

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: P331776-935

Luminaire Tested: **S122RDIW-S290D970U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331776-935
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: S122RDIW-S290D970U935-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3782.6 lumens
Efficiency: N/A
Efficacy: 99.5 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

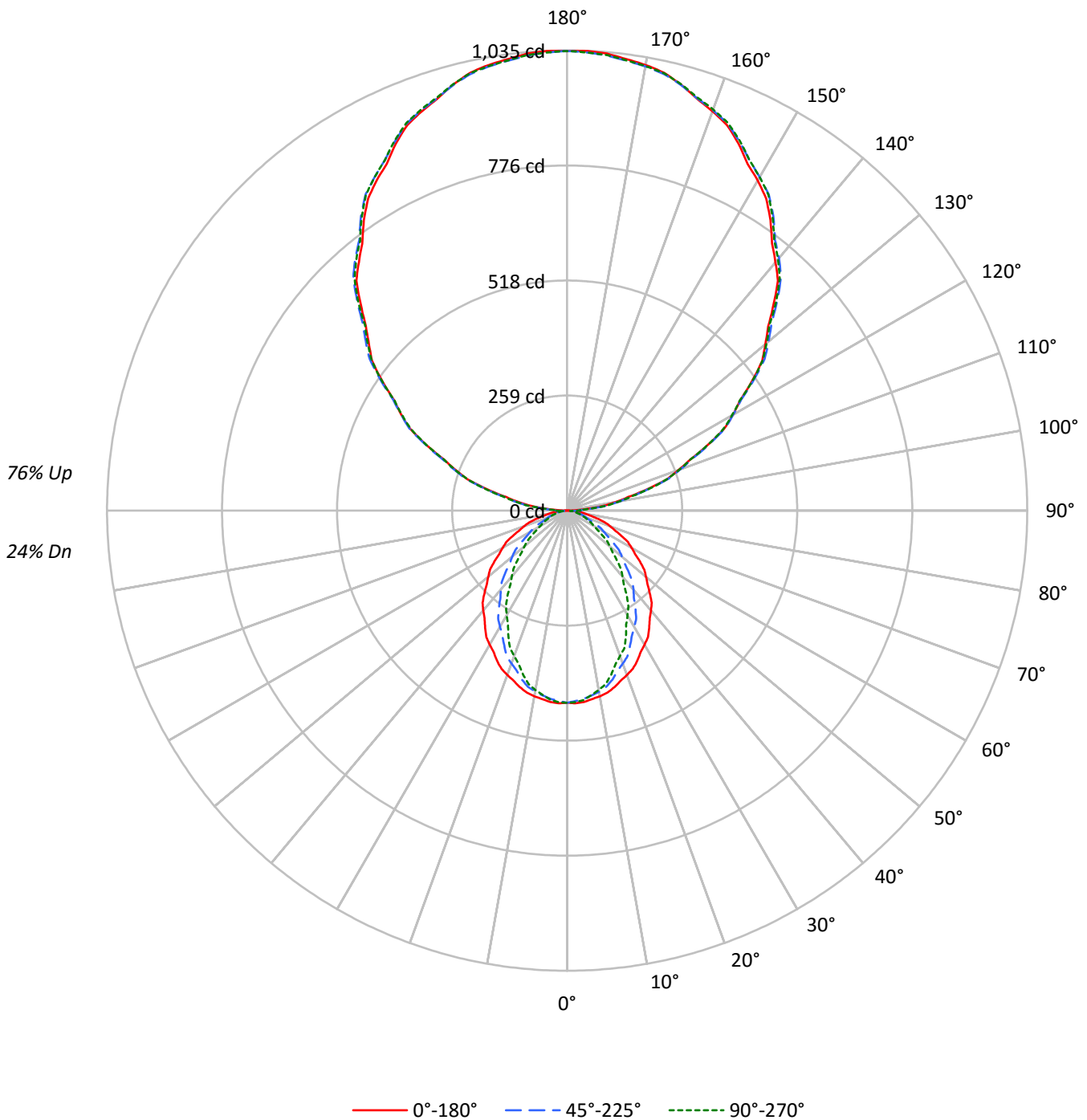
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	24
1	92	88	84	81	82	78	75	73	60	58	57	44	43	41	28	28	27	20
2	84	77	71	66	74	69	64	60	53	50	47	39	37	35	25	24	23	17
3	77	68	61	56	68	61	55	50	47	43	40	34	32	30	23	21	20	15
4	70	60	53	47	62	54	47	43	42	37	34	31	28	26	20	19	17	13
5	64	53	46	40	57	48	41	36	37	33	29	28	25	22	18	17	15	11
6	59	48	40	35	52	43	36	32	34	29	25	25	22	19	17	15	14	10
7	55	43	36	30	48	39	32	28	30	26	22	23	19	17	15	13	12	9
8	51	39	32	27	45	35	29	24	28	23	20	21	18	15	14	12	11	8
9	47	35	28	24	42	32	26	22	25	21	18	19	16	14	13	11	10	7
10	44	32	26	21	39	29	23	19	23	19	16	17	14	12	12	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6978	6978	6978
5°	7005	6891	6929
10°	6951	6779	6720
15°	6870	6578	6387
20°	6761	6290	5976
25°	6649	5964	5574
30°	6490	5630	5062
35°	6337	5267	4610
40°	6182	4890	4089
45°	6003	4464	3617
50°	5815	4037	3152
55°	5624	3578	2711
60°	5406	3094	2251
65°	5154	2598	2048
70°	4858	2143	1884
75°	4492	1953	1759
80°	3961	1748	1599
85°	3112	1371	1371



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	1.1
10°-20°	111.1	2.9
20°-30°	156.0	4.1
30°-40°	170.1	4.5
40°-50°	156.4	4.1
50°-60°	122.8	3.2
60°-70°	80.1	2.1
70°-80°	41.3	1.1
80°-90°	14.8	0.4
90°-100°	65.5	1.7
100°-110°	203.4	5.4
110°-120°	347.6	9.2
120°-130°	457.2	12.1
130°-140°	513.1	13.6
140°-150°	503.1	13.3
150°-160°	422.0	11.2
160°-170°	279.9	7.4
170°-180°	97.8	2.6
0°-30°	307.5	8.1
0°-40°	477.6	12.6
0°-60°	756.8	20.0
0°-90°	893.0	23.6
90°-120°	616.5	16.3
90°-150°	2089.9	55.2
90°-180°	2890.0	76.4
