

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: P332107-930

Luminaire Tested: **S123DIW-S340D1030U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332107-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D1030U930-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4066.0 lumens
Efficiency: N/A
Efficacy: 107.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

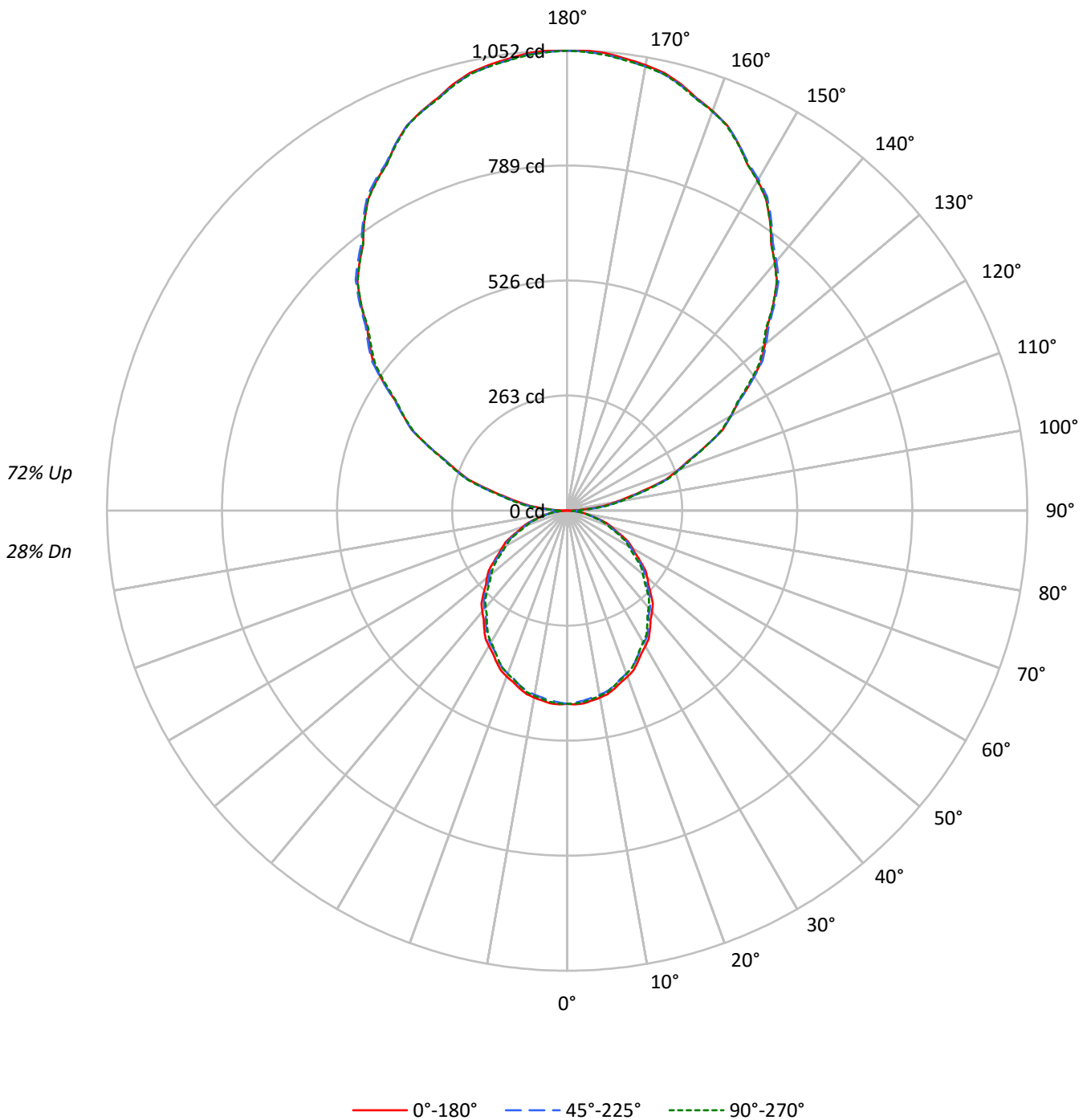
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	93	89	85	81	83	79	76	73	62	60	58	46	45	44	32	31	30	24
2	85	77	71	66	75	69	64	60	55	51	48	41	39	37	28	27	26	20
3	77	68	61	55	69	61	55	50	48	44	40	36	33	31	25	23	22	17
4	70	60	52	47	63	54	47	42	43	38	34	32	29	26	22	20	19	14
5	64	53	45	40	57	48	41	36	38	33	29	29	25	23	20	18	16	13
6	59	48	40	34	53	43	36	31	34	29	25	26	22	20	18	16	14	11
7	55	43	35	30	49	39	32	27	31	26	22	23	20	17	16	14	13	10
8	51	39	31	26	45	35	29	24	28	23	20	21	18	15	15	13	11	9
9	47	35	28	23	42	32	26	21	26	21	18	20	16	14	14	12	10	8
10	44	32	25	21	39	29	23	19	23	19	16	18	15	12	13	11	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4755	4755	4755
5°	4778	4712	4744
10°	4746	4671	4701
15°	4690	4619	4627
20°	4625	4543	4548
25°	4538	4454	4444
30°	4443	4354	4320
35°	4343	4248	4193
40°	4239	4131	4068
45°	4122	4025	3927
50°	4007	3893	3785
55°	3856	3757	3643
60°	3705	3597	3483
65°	3568	3423	3319
70°	3371	3229	3084
75°	3082	2969	2845
80°	2777	2665	2641
85°	2433	2347	2260



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.6	1.0
10°-20°	117.5	2.9
20°-30°	173.6	4.3
30°-40°	202.8	5.0
40°-50°	203.9	5.0
50°-60°	179.1	4.4
60°-70°	133.4	3.3
70°-80°	76.0	1.9
80°-90°	24.9	0.6
90°-100°	68.5	1.7
100°-110°	205.0	5.0
110°-120°	348.7	8.6
120°-130°	458.7	11.3
130°-140°	515.5	12.7
140°-150°	506.8	12.5
150°-160°	426.6	10.5
160°-170°	284.0	7.0
170°-180°	99.4	2.4
0°-30°	332.7	8.2
0°-40°	535.5	13.2
0°-60°	918.4	22.6
0°-90°	1152.8	28.4
90°-120°	622.2	15.3
90°-150°	2103.2	51.7
90°-180°	2913.0	71.6
0°-180°	4066.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	442	442	442	442	442	
5°	442	440	436	440	439	42
15°	421	419	414	417	415	119
25°	382	380	375	375	374	176
35°	330	328	323	321	319	207
45°	271	269	264	260	258	209
55°	206	205	200	196	194	184
65°	140	138	134	132	130	138
75°	74	73	71	70	68	79
85°	20	19	19	18	18	22
90°	1	9	20	23	25	4
95°	49	55	61	64	64	55
105°	186	188	195	195	197	199
