

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: P331643-930

Luminaire Tested: **SA2XXRDIP-C290D1080U930-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331643-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C290D1080U930-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

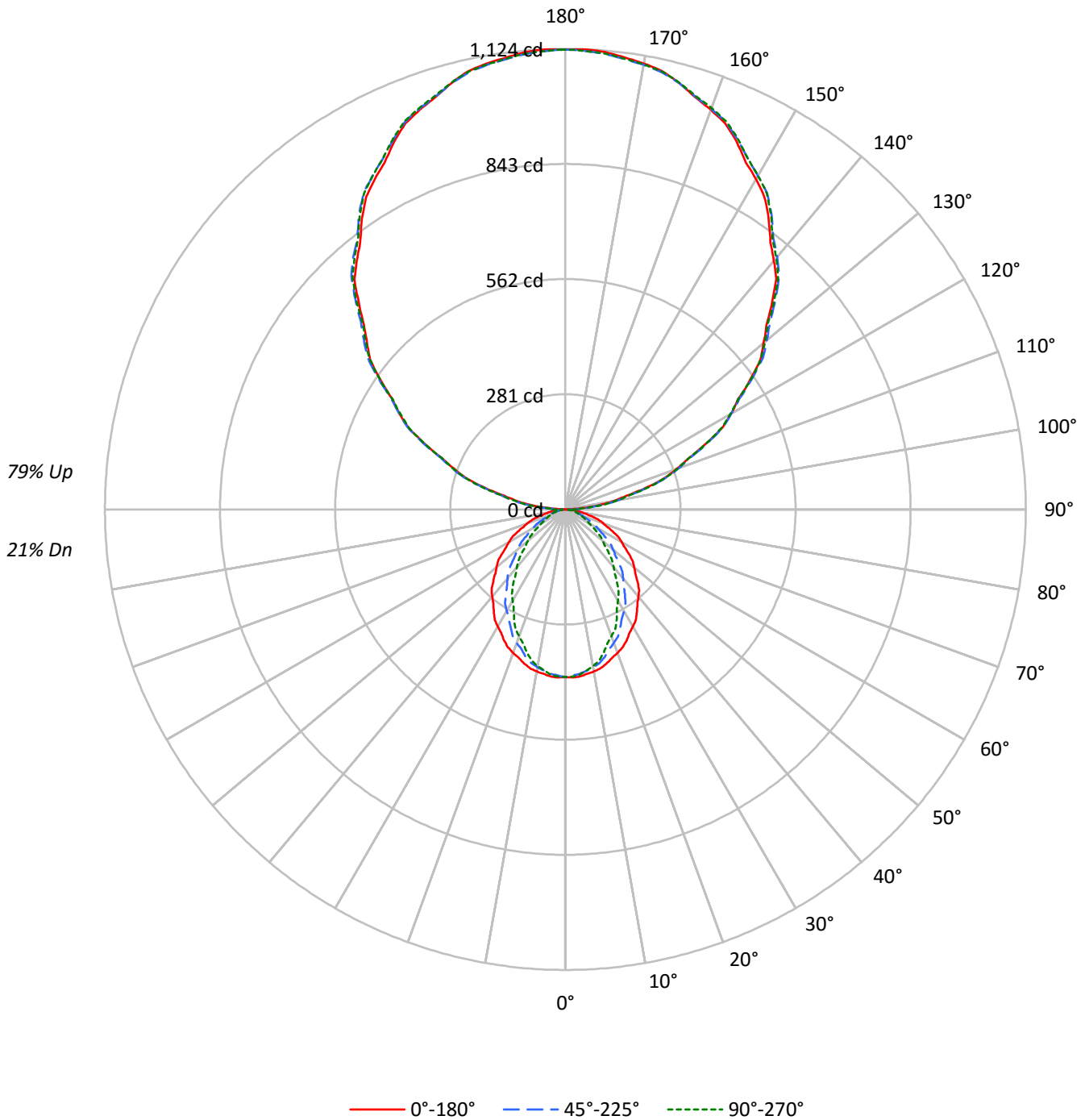
Lumens per Lamp: N/A
Luminaire Lumens: 3984.2 lumens
Efficiency: N/A
Efficacy: 94.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

Input Watts (W): 42.2
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	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21
1	92	87	84	80	81	78	75	72	59	57	55	42	41	40	26	26	25	18
2	83	77	71	66	74	68	63	59	52	49	46	37	35	34	24	23	22	16
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19	13
4	70	60	52	47	61	53	47	42	41	37	33	29	27	25	19	17	16	12
5	64	53	45	40	56	47	41	36	36	32	29	26	24	21	17	15	14	10
6	59	47	40	34	52	42	36	31	33	28	25	24	21	19	16	14	13	9
7	54	43	35	30	48	38	32	27	30	25	22	22	19	16	14	12	11	8
8	50	39	31	26	44	35	28	24	27	22	19	20	17	15	13	11	10	7
9	47	35	28	23	41	32	25	21	25	20	17	18	15	13	12	10	9	7
10	43	32	25	21	39	29	23	19	23	18	15	17	14	12	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6608	6608	6608
5°	6634	6525	6561
10°	6583	6419	6365
15°	6506	6228	6048
20°	6402	5957	5658
25°	6296	5649	5279
30°	6145	5330	4793
35°	6000	4987	4366
40°	5855	4628	3872
45°	5683	4229	3425
50°	5506	3823	2987
55°	5326	3386	2567
60°	5118	2929	2131
65°	4883	2460	1937
70°	4598	2030	1780
75°	4255	1847	1666
80°	3756	1655	1516
85°	2946	1297	1297



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	38.3	1.0
10°-20°	105.2	2.6
20°-30°	147.7	3.7
30°-40°	161.1	4.0
40°-50°	148.1	3.7
50°-60°	116.3	2.9
60°-70°	75.8	1.9
70°-80°	39.1	1.0
80°-90°	14.6	0.4
90°-100°	71.1	1.8
100°-110°	220.9	5.5
110°-120°	377.5	9.5
120°-130°	496.5	12.5
130°-140°	557.2	14.0
140°-150°	546.4	13.7
150°-160°	458.3	11.5
160°-170°	304.0	7.6
170°-180°	106.2	2.7
0°-30°	291.2	7.3
0°-40°	452.3	11.4
0°-60°	716.7	18.0
0°-90°	846.2	21.2
90°-120°	669.5	16.8
90°-150°	2269.5	57.0
90°-180°	3138.0	78.8
0°-180°	3984.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	409	409	409	409	409	
5°	409	407	403	406	405	39
15°	389	385	373	366	362	110
25°	353	341	317	302	296	162
35°	304	285	253	230	222	190
45°	249	223	185	160	150	192
55°	189	160	120	99	91	169
65°	128	98	64	52	51	127
75°	68	43	30	27	27	72
