

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: P331273-840

Luminaire Tested: **SA2XXDIP-C290D925U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331273-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXDIP-C290D925U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 925 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4952.3 lumens
Efficiency: N/A
Efficacy: 132.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

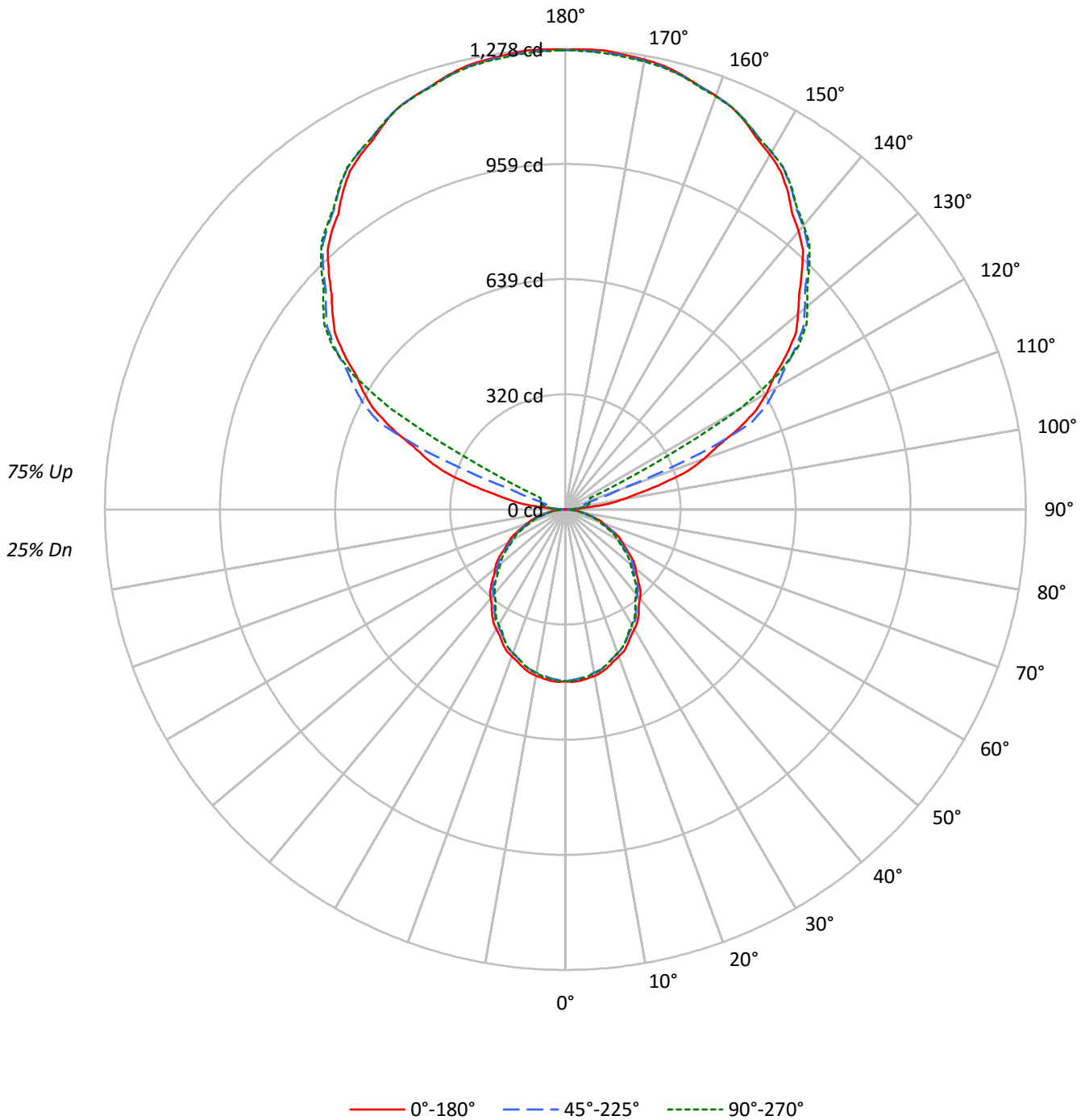
Input Watts (W): 37.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	50	50	33	33	33	25				
1	92	88	84	81	82	78	75	72	60	58	57	44	43	42	29	28	28	21				
2	84	77	71	66	74	68	64	59	53	50	47	39	37	35	25	24	23	17				
3	76	67	60	55	68	60	54	50	47	43	39	34	31	29	22	21	20	15				
4	70	59	52	46	62	53	47	42	41	37	33	30	27	25	20	18	17	13				
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	16	15	11				
6	59	47	39	34	52	42	36	31	33	28	25	24	21	19	16	14	13	10				
7	54	42	35	30	48	38	32	27	30	25	22	22	19	17	15	13	11	9				
8	50	38	31	26	45	34	28	24	27	22	19	20	17	15	14	12	10	8				
9	47	35	28	23	41	31	25	21	25	20	17	18	15	13	13	11	9	7				
10	43	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7703	7703	7703
5°	7733	7621	7666
10°	7688	7543	7581
15°	7590	7447	7438
20°	7455	7301	7290
25°	7322	7119	7119
30°	7150	6952	6893
35°	6991	6753	6654
40°	6787	6555	6431
45°	6588	6357	6202
50°	6373	6154	5935
55°	6145	5917	5695
60°	5896	5628	5422
65°	5624	5349	5100
70°	5282	4999	4763
75°	4810	4604	4492
80°	4258	4138	3924
85°	3483	3316	2983



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.9	0.9
10°-20°	126.2	2.5
20°-30°	185.5	3.7
30°-40°	215.5	4.4
40°-50°	215.3	4.3
50°-60°	187.7	3.8
60°-70°	138.8	2.8
70°-80°	78.6	1.6
80°-90°	24.3	0.5
90°-100°	42.5	0.9
100°-110°	155.9	3.1
110°-120°	416.8	8.4
120°-130°	688.0	13.9
130°-140°	731.7	14.8
140°-150°	680.1	13.7
150°-160°	546.8	11.0
160°-170°	352.3	7.1
170°-180°	121.3	2.4
0°-30°	356.6	7.2
0°-40°	572.2	11.6
0°-60°	975.2	19.7
0°-90°	1216.9	24.6
90°-120°	615.2	12.4
90°-150°	2714.9	54.8
90°-180°	3735.0	75.4
0°-180°	4952.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	477	477	477	477	477	
5°	477	475	470	474	473	45
15°	454	451	446	447	445	128
25°	411	407	400	400	400	189
35°	355	350	343	340	338	221
45°	288	285	278	274	272	223
55°	218	215	210	205	202	195
65°	147	144	140	136	134	146
75°	77	76	74	71	72	82
85°	19	18	18	17	16	22
90°	1	11	18	23	25	4
