

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: P332113-930

Luminaire Tested: **S123DIW-S340D1320U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332113-930
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-S340D1320U930-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4883.2 lumens
Efficiency: N/A
Efficacy: 104.8 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

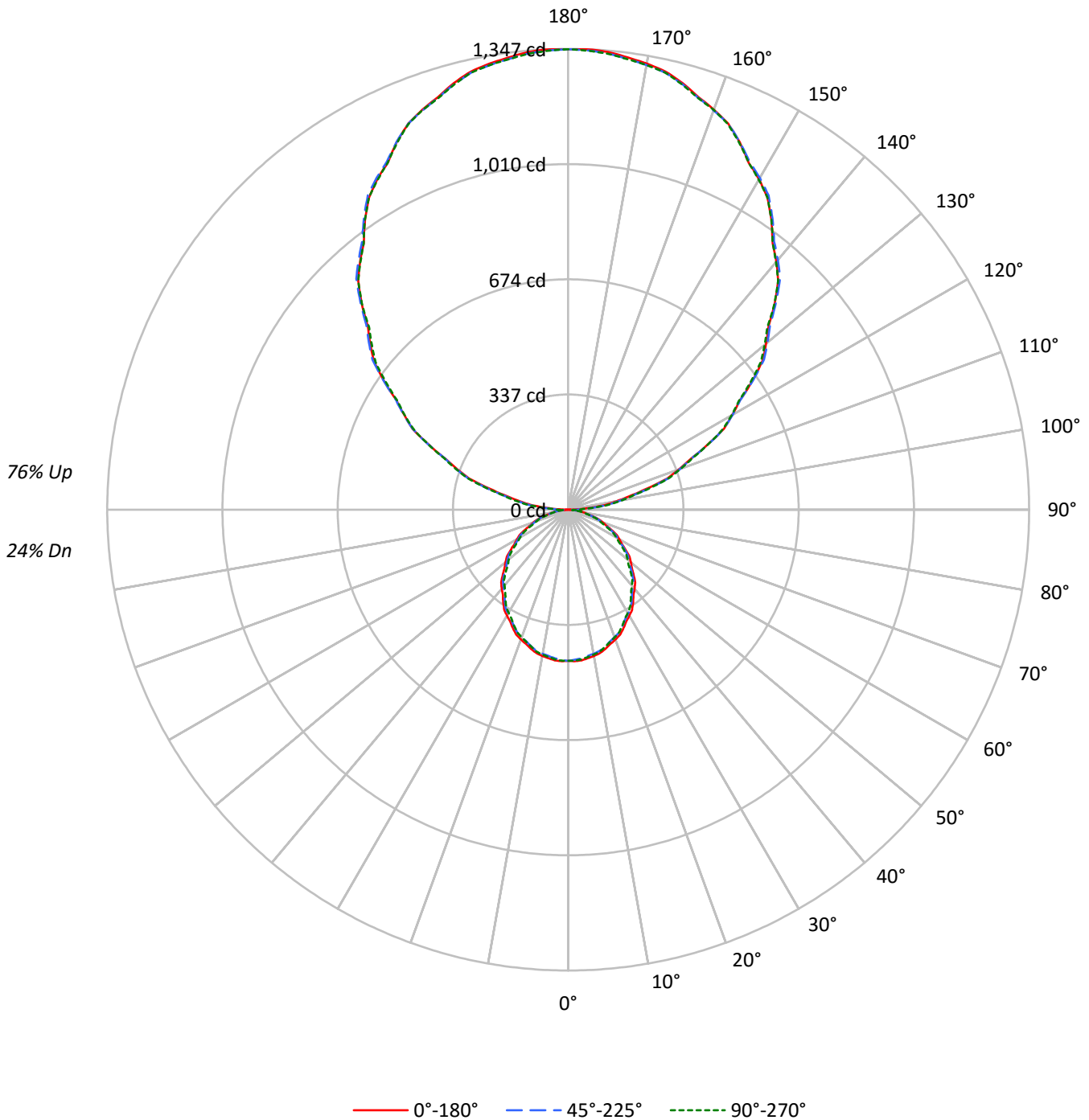
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24
1	92	88	84	81	81	78	75	72	60	58	56	43	42	41	28	27	27	20
2	84	76	71	66	74	68	63	59	52	49	46	38	36	34	25	24	22	17
3	76	67	60	55	67	60	54	49	46	42	39	34	31	29	22	20	19	14
4	70	59	52	46	62	53	46	42	41	36	33	30	27	25	19	18	16	12
5	64	53	45	39	56	47	40	35	36	32	28	27	24	21	17	16	14	10
6	59	47	39	34	52	42	35	31	33	28	24	24	21	18	16	14	12	9
7	54	42	35	29	48	38	31	27	30	25	21	22	19	16	14	13	11	8
8	50	38	31	26	44	34	28	23	27	22	19	20	17	14	13	11	10	7
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	12	10	9	7
10	43	32	25	20	38	28	22	18	22	18	15	17	14	11	11	9	8	6

