	1223.2	1221.8	1220.3
165°	1248.9	1250.2	1251.6	1251.5	1249.9	1248.3	1246.7	1245.2
167.5°	1269.0	1270.4	1271.8	1271.8	1270.4	1269.0	1267.6	1266.2
170°	1280.0	1281.6	1283.2	1283.2	1281.6	1280.0	1278.4	1276.9
172.5°	1288.7	1290.1	1291.5	1291.4	1289.8	1288.2	1286.6	1285.1
175°	1298.0	1299.4	1300.7	1300.6	1299.0	1297.4	1295.9	1294.2
177.5°	1302.1	1303.2	1304.3	1304.2	1302.9	1301.7	1300.4	1299.2
180°	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4	1302.4

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