

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: P331480-930

Luminaire Tested: **S122DIW-S290D970U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331480-930
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-S290D970U930-4F0-1E-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: 3715.1 lumens
Efficiency: N/A
Efficacy: 97.8 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

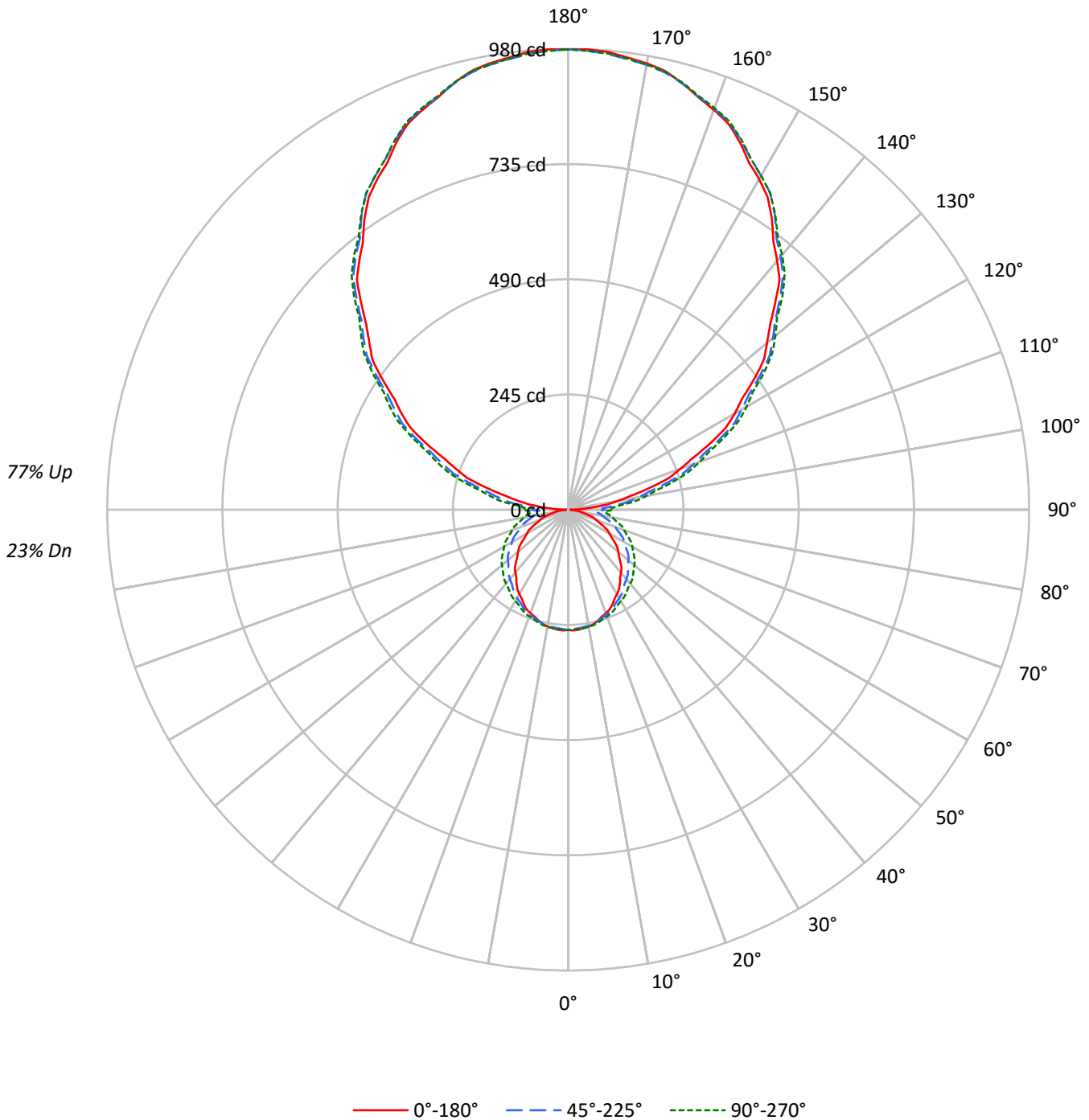
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	4127	4127	4127
5°	4146	3973	3957
10°	4121	3855	3812
15°	4063	3730	3659
20°	3992	3597	3511
25°	3922	3468	3376
30°	3821	3336	3241
35°	3720	3209	3148
40°	3615	3101	3051
45°	3512	3004	2971
50°	3404	2917	2891
55°	3289	2822	2810
60°	3151	2723	2724
65°	3006	2608	2622
70°	2844	2485	2512
75°	2639	2365	2410
80°	2312	2240	2305
85°	2005	2134	2226



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.2	0.7
10°-20°	69.4	1.9
20°-30°	105.2	2.8
30°-40°	128.2	3.5
40°-50°	137.9	3.7
50°-60°	133.9	3.6
60°-70°	116.9	3.1
70°-80°	90.0	2.4
80°-90°	64.3	1.7
90°-100°	103.6	2.8
100°-110°	223.0	6.0
110°-120°	349.3	9.4
120°-130°	444.1	12.0
130°-140°	490.6	13.2
140°-150°	477.2	12.8
150°-160°	399.6	10.8
160°-170°	265.0	7.1
170°-180°	92.6	2.5
0°-30°	198.9	5.4
0°-40°	327.1	8.8
0°-60°	598.8	16.1
0°-90°	870.1	23.4
90°-120°	675.8	18.2
90°-150°	2087.7	56.2
90°-180°	2845.0	76.6
0°-180°	3715.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	256	256	256	256	256	
5°	256	255	253	255	255	24
15°	244	245	245	248	248	69
25°	222	225	228	232	234	102
35°	192	198	205	213	216	120
45°	157	167	180	191	195	121
55°	120	134	153	166	171	108
65°	82	101	122	137	142	82
75°	46	66	90	105	111	48
85°	13	36	60	75	81	14
90°	5	36	78	91	96	5
95°	46	71	96	109	112	52
105°	179	193	214	228	232	190
115°	332	341	356	366	368	328
125°	481	489	498	505	508	430
135°	622	631	637	643	644	481
145°	755	760	766	768	767	471
155°	863	865	868	872	870	397
165°	939	938	938	943	940	265
175°	977	974	973	978	974	93
180°	978	978	978	978	978	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	257.1	256.8	256.7	256.4	256.2	255.9	255.4	255.0	254.5	254.0	254.4
5°	256.3	256.1	255.8	255.6	255.3	254.9	254.5	254.0	253.5	253.0	253.5