95°	60	32	36	40	40	73
105°	280	292	56	66	70	300
115°	530	546	569	162	76	522
125°	750	762	779	786	789	668
135°	928	942	951	960	958	716
145°	1076	1076	1091	1097	1093	673
155°	1185	1178	1188	1193	1186	546
165°	1249	1244	1246	1252	1246	353
175°	1277	1271	1273	1278	1270	122
180°	1275	1275	1275	1275	1275	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	479.3	478.9	478.5	478.1	477.7	477.1	476.2	475.2	474.3	473.4	474.2
5°	477.1	476.7	476.3	475.8	475.4	474.7	473.6	472.5	471.3	470.2	471.0
7.5°	472.9	472.2	471.6	471.0	470.4	469.5	468.4	467.2	466.1	464.9	465.7
10°	468.9	468.2	467.5	466.8	466.0	465.0	463.8	462.6	461.4	460.1	460.9
12.5°	463.3	462.7	462.1	461.4	460.8	459.9	458.7	457.5	456.3	455.0	455.6
15°	454.1	453.5	452.9	452.3	451.7	450.8	449.4	448.1	446.8	445.5	445.9
17.5°	442.4	441.8	441.2	440.6	440.0	439.0	437.7	436.3	434.9	433.6	434.0
20°	433.9	433.3	432.7	432.1	431.5	430.5	429.1	427.7	426.3	424.9	425.2
22.5°	425.6	424.6	423.8	422.9	422.1	421.0	419.7	418.3	417.0	415.7	415.7
25°	411.0	410.2	409.4	408.6	407.8	406.5	404.8	403.0	401.3	399.6	399.8
27.5°	394.6	393.8	393.0	392.3	391.6	390.5	389.2	387.8	386.5	385.1	384.8
30°	383.5	382.7	381.9	381.1	380.2	379.1	377.6	376.1	374.5	372.9	372.6
32.5°	371.7	371.1	370.5	369.8	369.2	368.0	366.4	364.9	363.2	361.6	361.0
35°	354.7	353.6	352.5	351.5	350.5	349.2	347.6	346.0	344.4	342.6	342.0
37.5°	335.3	334.4	333.5	332.5	331.6	330.4	328.8	327.2	325.5	323.9	323.2
40°	322.0	321.2	320.4	319.6	318.8	317.6	315.9	314.3	312.7	311.0	310.1
42.5°	309.2	308.4	307.6	306.8	306.0	304.7	303.1	301.4	299.8	298.2	297.2
45°	288.5	287.8	287.1	286.4	285.7	284.6	283.1	281.6	280.0	278.4	277.3
47.5°	268.0	267.3	266.7	266.0	265.3	264.2	262.6	261.1	259.4	257.8	256.6
50°	253.7	253.2	252.7	252.2	251.7	250.6	249.2	247.8	246.4	245.0	243.6
52.5°	239.7	239.0	238.4	237.7	237.0	236.0	234.7	233.4	232.0	230.7	229.4
55°	218.3	217.7	217.1	216.5	215.9	215.0	213.8	212.6	211.4	210.2	208.8
57.5°	196.9	196.4	195.9	195.4	194.9	194.0	192.7	191.4	190.0	188.6	187.4
60°	182.6	182.2	181.8	181.4	181.0	180.1	178.6	177.2	175.7	174.3	173.2
62.5°	168.6	167.9	167.3	166.7	166.0	165.1	164.0	163.0	161.9	160.8	159.7
65°	147.2	146.6	146.0	145.4	144.8	144.0	143.0	142.0	141.0	140.0	139.0
67.5°	125.5	125.0	124.5	124.0	123.6	122.9	121.9	121.0	120.1	119.2	118.5
70°	111.9	111.5	111.1	110.7	110.3	109.7	108.8	107.9	106.8	105.9	105.2
72.5°	98.0	97.6	97.1	96.7	96.3	95.8	95.2	94.7	94.1	93.5	92.8
