

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: P332729-935

Luminaire Tested: **S124DIW-S350D1050U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332729-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D1050U935-4F0-1E-UDD-D
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4851.8 lumens
Efficiency: N/A
Efficacy: 127.7 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

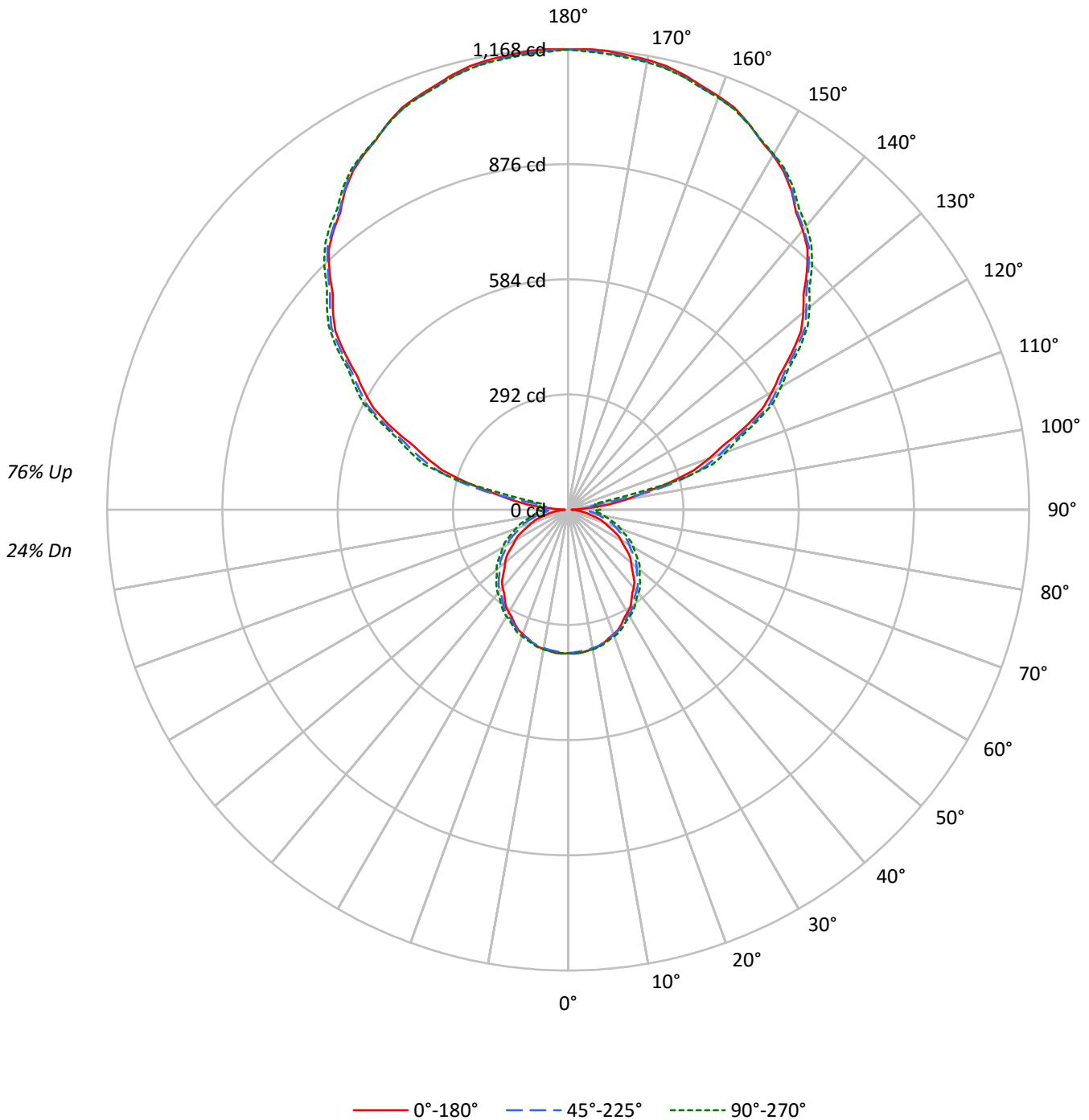
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P332729-935

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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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24
1	91	87	83	80	81	77	74	71	59	57	55	43	41	40	27	27	26	19
2	83	76	70	64	73	67	62	58	52	48	45	37	35	33	24	23	21	15
3	76	66	59	53	67	59	53	48	45	41	38	33	30	28	21	19	18	13
4	69	58	51	45	61	52	45	40	40	35	32	29	26	23	19	17	15	11
5	63	52	44	38	56	46	39	34	36	31	27	26	23	20	17	15	13	9
6	58	46	38	33	51	41	34	30	32	27	23	23	20	17	15	13	12	8
7	53	41	34	28	47	37	30	26	29	24	20	21	18	15	14	12	10	7
8	49	37	30	25	44	34	27	23	26	21	18	19	16	13	12	10	9	6
9	46	34	27	22	41	30	24	20	24	19	16	17	14	12	11	10	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	11	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2938	2938	2938
5°	2948	2871	2880
10°	2929	2825	2823
15°	2902	2770	2755
20°	2863	2710	2690
25°	2819	2643	2617
30°	2770	2576	2543
35°	2716	2507	2478
40°	2672	2442	2410
45°	2607	2382	2352
50°	2553	2313	2291
55°	2496	2248	2220
60°	2408	2164	2153
65°	2309	2076	2073
70°	2192	1973	1979
75°	2029	1861	1894
80°	1846	1754	1809
85°	1616	1659	1762



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.5	0.7
10°-20°	98.7	2.0
20°-30°	149.3	3.1
30°-40°	180.7	3.7
40°-50°	191.0	3.9
50°-60°	179.7	3.7
60°-70°	149.1	3.1
70°-80°	104.7	2.2
80°-90°	62.6	1.3
90°-100°	75.1	1.5
100°-110°	280.4	5.8
110°-120°	504.0	10.4
120°-130°	627.5	12.9
130°-140°	665.1	13.7
140°-150°	618.8	12.8
150°-160°	498.3	10.3
160°-170°	321.4	6.6
170°-180°	110.8	2.3
0°-30°	282.5	5.8
0°-40°	463.2	9.5
0°-60°	833.9	17.2
0°-90°	1150.3	23.7
90°-120°	859.5	17.7
90°-150°	2770.9	57.1
90°-180°	3701.0	76.3
0°-180°	4851.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	364	364	364	364	364	
5°	364	363	360	363	363	35
15°	349	350	348	352	352	98
25°	320	322	323	327	328	147
35°	280	284	288	294	296	175
45°	233	241	249	255	258	180
55°	183	191	203	211	214	163
65°	126	139	153	163	167	125
