

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: P331480-940

Luminaire Tested: **S122DIW-S290D970U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331480-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D970U940-4F0-1E-UDD-D1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4063.2 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

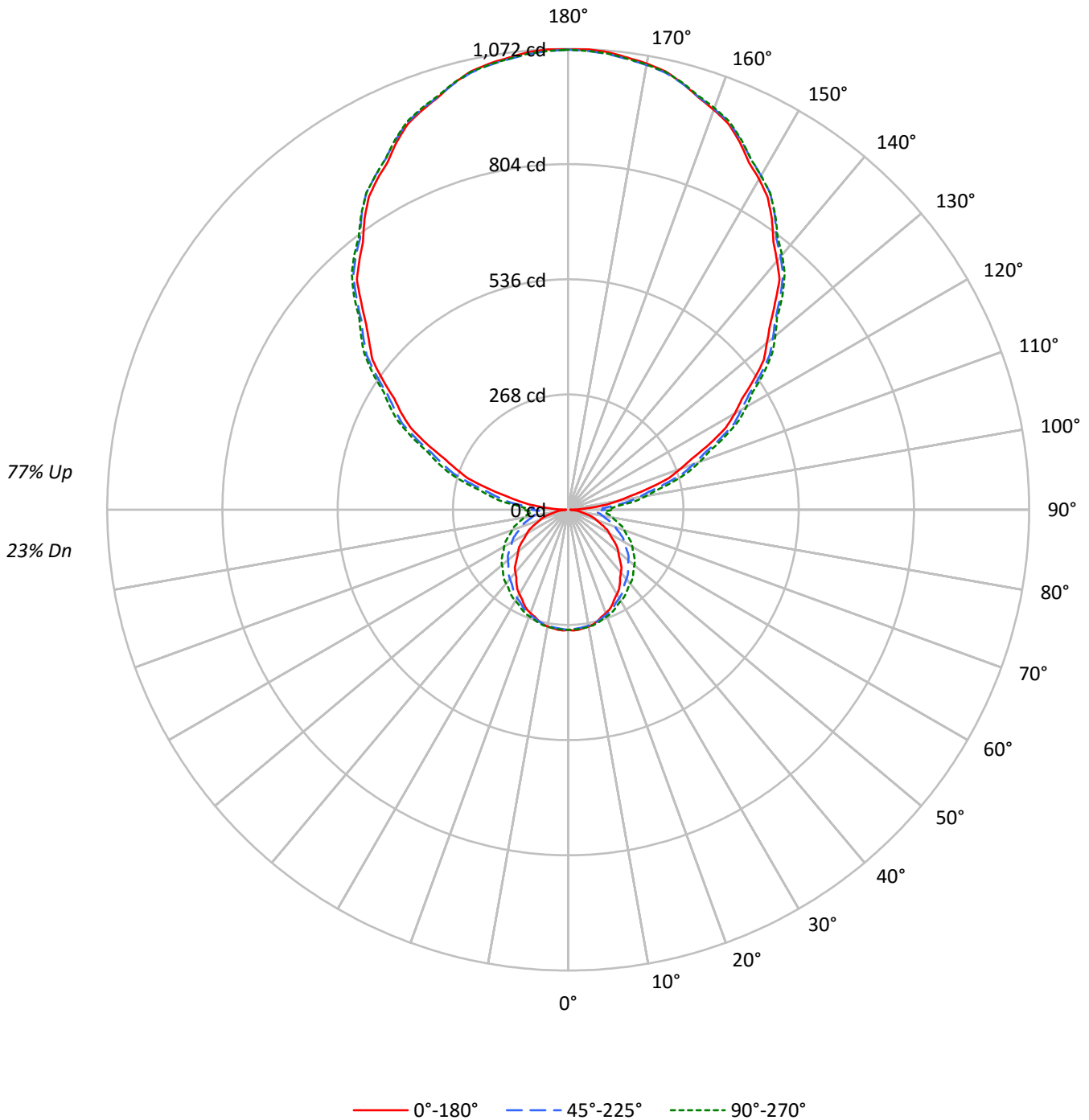
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	49	49	49	32	32	32	23
1	91	87	83	79	81	77	74	71	59	57	55	42	41	39	27	26	25	18
2	83	75	69	64	73	67	62	57	51	48	45	37	34	32	23	22	21	15
3	75	66	59	53	66	58	52	47	45	41	37	32	29	27	20	19	17	12
4	69	58	50	44	60	52	45	40	40	35	31	28	25	23	18	16	15	10
5	63	51	43	38	55	46	39	34	35	30	27	25	22	20	16	14	13	9
6	58	46	38	32	51	41	34	29	31	27	23	23	19	17	14	13	11	8
7	53	41	33	28	47	37	30	25	28	24	20	21	17	15	13	11	10	7
8	49	37	30	24	43	33	27	22	26	21	18	19	15	13	12	10	9	6
9	46	34	26	22	40	30	24	20	23	19	16	17	14	12	11	9	8	5
10	42	31	24	19	38	28	21	17	21	17	14	16	13	10	10	8	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4514	4514	4514
5°	4536	4345	4328
10°	4507	4215	4169
15°	4443	4079	4001
20°	4366	3935	3839
25°	4289	3793	3693
30°	4180	3650	3544
35°	4070	3510	3442
40°	3952	3391	3338
45°	3841	3286	3250
50°	3723	3189	3162
55°	3597	3086	3074
60°	3447	2979	2980
65°	3288	2854	2867
70°	3108	2717	2746
75°	2883	2585	2636
80°	2528	2450	2524
85°	2185	2333	2436



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.5	0.7
10°-20°	75.9	1.9
20°-30°	115.1	2.8
30°-40°	140.2	3.4
40°-50°	150.8	3.7
50°-60°	146.5	3.6
60°-70°	127.9	3.1
70°-80°	98.4	2.4
80°-90°	70.3	1.7
90°-100°	113.3	2.8
100°-110°	243.9	6.0
110°-120°	382.0	9.4
120°-130°	485.7	12.0
130°-140°	536.5	13.2
140°-150°	522.0	12.8
150°-160°	437.0	10.8
160°-170°	289.9	7.1
170°-180°	101.3	2.5
0°-30°	217.5	5.4
0°-40°	357.7	8.8
0°-60°	654.9	16.1
0°-90°	951.6	23.4
90°-120°	739.2	18.2
90°-150°	2283.4	56.2
90°-180°	3112.0	76.6
0°-180°	4063.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	280	280	280	280	280	
5°	280	279	277	279	279	27
15°	267	268	268	272	271	75
25°	243	246	250	254	256	112
35°	210	216	224	233	236	131
45°	172	183	197	209	214	133
55°	132	147	167	181	187	118
65°	90	110	134	150	156	89
75°	50	73	98	115	121	53
85°	15	40	66	82	88	16
90°	5	40	85	99	105	5
95°	50	78	104	119	123	56
105°	196	211	234	249	254	207