75°	77.1	76.9	76.6	76.4	76.2	75.9	75.4	74.8	74.3	73.8	73.2
77.5°	58.4	58.0	57.7	57.4	57.0	56.7	56.5	56.2	56.0	55.8	55.5
80°	45.8	45.7	45.6	45.5	45.4	45.3	45.1	44.9	44.7	44.5	44.2
82.5°	34.1	34.1	34.1	34.0	34.0	33.9	33.8	33.7	33.6	33.5	33.1
85°	18.8	18.7	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.6
87.5°	6.8	7.1	7.4	7.7	8.0	8.2	8.4	8.5	8.7	8.8	8.8
90°	0.9	3.1	5.5	7.7	9.9	11.9	13.5	15.1	16.8	18.5	19.5
92.5°	18.6	18.4	18.2	18.0	17.8	18.1	19.0	19.8	20.6	21.4	21.9
95°	60.0	53.2	46.5	39.7	32.9	30.2	31.7	33.1	34.5	36.0	37.0
97.5°	119.0	99.9	80.9	61.8	42.7	34.8	38.2	41.5	44.8	48.2	49.0
100°	163.3	135.1	107.0	79.0	50.9	38.7	42.1	45.6	49.1	52.6	54.2
102.5°	212.0	206.0	200.1	194.1	188.1	170.7	141.5	112.3	83.2	54.0	56.1
105°	280.3	286.5	292.7	298.8	305.0	280.0	224.1	168.1	112.2	56.2	58.5
107.5°	358.4	363.3	368.3	373.2	378.3	347.2	280.0	213.0	145.8	78.8	76.4
110°	408.6	412.9	417.2	421.5	425.8	398.3	339.1	279.8	220.7	161.4	140.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	455.8	459.6	463.4	467.3	471.0	465.6	451.0	436.4	421.7	407.1	332.3
115°	530.3	533.8	537.2	540.8	544.2	548.6	553.7	558.9	563.9	569.1	474.1
117.5°	596.9	600.8	604.7	608.6	612.5	616.2	619.8	623.3	626.8	630.3	607.3
120°	645.6	648.6	651.8	654.8	657.9	661.3	665.0	668.6	672.4	676.0	678.5
122.5°	686.9	690.1	693.4	696.6	699.8	703.5	707.5	711.6	715.6	719.6	721.0
125°	749.8	752.5	755.2	757.8	760.5	763.8	767.7	771.5	775.5	779.3	780.8
127.5°	806.8	809.8	812.7	815.7	818.6	821.5	824.5	827.4	830.3	833.2	835.3
130°	843.0	846.3	849.5	852.8	856.1	858.9	861.1	863.3	865.7	867.9	870.1
132.5°	879.9	882.6	885.4	888.3	891.0	893.5	895.9	898.1	900.3	902.5	904.5
135°	927.9	931.1	934.4	937.7	941.0	943.5	945.3	947.3	949.1	950.9	952.9
137.5°	976.3	978.7	981.0	983.2	985.5	987.7	989.8	991.9	994.0	996.1	998.0
140°	1008.0	1009.8	1011.4	1013.0	1014.6	1016.6	1018.9	1021.1	1023.4	1025.6	1027.4
142.5°	1034.6	1036.1	1037.6	1039.1	1040.6	1042.6	1045.1	1047.7	1050.4	1052.9	1054.6
145°	1076.3	1076.1	1075.9	1075.7	1075.5	1077.1	1080.7	1084.1	1087.6	1091.1	1092.5
147.5°	1112.7	1111.9	1111.2	1110.3	1109.5	1110.9	1114.3	1117.8	1121.3	1124.7	1125.7
150°	1136.3	1134.9	1133.4	1132.0	1130.5	1131.5	1134.8	1138.0	1141.3	1144.6	1145.8
152.5°	1156.2	1154.6	1153.0	1151.4	1149.8	1150.5	1153.7	1156.8	1159.9	1163.1	1164.3
155°	1185.2	1183.4	1181.4	1179.6	1177.8	1178.1	1180.5	1183.1	1185.5	1187.9	1189.1