0°-180°	3782.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	430	425	428	428	41
15°	411	406	394	386	382	116
25°	373	360	335	319	313	172
35°	322	301	267	243	234	201
45°	263	236	196	169	158	203
55°	200	169	127	104	96	179
65°	135	103	68	55	54	134
75°	72	45	31	29	28	76
85°	17	9	7	7	7	20
90°	1	12	30	29	30	3
95°	45	54	56	56	54	52
105°	188	190	192	194	194	198
115°	349	354	352	351	349	345
125°	508	515	513	510	509	453
135°	657	666	668	667	664	507
145°	797	803	808	809	806	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°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	433.8	433.4	433.1	432.7	432.4	431.8	431.0	430.3	429.6	428.8	429.5
5°	432.2	431.8	431.4	430.9	430.5	429.6	428.5	427.4	426.3	425.2	425.9
7.5°	427.7	427.2	426.6	426.1	425.6	424.6	423.4	422.0	420.7	419.4	419.6
10°	424.0	423.4	422.8	422.1	421.5	420.3	418.6	416.9	415.2	413.5	413.2
12.5°	419.3	418.5	417.8	417.1	416.3	414.8	412.6	410.4	408.1	405.9	405.4
15°	411.0	410.1	409.1	408.2	407.3	405.3	402.3	399.4	396.4	393.5	391.8
17.5°	401.0	399.5	398.0	396.6	395.1	392.5	388.7	385.0	381.2	377.4	375.4
20°	393.5	391.8	390.0	388.2	386.5	383.5	379.1	374.8	370.5	366.1	363.9
22.5°	385.4	383.4	381.4	379.5	377.5	374.1	369.2	364.3	359.5	354.6	351.7
25°	373.2	370.3	367.6	364.8	362.1	357.7	352.0	346.3	340.5	334.8	331.2
27.5°	358.4	355.4	352.4	349.4	346.3	341.6	335.1	328.6	322.2	315.7	311.6
30°	348.1	344.8	341.5	338.2	334.9	329.8	322.8	315.9	308.9	302.0	297.6
32.5°	338.1	334.2	330.4	326.5	322.6	317.2	310.1	303.0	295.9	288.8	283.8
35°	321.5	317.1	312.6	308.2	303.8	297.7	290.1	282.4	274.8	267.2	261.7
37.5°	305.0	300.1	295.2	290.3	285.4	279.0	270.8	262.6	254.5	246.3	240.3
40°	293.3	288.2	282.9	277.7	272.5	265.7	257.3	248.8	240.4	232.0	225.8
42.5°	281.5	276.0	270.4	265.0	259.5	252.4	243.7	235.0	226.3	217.6	211.2
45°	262.9	257.0	251.2	245.4	239.5	232.0	222.9	213.8	204.7	195.5	189.4
47.5°	244.7	238.5	232.4	226.2	220.0	212.2	202.8	193.4	183.9	174.5	168.4
50°	231.5	225.4	219.2	213.0	206.9	199.0	189.4	179.9	170.3	160.7	154.7
