

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: P331480-935

Luminaire Tested: **S122DIW-S290D970U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331480-935
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-S290D970U935-4F0-1E-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: 3923.3 lumens
Efficiency: N/A
Efficacy: 103.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

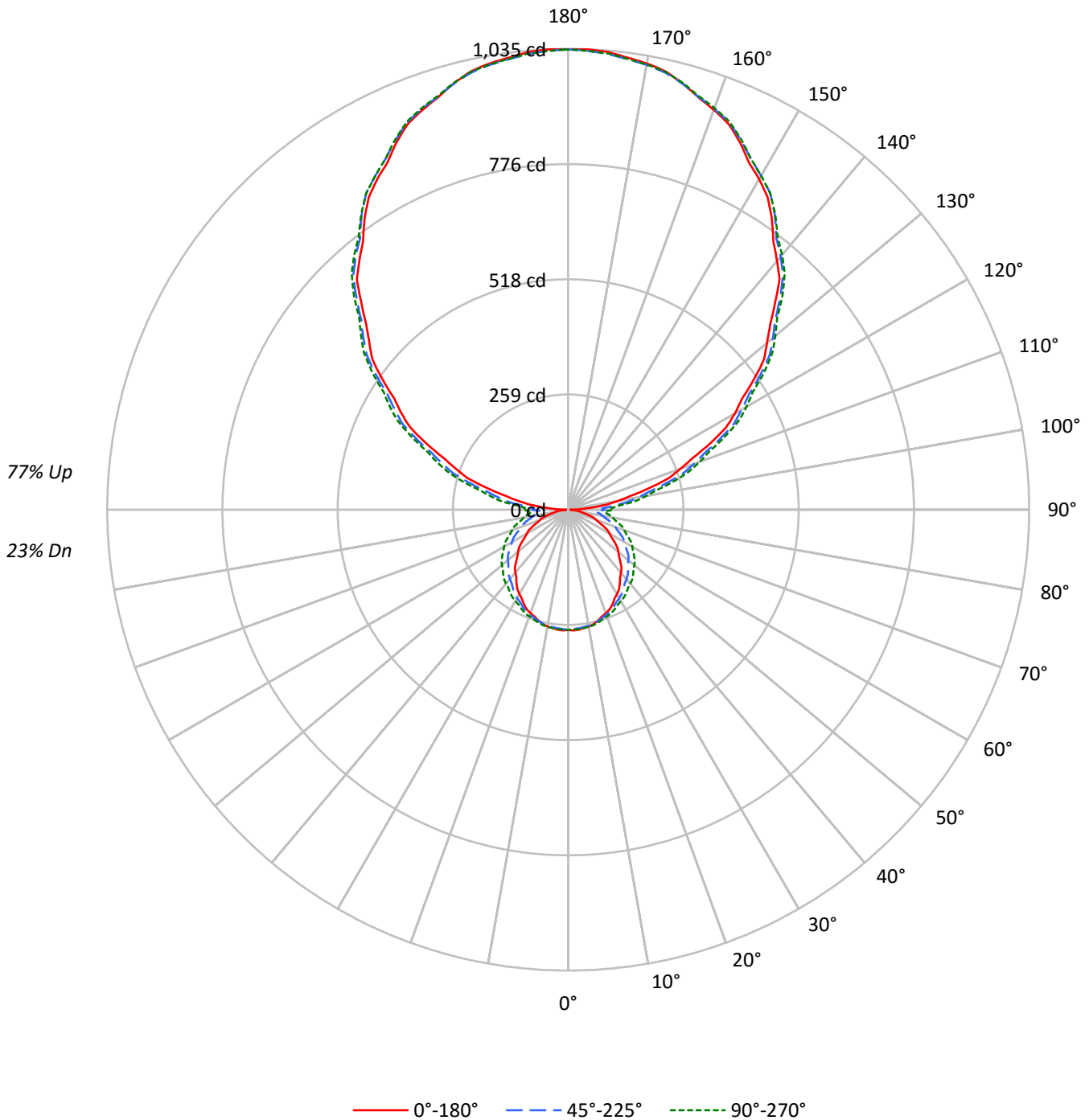
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.6	0.7
10°-20°	73.3	1.9
20°-30°	111.1	2.8
30°-40°	135.3	3.4
40°-50°	145.6	3.7
50°-60°	141.4	3.6
60°-70°	123.5	3.1
70°-80°	95.1	2.4
80°-90°	67.9	1.7
90°-100°	109.4	2.8
100°-110°	235.5	6.0
110°-120°	368.8	9.4
120°-130°	469.0	12.0
130°-140°	518.1	13.2
140°-150°	504.0	12.8
150°-160°	422.0	10.8
160°-170°	279.9	7.1
170°-180°	97.8	2.5
0°-30°	210.0	5.4
0°-40°	345.4	8.8
0°-60°	632.4	16.1
0°-90°	918.8	23.4
90°-120°	713.7	18.2
90°-150°	2204.8	56.2
90°-180°	3004.0	76.6
0°-180°	3923.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	5	39	82	96	102	5
95°	48	76	101	115	119	54
105°	189	204	226	240	245	200
115°	350	360	376	386	388	346
125°	508	516	526	534	537	454
135°	657	666	672	679	680	507
145°	797	803	808	811	810	498
155°	911	914	916	920	918	419
165°	992	991	991	996	992	280
175°	1032	1029	1027	1033	1028	98
180°	1033	1033	1033	1033	1033	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.8	13.5	19.1	24.8	30.4	36.4	42.9	49.2	55.7	62.1	65.6
90°	4.8	12.1	19.5	26.9	34.3	42.9	52.7	62.5	72.3	82.1	85.2
92.5°	19.1	25.5	31.9	38.3	44.7	51.1	57.4	63.8	70.2	76.5	80.1
95°	48.5	54.5	60.5	66.6	72.6	78.4	83.9	89.6	95.2	100.8	104.1
97.5°	85.6	90.9	96.3	101.6	106.9	112.4	118.2	124.0	129.7	135.4	138.7
100°	113.5	118.2	123.0	127.8	132.6	137.7	143.1	148.5	154.0	159.5	162.6
102.5°	142.5	146.6	150.8	155.0	159.2	164.0	169.4	175.0	180.4	185.9	189.2
105°	189.4	192.5	195.6	198.7	201.8	205.9	210.8	215.7	220.6	225.5	228.9
107.5°	237.1	240.0	242.9	245.7	248.7	252.3	256.6	260.9	265.2	269.6	272.6
110°	267.5	270.4	273.4	276.2	279.1	282.8	287.0	291.3	295.5	299.8	302.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	301.0	303.7	306.3	308.9	311.5	314.8	318.7	322.6	326.5	330.4	332.7