7.5°	254.0	253.8	253.6	253.5	253.3	253.1	252.7	252.3	251.9	251.5	252.2
10°	252.3	252.1	251.9	251.8	251.6	251.4	251.1	250.9	250.6	250.4	251.0
12.5°	249.2	249.3	249.3	249.4	249.4	249.3	249.2	249.0	248.7	248.6	249.2
15°	244.4	244.6	244.8	244.9	245.1	245.2	245.2	245.2	245.2	245.2	245.9
17.5°	238.2	238.6	238.9	239.3	239.6	239.9	240.2	240.4	240.7	241.0	241.7
20°	234.1	234.5	234.9	235.3	235.7	236.1	236.4	236.8	237.1	237.4	238.3
22.5°	229.7	230.1	230.6	231.1	231.5	232.0	232.4	232.9	233.4	233.8	234.7
25°	222.3	222.8	223.4	224.0	224.5	225.2	225.9	226.7	227.4	228.1	229.1
27.5°	213.4	214.3	215.2	216.1	217.1	218.0	218.8	219.7	220.6	221.5	222.7
30°	207.4	208.5	209.5	210.6	211.7	212.8	213.9	214.9	216.0	217.0	218.3
32.5°	200.9	202.1	203.3	204.5	205.7	206.9	208.2	209.5	210.8	212.0	213.5
35°	191.5	192.9	194.3	195.7	197.1	198.5	200.2	201.7	203.3	204.8	206.6
37.5°	181.2	182.9	184.5	186.1	187.7	189.6	191.6	193.6	195.6	197.6	199.7
40°	174.5	176.3	178.1	179.9	181.6	183.7	185.9	188.2	190.4	192.6	194.7
42.5°	168.0	169.7	171.5	173.3	175.2	177.3	179.9	182.5	185.0	187.5	189.9
45°	157.0	159.2	161.5	163.7	165.9	168.4	171.4	174.2	177.1	180.0	182.5
47.5°	146.3	148.7	151.2	153.5	156.0	158.9	162.2	165.6	169.0	172.4	175.0
50°	138.9	141.5	144.0	146.5	149.1	152.2	156.0	159.6	163.3	167.1	169.8
52.5°	131.8	134.4	137.1	139.8	142.5	145.8	149.7	153.6	157.5	161.4	164.3
55°	120.3	123.4	126.3	129.2	132.2	135.8	140.1	144.4	148.7	153.0	156.0
57.5°	109.1	112.4	115.8	119.1	122.5	126.3	130.7	135.0	139.4	143.8	147.0
60°	101.1	104.7	108.2	111.7	115.3	119.4	124.1	128.7	133.5	138.1	141.3
62.5°	94.0	97.7	101.3	105.0	108.7	112.8	117.6	122.2	126.9	131.7	134.9
65°	82.2	86.3	90.3	94.3	98.3	102.8	107.6	112.5	117.4	122.2	125.6
67.5°	71.4	75.7	79.8	84.1	88.3	92.9	97.8	102.8	107.8	112.8	116.2
70°	63.7	68.0	72.2	76.6	80.8	85.5	90.6	95.7	100.9	105.9	109.5
72.5°	56.6	61.0	65.4	69.8	74.3	79.0	84.2	89.4	94.6	99.7	103.2
75°	45.6	50.1	54.8	59.4	64.0	68.9	74.2	79.5	84.7	90.0	93.5
77.5°	34.9	39.7	44.5	49.3	54.2	59.3	64.7	70.0	75.3	80.6	84.2
80°	27.8	32.8	37.8	42.8	47.9	53.1	58.4	63.8	69.1	74.4	77.9
82.5°	21.9	26.8	31.8	36.7	41.7	46.9	52.3	57.7	63.1	68.5	72.0
85°	13.4	18.4	23.6	28.6	33.8	38.9	44.2	49.5	54.7	60.0	63.4
87.5°	7.4	12.8	18.1	23.5	28.8	34.5	40.6	46.6	52.7	58.8	62.1