52.5°	218.7	212.2	205.9	199.4	193.0	185.0	175.6	166.3	157.0	147.6	141.8
55°	199.8	193.1	186.3	179.5	172.7	164.7	155.2	145.9	136.5	127.1	121.9
57.5°	180.6	173.6	166.6	159.7	152.7	144.7	135.7	126.7	117.7	108.7	103.8
60°	167.4	160.5	153.5	146.5	139.6	131.6	122.7	113.7	104.8	95.8	91.4
62.5°	154.5	147.7	140.7	133.7	126.7	119.0	110.5	101.9	93.4	84.9	80.7
65°	134.9	127.9	120.9	113.8	106.8	99.4	91.5	83.7	75.9	68.0	65.1
67.5°	116.0	109.0	102.0	95.1	88.1	81.0	74.0	67.0	59.9	52.9	51.5
70°	102.9	96.1	89.3	82.6	75.8	69.4	63.4	57.3	51.4	45.4	44.5
72.5°	90.3	83.9	77.3	70.9	64.3	58.7	53.9	49.1	44.3	39.4	38.7
75°	72.0	65.9	59.8	53.7	47.6	43.1	40.1	37.2	34.3	31.3	30.7
77.5°	53.9	48.6	43.2	37.9	32.5	29.2	27.7	26.3	24.9	23.5	23.2
80°	42.6	38.2	33.8	29.4	24.9	22.2	21.4	20.5	19.6	18.8	18.4
82.5°	32.3	28.8	25.4	22.0	18.5	16.4	15.8	15.2	14.6	14.1	13.9
85°	16.8	15.0	13.2	11.4	9.6	8.4	8.2	7.9	7.7	7.4	7.4
87.5°	5.2	5.1	5.0	4.9	4.8	5.2	6.0	6.9	7.7	8.6	8.4
90°	0.9	3.2	5.5	7.8	10.2	13.4	17.7	22.0	26.3	30.5	30.1
92.5°	15.5	17.2	18.9	20.7	22.4	23.7	24.7	25.7	26.7	27.7	27.8
95°	45.4	47.3	49.2	51.1	53.1	54.2	54.7	55.0	55.4	55.8	55.8
97.5°	82.8	84.6	86.3	88.0	89.6	90.9	91.6	92.4	93.1	93.8	93.8
100°	110.7	112.3	113.8	115.4	116.9	118.0	118.6	119.2	119.8	120.4	120.4
102.5°	140.1	141.3	142.5	143.8	145.0	146.0	146.7	147.5	148.2	149.0	149.1
105°	187.5	188.0	188.6	189.2	189.9	190.3	190.7	191.1	191.5	191.8	192.3
107.5°	235.3	236.2	236.9	237.8	238.7	239.1	239.1	239.1	239.1	239.1	239.3
110°	266.0	267.2	268.3	269.5	270.6	271.2	271.2	271.2	271.2	271.2	271.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	299.5	300.7	301.8	303.0	304.1	304.6	304.4	304.3	304.2	304.0	303.5
115°	348.8	350.0	351.1	352.3	353.4	353.9	353.4	353.1	352.7	352.3	352.1
117.5°	398.0	399.6	401.1	402.7	404.2	404.4	403.4	402.3	401.2	400.1	399.7
120°	430.8	432.4	433.9	435.5	437.0	437.0	435.5	433.9	432.4	430.8	430.8
122.5°	460.8	462.7	464.5	466.4	468.2	468.6	467.5	466.5	465.4	464.3	463.8