115°	363	373	389	400	402	359
125°	526	535	545	553	556	470
135°	680	690	696	703	704	526
145°	826	832	837	840	839	516
155°	944	946	949	953	951	434
165°	1027	1026	1026	1032	1028	289
175°	1068	1066	1064	1070	1065	101
180°	1070	1070	1070	1070	1070	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	281.2	280.9	280.7	280.4	280.3	279.9	279.4	278.9	278.4	277.9	278.2
5°	280.4	280.1	279.8	279.6	279.2	278.8	278.3	277.8	277.2	276.7	277.2
7.5°	277.8	277.6	277.4	277.2	277.1	276.8	276.3	276.0	275.5	275.1	275.8
10°	275.9	275.7	275.5	275.4	275.2	274.9	274.6	274.4	274.1	273.8	274.6
12.5°	272.6	272.7	272.7	272.8	272.8	272.7	272.5	272.3	272.1	271.9	272.6
15°	267.3	267.5	267.7	267.9	268.0	268.1	268.1	268.1	268.1	268.1	268.9
17.5°	260.6	260.9	261.3	261.7	262.1	262.4	262.7	263.0	263.2	263.6	264.4
20°	256.0	256.5	256.9	257.3	257.8	258.2	258.6	259.0	259.3	259.7	260.6
22.5°	251.2	251.6	252.2	252.7	253.2	253.8	254.2	254.8	255.3	255.7	256.7
25°	243.1	243.7	244.3	245.0	245.6	246.3	247.1	247.9	248.7	249.5	250.6
27.5°	233.4	234.3	235.4	236.4	237.5	238.4	239.3	240.3	241.3	242.3	243.6
30°	226.9	228.0	229.2	230.3	231.5	232.7	233.9	235.1	236.2	237.4	238.8
32.5°	219.7	221.1	222.3	223.6	225.0	226.3	227.7	229.1	230.5	231.8	233.5
35°	209.5	211.0	212.5	214.0	215.5	217.1	218.9	220.6	222.3	224.0	226.0
37.5°	198.2	200.0	201.8	203.6	205.3	207.3	209.6	211.7	213.9	216.2	218.4
40°	190.8	192.8	194.7	196.7	198.7	200.9	203.3	205.8	208.2	210.6	212.9
42.5°	183.7	185.7	187.6	189.6	191.6	193.9	196.8	199.6	202.3	205.1	207.7
45°	171.7	174.2	176.6	179.1	181.5	184.2	187.4	190.6	193.7	196.9	199.7
47.5°	160.0	162.6	165.3	167.9	170.6	173.8	177.5	181.1	184.9	188.5	191.5
50°	151.9	154.7	157.5	160.2	163.1	166.5	170.6	174.6	178.6	182.7	185.7
52.5°	144.1	147.0	150.0	152.9	155.9	159.4	163.7	168.0	172.3	176.6	179.7
55°	131.6	134.9	138.1	141.3	144.6	148.6	153.3	157.9	162.6	167.3	170.6
57.5°	119.3	123.0	126.6	130.3	133.9	138.1	142.9	147.7	152.5	157.3	160.8
60°	110.6	114.5	118.3	122.2	126.1	130.5	135.7	140.8	146.0	151.1	154.5
62.5°	102.8	106.8	110.8	114.9	118.9	123.4	128.6	133.7	138.8	144.0	147.6
65°	89.9	94.3	98.7	103.2	107.5	112.4	117.7	123.1	128.4	133.7	137.4
67.5°	78.1	82.8	87.3	91.9	96.6	101.6	107.0	112.4	117.9	123.3	127.1
70°	69.6	74.4	79.0	83.7	88.4	93.5	99.1	104.7	110.3	115.8	119.8
72.5°	61.9	66.7	71.5	76.3	81.2	86.4	92.1	97.7	103.4	109.1	112.9
75°	49.8	54.8	59.9	64.9	70.0	75.3	81.1	86.9	92.6	98.4	102.3
