

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

Luminaire Tested: **SA2XXRDIP-C290D925U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331636
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-C290D925U835-4F0-1E-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: 4734.4 lumens
Efficiency: N/A
Efficacy: 126.9 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

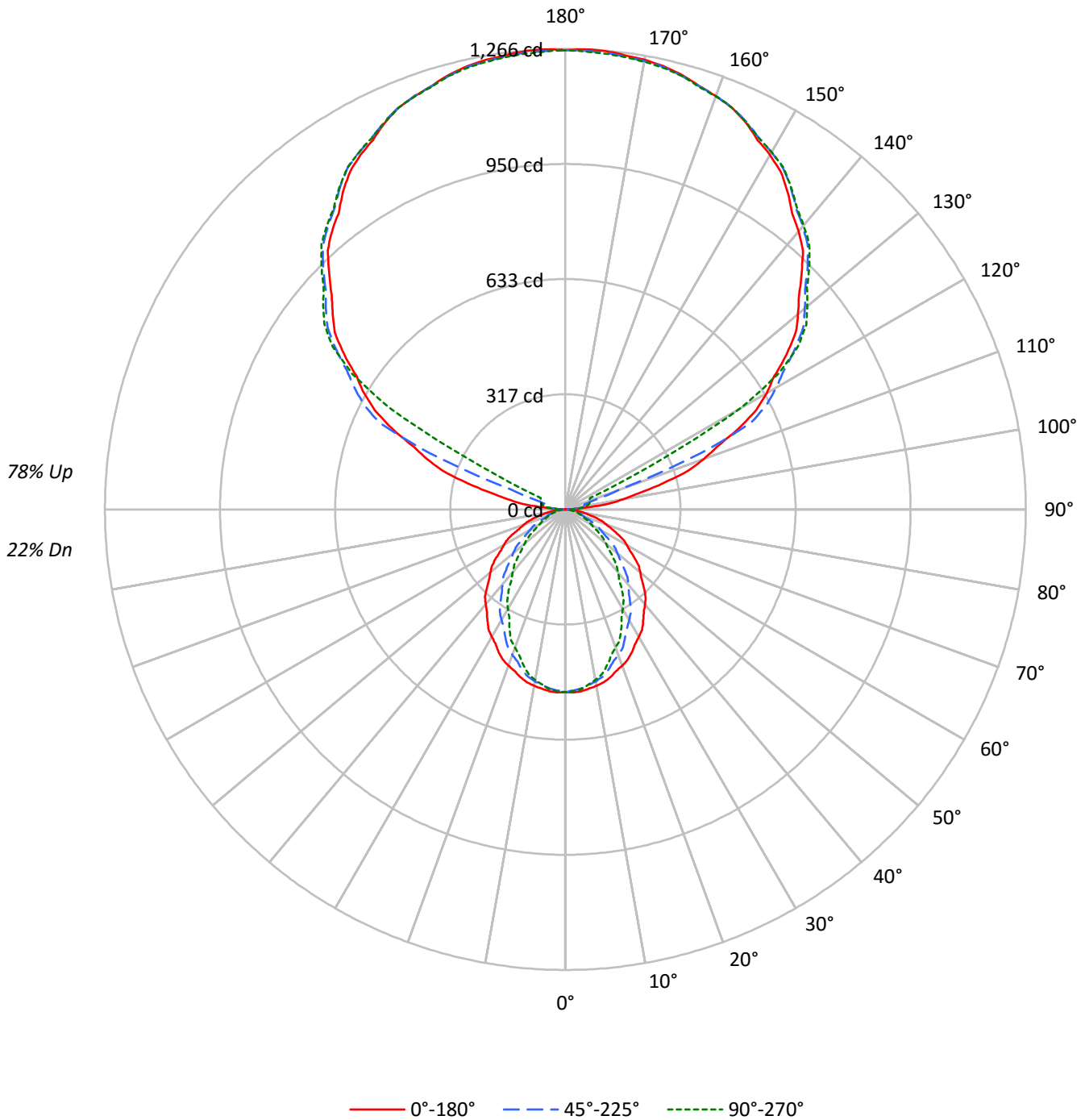
Input Watts (W): 37.3
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	8105	8105	8105
5°	8136	8003	8047
10°	8073	7873	7806
15°	7980	7639	7418
20°	7852	7306	6940
25°	7721	6928	6474
30°	7538	6538	5878
35°	7360	6116	5355
40°	7181	5678	4749
45°	6971	5186	4201
50°	6754	4690	3662
55°	6533	4155	3147
60°	6278	3594	2612
65°	5987	3018	2376
70°	5641	2488	2186
75°	5215	2264	2040
80°	4603	2027	1860
85°	3612	1593	1593