125°	507.6	509.3	511.0	512.8	514.5	515.1	514.5	513.9	513.3	512.8	512.2
127.5°	553.1	555.3	557.5	559.7	561.9	562.7	562.0	561.3	560.6	559.9	559.1
130°	581.7	584.2	586.7	589.3	591.8	592.8	592.5	592.0	591.7	591.2	590.9
132.5°	613.7	615.8	617.9	619.9	622.0	623.0	623.1	623.2	623.3	623.4	622.5
135°	656.7	658.8	660.9	663.1	665.2	666.4	666.8	667.2	667.6	668.0	667.8
137.5°	701.8	703.6	705.3	707.1	708.8	710.0	710.4	710.9	711.4	712.0	711.8
140°	729.0	730.8	732.5	734.3	736.0	737.4	738.4	739.3	740.3	741.2	741.2
142.5°	757.0	758.7	760.4	762.2	764.0	765.2	765.8	766.5	767.2	767.8	767.9
145°	797.0	798.4	799.8	801.2	802.5	803.7	804.9	806.1	807.3	808.4	808.6
147.5°	832.8	834.5	836.1	837.7	839.3	840.5	841.3	842.1	842.8	843.6	844.0
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°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	430.2	430.8	431.5	431.8	431.7	431.5	431.4	431.3
5°	426.7	427.5	428.3	428.5	428.3	428.0	427.7	427.5
7.5°	419.8	420.1	420.3	420.2	419.7	419.2	418.8	418.4
10°	412.9	412.7	412.4	412.0	411.5	411.0	410.4	409.9
12.5°	405.0	404.5	404.1	403.4	402.5	401.7	400.8	399.9
15°	390.2	388.5	386.8	385.6	384.8	383.8	383.0	382.1
17.5°	373.4	371.4	369.5	367.8	366.3	364.8	363.3	361.8
20°	361.8	359.6	357.4	355.3	353.4	351.5	349.7	347.8
22.5°	349.0	346.1	343.4	341.2	339.8	338.4	336.9	335.5
25°	327.7	324.1	320.6	318.1	316.8	315.5	314.2	312.9
27.5°	307.4	303.2	299.1	296.0	293.9	291.9	289.8	287.7
30°	293.1	288.7	284.2	280.9	278.4	276.1	273.8	271.5
32.5°	278.7	273.6	268.5	264.9	262.8	260.5	258.3	256.1
35°	256.2	250.7	245.2	241.5	239.6	237.7	235.8	233.9
37.5°	234.3	228.3	222.2	218.1	215.9	213.7	211.5	209.3
40°	219.6	213.4	207.2	203.0	200.8	198.5	196.2	194.0
42.5°	204.7	198.4	192.0	187.8	185.5	183.4	181.2	179.0
45°	183.2	177.0	170.9	166.8	164.7	162.6	160.5	158.4
47.5°	162.2	156.1	150.0	145.9	144.0	142.2	140.3	138.4
50°	148.8	142.8	136.7	132.9	131.0	129.2	127.3	125.5
52.5°	136.0	130.3	124.5	120.7	119.1	117.4	115.6	114.0
55°	116.7	111.5	106.2	102.8	101.2	99.5	97.9	96.3
57.5°	99.1	94.3	89.5	86.4	85.1	83.7	82.3	80.8