77.5°	38.2	43.4	48.7	53.9	59.3	64.8	70.7	76.5	82.4	88.2	92.1
80°	30.4	35.8	41.4	46.8	52.3	58.1	63.8	69.7	75.5	81.4	85.2
82.5°	23.9	29.3	34.8	40.1	45.6	51.3	57.2	63.1	69.0	74.9	78.7
85°	14.6	20.2	25.8	31.3	36.9	42.5	48.3	54.1	59.8	65.6	69.4
87.5°	8.1	14.0	19.8	25.7	31.5	37.7	44.4	51.0	57.7	64.3	67.9
90°	5.0	12.6	20.2	27.8	35.5	44.4	54.6	64.7	74.9	85.1	88.3
92.5°	19.8	26.4	33.1	39.7	46.3	52.9	59.5	66.1	72.7	79.3	82.9
95°	50.2	56.4	62.7	68.9	75.2	81.1	86.9	92.8	98.6	104.4	107.8
97.5°	88.6	94.2	99.7	105.2	110.8	116.5	122.4	128.4	134.3	140.3	143.7
100°	117.5	122.4	127.4	132.3	137.3	142.6	148.2	153.8	159.5	165.1	168.4
102.5°	147.6	151.9	156.2	160.5	164.9	169.9	175.5	181.2	186.8	192.5	195.9
105°	196.2	199.4	202.6	205.8	209.0	213.2	218.3	223.4	228.5	233.5	237.1
107.5°	245.6	248.6	251.6	254.5	257.5	261.3	265.7	270.2	274.6	279.2	282.3
110°	277.1	280.1	283.1	286.1	289.1	292.8	297.2	301.7	306.0	310.5	313.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	311.7	314.5	317.2	319.9	322.6	326.0	330.0	334.1	338.1	342.1	344.6
115°	362.9	365.1	367.3	369.4	371.7	374.6	378.3	381.9	385.6	389.2	391.7
117.5°	413.4	415.7	417.9	420.2	422.4	424.9	427.5	430.2	432.7	435.3	437.6
120°	447.4	449.3	451.3	453.3	455.2	457.3	459.2	461.2	463.2	465.2	467.7
122.5°	478.5	480.5	482.6	484.6	486.7	488.9	491.2	493.4	495.7	497.9	499.9
125°	526.5	528.2	530.0	531.9	533.7	535.7	538.0	540.3	542.5	544.8	546.7
127.5°	573.6	575.8	578.0	580.2	582.4	584.3	585.9	587.5	589.1	590.7	592.2
130°	603.2	605.7	608.2	610.8	613.3	615.3	616.8	618.3	619.7	621.3	623.0
132.5°	636.5	638.5	640.5	642.6	644.6	646.4	647.9	649.5	651.0	652.6	653.8
135°	680.5	682.7	684.9	687.2	689.3	691.1	692.4	693.7	695.0	696.2	697.9
137.5°	727.3	729.1	730.8	732.6	734.4	735.8	736.7	737.6	738.5	739.5	740.9
140°	755.5	757.2	758.9	760.6	762.3	763.8	765.0	766.2	767.3	768.5	770.0
142.5°	784.3	786.0	787.8	789.5	791.2	792.5	793.2	793.9	794.6	795.3	796.7
145°	825.5	826.9	828.3	829.7	831.2	832.4	833.7	834.8	836.1	837.2	837.9
147.5°	862.6	864.2	865.9	867.5	869.2	870.5	871.3	872.1	872.9	873.7	874.2
150°	887.8	889.0	890.2	891.4	892.6	893.7	894.5	895.3	896.1	896.9	897.4
152.5°	910.3	911.4	912.7	913.8	915.1	916.1	917.1	918.0	919.0	920.0	920.7
155°	943.8	944.4	945.0	945.7	946.2	946.8	947.4	948.1	948.6	949.2	950.2
157.5°	972.5	972.9	973.3	973.7	974.1	974.6	974.9	975.3	975.6	976.0	977.3