115°	351	353	352	353	352	347
125°	514	516	515	511	508	458
135°	667	671	671	667	666	513
145°	809	810	813	812	809	505
155°	926	926	927	930	924	426
165°	1008	1006	1006	1010	1005	284
175°	1049	1046	1046	1050	1045	100
180°	1052	1052	1052	1052	1052	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	443.4	443.0	442.8	442.5	442.2	441.7	441.0	440.3	439.5	438.8	439.4
5°	442.2	441.7	441.3	440.9	440.5	439.9	438.9	438.0	437.0	436.1	436.9
7.5°	437.9	437.4	437.0	436.6	436.2	435.5	434.6	433.6	432.6	431.6	432.4
10°	434.2	433.8	433.3	432.9	432.5	431.8	430.6	429.6	428.4	427.4	428.1
12.5°	429.3	429.0	428.6	428.3	428.0	427.2	426.2	425.2	424.1	423.1	423.7
15°	420.9	420.6	420.2	419.9	419.6	418.8	417.8	416.6	415.6	414.5	415.2
17.5°	411.1	410.7	410.3	409.8	409.4	408.6	407.5	406.4	405.3	404.2	404.6
20°	403.8	403.3	402.8	402.3	401.8	401.0	399.9	398.8	397.7	396.6	397.0
22.5°	395.6	395.1	394.6	394.1	393.6	392.8	391.7	390.6	389.5	388.4	388.7
25°	382.1	381.6	381.2	380.7	380.2	379.4	378.2	377.2	376.0	375.0	375.0
27.5°	367.8	367.3	366.8	366.3	365.8	365.0	363.9	362.6	361.5	360.3	360.4
30°	357.5	357.0	356.6	356.2	355.8	355.0	353.8	352.6	351.5	350.3	350.3
32.5°	347.2	346.6	346.0	345.4	345.0	344.1	343.2	342.3	341.4	340.6	340.1
35°	330.5	330.0	329.5	329.0	328.5	327.7	326.6	325.5	324.4	323.3	322.8
37.5°	313.5	312.8	312.2	311.5	311.0	310.1	308.9	307.8	306.7	305.6	305.0
40°	301.7	301.1	300.6	300.1	299.6	298.7	297.6	296.4	295.2	294.0	293.3
42.5°	289.8	289.2	288.6	288.0	287.5	286.6	285.4	284.2	283.1	281.8	281.2
45°	270.8	270.5	270.2	269.9	269.5	268.8	267.7	266.6	265.5	264.4	263.4
47.5°	252.1	251.6	251.1	250.6	250.1	249.4	248.3	247.3	246.3	245.2	244.3
50°	239.3	238.9	238.5	238.1	237.7	236.8	235.8	234.7	233.6	232.5	231.5
52.5°	225.9	225.7	225.3	225.1	224.8	224.0	222.9	221.8	220.6	219.4	218.7
55°	205.5	205.5	205.4	205.3	205.2	204.6	203.5	202.4	201.3	200.2	199.3
57.5°	186.1	185.8	185.5	185.2	184.9	184.3	183.4	182.5	181.7	180.8	180.0
60°	172.1	172.0	171.9	171.9	171.8	171.2	170.2	169.2	168.2	167.1	166.4
62.5°	159.6	159.4	159.2	159.0	158.7	158.2	157.1	156.1	155.1	154.1	153.4
65°	140.1	139.7	139.3	138.9	138.5	137.9	137.1	136.2	135.3	134.4	133.8
67.5°	119.6	119.2	118.9	118.5	118.1	117.6	117.0	116.3	115.7	115.0	114.5
70°	107.1	106.6	106.2	105.6	105.1	104.6	104.1	103.5	103.1	102.6	102.0
72.5°	94.1	93.7	93.4	92.9	92.5	92.1	91.6	91.0	90.4	89.8	89.3