85°	16	8	7	7	7	19
90°	1	13	33	31	32	3
95°	49	58	61	60	59	56
105°	204	206	208	210	210	215
115°	379	384	383	382	379	375
125°	551	559	557	554	553	492
135°	713	723	726	724	722	551
145°	866	872	878	879	875	541
155°	990	992	995	1000	997	455
165°	1077	1076	1076	1082	1078	304
175°	1120	1118	1116	1122	1117	106
180°	1122	1122	1122	1122	1122	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3
2.5°	410.7	410.4	410.1	409.8	409.4	408.9	408.1	407.5	406.8	406.0	406.7
5°	409.3	408.9	408.5	408.1	407.6	406.8	405.8	404.7	403.7	402.6	403.3
7.5°	405.0	404.6	404.0	403.5	403.0	402.1	400.9	399.6	398.4	397.1	397.3
10°	401.5	400.9	400.3	399.7	399.2	398.0	396.4	394.8	393.1	391.5	391.3
12.5°	397.1	396.3	395.6	394.9	394.2	392.8	390.7	388.6	386.5	384.3	383.9
15°	389.2	388.3	387.4	386.5	385.6	383.8	381.0	378.2	375.4	372.6	371.0
17.5°	379.7	378.3	376.9	375.5	374.1	371.7	368.1	364.5	360.9	357.3	355.5
20°	372.6	371.0	369.3	367.6	366.0	363.1	359.0	354.9	350.8	346.7	344.6
22.5°	364.9	363.1	361.2	359.4	357.5	354.2	349.6	345.0	340.4	335.7	333.0
25°	353.4	350.7	348.1	345.4	342.8	338.8	333.3	327.9	322.5	317.1	313.6
27.5°	339.4	336.6	333.7	330.8	327.9	323.4	317.3	311.2	305.1	299.0	295.1
30°	329.6	326.5	323.3	320.2	317.2	312.3	305.7	299.1	292.5	285.9	281.8
32.5°	320.2	316.5	312.8	309.2	305.5	300.4	293.7	286.9	280.2	273.5	268.7
35°	304.4	300.3	296.0	291.9	287.6	281.9	274.7	267.4	260.2	253.0	247.8
37.5°	288.8	284.1	279.5	274.9	270.3	264.2	256.4	248.7	241.0	233.3	227.6
40°	277.8	272.9	267.9	262.9	258.0	251.6	243.6	235.6	227.6	219.6	213.8
42.5°	266.5	261.3	256.1	250.9	245.7	239.0	230.7	222.5	214.3	206.0	200.0
45°	248.9	243.4	237.8	232.4	226.8	219.7	211.1	202.4	193.8	185.2	179.4
47.5°	231.7	225.8	220.0	214.2	208.3	201.0	192.0	183.1	174.1	165.3	159.5
50°	219.2	213.4	207.6	201.7	195.9	188.4	179.4	170.3	161.3	152.2	146.5
52.5°	207.1	201.0	194.9	188.8	182.7	175.2	166.3	157.5	148.6	139.7	134.3
55°	189.2	182.9	176.4	170.0	163.5	156.0	147.0	138.1	129.2	120.3	115.4
57.5°	171.0	164.4	157.8	151.2	144.6	137.1	128.5	120.0	111.5	102.9	98.3
60°	158.5	152.0	145.4	138.8	132.2	124.7	116.2	107.7	99.2	90.7	86.5
62.5°	146.3	139.8	133.2	126.6	120.0	112.7	104.6	96.5	88.5	80.4	76.4
65°	127.8	121.1	114.5	107.8	101.1	94.1	86.7	79.2	71.8	64.4	61.6
67.5°	109.8	103.2	96.6	90.0	83.4	76.7	70.0	63.4	56.7	50.1	48.8
70°	97.4	91.0	84.5	78.2	71.7	65.7	60.0	54.3	48.7	43.0	42.2