60°	87.0	82.6	78.1	75.2	73.8	72.4	71.0	69.7
62.5°	76.5	72.2	68.0	65.4	64.6	63.8	62.9	62.1
65°	62.2	59.2	56.2	54.6	54.3	54.1	53.8	53.6
67.5°	50.2	48.8	47.4	46.7	46.3	46.1	45.8	45.5
70°	43.7	42.8	41.9	41.3	40.9	40.6	40.2	39.9
72.5°	38.0	37.2	36.5	36.1	35.8	35.6	35.4	35.2
75°	30.0	29.4	28.8	28.5	28.4	28.3	28.2	28.2
77.5°	22.7	22.4	22.0	21.9	21.7	21.5	21.4	21.3
80°	18.1	17.7	17.4	17.2	17.2	17.2	17.2	17.2
82.5°	13.7	13.4	13.3	13.2	13.2	13.2	13.2	13.2
85°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
87.5°	8.4	8.2	8.0	8.0	8.0	8.0	8.1	8.1
90°	29.7	29.4	28.9	28.8	29.1	29.3	29.4	29.6
92.5°	27.9	28.0	28.1	28.1	28.2	28.2	28.2	28.2
95°	55.8	55.8	55.8	55.6	55.2	54.8	54.4	54.1
97.5°	93.8	93.8	93.8	93.8	93.8	93.8	93.7	93.7
100°	120.4	120.4	120.4	120.3	120.0	119.9	119.7	119.5
102.5°	149.3	149.4	149.6	149.6	149.4	149.1	149.0	148.8
105°	192.6	193.0	193.4	193.6	193.6	193.6	193.6	193.6
107.5°	239.4	239.6	239.7	239.4	238.5	237.5	236.7	235.8
110°	271.2	271.2	271.2	271.0	270.4	269.8	269.1	268.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	303.1	302.6	302.1	301.7	301.3	300.8	300.4	300.0
115°	351.9	351.7	351.5	351.1	350.6	350.0	349.4	348.8
117.5°	399.2	398.7	398.2	397.7	397.2	396.6	396.0	395.4
120°	430.8	430.8	430.8	430.5	429.9	429.4	428.8	428.2
122.5°	463.4	462.9	462.4	462.0	461.6	461.2	460.7	460.3
125°	511.6	511.0	510.5	510.1	509.9	509.7	509.5	509.3
127.5°	558.4	557.8	557.1	556.4	555.8	555.2	554.6	554.0
130°	590.5	590.1	589.7	589.1	588.3	587.5	586.8	586.0
132.5°	621.6	620.8	619.9	619.2	618.6	617.9	617.3	616.7
135°	667.6	667.4	667.2	666.8	666.2	665.6	665.1	664.5
137.5°	711.6	711.5	711.4	710.8	710.1	709.3	708.5	707.7
140°	741.2	741.2	741.2	740.9	740.1	739.3	738.6	737.8
142.5°	768.1	768.3	768.4	768.1	767.3	766.5	765.8	765.0
145°	808.8	809.0	809.2	808.9	808.1	807.4	806.6	805.8
147.5°	844.5	844.9	845.3	845.2	844.5	843.7	843.0	842.2
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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