90°	4.6	11.5	18.5	25.4	32.4	40.6	49.9	59.2	68.5	77.8	80.7
92.5°	18.1	24.1	30.2	36.3	42.3	48.3	54.4	60.4	66.4	72.5	75.8
95°	45.9	51.6	57.3	63.0	68.7	74.2	79.5	84.9	90.2	95.5	98.6
97.5°	81.0	86.1	91.2	96.2	101.3	106.5	111.9	117.4	122.8	128.2	131.3
100°	107.5	111.9	116.5	121.0	125.6	130.4	135.5	140.6	145.9	151.0	154.0
102.5°	134.9	138.8	142.8	146.8	150.7	155.3	160.5	165.7	170.8	176.0	179.1
105°	179.4	182.3	185.2	188.2	191.1	194.9	199.6	204.2	208.9	213.5	216.8
107.5°	224.5	227.3	230.0	232.7	235.5	238.9	243.0	247.0	251.1	255.3	258.1
110°	253.3	256.1	258.9	261.5	264.3	267.7	271.7	275.8	279.8	283.9	286.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	285.0	287.6	290.0	292.5	295.0	298.1	301.7	305.5	309.2	312.8	315.0
115°	331.8	333.8	335.8	337.8	339.8	342.5	345.8	349.2	352.5	355.9	358.2
117.5°	378.0	380.1	382.1	384.2	386.2	388.5	390.9	393.3	395.7	398.0	400.1
120°	409.0	410.8	412.6	414.4	416.2	418.1	419.9	421.7	423.5	425.3	427.6
122.5°	437.5	439.4	441.2	443.1	445.0	447.0	449.1	451.1	453.2	455.3	457.1
125°	481.4	483.0	484.6	486.3	488.0	489.8	491.9	494.0	496.0	498.1	499.9
127.5°	524.5	526.4	528.5	530.5	532.5	534.3	535.7	537.1	538.6	540.1	541.4
130°	551.5	553.8	556.1	558.5	560.8	562.6	563.9	565.3	566.6	568.0	569.6
132.5°	582.0	583.8	585.6	587.5	589.4	591.0	592.4	593.9	595.3	596.6	597.8
135°	622.2	624.2	626.2	628.3	630.2	631.9	633.1	634.2	635.4	636.6	638.1
137.5°	665.0	666.6	668.2	669.8	671.5	672.7	673.6	674.4	675.2	676.1	677.4
140°	690.7	692.3	693.9	695.5	697.0	698.3	699.4	700.5	701.6	702.6	704.0
142.5°	717.1	718.7	720.3	721.9	723.4	724.6	725.2	725.9	726.5	727.2	728.4
145°	754.7	756.0	757.3	758.6	759.9	761.1	762.2	763.3	764.4	765.5	766.1
147.5°	788.6	790.2	791.7	793.2	794.8	795.9	796.6	797.4	798.1	798.8	799.3
150°	811.7	812.9	813.9	815.1	816.1	817.1	817.8	818.6	819.3	820.0	820.5
152.5°	832.3	833.3	834.5	835.5	836.7	837.6	838.5	839.4	840.2	841.1	841.8
155°	862.9	863.5	864.1	864.6	865.1	865.7	866.3	866.8	867.3	867.9	868.8
157.5°	889.2	889.6	889.9	890.3	890.6	891.0	891.4	891.7	892.0	892.3	893.6
160°	905.1	905.4	905.8	906.1	906.5	906.8	907.0	907.2	907.3	907.5	908.7
162.5°	919.6	919.7	919.7	919.8	919.9	920.0	920.2	920.4	920.6	920.7	922.0