157.5°	1207.8	1206.3	1204.8	1203.2	1201.6	1201.7	1203.5	1205.2	1206.9	1208.6	1210.0
160°	1221.1	1219.9	1218.7	1217.4	1216.2	1216.2	1217.4	1218.7	1219.9	1221.1	1222.3
162.5°	1232.9	1231.7	1230.5	1229.2	1228.0	1227.9	1229.0	1230.0	1231.1	1232.2	1233.6
165°	1248.8	1247.6	1246.4	1245.1	1243.9	1243.5	1244.2	1244.8	1245.5	1246.1	1247.5
167.5°	1260.6	1259.4	1258.2	1256.9	1255.7	1255.4	1256.0	1256.5	1257.1	1257.7	1259.1
170°	1267.3	1266.0	1264.8	1263.5	1262.3	1261.9	1262.3	1262.7	1263.1	1263.5	1265.0
172.5°	1271.6	1270.4	1269.2	1268.0	1266.8	1266.4	1266.8	1267.2	1267.6	1268.0	1269.4
175°	1277.4	1276.0	1274.6	1273.0	1271.6	1271.1	1271.5	1271.9	1272.3	1272.7	1274.2
177.5°	1278.3	1277.2	1276.1	1274.9	1273.7	1273.2	1273.4	1273.5	1273.7	1273.8	1275.1
180°	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	477.1	477.1	477.1	477.1	477.1	477.1	477.1	477.1
2.5°	475.0	475.8	476.7	477.1	476.9	476.7	476.6	476.4
5°	471.9	472.7	473.5	473.8	473.6	473.4	473.2	473.0
7.5°	466.6	467.4	468.2	468.5	468.3	468.0	467.8	467.6
10°	461.8	462.6	463.4	463.6	463.3	463.0	462.7	462.4
12.5°	456.2	456.7	457.3	457.5	457.3	457.0	456.8	456.6
15°	446.3	446.7	447.1	447.1	446.6	446.1	445.6	445.0
17.5°	434.5	435.0	435.5	435.5	434.9	434.5	434.0	433.5
20°	425.5	425.8	426.1	426.0	425.6	425.2	424.7	424.3
22.5°	415.8	415.9	415.9	415.8	415.6	415.3	415.1	414.9
25°	400.0	400.2	400.4	400.4	400.2	400.0	399.8	399.6
27.5°	384.5	384.2	383.8	383.4	382.9	382.4	382.0	381.5
30°	372.3	372.0	371.7	371.4	371.0	370.6	370.2	369.7
32.5°	360.5	359.9	359.4	358.9	358.5	358.1	357.7	357.3
35°	341.4	340.8	340.2	339.7	339.2	338.7	338.2	337.6
37.5°	322.3	321.6	320.8	320.2	319.7	319.2	318.8	318.3
40°	309.2	308.3	307.4	306.7	306.3	305.9	305.5	305.1
42.5°	296.2	295.2	294.2	293.4	292.9	292.3	291.8	291.1
45°	276.2	275.1	274.0	273.2	272.8	272.4	272.0	271.6
47.5°	255.5	254.3	253.1	252.2	251.7	251.1	250.4	249.8
50°	242.2	240.7	239.2	238.3	237.8	237.3	236.8	236.3
52.5°	228.3	227.1	225.9	225.0	224.3	223.7	223.0	222.3
55°	207.6	206.4	205.2	204.4	203.9	203.3	202.8	202.3
57.5°	186.2	185.0	183.8	183.0	182.7	182.3	181.9	181.5
60°	172.1	171.0	169.9	169.2	168.8	168.5	168.2	167.9
62.5°	158.6	157.6	156.6	155.9	155.5	155.1	154.7	154.3
65°	138.0	137.1	136.2	135.5	135.0	134.5	134.0	133.5
67.5°	117.8	117.0	116.3	115.7	115.3	114.9	114.5	114.1
70°	104.5	103.8	103.1	102.6	102.2	101.7	101.3	100.9
72.5°	92.1	91.4	90.7	90.1	89.8	89.5	89.2	88.8
75°	72.6	72.0	71.4	71.2	71.4	71.6	71.8	72.0