75°	70	85	102	113	117	75
85°	22	39	57	69	73	23
90°	9	35	60	76	82	7
95°	53	39	55	70	75	66
105°	266	280	299	315	289	279
115°	493	499	511	521	525	485
125°	691	694	702	712	716	617
135°	856	855	861	869	874	659
145°	986	988	988	992	995	616
155°	1081	1082	1079	1082	1080	498
165°	1140	1136	1136	1142	1135	322
175°	1166	1161	1162	1169	1159	111
180°	1166	1166	1166	1166	1166	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	365.2	365.0	364.8	364.5	364.4	363.9	363.4	362.8	362.2	361.6	362.1
5°	364.4	364.0	363.8	363.5	363.3	362.8	362.1	361.5	360.9	360.2	361.0
7.5°	361.3	361.1	360.9	360.8	360.6	360.2	359.7	359.2	358.7	358.2	359.0
10°	358.6	358.5	358.4	358.3	358.3	358.0	357.6	357.1	356.6	356.2	357.0
12.5°	355.1	355.0	355.0	355.0	355.0	354.8	354.5	354.2	353.9	353.6	354.3
15°	349.2	349.4	349.5	349.6	349.7	349.6	349.2	349.0	348.7	348.4	349.2
17.5°	341.4	341.6	341.9	342.2	342.4	342.6	342.5	342.4	342.4	342.3	343.2
20°	335.8	336.0	336.4	336.7	336.9	337.1	337.2	337.3	337.3	337.4	338.4
22.5°	329.6	329.9	330.3	330.6	331.0	331.2	331.4	331.6	331.7	331.9	332.8
25°	319.5	320.0	320.6	321.2	321.7	322.1	322.4	322.6	322.9	323.2	324.2
27.5°	308.2	309.1	309.9	310.6	311.4	312.0	312.5	312.9	313.3	313.7	314.6
30°	300.7	301.5	302.2	302.9	303.7	304.4	305.0	305.6	306.3	306.9	307.9
32.5°	292.7	293.5	294.4	295.2	296.1	296.9	297.6	298.3	299.0	299.7	300.8
35°	279.6	280.7	281.7	282.8	284.0	284.9	285.9	286.7	287.7	288.5	289.8
37.5°	266.5	267.7	269.0	270.2	271.5	272.6	273.8	274.9	276.0	277.2	278.4
40°	258.0	259.2	260.4	261.5	262.7	263.9	265.2	266.5	267.7	269.0	270.4
42.5°	248.2	249.5	250.8	252.2	253.5	254.9	256.4	257.9	259.3	260.8	262.3
45°	233.1	234.8	236.5	238.2	240.0	241.7	243.4	245.1	246.8	248.6	250.1
47.5°	218.7	220.5	222.2	224.0	225.8	227.6	229.6	231.7	233.7	235.7	237.2
50°	208.3	210.3	212.2	214.2	216.2	218.2	220.2	222.2	224.2	226.2	228.0
52.5°	197.9	199.8	201.8	203.8	205.8	207.9	210.2	212.5	214.7	217.1	218.9
55°	182.6	184.5	186.4	188.3	190.2	192.5	195.2	197.9	200.6	203.4	205.2
57.5°	165.6	167.9	170.2	172.6	175.0	177.5	180.2	182.9	185.5	188.3	190.5
60°	154.5	156.8	159.2	161.5	163.8	166.5	169.5	172.5	175.5	178.5	180.6
62.5°	143.7	146.3	148.9	151.4	153.9	156.8	159.7	162.7	165.7	168.8	170.8
65°	126.3	129.2	132.2	135.0	137.9	140.9	144.0	147.1	150.2	153.3	155.5
67.5°	109.6	112.7	115.8	118.9	121.9	125.1	128.5	131.7	135.0	138.3	140.6
70°	98.2	101.3	104.4	107.5	110.6	113.8	117.3	120.7	124.2	127.6	130.0