165°	938.9	938.7	938.6	938.3	938.2	938.1	938.1	938.1	938.1	938.1	939.4
167.5°	955.1	954.6	954.0	953.4	952.9	952.6	952.6	952.5	952.5	952.4	953.7
170°	963.7	963.1	962.6	962.1	961.5	961.2	960.9	960.7	960.6	960.4	961.6
172.5°	969.6	969.1	968.5	968.0	967.4	967.0	966.9	966.7	966.5	966.3	967.6
175°	976.9	976.3	975.8	975.3	974.7	974.2	973.9	973.5	973.1	972.7	974.0
177.5°	979.9	979.4	979.0	978.5	978.1	977.7	977.5	977.1	976.9	976.6	977.5
180°	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	254.7	255.0	255.4	255.5	255.4	255.2	255.1	254.9
5°	254.0	254.5	254.9	255.1	255.0	254.9	254.9	254.8
7.5°	252.7	253.3	254.0	254.2	254.1	254.0	254.0	253.9
10°	251.7	252.3	253.0	253.3	253.2	253.2	253.1	253.0
12.5°	249.9	250.5	251.2	251.5	251.4	251.4	251.3	251.2
15°	246.6	247.4	248.2	248.5	248.4	248.3	248.3	248.2
17.5°	242.6	243.3	244.0	244.4	244.4	244.4	244.4	244.4
20°	239.2	240.1	241.0	241.5	241.5	241.5	241.5	241.5
22.5°	235.7	236.6	237.5	238.0	238.1	238.2	238.4	238.6
25°	230.2	231.1	232.1	232.7	232.9	233.2	233.4	233.7
27.5°	224.0	225.3	226.5	227.2	227.4	227.6	227.7	228.0
30°	219.6	221.0	222.3	223.1	223.3	223.6	223.8	224.0
32.5°	215.0	216.5	218.1	219.1	219.5	220.0	220.4	220.8
35°	208.5	210.3	212.1	213.3	213.9	214.4	215.0	215.6
37.5°	201.6	203.7	205.7	207.0	207.6	208.2	208.8	209.4
40°	196.9	199.0	201.1	202.6	203.3	204.1	204.8	205.5
42.5°	192.2	194.5	196.9	198.4	199.2	199.9	200.6	201.4
45°	185.1	187.7	190.2	191.9	192.7	193.6	194.4	195.2
47.5°	177.7	180.3	183.0	184.8	185.7	186.6	187.5	188.4
50°	172.6	175.5	178.2	180.1	181.0	181.9	182.8	183.7
52.5°	167.1	170.0	172.8	174.8	175.8	176.8	177.7	178.6
55°	158.9	161.8	164.9	166.8	167.9	169.0	170.1	171.1
57.5°	150.2	153.4	156.5	158.7	159.8	160.9	161.9	163.1
60°	144.4	147.6	150.7	152.8	153.9	155.1	156.3	157.4
62.5°	138.3	141.6	145.0	147.2	148.2	149.3	150.4	151.5
65°	129.0	132.3	135.7	137.9	139.0	140.1	141.1	142.2
67.5°	119.5	122.9	126.4	128.7	129.7	130.9	132.0	133.1
70°	113.0	116.5	120.1	122.4	123.4	124.3	125.3	126.3
72.5°	106.6	110.1	113.6	115.9	117.1	118.3	119.5	120.7
75°	97.1	100.6	104.2	106.5	107.5	108.6	109.7	110.7
77.5°	87.7	91.2	94.7	97.1	98.2	99.4	100.5	101.7
80°	81.4	84.8	88.3	90.6	91.7	92.9	94.0	95.1