77.5°	55.2	54.9	54.6	54.3	54.0	53.8	53.5	53.2
80°	43.9	43.6	43.3	43.0	42.8	42.6	42.4	42.2
82.5°	32.7	32.3	31.9	31.7	31.7	31.6	31.6	31.6
85°	17.3	17.0	16.7	16.5	16.4	16.3	16.2	16.1
87.5°	8.8	8.7	8.7	8.7	8.7	8.7	8.7	8.7
90°	20.5	21.5	22.5	23.2	23.6	24.0	24.5	24.9
92.5°	22.4	23.0	23.5	23.9	24.1	24.4	24.6	24.9
95°	38.0	39.1	40.1	40.5	40.3	40.1	39.9	39.7
97.5°	49.8	50.6	51.4	51.9	52.2	52.4	52.7	52.9
100°	55.8	57.5	59.2	60.2	60.6	61.0	61.4	61.8
102.5°	58.3	60.5	62.6	63.9	64.5	65.0	65.6	66.2
105°	60.8	63.0	65.2	66.9	67.7	68.5	69.3	70.1
107.5°	74.1	71.9	69.6	68.9	69.7	70.5	71.3	72.1
110°	120.4	99.9	79.4	69.6	70.4	71.2	72.0	72.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	257.6	182.8	108.1	71.0	71.6	72.3	72.9	73.6
115°	379.3	284.4	189.5	134.6	119.9	105.1	90.4	75.6
117.5°	584.4	561.5	538.5	502.7	454.2	405.8	357.3	308.8
120°	681.0	683.5	685.9	673.3	645.6	617.9	590.3	562.6
122.5°	722.6	724.0	725.5	723.6	718.2	712.8	707.4	702.1
125°	782.2	783.7	785.1	786.1	786.7	787.3	788.0	788.6
127.5°	837.4	839.5	841.6	842.6	842.8	842.9	843.0	843.1
130°	872.4	874.6	876.9	878.0	877.8	877.5	877.3	877.1
132.5°	906.5	908.4	910.3	911.1	910.9	910.7	910.5	910.3
135°	955.0	957.0	959.1	959.9	959.5	959.1	958.7	958.3
137.5°	1000.1	1002.1	1004.1	1004.8	1004.1	1003.4	1002.7	1002.0
140°	1029.3	1031.2	1033.0	1033.4	1032.4	1031.4	1030.4	1029.3
142.5°	1056.2	1057.9	1059.7	1060.0	1058.9	1057.9	1056.9	1055.8
145°	1094.0	1095.4	1096.8	1097.0	1096.0	1095.0	1094.0	1093.0
147.5°	1126.8	1127.8	1128.9	1129.0	1128.1	1127.3	1126.4	1125.6
150°	1147.0	1148.3	1149.5	1149.6	1148.6	1147.5	1146.5	1145.5
152.5°	1165.5	1166.7	1167.9	1167.9	1166.5	1165.2	1163.9	1162.5
155°	1190.4	1191.6	1192.9	1192.7	1191.0	1189.3	1187.7	1186.1
157.5°	1211.3	1212.7	1214.2	1214.1	1212.4	1210.8	1209.2	1207.7
160°	1223.6	1224.9	1226.1	1226.0	1224.5	1223.0	1221.6	1220.2
162.5°	1235.0	1236.4	1237.8	1237.6	1235.9	1234.1	1232.3	1230.5
165°	1248.9	1250.3	1251.7	1251.7	1250.3	1248.9	1247.5	1246.1
167.5°	1260.5	1261.9	1263.4	1263.1	1261.3	1259.5	1257.7	1255.8
170°	1266.5	1267.9	1269.3	1269.1	1267.3	1265.4	1263.5	1261.7
172.5°	1270.8	1272.3	1273.7	1273.5	1271.6	1269.8	1268.0	1266.2
175°	1275.7	1277.1	1278.5	1278.2	1276.2	1274.1	1272.0	1270.0
177.5°	1276.2	1277.4	1278.5	1278.3	1276.9	1275.4	1273.8	1272.4
180°	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7	1274.7

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