75°	74.1	73.7	73.4	73.1	72.7	72.4	72.2	71.9	71.7	71.4	71.0
77.5°	56.3	56.2	56.0	55.8	55.6	55.4	55.1	54.8	54.5	54.1	53.9
80°	44.8	44.6	44.4	44.1	43.8	43.6	43.5	43.3	43.1	43.0	42.8
82.5°	33.6	33.5	33.5	33.4	33.3	33.3	33.3	33.3	33.3	33.2	33.0
85°	19.7	19.6	19.4	19.2	19.1	19.0	19.0	19.0	19.0	19.0	18.8
87.5°	8.1	8.2	8.4	8.6	8.7	9.0	9.5	9.9	10.3	10.7	10.8
90°	0.8	2.7	4.5	6.4	8.2	10.3	12.6	15.1	17.4	19.8	20.5
92.5°	20.0	21.2	22.5	23.7	24.9	26.3	27.6	29.0	30.3	31.7	32.3
95°	48.8	50.0	51.3	52.6	53.9	55.3	56.7	58.2	59.7	61.1	61.9
97.5°	86.6	87.5	88.5	89.4	90.4	91.4	92.5	93.5	94.6	95.6	96.5
100°	112.3	113.4	114.5	115.6	116.8	117.7	118.7	119.6	120.5	121.4	122.0
102.5°	142.1	142.8	143.4	144.1	144.7	145.6	146.8	148.1	149.3	150.5	151.1
105°	185.9	186.2	186.6	186.9	187.4	188.3	190.0	191.6	193.3	194.9	194.9
107.5°	236.8	236.9	237.2	237.4	237.6	238.1	238.7	239.4	240.0	240.7	241.2
110°	268.5	268.8	269.2	269.5	269.9	270.3	270.7	271.0	271.4	271.7	272.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	301.5	301.7	301.9	302.1	302.4	302.5	302.6	302.6	302.7	302.8	303.7
115°	351.1	351.6	352.1	352.7	353.3	353.4	352.9	352.6	352.2	351.9	352.0
117.5°	401.0	401.3	401.7	402.0	402.4	402.4	401.9	401.4	400.9	400.5	400.4
120°	432.0	433.1	434.2	435.3	436.4	436.5	435.5	434.6	433.7	432.8	432.6
122.5°	464.4	465.2	466.0	466.8	467.6	467.7	467.3	466.8	466.4	465.9	465.4
125°	513.8	514.3	514.9	515.4	516.0	516.1	515.7	515.4	514.9	514.6	513.9
127.5°	559.4	560.5	561.7	562.9	564.0	564.4	564.0	563.6	563.2	562.8	561.8
130°	589.8	591.3	592.7	594.2	595.7	596.1	595.6	595.0	594.4	593.9	593.1
132.5°	620.1	621.6	623.1	624.6	626.1	626.6	626.1	625.7	625.3	624.9	624.0
135°	666.6	667.6	668.8	669.8	671.0	671.4	671.2	671.1	670.9	670.7	669.9
137.5°	709.6	710.5	711.3	712.2	713.2	713.9	714.4	714.9	715.3	715.8	715.0
140°	739.2	740.2	741.1	742.0	742.9	743.5	743.6	743.9	744.0	744.2	744.0
142.5°	766.4	767.3	768.2	769.1	770.1	770.6	770.9	771.3	771.7	772.0	771.8
145°	808.6	809.0	809.3	809.8	810.1	810.6	811.1	811.7	812.2	812.8	812.6
147.5°	845.6	846.3	846.9	847.7	848.3	848.9	849.4	849.9	850.4	850.9	850.9
150°	871.4	871.8	872.1	872.5	872.9	873.3	873.6	874.0	874.3	874.7	874.7
152.5°	892.6	893.1	893.6	894.1	894.6	895.0	895.2	895.4	895.7	895.9	896.2
155°	925.9	925.9	925.9	925.9	925.9	926.0	926.2	926.4	926.6	926.8	927.5