115°	350.4	352.5	354.6	356.7	358.9	361.7	365.2	368.8	372.3	375.8	378.2
117.5°	399.2	401.4	403.6	405.7	407.9	410.3	412.8	415.3	417.8	420.3	422.5
120°	432.0	433.9	435.8	437.6	439.5	441.5	443.4	445.3	447.3	449.2	451.6
122.5°	462.0	464.0	466.0	468.0	469.9	472.1	474.2	476.4	478.6	480.8	482.7
125°	508.3	510.1	511.8	513.6	515.3	517.3	519.4	521.7	523.8	526.1	527.9
127.5°	553.9	555.9	558.1	560.3	562.3	564.2	565.7	567.2	568.8	570.3	571.8
130°	582.5	584.9	587.3	589.8	592.2	594.1	595.6	597.0	598.4	599.9	601.6
132.5°	614.6	616.5	618.5	620.4	622.4	624.1	625.6	627.2	628.6	630.1	631.3
135°	657.0	659.2	661.3	663.5	665.6	667.3	668.6	669.8	671.1	672.3	673.9
137.5°	702.2	704.0	705.7	707.4	709.1	710.4	711.4	712.2	713.1	714.0	715.4
140°	729.4	731.1	732.8	734.4	736.1	737.4	738.7	739.8	740.9	742.0	743.5
142.5°	757.3	759.0	760.7	762.3	764.0	765.2	765.9	766.5	767.2	767.9	769.2
145°	797.0	798.4	799.8	801.2	802.5	803.7	804.9	806.1	807.3	808.4	809.1
147.5°	832.8	834.5	836.1	837.7	839.3	840.5	841.3	842.1	842.8	843.6	844.1
150°	857.2	858.4	859.5	860.7	861.9	862.9	863.7	864.4	865.2	866.0	866.5
152.5°	878.9	880.0	881.2	882.4	883.6	884.6	885.5	886.4	887.3	888.3	889.0
155°	911.3	911.9	912.5	913.1	913.6	914.2	914.8	915.4	915.9	916.5	917.5
157.5°	939.0	939.4	939.8	940.2	940.6	941.0	941.3	941.7	942.0	942.4	943.7
160°	955.8	956.1	956.6	956.9	957.3	957.6	957.9	958.0	958.2	958.4	959.6
162.5°	971.1	971.2	971.3	971.4	971.5	971.6	971.8	972.0	972.2	972.3	973.7
165°	991.5	991.4	991.2	990.9	990.8	990.7	990.7	990.7	990.7	990.7	992.0
167.5°	1008.7	1008.1	1007.5	1006.9	1006.3	1006.0	1006.0	1005.9	1005.9	1005.8	1007.2
170°	1017.7	1017.1	1016.6	1016.0	1015.4	1015.0	1014.8	1014.6	1014.4	1014.3	1015.5
172.5°	1024.0	1023.4	1022.8	1022.3	1021.7	1021.2	1021.1	1020.9	1020.7	1020.5	1021.8
175°	1031.7	1031.0	1030.5	1029.9	1029.3	1028.8	1028.5	1028.0	1027.7	1027.3	1028.6
177.5°	1034.8	1034.3	1033.9	1033.4	1032.9	1032.5	1032.3	1031.9	1031.7	1031.3	1032.3
180°	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	69.1	72.5	76.0	78.3	79.5	80.6	81.8	82.9
90°	88.3	91.4	94.5	96.7	97.9	99.2	100.4	101.6