72.5°	87.1	90.3	93.4	96.6	99.7	103.1	106.8	110.5	114.1	117.8	120.1
75°	70.1	73.4	76.8	80.2	83.5	87.0	90.9	94.7	98.5	102.3	104.9
77.5°	54.2	57.8	61.3	64.8	68.4	72.2	76.1	80.2	84.1	88.1	90.7
80°	44.4	48.0	51.7	55.3	58.9	62.7	66.7	70.7	74.6	78.7	81.4
82.5°	34.6	38.4	42.2	46.0	49.7	53.6	57.6	61.6	65.5	69.6	72.3
85°	21.6	25.4	29.2	33.0	36.9	40.7	44.9	48.9	53.0	57.1	59.8
87.5°	12.6	16.7	20.8	25.0	29.1	33.2	37.5	41.8	46.1	50.4	53.2
90°	9.1	14.9	20.7	26.4	32.1	37.8	43.2	48.6	54.1	59.5	63.4
92.5°	17.2	20.6	23.9	27.3	30.7	35.1	40.6	46.0	51.4	56.9	60.6
95°	53.3	49.7	46.1	42.4	38.8	39.0	43.0	46.8	50.7	54.7	58.3
97.5°	106.7	113.4	120.0	126.7	133.5	127.8	109.9	91.9	73.9	56.0	58.5
100°	147.6	153.4	159.2	165.1	170.9	162.2	139.1	115.8	92.6	69.4	68.5
102.5°	193.6	198.2	202.9	207.5	212.1	214.4	214.4	214.3	214.3	214.3	181.1
105°	266.2	269.2	272.2	275.2	278.1	281.8	286.1	290.4	294.7	299.1	303.1
107.5°	334.4	336.5	338.5	340.6	342.7	345.9	350.4	354.9	359.4	363.9	367.0
110°	380.1	381.9	383.8	385.6	387.5	390.6	394.9	399.2	403.6	407.9	410.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	424.5	426.6	428.8	430.9	433.2	436.0	439.5	443.2	446.7	450.3	452.2
115°	492.7	494.1	495.5	496.9	498.3	500.3	503.1	505.8	508.4	511.2	513.5
117.5°	554.6	555.9	557.1	558.4	559.6	561.8	564.9	568.1	571.2	574.3	576.1
120°	596.1	597.2	598.2	599.3	600.3	602.0	604.5	606.9	609.3	611.7	614.0
122.5°	635.2	635.7	636.2	636.7	637.2	638.9	641.6	644.4	647.1	649.9	651.9
125°	690.8	691.5	692.2	692.8	693.5	694.8	696.7	698.5	700.4	702.3	704.6
127.5°	743.7	743.8	743.9	744.1	744.2	745.5	748.1	750.8	753.4	756.0	757.6
130°	777.6	777.7	777.8	777.9	778.0	779.1	781.1	783.2	785.1	787.2	789.0
132.5°	809.0	809.3	809.5	809.8	810.0	811.1	813.0	814.9	816.8	818.7	820.4
135°	855.7	855.5	855.3	855.1	855.0	855.6	857.0	858.3	859.8	861.2	863.0
137.5°	897.4	897.4	897.4	897.3	897.3	897.9	899.1	900.3	901.4	902.6	904.3
140°	924.6	924.9	925.2	925.5	925.8	926.2	926.7	927.1	927.6	928.2	929.9
142.5°	948.7	949.4	950.1	950.8	951.4	951.8	952.1	952.3	952.4	952.6	954.1
145°	986.2	986.6	987.1	987.7	988.1	988.3	988.3	988.3	988.3	988.3	989.1
147.5°	1016.0	1017.0	1018.0	1019.0	1019.9	1020.4	1020.2	1020.0	1019.8	1019.6	1019.9
150°	1037.6	1038.3	1039.0	1039.7	1040.3	1040.6	1040.4	1040.3	1040.0	1039.8	1039.8
152.5°	1055.4	1056.0	1056.6	1057.2	1057.8	1058.0	1057.7	1057.3	1057.0	1056.6	1056.9
155°	1080.8	1081.1	1081.2	1081.4	1081.6	1081.4	1080.8	1080.3	1079.7	1079.1	1079.9