157.5°	954.4	954.1	953.9	953.7	953.5	953.4	953.6	953.7	953.9	954.0	954.8
160°	972.2	971.8	971.4	971.1	970.7	970.5	970.5	970.5	970.5	970.5	971.4
162.5°	988.1	987.6	987.0	986.5	986.0	985.8	985.9	986.1	986.3	986.4	987.3
165°	1008.5	1008.0	1007.5	1006.9	1006.3	1006.1	1006.1	1006.1	1006.1	1006.1	1007.1
167.5°	1024.9	1024.2	1023.4	1022.7	1022.0	1021.7	1021.8	1022.0	1022.1	1022.2	1023.4
170°	1034.1	1033.4	1032.7	1031.9	1031.2	1030.9	1030.9	1030.9	1030.9	1030.9	1032.1
172.5°	1041.4	1040.6	1039.9	1039.2	1038.4	1038.1	1038.1	1038.1	1038.1	1038.1	1039.3
175°	1049.0	1048.3	1047.6	1046.8	1046.1	1045.7	1045.7	1045.7	1045.7	1045.7	1046.8
177.5°	1052.1	1051.6	1051.0	1050.4	1049.8	1049.5	1049.5	1049.5	1049.5	1049.5	1050.4
180°	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	440.1	440.8	441.5	441.8	441.7	441.6	441.6	441.5
5°	437.8	438.6	439.5	439.9	439.7	439.5	439.3	439.1
7.5°	433.2	433.9	434.6	435.0	434.9	434.8	434.7	434.6
10°	428.9	429.7	430.4	430.7	430.6	430.4	430.2	430.1
12.5°	424.2	424.8	425.3	425.6	425.5	425.3	425.3	425.2
15°	415.8	416.5	417.2	417.3	416.7	416.2	415.7	415.2
17.5°	405.1	405.6	406.1	406.3	406.0	405.9	405.7	405.5
20°	397.3	397.6	397.9	398.0	397.7	397.5	397.2	397.0
22.5°	388.9	389.2	389.5	389.5	389.1	388.8	388.5	388.2
25°	375.1	375.2	375.3	375.2	375.0	374.7	374.5	374.2
27.5°	360.4	360.5	360.5	360.4	360.1	359.8	359.5	359.1
30°	350.3	350.3	350.3	349.9	349.4	348.8	348.2	347.6
32.5°	339.6	339.1	338.7	338.3	337.9	337.6	337.3	337.0
35°	322.3	321.8	321.2	320.8	320.4	319.9	319.5	319.1
37.5°	304.4	303.8	303.1	302.7	302.5	302.1	301.9	301.7
40°	292.7	292.0	291.3	290.8	290.5	290.2	289.8	289.5
42.5°	280.5	279.8	279.2	278.7	278.3	278.0	277.7	277.3
45°	262.4	261.4	260.3	259.7	259.2	258.8	258.4	258.0
47.5°	243.3	242.3	241.2	240.6	240.2	239.9	239.5	239.1
50°	230.6	229.7	228.8	228.0	227.6	227.1	226.6	226.0
52.5°	217.8	217.0	216.2	215.6	215.1	214.6	214.1	213.6
55°	198.4	197.4	196.5	195.8	195.4	194.9	194.5	194.1
57.5°	179.2	178.3	177.5	176.8	176.3	175.9	175.4	174.9
60°	165.7	164.9	164.1	163.5	163.1	162.7	162.2	161.8
62.5°	152.5	151.8	151.1	150.5	150.3	149.9	149.7	149.4
65°	133.1	132.5	131.8	131.3	131.1	130.8	130.5	130.3
67.5°	113.8	113.2	112.7	112.2	111.9	111.5	111.1	110.8
70°	101.4	100.8	100.2	99.7	99.3	98.9	98.4	98.0
72.5°	88.8	88.2	87.7	87.3	87.2	86.9	86.7	86.4
75°	70.6	70.1	69.7	69.4	69.1	68.9	68.6	68.4