160°	989.9	990.2	990.7	991.0	991.5	991.8	992.0	992.2	992.4	992.6	993.8
162.5°	1005.8	1005.8	1005.9	1006.0	1006.1	1006.2	1006.5	1006.7	1006.8	1007.0	1008.4
165°	1026.9	1026.7	1026.5	1026.3	1026.1	1026.0	1026.0	1026.0	1026.0	1026.0	1027.4
167.5°	1044.6	1044.0	1043.4	1042.8	1042.2	1041.9	1041.9	1041.8	1041.8	1041.7	1043.1
170°	1054.0	1053.4	1052.8	1052.2	1051.6	1051.2	1051.0	1050.8	1050.6	1050.4	1051.8
172.5°	1060.5	1059.9	1059.3	1058.7	1058.1	1057.7	1057.5	1057.3	1057.1	1056.9	1058.3
175°	1068.4	1067.8	1067.3	1066.7	1066.0	1065.5	1065.1	1064.7	1064.3	1063.9	1065.3
177.5°	1071.7	1071.2	1070.8	1070.2	1069.8	1069.3	1069.1	1068.7	1068.4	1068.1	1069.1
180°	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	278.6	278.9	279.3	279.5	279.3	279.1	279.0	278.8
5°	277.8	278.3	278.8	279.0	278.9	278.8	278.7	278.7
7.5°	276.4	277.1	277.8	278.0	277.9	277.9	277.8	277.7
10°	275.3	276.0	276.7	277.1	277.0	276.9	276.8	276.7
12.5°	273.3	274.0	274.7	275.1	275.0	274.9	274.8	274.7
15°	269.7	270.6	271.4	271.8	271.7	271.6	271.5	271.4
17.5°	265.3	266.1	266.9	267.3	267.3	267.3	267.3	267.3
20°	261.6	262.6	263.6	264.1	264.1	264.1	264.1	264.1
22.5°	257.8	258.8	259.8	260.3	260.5	260.6	260.7	260.9
25°	251.7	252.8	253.9	254.5	254.8	255.0	255.3	255.6
27.5°	245.0	246.4	247.7	248.5	248.7	248.9	249.1	249.3
30°	240.2	241.7	243.2	244.0	244.2	244.5	244.8	245.0
32.5°	235.1	236.8	238.5	239.6	240.0	240.6	241.0	241.5
35°	228.0	230.0	231.9	233.3	233.9	234.5	235.1	235.8
37.5°	220.5	222.7	225.0	226.4	227.0	227.7	228.4	229.0
40°	215.3	217.7	220.0	221.6	222.4	223.2	224.0	224.8
42.5°	210.3	212.8	215.3	217.0	217.8	218.6	219.5	220.3
45°	202.4	205.3	208.0	209.9	210.8	211.7	212.6	213.5
47.5°	194.4	197.2	200.2	202.2	203.1	204.1	205.1	206.1
50°	188.8	191.9	194.9	197.0	198.0	198.9	199.9	200.9
52.5°	182.8	185.9	189.0	191.2	192.3	193.3	194.4	195.4
55°	173.8	177.0	180.3	182.4	183.6	184.9	186.0	187.2
57.5°	164.3	167.7	171.2	173.5	174.8	175.9	177.1	178.3
60°	157.9	161.4	164.8	167.1	168.4	169.6	170.9	172.2
62.5°	151.2	154.9	158.5	161.0	162.1	163.3	164.5	165.7
65°	141.1	144.7	148.5	150.9	152.0	153.2	154.4	155.5
67.5°	130.7	134.5	138.2	140.7	141.9	143.1	144.4	145.6
70°	123.6	127.4	131.3	133.8	134.9	136.0	137.1	138.1
72.5°	116.6	120.5	124.2	126.8	128.0	129.4	130.7	132.0
75°	106.2	110.0	114.0	116.5	117.6	118.8	119.9	121.1
77.5°	95.9	99.8	103.6	106.2	107.5	108.7	109.9	111.2
