

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: P331636-840

Luminaire Tested: **SA2XXRDIP-C290D925U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331636-840
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: SA2XXRDIP-C290D925U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 925 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

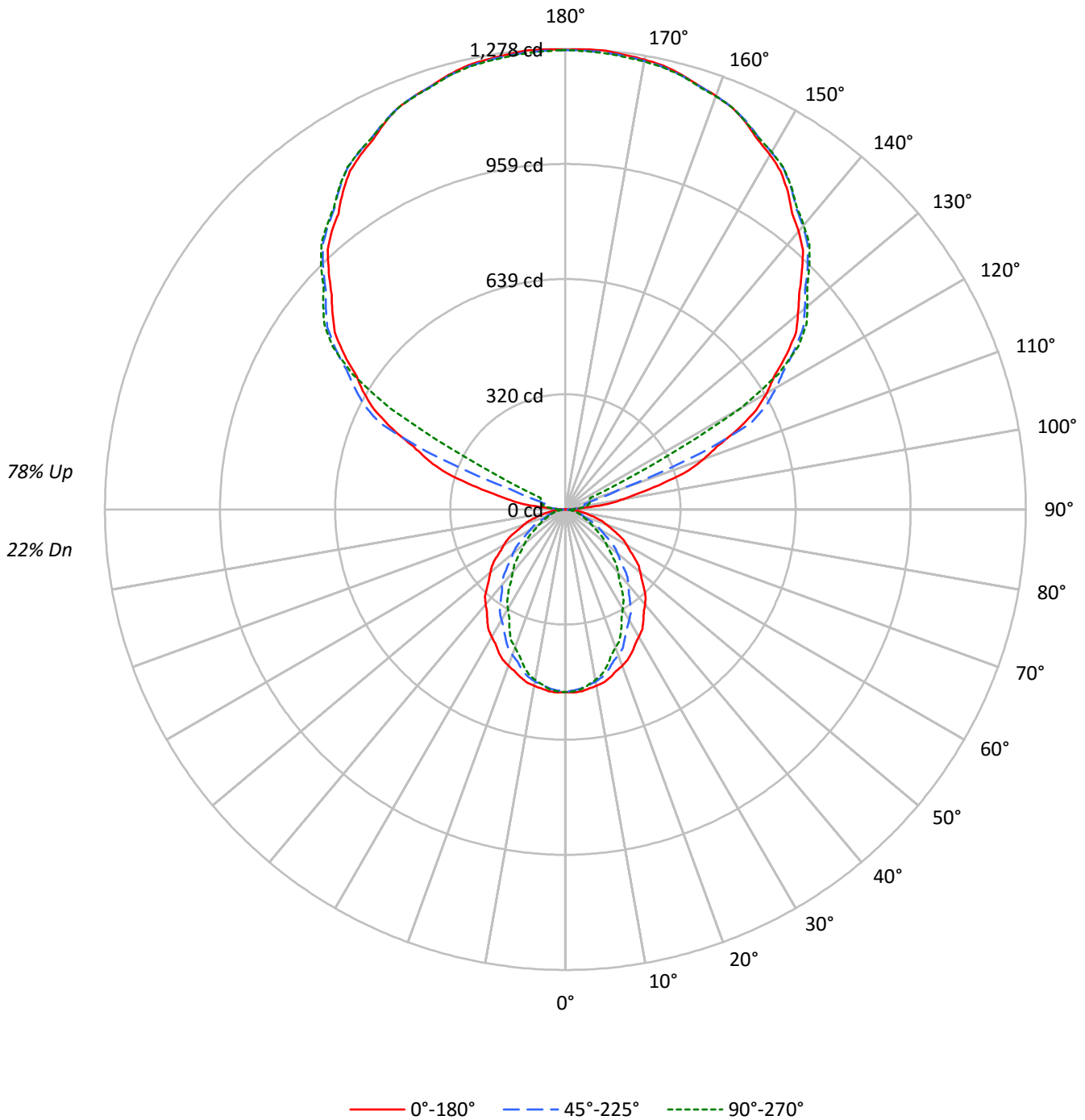
Lumens per Lamp: N/A
Luminaire Lumens: 4781.1 lumens
Efficiency: N/A
Efficacy: 128.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