82.5°	75.4	78.9	82.3	84.6	85.7	86.8	87.9	88.9
85°	66.9	70.4	73.9	76.1	77.3	78.4	79.6	80.7
87.5°	65.4	68.6	72.0	74.1	75.3	76.3	77.5	78.5
90°	83.6	86.6	89.5	91.6	92.7	93.9	95.1	96.2
92.5°	79.1	82.3	85.7	87.8	88.9	89.9	90.9	92.0
95°	101.7	104.8	107.9	109.8	110.5	111.0	111.7	112.3
97.5°	134.4	137.4	140.5	142.4	143.3	144.3	145.2	146.2
100°	157.1	160.1	163.1	165.1	165.8	166.5	167.2	168.0
102.5°	182.2	185.4	188.5	190.5	191.2	191.8	192.6	193.3
105°	220.0	223.2	226.5	228.6	229.5	230.4	231.3	232.2
107.5°	261.1	264.0	266.9	268.4	268.5	268.5	268.6	268.6
110°	289.1	291.8	294.4	295.9	296.3	296.6	296.9	297.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	317.2	319.4	321.6	322.9	323.4	323.9	324.5	325.0
115°	360.4	362.7	365.0	366.3	366.6	367.0	367.4	367.7
117.5°	402.0	404.1	406.0	407.2	407.5	407.7	408.1	408.3
120°	430.0	432.3	434.6	435.9	436.3	436.6	436.9	437.3
122.5°	458.9	460.6	462.4	463.6	463.9	464.3	464.6	465.0
125°	501.5	503.2	504.8	506.0	506.5	507.0	507.6	508.2
127.5°	542.8	544.2	545.6	546.3	546.5	546.7	546.7	546.9
130°	571.3	572.8	574.5	575.2	575.1	575.1	575.0	574.9
132.5°	598.8	600.0	601.0	601.6	601.7	601.8	601.9	601.9
135°	639.7	641.2	642.8	643.6	643.8	643.8	643.9	644.1
137.5°	678.8	680.2	681.6	682.2	682.0	681.8	681.7	681.4
140°	705.3	706.6	707.9	708.5	708.3	708.0	707.8	707.5
142.5°	729.5	730.8	732.0	732.4	732.1	731.8	731.5	731.2
145°	766.9	767.5	768.2	768.4	768.1	767.8	767.4	767.1
147.5°	799.8	800.3	800.7	800.7	800.2	799.7	799.2	798.7
150°	821.1	821.7	822.2	822.2	821.7	821.1	820.5	820.0
152.5°	842.5	843.3	843.9	843.9	843.3	842.5	841.8	841.1
155°	869.8	870.7	871.6	871.7	871.2	870.7	870.1	869.5
157.5°	894.9	896.1	897.3	897.5	896.7	895.8	894.9	894.0
160°	909.7	910.9	911.9	912.2	911.4	910.7	910.0	909.2
162.5°	923.2	924.5	925.8	925.9	925.0	924.1	923.2	922.4
165°	940.7	941.9	943.2	943.4	942.5	941.6	940.7	939.7
167.5°	955.0	956.3	957.6	957.7	956.8	955.9	954.9	954.0
170°	963.0	964.3	965.6	965.6	964.5	963.4	962.3	961.2
172.5°	968.9	970.2	971.4	971.6	970.5	969.4	968.2	967.2
175°	975.3	976.6	977.9	978.0	976.9	975.8	974.7	973.6
177.5°	978.4	979.2	980.1	980.1	979.2	978.4	977.5	976.6
180°	978.5	978.5	978.5	978.5	978.5	978.5	978.5	978.5

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