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	0.9
10°-20°	117.5	2.4
20°-30°	173.6	3.6
30°-40°	202.8	4.2
40°-50°	203.9	4.2
50°-60°	179.1	3.7
60°-70°	133.4	2.7
70°-80°	76.0	1.6
80°-90°	25.8	0.5
90°-100°	87.7	1.8
100°-110°	262.5	5.4
110°-120°	446.4	9.1
120°-130°	587.2	12.0
130°-140°	660.0	13.5
140°-150°	648.8	13.3
150°-160°	546.2	11.2
160°-170°	363.6	7.4
170°-180°	127.3	2.6
0°-30°	332.7	6.8
0°-40°	535.5	11.0
0°-60°	918.4	18.8
0°-90°	1153.6	23.6
90°-120°	796.6	16.3
90°-150°	2692.5	55.1
90°-180°	3730.0	76.4
0°-180°	4883.2	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	12	25	29	32	5
95°	62	70	78	82	82	70
105°	238	240	250	250	252	255
115°	449	452	450	451	450	444
125°	658	661	659	655	650	586
135°	853	859	859	854	852	657
145°	1035	1037	1040	1039	1035	646
155°	1185	1185	1186	1190	1183	545
165°	1291	1288	1288	1294	1287	364
175°	1343	1339	1339	1344	1338	128
180°	1346	1346	1346	1346	1346	



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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°	8.2	8.4	8.6	8.9	9.2	9.6	10.1	10.7	11.3	11.7	11.9
90°	1.1	3.4	5.8	8.1	10.4	13.1	16.2	19.2	22.3	25.4	26.3
92.5°	25.6	27.1	28.8	30.4	32.0	33.7	35.4	37.1	38.9	40.6	41.3
95°	62.4	64.0	65.7	67.3	69.0	70.8	72.6	74.5	76.4	78.3	79.2
97.5°	110.8	112.0	113.2	114.5	115.7	117.0	118.4	119.7	121.1	122.5	123.5
100°	143.8	145.2	146.6	148.1	149.4	150.7	151.9	153.1	154.3	155.5	156.1
102.5°	181.9	182.7	183.6	184.4	185.2	186.5	188.0	189.6	191.1	192.7	193.4
105°	237.9	238.4	238.9	239.3	239.8	241.1	243.2	245.3	247.4	249.6	249.6
107.5°	303.0	303.4	303.6	303.9	304.2	304.8	305.6	306.5	307.3	308.1	308.9
110°	343.6	344.1	344.6	345.0	345.5	346.0	346.5	347.0	347.4	347.9	348.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	386.0	386.2	386.5	386.8	387.1	387.3	387.3	387.4	387.6	387.7	388.8
115°	449.4	450.1	450.8	451.5	452.2	452.3	451.8	451.4	450.9	450.5	450.7
117.5°	513.3	513.7	514.2	514.7	515.2	515.1	514.5	513.9	513.2	512.7	512.6
120°	553.0	554.4	555.9	557.3	558.6	558.8	557.6	556.4	555.3	554.1	553.8
122.5°	594.5	595.5	596.6	597.6	598.6	598.8	598.2	597.6	597.0	596.4	595.7
125°	657.7	658.4	659.1	659.8	660.6	660.6	660.1	659.7	659.3	658.8	657.9
127.5°	716.1	717.6	719.1	720.6	722.1	722.6	722.1	721.5	721.1	720.6	719.2
130°	755.0	756.8	758.8	760.7	762.5	763.1	762.4	761.7	761.0	760.3	759.4
132.5°	793.9	795.8	797.7	799.6	801.4	802.1	801.6	801.1	800.5	800.1	798.9
135°	853.4	854.8	856.1	857.5	859.0	859.6	859.3	859.1	858.8	858.6	857.7
137.5°	908.3	909.5	910.7	911.8	913.1	914.0	914.5	915.2	915.7	916.4	915.3
140°	946.4	947.5	948.8	949.9	951.1	951.8	952.0	952.3	952.5	952.8	952.5
142.5°	981.0	982.3	983.4	984.6	985.8	986.6	987.0	987.4	987.8	988.3	988.1
145°	1035.2	1035.7	1036.2	1036.7	1037.1	1037.7	1038.4	1039.1	1039.8	1040.5	1040.2
147.5°	1082.6	1083.5	1084.3	1085.2	1086.0	1086.7	1087.4	1088.0	1088.7	1089.3	1089.3
150°	1115.6	1116.1	1116.6	1117.0	1117.4	1117.9	1118.4	1118.8	1119.3	1119.8	1119.8
152.5°	1142.6	1143.3	1143.9	1144.6	1145.3	1145.7	1146.1	1146.3	1146.6	1146.9	1147.3
155°	1185.4	1185.4	1185.4	1185.4	1185.4	1185.5	1185.7	1185.9	1186.2	1186.4	1187.4
157.5°	1221.7	1221.5	1221.2	1220.9	1220.6	1220.6	1220.7	1220.9	1221.2	1221.3	1222.3
160°	1244.6	1244.1	1243.7	1243.2	1242.7	1242.4	1242.4	1242.4	1242.4	1242.4	1243.7
162.5°	1264.9	1264.2	1263.6	1262.9	1262.2	1262.0	1262.2	1262.4	1262.6	1262.7	1264.0
165°	1291.1	1290.4	1289.7	1289.0	1288.3	1287.9	1287.9	1287.9	1287.9	1287.9	1289.3
167.5°	1312.1	1311.1	1310.2	1309.2	1308.3	1307.9	1308.1	1308.3	1308.5	1308.6	1310.1
170°	1323.9	1323.0	1322.0	1321.1	1320.1	1319.6	1319.6	1319.6	1319.6	1319.6	1321.3
172.5°	1333.2	1332.3	1331.3	1330.4	1329.4	1328.9	1328.9	1328.9	1328.9	1328.9	1330.4
175°	1343.0	1342.0	1341.1	1340.1	1339.1	1338.7	1338.7	1338.7	1338.7	1338.7	1340.1
177.5°	1347.0	1346.2	1345.4	1344.7	1343.9	1343.5	1343.5	1343.5	1343.5	1343.5	1344.7
180°	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1