Input Watts (W): 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	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22				
1	92	88	84	81	81	78	75	72	59	57	56	43	41	40	27	26	26	19				
2	84	77	71	66	74	68	63	59	52	49	46	38	36	34	24	23	22	16				
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19	14				
4	70	60	52	47	62	53	47	42	41	37	33	30	27	25	19	18	17	12				
5	64	53	46	40	57	47	41	36	37	32	29	27	24	22	17	16	14	11				
6	59	48	40	34	52	43	36	31	33	28	25	24	21	19	16	14	13	9				
7	54	43	35	30	48	38	32	27	30	25	22	22	19	17	14	13	11	8				
8	50	39	31	26	45	35	28	24	27	23	19	20	17	15	13	12	10	8				
9	47	35	28	23	41	32	26	21	25	20	17	18	15	13	12	11	9	7				
10	44	32	25	21	39	29	23	19	23	18	15	17	14	12	11	10	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8186	8186	8186
5°	8217	8083	8126
10°	8153	7950	7883
15°	8058	7714	7492
20°	7930	7378	7009
25°	7798	6996	6538
30°	7612	6604	5936
35°	7433	6177	5409
40°	7253	5735	4795
45°	7040	5236	4242
50°	6822	4735	3697
55°	6598	4197	3178
60°	6339	3630	2638
65°	6044	3049	2399
70°	5698	2511	2209
75°	5265	2289	2059
80°	4649	2046	1878
85°	3649	1612	1612