80°	89.0	92.7	96.6	99.1	100.3	101.6	102.8	104.1
82.5°	82.5	86.3	90.1	92.6	93.7	95.0	96.1	97.3
85°	73.2	77.0	80.8	83.3	84.5	85.8	87.0	88.3
87.5°	71.5	75.1	78.7	81.1	82.3	83.5	84.7	85.9
90°	91.5	94.7	97.9	100.1	101.4	102.7	104.0	105.2
92.5°	86.5	90.1	93.7	96.0	97.2	98.4	99.4	100.6
95°	111.2	114.7	118.1	120.1	120.8	121.5	122.2	122.9
97.5°	147.0	150.3	153.6	155.8	156.8	157.8	158.8	159.9
100°	171.8	175.1	178.4	180.6	181.3	182.1	182.9	183.7
102.5°	199.3	202.8	206.2	208.3	209.1	209.8	210.6	211.4
105°	240.7	244.2	247.7	250.0	251.0	252.0	253.0	254.0
107.5°	285.5	288.7	291.9	293.6	293.6	293.6	293.7	293.8
110°	316.2	319.1	322.0	323.6	324.0	324.4	324.8	325.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	347.0	349.4	351.8	353.2	353.7	354.3	354.9	355.4
115°	394.2	396.7	399.2	400.6	401.0	401.4	401.8	402.2
117.5°	439.7	441.9	444.1	445.3	445.7	445.9	446.3	446.6
120°	470.3	472.8	475.3	476.7	477.2	477.5	477.9	478.3
122.5°	501.9	503.8	505.8	507.0	507.4	507.8	508.2	508.6
125°	548.5	550.4	552.1	553.4	554.0	554.6	555.2	555.8
127.5°	593.7	595.2	596.7	597.5	597.7	597.9	598.0	598.2
130°	624.8	626.5	628.3	629.1	629.0	629.0	628.9	628.8
132.5°	655.0	656.2	657.4	658.0	658.1	658.2	658.3	658.4
135°	699.6	701.3	703.0	703.9	704.1	704.2	704.3	704.5
137.5°	742.4	744.0	745.5	746.1	745.9	745.7	745.6	745.3
140°	771.4	772.8	774.3	774.9	774.6	774.4	774.1	773.8
142.5°	797.9	799.2	800.6	801.0	800.8	800.4	800.0	799.7
145°	838.7	839.5	840.2	840.4	840.1	839.7	839.4	839.0
147.5°	874.8	875.3	875.7	875.7	875.2	874.7	874.1	873.6
150°	898.0	898.7	899.3	899.3	898.7	898.0	897.4	896.9
152.5°	921.5	922.3	923.0	923.0	922.3	921.5	920.7	920.0
155°	951.3	952.3	953.2	953.4	952.9	952.3	951.6	951.0
157.5°	978.7	980.1	981.4	981.6	980.7	979.7	978.7	977.8
160°	995.0	996.2	997.4	997.6	996.8	996.0	995.2	994.4
162.5°	1009.8	1011.1	1012.5	1012.7	1011.7	1010.8	1009.8	1008.9
165°	1028.9	1030.2	1031.6	1031.8	1030.8	1029.8	1028.9	1027.8
167.5°	1044.6	1046.0	1047.3	1047.5	1046.5	1045.4	1044.4	1043.4
170°	1053.2	1054.6	1056.1	1056.1	1054.9	1053.7	1052.5	1051.3
172.5°	1059.7	1061.1	1062.5	1062.7	1061.4	1060.2	1059.0	1057.8
175°	1066.8	1068.2	1069.5	1069.7	1068.4	1067.3	1066.0	1064.9
177.5°	1070.1	1070.9	1071.9	1071.9	1070.9	1070.1	1069.1	1068.1
180°	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2

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