157.5°	1102.3	1102.2	1102.1	1101.9	1101.8	1101.5	1100.8	1100.1	1099.5	1098.8	1099.8
160°	1114.8	1114.3	1113.7	1113.1	1112.5	1112.2	1112.0	1111.7	1111.6	1111.4	1112.5
162.5°	1126.0	1125.3	1124.6	1123.8	1123.1	1122.6	1122.4	1122.2	1122.1	1121.8	1123.0
165°	1140.1	1139.2	1138.2	1137.2	1136.3	1135.8	1135.8	1135.8	1135.8	1135.8	1137.4
167.5°	1151.3	1150.3	1149.3	1148.3	1147.3	1146.8	1146.6	1146.5	1146.4	1146.2	1148.0
170°	1157.6	1156.4	1155.3	1154.1	1153.0	1152.4	1152.6	1152.9	1153.1	1153.2	1154.8
172.5°	1161.7	1160.6	1159.4	1158.3	1157.1	1156.7	1156.8	1157.0	1157.3	1157.4	1159.0
175°	1166.3	1165.2	1164.0	1162.9	1161.7	1161.2	1161.4	1161.6	1161.7	1162.0	1163.7
177.5°	1168.4	1167.3	1166.2	1165.2	1164.1	1163.7	1164.0	1164.3	1164.6	1164.9	1166.1
180°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	363.9
2.5°	362.7	363.2	363.7	363.9	363.9	363.8	363.7	363.6
5°	361.7	362.4	363.2	363.5	363.4	363.3	363.2	363.1
7.5°	359.8	360.6	361.4	361.8	361.7	361.6	361.5	361.4
10°	357.8	358.6	359.5	359.8	359.7	359.6	359.6	359.5
12.5°	355.1	355.9	356.5	356.9	356.9	356.9	356.9	356.8
15°	350.1	350.9	351.7	352.1	352.0	351.9	351.8	351.7
17.5°	344.0	344.8	345.7	346.0	345.9	345.9	345.9	345.8
20°	339.2	340.2	341.0	341.6	341.6	341.6	341.6	341.6
22.5°	333.7	334.6	335.5	336.0	336.2	336.3	336.5	336.7
25°	325.2	326.1	327.2	327.7	327.8	327.9	328.0	328.0
27.5°	315.6	316.5	317.5	318.0	318.1	318.1	318.2	318.4
30°	308.8	309.9	310.8	311.4	311.6	311.9	312.0	312.2
32.5°	302.0	303.2	304.3	305.0	305.1	305.3	305.5	305.7
35°	291.1	292.3	293.6	294.4	294.6	294.9	295.2	295.5
37.5°	279.7	280.9	282.2	283.1	283.4	283.6	284.0	284.2
40°	271.7	273.0	274.4	275.3	275.6	276.0	276.4	276.7
42.5°	263.8	265.4	266.8	267.8	268.0	268.3	268.6	268.9
45°	251.7	253.2	254.8	255.7	256.2	256.7	257.1	257.5
47.5°	238.8	240.4	242.0	243.1	243.7	244.2	244.7	245.3
50°	229.8	231.6	233.4	234.6	235.1	235.7	236.3	236.8
52.5°	220.7	222.5	224.3	225.5	226.0	226.5	227.1	227.6
55°	207.0	208.8	210.6	211.8	212.3	212.8	213.4	214.0
57.5°	192.6	194.8	196.9	198.2	198.7	199.2	199.8	200.3
60°	182.7	184.8	186.8	188.2	189.0	189.7	190.5	191.1
62.5°	172.9	175.0	177.0	178.5	179.2	179.9	180.6	181.3
65°	157.7	160.1	162.3	163.8	164.5	165.2	166.0	166.7
67.5°	142.9	145.3	147.5	149.0	149.7	150.4	151.1	151.9
70°	132.4	134.9	137.3	138.9	139.5	140.2	140.8	141.4
72.5°	122.5	124.9	127.3	128.8	129.5	130.2	131.0	131.6
75°	107.4	109.9	112.4	114.1	114.9	115.7	116.6	117.4