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.4	1.0
10°-20°	130.3	2.7
20°-30°	183.0	3.8
30°-40°	199.5	4.2
40°-50°	183.4	3.8
50°-60°	144.1	3.0
60°-70°	93.9	2.0
70°-80°	48.4	1.0
80°-90°	15.7	0.3
90°-100°	42.5	0.9
100°-110°	155.9	3.3
110°-120°	416.8	8.7
120°-130°	688.0	14.4
130°-140°	731.7	15.3
140°-150°	680.1	14.2
150°-160°	546.8	11.4
160°-170°	352.3	7.4
170°-180°	121.3	2.5
0°-30°	360.7	7.5
0°-40°	560.2	11.7
0°-60°	887.7	18.6
0°-90°	1045.8	21.9
90°-120°	615.2	12.9
90°-150°	2714.9	56.8
90°-180°	3735.0	78.1
0°-180°	4781.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	507	507	507	507	507	
5°	507	504	499	502	501	48
15°	482	476	462	453	448	136
25°	438	422	393	375	367	201
35°	377	353	313	285	274	236
45°	308	277	229	198	186	238
55°	234	198	149	123	113	209
65°	158	121	80	65	63	157
75°	84	53	37	34	33	89
85°	20	11	9	9	9	23
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°	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0
2.5°	508.8	508.4	508.0	507.6	507.2	506.4	505.5	504.7	503.8	502.9	503.7
5°	507.0	506.4	505.9	505.4	504.9	503.9	502.6	501.3	500.0	498.7	499.6
7.5°	501.7	501.1	500.4	499.8	499.2	498.1	496.6	494.9	493.4	491.9	492.1
10°	497.3	496.6	495.8	495.1	494.4	493.0	491.0	489.0	487.0	484.9	484.6
12.5°	491.8	490.9	490.0	489.2	488.3	486.6	483.9	481.3	478.7	476.1	475.5
15°	482.1	481.0	479.9	478.8	477.7	475.3	471.9	468.5	464.9	461.5	459.6
17.5°	470.3	468.6	466.9	465.1	463.4	460.4	456.0	451.5	447.1	442.6	440.3
20°	461.5	459.5	457.5	455.3	453.3	449.8	444.6	439.6	434.5	429.4	426.9
22.5°	452.0	449.7	447.4	445.1	442.8	438.8	433.0	427.3	421.6	415.9	412.5
25°	437.7	434.3	431.1	427.9	424.6	419.6	412.8	406.2	399.4	392.7	388.5
27.5°	420.4	416.9	413.3	409.8	406.2	400.6	393.0	385.5	377.9	370.3	365.5
30°	408.3	404.5	400.5	396.7	392.8	386.8	378.6	370.5	362.3	354.2	349.0
32.5°	396.6	392.0	387.5	382.9	378.4	372.0	363.8	355.4	347.1	338.7	332.9
35°	377.1	371.9	366.7	361.5	356.3	349.2	340.2	331.2	322.3	313.4	306.9
37.5°	357.7	351.9	346.2	340.5	334.8	327.2	317.6	308.0	298.5	288.9	281.9
40°	344.1	338.0	331.8	325.7	319.6	311.6	301.7	291.9	282.0	272.1	264.8
42.5°	330.1	323.7	317.2	310.8	304.4	296.0	285.8	275.6	265.4	255.2	247.7
45°	308.3	301.4	294.6	287.8	280.9	272.2	261.5	250.7	240.0	229.3	222.2
47.5°	287.0	279.7	272.6	265.3	258.0	248.9	237.8	226.8	215.7	204.7	197.5
50°	271.6	264.4	257.1	249.8	242.7	233.4	222.2	211.0	199.8	188.5	181.5
52.5°	256.5	248.9	241.5	233.9	226.3	217.0	206.0	195.1	184.1	173.1	166.3
55°	234.4	226.5	218.5	210.6	202.6	193.2	182.1	171.1	160.1	149.1	143.0
57.5°	211.8	203.6	195.4	187.3	179.2	169.8	159.2	148.7	138.0	127.4	121.8
60°	196.3	188.2	180.1	171.9	163.7	154.4	143.9	133.4	122.9	112.4	107.1
62.5°	181.3	173.2	165.0	156.8	148.7	139.6	129.6	119.6	109.6	99.6	94.6
65°	158.2	150.0	141.8	133.5	125.2	116.5	107.3	98.2	89.0	79.8	76.3
67.5°	136.0	127.8	119.7	111.5	103.3	95.0	86.7	78.6	70.3	62.0	60.4
70°	120.7	112.7	104.7	96.8	88.9	81.4	74.3	67.3	60.3	53.2	52.2
72.5°	105.9	98.4	90.7	83.1	75.4	68.9	63.2	57.6	51.9	46.3	45.3
75°	84.4	77.3	70.2	63.0	55.8	50.6	47.1	43.6	40.2	36.7	36.0
77.5°	63.2	57.0	50.7	44.4	38.2	34.2	32.5	30.9	29.2	27.6	27.2
80°	50.0	44.8	39.6	34.4	29.2	26.1	25.0	24.0	23.0	22.0	21.6
82.5°	37.9	33.8	29.8	25.8	21.7	19.3	18.6	17.9	17.2	16.6	16.3
85°	19.7	17.6	15.5	13.3	11.2	9.9	9.6	9.3	9.0	8.7	8.7
87.5°	6.1	5.9	5.7	5.5	5.3	5.4	5.7	6.0	6.3	6.7	6.8
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°	507.0	507.0	507.0	507.0	507.0	507.0	507.0	507.0
2.5°	504.5	505.3	506.1	506.4	506.3	506.1	505.9	505.8
5°	500.5	501.4	502.3	502.6	502.3	502.0	501.7	501.4
7.5°	492.4	492.7	492.9	492.8	492.3	491.7	491.2	490.7
10°	484.3	484.0	483.7	483.2	482.6	482.0	481.4	480.8
12.5°	475.0	474.4	473.9	473.1	472.1	471.1	470.1	469.1
15°	457.7	455.7	453.7	452.3	451.3	450.2	449.2	448.2
17.5°	438.0	435.7	433.4	431.4	429.6	427.9	426.1	424.3
20°	424.3	421.7	419.2	416.8	414.5	412.3	410.1	407.9
22.5°	409.3	406.0	402.7	400.2	398.5	396.9	395.2	393.5
25°	384.4	380.1	376.0	373.1	371.6	370.0	368.5	367.0
27.5°	360.5	355.7	350.8	347.2	344.8	342.3	339.9	337.5
30°	343.8	338.6	333.4	329.4	326.6	323.9	321.1	318.4
32.5°	326.9	320.9	315.0	310.7	308.2	305.6	303.0	300.4
35°	300.5	294.1	287.6	283.3	281.0	278.8	276.6	274.4
37.5°	274.8	267.7	260.6	255.8	253.3	250.6	248.1	245.5
40°	257.6	250.3	243.1	238.1	235.5	232.9	230.1	227.5
42.5°	240.1	232.7	225.2	220.3	217.6	215.1	212.5	210.0
45°	214.9	207.6	200.5	195.6	193.2	190.7	188.2	185.8
47.5°	190.3	183.1	175.9	171.2	169.0	166.7	164.5	162.3
50°	174.5	167.4	160.4	155.8	153.7	151.6	149.4	147.2
52.5°	159.6	152.8	146.0	141.6	139.7	137.6	135.6	133.7
55°	136.8	130.8	124.6	120.6	118.7	116.7	114.8	112.9
57.5°	116.2	110.6	105.0	101.4	99.8	98.2	96.5	94.8
60°	102.0	96.8	91.6	88.2	86.5	84.9	83.3	81.7
62.5°	89.7	84.7	79.8	76.7	75.7	74.8	73.8	72.8
65°	72.9	69.4	65.9	64.0	63.7	63.4	63.1	62.8
67.5°	58.9	57.3	55.6	54.7	54.3	54.0	53.7	53.4
70°	51.2	50.2	49.2	48.5	48.0	47.6	47.2	46.8
72.5°	44.5	43.6	42.8	42.3	42.0	41.8	41.5	41.3
75°	35.2	34.5	33.8	33.4	33.3	33.2	33.1	33.0
77.5°	26.7	26.3	25.9	25.7	25.4	25.2	25.1	24.9
80°	21.2	20.8	20.4	20.2	20.2	20.2	20.2	20.2
82.5°	16.1	15.8	15.6	15.5	15.5	15.5	15.5	15.5
85°	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7
87.5°	6.9	7.0	7.1	7.3	7.3	7.4	7.5	7.6
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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