77.5°	53.6	53.3	53.0	52.9	52.9	52.9	52.9	52.9
80°	42.7	42.6	42.6	42.6	42.6	42.6	42.6	42.6
82.5°	32.9	32.8	32.6	32.4	32.4	32.4	32.3	32.2
85°	18.7	18.5	18.3	18.3	18.3	18.3	18.3	18.3
87.5°	10.8	10.9	11.0	11.0	11.1	11.2	11.3	11.3
90°	21.3	22.0	22.7	23.3	23.6	24.1	24.4	24.8
92.5°	32.9	33.5	34.1	34.2	34.0	33.8	33.6	33.3
95°	62.6	63.3	64.1	64.4	64.4	64.4	64.4	64.4
97.5°	97.3	98.2	99.1	99.4	99.3	99.3	99.2	99.1
100°	122.5	123.1	123.6	124.1	124.4	124.8	125.1	125.6
102.5°	151.6	152.1	152.7	153.0	152.9	152.8	152.7	152.6
105°	194.9	194.9	194.9	195.1	195.5	195.8	196.2	196.6
107.5°	241.9	242.5	243.0	243.2	243.0	242.8	242.6	242.3
110°	273.2	273.9	274.7	274.8	274.5	274.1	273.8	273.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	304.6	305.4	306.3	306.7	306.6	306.6	306.6	306.5
115°	352.2	352.5	352.6	352.6	352.5	352.2	352.0	351.9
117.5°	400.4	400.3	400.3	400.0	399.5	399.0	398.4	397.9
120°	432.4	432.3	432.1	431.8	431.5	431.0	430.7	430.3
122.5°	464.9	464.4	464.0	463.4	462.9	462.4	461.9	461.4
125°	513.1	512.4	511.7	510.9	510.2	509.5	508.7	508.0
127.5°	560.8	559.8	558.7	557.7	556.9	556.1	555.2	554.4
130°	592.4	591.7	590.9	590.0	588.6	587.3	586.1	584.8
132.5°	623.2	622.3	621.4	620.5	619.5	618.5	617.5	616.5
135°	669.2	668.5	667.7	667.2	666.8	666.5	666.1	665.8
137.5°	714.3	713.5	712.7	712.0	711.3	710.6	709.9	709.2
140°	743.9	743.6	743.5	742.7	741.4	740.2	738.9	737.6
142.5°	771.6	771.4	771.3	770.6	769.6	768.7	767.7	766.7
145°	812.4	812.2	812.0	811.5	810.8	810.1	809.3	808.6
147.5°	850.9	850.9	850.9	850.4	849.3	848.2	847.1	846.0
150°	874.7	874.7	874.7	874.2	873.1	872.0	870.9	869.8
152.5°	896.4	896.7	897.1	896.7	895.8	894.8	893.8	892.9
155°	928.2	929.0	929.7	929.4	928.1	926.8	925.6	924.3
157.5°	955.5	956.3	957.1	957.0	955.9	955.0	953.9	952.8
160°	972.4	973.3	974.2	974.3	973.5	972.8	972.1	971.3
162.5°	988.2	989.1	990.1	989.9	988.8	987.6	986.4	985.2
165°	1008.3	1009.3	1010.5	1010.4	1009.1	1007.8	1006.5	1005.3
167.5°	1024.5	1025.6	1026.8	1026.8	1025.6	1024.5	1023.4	1022.2
170°	1033.4	1034.7	1036.0	1036.0	1034.7	1033.4	1032.1	1030.9
172.5°	1040.4	1041.5	1042.7	1042.6	1041.3	1040.0	1038.7	1037.5
175°	1047.9	1049.0	1050.1	1050.0	1048.7	1047.4	1046.2	1044.9
177.5°	1051.2	1052.1	1053.0	1053.0	1051.9	1050.9	1049.9	1048.9
180°	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5	1051.5

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