72.5°	85.5	79.4	73.2	67.1	60.9	55.6	51.0	46.5	41.9	37.3	36.6
75°	68.2	62.4	56.7	50.9	45.1	40.8	38.0	35.2	32.4	29.6	29.0
77.5°	51.0	46.0	40.9	35.9	30.8	27.6	26.3	24.9	23.6	22.3	21.9
80°	40.4	36.2	32.0	27.8	23.6	21.0	20.2	19.4	18.6	17.8	17.4
82.5°	30.6	27.3	24.1	20.8	17.5	15.6	15.0	14.4	13.9	13.4	13.1
85°	15.9	14.2	12.5	10.8	9.0	8.0	7.7	7.5	7.3	7.0	7.0
87.5°	4.9	4.9	4.9	4.9	4.8	5.3	6.2	7.2	8.1	9.0	8.9
90°	1.0	3.5	6.0	8.6	11.1	14.6	19.2	23.9	28.5	33.2	32.7
92.5°	16.9	18.7	20.5	22.4	24.3	25.8	26.8	28.0	29.0	30.1	30.2
95°	49.2	51.4	53.5	55.5	57.6	58.9	59.4	59.8	60.2	60.6	60.6
97.5°	90.0	91.8	93.7	95.6	97.3	98.7	99.5	100.3	101.1	101.9	101.9
100°	120.3	122.0	123.7	125.3	127.0	128.2	128.8	129.4	130.0	130.7	130.7
102.5°	152.1	153.4	154.8	156.1	157.5	158.6	159.4	160.1	160.9	161.8	161.9
105°	203.6	204.2	204.9	205.5	206.1	206.7	207.1	207.5	207.9	208.3	208.8
107.5°	255.5	256.4	257.4	258.3	259.2	259.7	259.7	259.7	259.7	259.7	259.8
110°	288.9	290.1	291.4	292.6	293.9	294.6	294.6	294.6	294.6	294.6	294.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	325.2	326.4	327.8	329.0	330.3	330.8	330.6	330.4	330.3	330.1	329.6
115°	378.8	380.1	381.3	382.6	383.8	384.3	383.8	383.4	383.0	382.6	382.4
117.5°	432.2	433.9	435.6	437.2	439.0	439.2	438.1	436.8	435.7	434.5	434.0
120°	467.8	469.5	471.2	472.9	474.6	474.6	472.9	471.2	469.5	467.8	467.8
122.5°	500.4	502.5	504.4	506.5	508.5	508.9	507.8	506.5	505.4	504.2	503.7
125°	551.1	553.1	555.0	556.8	558.7	559.4	558.7	558.2	557.5	556.8	556.2
127.5°	600.6	603.0	605.4	607.8	610.2	611.1	610.3	609.5	608.8	608.0	607.2
130°	631.7	634.4	637.2	639.8	642.6	643.8	643.4	642.9	642.5	642.1	641.6
132.5°	666.5	668.8	671.0	673.2	675.5	676.6	676.7	676.8	676.9	676.9	676.0
135°	713.1	715.4	717.8	720.1	722.4	723.7	724.1	724.6	725.0	725.5	725.2
137.5°	762.1	764.1	766.0	767.8	769.7	770.9	771.5	772.1	772.6	773.1	773.0
140°	791.7	793.6	795.5	797.4	799.3	800.8	801.8	802.9	804.0	804.9	804.9
142.5°	822.1	823.9	825.8	827.7	829.6	830.9	831.6	832.3	833.1	833.8	834.0
145°	865.6	867.1	868.5	870.0	871.5	872.9	874.1	875.4	876.6	877.9	878.1
147.5°	904.4	906.2	907.9	909.7	911.5	912.8	913.6	914.5	915.3	916.2	916.6
150°	930.9	932.2	933.4	934.7	936.0	937.0	937.9	938.7	939.6	940.4	941.0
152.5°	954.4	955.7	956.9	958.2	959.4	960.6	961.6	962.6	963.7	964.7	965.5
155°	989.7	990.3	990.9	991.6	992.2	992.8	993.4	994.1	994.7	995.3	996.4