77.5°	93.2	95.8	98.4	100.1	101.0	101.9	102.7	103.6
80°	84.1	86.8	89.5	91.3	92.0	92.7	93.4	94.1
82.5°	75.1	77.9	80.7	82.5	83.3	84.0	84.9	85.7
85°	62.5	65.2	67.9	69.7	70.6	71.5	72.4	73.4
87.5°	56.1	59.0	61.8	63.7	64.6	65.4	66.3	67.2
90°	67.2	70.9	74.7	77.1	78.3	79.4	80.5	81.6
92.5°	64.3	68.0	71.7	74.0	74.8	75.6	76.5	77.2
95°	61.9	65.4	69.1	71.4	72.4	73.4	74.4	75.4
97.5°	61.0	63.5	66.0	67.7	68.6	69.6	70.6	71.5
100°	67.7	66.8	66.0	66.0	66.8	67.6	68.4	69.2
102.5°	147.9	114.8	81.5	65.3	66.1	66.8	67.6	68.4
105°	307.1	311.1	315.1	314.0	307.7	301.4	295.2	289.0
107.5°	370.1	373.2	376.2	378.4	379.8	381.3	382.6	384.0
110°	412.8	415.3	417.8	419.7	421.0	422.3	423.6	424.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	454.2	456.1	458.0	459.7	461.2	462.6	464.1	465.5
115°	515.9	518.3	520.6	522.2	522.8	523.5	524.1	524.7
117.5°	577.9	579.7	581.5	582.7	583.4	584.0	584.7	585.4
120°	616.1	618.4	620.5	621.8	622.2	622.5	622.8	623.2
122.5°	654.0	656.1	658.1	659.3	659.5	659.8	660.0	660.3
125°	706.9	709.2	711.5	713.1	713.8	714.5	715.2	716.0
127.5°	759.1	760.6	762.1	763.1	763.5	764.0	764.5	764.9
130°	790.8	792.7	794.5	795.7	796.3	796.8	797.3	797.9
132.5°	822.3	824.0	825.7	826.8	827.2	827.6	827.9	828.4
135°	864.9	866.7	868.5	870.0	870.8	871.8	872.7	873.7
137.5°	906.1	907.8	909.6	910.6	910.9	911.3	911.6	912.0
140°	931.6	933.4	935.1	936.3	937.0	937.6	938.3	938.9
142.5°	955.5	957.0	958.5	959.3	959.8	960.2	960.6	961.0
145°	989.8	990.6	991.4	992.0	992.8	993.6	994.3	995.1
147.5°	1020.0	1020.3	1020.5	1020.9	1021.3	1021.8	1022.4	1022.8
150°	1039.8	1039.8	1039.8	1039.9	1040.1	1040.3	1040.5	1040.7
152.5°	1057.2	1057.5	1057.8	1057.9	1057.8	1057.7	1057.6	1057.5
155°	1080.6	1081.4	1082.2	1082.3	1081.7	1081.2	1080.6	1080.0
157.5°	1100.8	1101.8	1102.9	1102.9	1101.8	1100.8	1099.8	1098.8
160°	1113.7	1114.8	1116.0	1116.0	1114.8	1113.7	1112.5	1111.4
162.5°	1124.1	1125.3	1126.4	1126.4	1125.1	1123.8	1122.5	1121.1
165°	1138.9	1140.5	1142.0	1141.9	1140.1	1138.4	1136.7	1134.9
167.5°	1149.7	1151.4	1153.1	1153.0	1151.1	1149.1	1147.2	1145.2
170°	1156.3	1157.9	1159.4	1159.3	1157.3	1155.4	1153.4	1151.5
172.5°	1160.5	1162.1	1163.6	1163.4	1161.2	1159.2	1157.1	1154.9
175°	1165.4	1167.2	1169.0	1168.6	1166.3	1164.0	1161.7	1159.3
177.5°	1167.4	1168.6	1169.9	1169.6	1167.7	1165.9	1164.0	1162.2
180°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3	1166.3

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