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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°	12.0	12.1	12.2	12.3	12.5	12.6	12.6	12.7
90°	27.2	28.2	29.1	29.8	30.3	30.8	31.2	31.7
92.5°	42.1	42.9	43.6	43.9	43.5	43.3	43.0	42.7
95°	80.1	81.0	82.0	82.5	82.5	82.5	82.5	82.5
97.5°	124.6	125.7	126.8	127.3	127.2	127.1	127.0	126.9
100°	156.9	157.5	158.2	158.8	159.3	159.8	160.3	160.7
102.5°	194.0	194.8	195.5	195.8	195.7	195.6	195.5	195.4
105°	249.6	249.6	249.6	249.8	250.3	250.7	251.2	251.7
107.5°	309.7	310.4	311.1	311.4	311.1	310.8	310.5	310.2
110°	349.8	350.7	351.6	351.9	351.4	351.0	350.5	350.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	389.9	391.0	392.2	392.6	392.6	392.5	392.4	392.3
115°	450.9	451.2	451.4	451.4	451.2	450.9	450.7	450.5
117.5°	512.6	512.5	512.4	512.1	511.4	510.8	510.1	509.5
120°	553.6	553.4	553.2	552.8	552.4	551.9	551.4	550.9
122.5°	595.2	594.5	593.9	593.3	592.6	592.0	591.3	590.7
125°	656.9	656.0	655.0	654.1	653.1	652.2	651.3	650.3
127.5°	717.9	716.6	715.3	714.0	713.0	711.9	710.9	709.7
130°	758.4	757.5	756.5	755.2	753.6	752.0	750.3	748.7
132.5°	797.8	796.6	795.6	794.3	793.0	791.8	790.5	789.3
135°	856.7	855.8	854.8	854.2	853.7	853.2	852.7	852.3
137.5°	914.4	913.4	912.4	911.5	910.6	909.7	908.8	907.9
140°	952.3	952.0	951.8	950.9	949.3	947.5	945.9	944.3
142.5°	987.8	987.6	987.3	986.6	985.3	984.1	982.8	981.5
145°	1040.0	1039.8	1039.6	1039.0	1038.0	1037.1	1036.2	1035.2
147.5°	1089.3	1089.3	1089.3	1088.7	1087.3	1085.8	1084.4	1083.0
150°	1119.8	1119.8	1119.8	1119.1	1117.7	1116.3	1114.8	1113.5
152.5°	1147.6	1148.0	1148.3	1147.9	1146.7	1145.5	1144.3	1143.0
155°	1188.3	1189.3	1190.2	1189.8	1188.2	1186.6	1184.9	1183.2
157.5°	1223.3	1224.3	1225.3	1225.1	1223.8	1222.5	1221.2	1219.9
160°	1244.8	1246.0	1247.2	1247.3	1246.3	1245.5	1244.5	1243.5
162.5°	1265.1	1266.3	1267.5	1267.3	1265.8	1264.3	1262.8	1261.3
165°	1290.8	1292.2	1293.6	1293.5	1291.8	1290.2	1288.5	1286.9
167.5°	1311.6	1313.0	1314.5	1314.5	1313.0	1311.6	1310.1	1308.6
170°	1323.0	1324.6	1326.2	1326.2	1324.6	1323.0	1321.3	1319.6
172.5°	1331.9	1333.3	1334.8	1334.7	1333.1	1331.4	1329.8	1328.1
175°	1341.5	1343.0	1344.3	1344.2	1342.6	1340.9	1339.3	1337.7
177.5°	1345.8	1347.0	1348.1	1348.0	1346.6	1345.3	1344.0	1342.7
180°	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1

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