157.5°	1019.8	1020.2	1020.6	1021.0	1021.5	1021.8	1022.2	1022.6	1023.0	1023.4	1024.8
160°	1038.0	1038.4	1038.8	1039.2	1039.7	1039.9	1040.2	1040.4	1040.6	1040.8	1042.0
162.5°	1054.6	1054.7	1054.8	1054.8	1055.0	1055.1	1055.3	1055.5	1055.7	1056.0	1057.4
165°	1076.8	1076.6	1076.4	1076.1	1076.0	1075.9	1075.9	1075.9	1075.9	1075.9	1077.3
167.5°	1095.4	1094.7	1094.1	1093.5	1092.8	1092.5	1092.4	1092.4	1092.3	1092.3	1093.8
170°	1105.2	1104.6	1103.9	1103.3	1102.7	1102.3	1102.0	1101.8	1101.6	1101.4	1102.9
172.5°	1112.0	1111.4	1110.8	1110.1	1109.5	1109.1	1108.9	1108.6	1108.4	1108.2	1109.7
175°	1120.4	1119.7	1119.1	1118.4	1117.9	1117.3	1116.9	1116.5	1116.1	1115.6	1117.1
177.5°	1123.7	1123.2	1122.7	1122.3	1121.8	1121.3	1121.0	1120.6	1120.3	1120.0	1121.0
180°	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	409.3	409.3	409.3	409.3	409.3	409.3	409.3	409.3
2.5°	407.3	408.0	408.6	408.9	408.8	408.6	408.5	408.4
5°	404.1	404.8	405.5	405.8	405.5	405.3	405.0	404.8
7.5°	397.5	397.8	397.9	397.9	397.5	397.0	396.6	396.2
10°	391.0	390.8	390.5	390.1	389.6	389.1	388.7	388.2
12.5°	383.5	383.0	382.6	382.0	381.2	380.3	379.5	378.7
15°	369.5	367.9	366.3	365.2	364.4	363.5	362.6	361.8
17.5°	353.6	351.7	349.9	348.3	346.8	345.4	344.0	342.6
20°	342.6	340.5	338.4	336.5	334.7	332.9	331.1	329.3
22.5°	330.4	327.8	325.1	323.1	321.7	320.4	319.0	317.7
25°	310.3	306.9	303.5	301.3	300.0	298.7	297.5	296.3
27.5°	291.1	287.1	283.2	280.3	278.3	276.4	274.4	272.5
30°	277.5	273.4	269.1	266.0	263.7	261.5	259.3	257.1
32.5°	263.9	259.1	254.3	250.9	248.8	246.7	244.6	242.6
35°	242.6	237.4	232.2	228.7	226.9	225.1	223.3	221.5
37.5°	221.8	216.1	210.4	206.5	204.5	202.4	200.3	198.2
40°	208.0	202.1	196.2	192.2	190.1	188.0	185.8	183.7
42.5°	193.9	187.8	181.8	177.8	175.7	173.7	171.5	169.5
45°	173.5	167.6	161.8	157.9	156.0	153.9	152.0	150.0
47.5°	153.6	147.8	142.0	138.2	136.4	134.6	132.8	131.0
50°	140.9	135.2	129.5	125.8	124.1	122.4	120.6	118.9
52.5°	128.8	123.4	117.9	114.3	112.8	111.1	109.5	107.9
55°	110.5	105.6	100.6	97.3	95.8	94.2	92.7	91.2
57.5°	93.8	89.3	84.8	81.9	80.6	79.2	77.9	76.6
60°	82.3	78.2	73.9	71.2	69.9	68.6	67.3	66.0
62.5°	72.4	68.4	64.4	62.0	61.1	60.4	59.6	58.8
65°	58.9	56.0	53.2	51.7	51.4	51.2	51.0	50.7
67.5°	47.5	46.2	44.9	44.2	43.9	43.6	43.4	43.1
70°	41.3	40.5	39.7	39.1	38.7	38.4	38.1	37.7
72.5°	36.0	35.2	34.6	34.2	33.9	33.8	33.5	33.3
75°	28.5	27.9	27.3	27.0	26.9	26.8	26.7	26.7
77.5°	21.5	21.2	20.9	20.7	20.5	20.4	20.3	20.1