92.5°	83.5	87.0	90.5	92.7	93.8	95.0	96.0	97.1
95°	107.4	110.7	114.0	116.0	116.7	117.3	118.0	118.6
97.5°	141.9	145.1	148.4	150.4	151.4	152.4	153.3	154.4
100°	165.9	169.1	172.3	174.4	175.0	175.8	176.6	177.4
102.5°	192.4	195.8	199.1	201.1	201.9	202.6	203.4	204.1
105°	232.4	235.7	239.2	241.4	242.4	243.3	244.3	245.2
107.5°	275.7	278.8	281.9	283.4	283.5	283.5	283.6	283.7
110°	305.3	308.2	310.9	312.5	312.9	313.2	313.6	314.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	335.0	337.3	339.7	341.0	341.6	342.1	342.7	343.2
115°	380.6	383.1	385.5	386.8	387.2	387.6	388.0	388.3
117.5°	424.6	426.7	428.8	430.0	430.3	430.6	430.9	431.2
120°	454.1	456.5	458.9	460.3	460.7	461.1	461.4	461.8
122.5°	484.6	486.5	488.4	489.6	489.9	490.3	490.7	491.1
125°	529.6	531.4	533.1	534.3	534.9	535.5	536.1	536.7
127.5°	573.3	574.7	576.2	577.0	577.1	577.3	577.4	577.6
130°	603.3	604.9	606.7	607.4	607.3	607.3	607.3	607.2
132.5°	632.4	633.6	634.7	635.3	635.4	635.5	635.6	635.7
135°	675.5	677.2	678.8	679.7	679.8	679.9	680.0	680.2
137.5°	716.9	718.3	719.8	720.4	720.2	720.1	719.9	719.6
140°	744.9	746.2	747.6	748.2	748.0	747.7	747.4	747.2
142.5°	770.4	771.7	773.0	773.4	773.2	772.8	772.5	772.1
145°	809.9	810.5	811.2	811.5	811.1	810.8	810.5	810.1
147.5°	844.6	845.2	845.6	845.6	845.1	844.6	844.0	843.5
150°	867.1	867.7	868.3	868.3	867.7	867.1	866.5	866.0
152.5°	889.8	890.5	891.2	891.2	890.5	889.8	889.0	888.3
155°	918.5	919.5	920.4	920.6	920.1	919.5	918.9	918.3
157.5°	945.0	946.3	947.6	947.8	946.9	946.0	945.0	944.1
160°	960.7	961.9	963.0	963.3	962.5	961.7	961.0	960.2
162.5°	975.0	976.3	977.7	977.8	976.9	975.9	975.0	974.1
165°	993.4	994.7	996.1	996.3	995.3	994.4	993.4	992.4
167.5°	1008.6	1010.0	1011.2	1011.4	1010.5	1009.4	1008.4	1007.5
170°	1016.9	1018.3	1019.7	1019.8	1018.6	1017.4	1016.2	1015.1
172.5°	1023.2	1024.6	1025.9	1026.1	1024.8	1023.7	1022.5	1021.4
175°	1030.0	1031.4	1032.7	1032.9	1031.7	1030.5	1029.3	1028.2
177.5°	1033.2	1034.1	1035.0	1035.0	1034.1	1033.2	1032.3	1031.3
180°	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4	1033.4

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