80°	17.1	16.8	16.5	16.3	16.3	16.3	16.3	16.3
82.5°	13.0	12.7	12.6	12.5	12.5	12.5	12.5	12.5
85°	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
87.5°	8.7	8.6	8.4	8.3	8.4	8.4	8.5	8.5
90°	32.3	31.9	31.5	31.4	31.6	31.8	32.0	32.2
92.5°	30.2	30.3	30.5	30.5	30.6	30.6	30.7	30.7
95°	60.6	60.6	60.6	60.4	60.0	59.6	59.1	58.7
97.5°	101.9	101.9	101.9	101.9	101.8	101.8	101.7	101.7
100°	130.7	130.7	130.7	130.6	130.4	130.2	130.0	129.7
102.5°	162.1	162.2	162.4	162.4	162.2	162.0	161.8	161.6
105°	209.2	209.6	210.0	210.3	210.3	210.3	210.3	210.3
107.5°	260.0	260.2	260.3	259.9	259.0	258.0	257.1	256.1
110°	294.6	294.6	294.6	294.2	293.6	292.9	292.3	291.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	329.1	328.6	328.2	327.7	327.2	326.7	326.3	325.8
115°	382.2	382.0	381.7	381.3	380.7	380.1	379.4	378.8
117.5°	433.5	433.0	432.5	431.9	431.3	430.6	430.0	429.4
120°	467.8	467.8	467.8	467.5	466.9	466.3	465.6	465.0
122.5°	503.2	502.7	502.1	501.7	501.2	500.8	500.3	499.9
125°	555.6	555.0	554.3	553.9	553.7	553.5	553.3	553.1
127.5°	606.5	605.7	605.0	604.2	603.6	602.9	602.3	601.5
130°	641.2	640.8	640.4	639.8	639.0	638.1	637.2	636.4
132.5°	675.1	674.2	673.3	672.5	671.8	671.1	670.4	669.8
135°	725.0	724.8	724.6	724.1	723.5	722.9	722.3	721.6
137.5°	772.8	772.7	772.5	772.0	771.1	770.3	769.5	768.6
140°	804.9	804.9	804.9	804.5	803.7	802.9	802.0	801.2
142.5°	834.1	834.3	834.5	834.1	833.2	832.4	831.6	830.7
145°	878.3	878.6	878.7	878.4	877.6	876.8	875.9	875.1
147.5°	917.1	917.5	918.0	917.9	917.0	916.2	915.4	914.7
150°	941.7	942.3	943.0	943.0	942.3	941.7	941.0	940.4
152.5°	966.3	967.0	967.8	967.8	967.0	966.3	965.5	964.7
155°	997.4	998.5	999.6	999.7	999.1	998.5	997.8	997.2
157.5°	1026.2	1027.7	1029.1	1029.3	1028.3	1027.3	1026.3	1025.2
160°	1043.3	1044.6	1045.9	1046.0	1045.2	1044.4	1043.5	1042.7
162.5°	1058.8	1060.2	1061.7	1061.8	1060.9	1059.9	1058.8	1057.9
165°	1078.8	1080.3	1081.7	1081.9	1080.9	1079.9	1078.8	1077.7
167.5°	1095.3	1096.7	1098.2	1098.4	1097.3	1096.2	1095.1	1094.1
170°	1104.3	1105.8	1107.3	1107.4	1106.1	1104.9	1103.6	1102.4
172.5°	1111.2	1112.6	1114.1	1114.2	1113.0	1111.7	1110.4	1109.1
175°	1118.6	1120.1	1121.5	1121.6	1120.4	1119.1	1117.9	1116.6
177.5°	1122.0	1123.0	1124.0	1124.0	1123.0	1122.0	1121.0	1120.0
180°	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3	1122.3

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