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.0	1.0
10°-20°	129.0	2.7
20°-30°	181.2	3.8
30°-40°	197.6	4.2
40°-50°	181.6	3.8
50°-60°	142.7	3.0
60°-70°	93.0	2.0
70°-80°	48.0	1.0
80°-90°	15.5	0.3
90°-100°	42.1	0.9
100°-110°	154.4	3.3
110°-120°	412.7	8.7
120°-130°	681.3	14.4
130°-140°	724.5	15.3
140°-150°	673.4	14.2
150°-160°	541.4	11.4
160°-170°	348.9	7.4
170°-180°	120.1	2.5
0°-30°	357.2	7.5
0°-40°	554.7	11.7
0°-60°	879.0	18.6
0°-90°	1035.5	21.9
90°-120°	609.2	12.9
90°-150°	2688.4	56.8
90°-180°	3699.0	78.1
0°-180°	4734.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	502	502	502	502	502	
5°	502	500	494	498	496	48
15°	477	472	457	449	444	134
25°	433	418	389	371	363	199
35°	373	349	310	283	272	234
45°	305	274	227	196	184	236
55°	232	196	148	121	112	207
65°	157	120	79	64	62	155
75°	84	53	36	33	33	88
85°	20	10	9	9	9	23
90°	1	11	18	23	25	4
95°	59	31	36	40	39	73
105°	278	290	56	65	69	297
115°	525	541	564	160	75	517
125°	742	755	772	778	781	662
135°	919	933	942	950	949	709
145°	1066	1066	1080	1086	1082	666
155°	1174	1166	1176	1181	1174	541
165°	1237	1232	1234	1240	1234	349
175°	1265	1259	1260	1266	1258	120
180°	1262	1262	1262	1262	1262	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0
2.5°	503.8	503.4	503.0	502.6	502.2	501.5	500.6	499.8	498.9	498.0	498.8
5°	502.0	501.5	501.0	500.5	500.0	499.0	497.7	496.4	495.1	493.8	494.7
7.5°	496.8	496.2	495.5	494.9	494.3	493.2	491.7	490.1	488.6	487.1	487.3
10°	492.4	491.7	491.0	490.3	489.6	488.2	486.2	484.2	482.2	480.2	479.9
12.5°	487.0	486.1	485.2	484.4	483.5	481.8	479.2	476.6	474.0	471.4	470.9
15°	477.4	476.3	475.2	474.1	473.0	470.7	467.3	463.9	460.4	457.0	455.1
17.5°	465.7	464.0	462.3	460.6	458.9	455.9	451.5	447.1	442.7	438.3	436.0
20°	457.0	455.0	453.0	450.9	448.9	445.4	440.3	435.3	430.3	425.2	422.7
22.5°	447.6	445.3	443.0	440.8	438.5	434.5	428.8	423.1	417.5	411.8	408.5
25°	433.4	430.1	426.9	423.7	420.5	415.5	408.8	402.2	395.5	388.9	384.7
27.5°	416.3	412.8	409.3	405.8	402.2	396.7	389.2	381.7	374.2	366.7	361.9
30°	404.3	400.5	396.6	392.8	389.0	383.0	374.9	366.9	358.8	350.7	345.6
32.5°	392.7	388.2	383.7	379.2	374.7	368.4	360.2	351.9	343.7	335.4	329.6
35°	373.4	368.3	363.1	358.0	352.8	345.8	336.9	328.0	319.2	310.3	303.9
37.5°	354.2	348.5	342.8	337.2	331.5	324.0	314.5	305.0	295.6	286.1	279.1
40°	340.7	334.7	328.6	322.5	316.5	308.6	298.8	289.0	279.2	269.4	262.2
42.5°	326.9	320.5	314.1	307.8	301.4	293.1	283.0	272.9	262.8	252.7	245.3
45°	305.3	298.5	291.7	285.0	278.2	269.5	258.9	248.3	237.7	227.1	220.0
47.5°	284.2	277.0	269.9	262.7	255.5	246.5	235.5	224.6	213.6	202.7	195.6
50°	268.9	261.8	254.6	247.4	240.3	231.1	220.0	208.9	197.8	186.7	179.7
52.5°	254.0	246.5	239.1	231.6	224.1	214.9	204.0	193.2	182.3	171.4	164.7
55°	232.1	224.3	216.4	208.5	200.6	191.3	180.3	169.4	158.5	147.6	141.6
57.5°	209.7	201.6	193.5	185.5	177.4	168.1	157.6	147.2	136.7	126.2	120.6
60°	194.4	186.4	178.3	170.2	162.1	152.9	142.5	132.1	121.7	111.3	106.1
62.5°	179.5	171.5	163.4	155.3	147.2	138.2	128.3	118.4	108.5	98.6	93.7
65°	156.7	148.5	140.4	132.2	124.0	115.4	106.3	97.2	88.1	79.0	75.6
67.5°	134.7	126.6	118.5	110.4	102.3	94.1	85.9	77.8	69.6	61.4	59.8
70°	119.5	111.6	103.7	95.9	88.0	80.6	73.6	66.6	59.7	52.7	51.7
72.5°	104.9	97.4	89.8	82.3	74.7	68.2	62.6	57.0	51.4	45.8	44.9
75°	83.6	76.5	69.5	62.4	55.3	50.1	46.6	43.2	39.8	36.3	35.6
77.5°	62.6	56.4	50.2	44.0	37.8	33.9	32.2	30.6	28.9	27.3	26.9
80°	49.5	44.4	39.2	34.1	28.9	25.8	24.8	23.8	22.8	21.8	21.4
82.5°	37.5	33.5	29.5	25.5	21.5	19.1	18.4	17.7	17.0	16.4	16.1
85°	19.5	17.4	15.3	13.2	11.1	9.8	9.5	9.2	8.9	8.6	8.6
87.5°	6.0	5.8	5.6	5.4	5.2	5.3	5.6	5.9	6.2	6.6	6.7
90°	0.9	3.1	5.4	7.6	9.8	11.8	13.4	15.0	16.6	18.3	19.3
92.5°	18.4	18.2	18.0	17.8	17.6	17.9	18.8	19.6	20.4	21.2	21.7
95°	59.4	52.7	46.0	39.3	32.6	29.9	31.4	32.8	34.2	35.6	36.6
97.5°	117.8	98.9	80.1	61.2	42.3	34.5	37.8	41.1	44.4	47.7	48.5
100°	161.7	133.8	106.0	78.2	50.4	38.3	41.7	45.2	48.6	52.1	53.7
102.5°	209.9	204.0	198.1	192.2	186.3	169.0	140.1	111.2	82.4	53.5	55.6
105°	277.6	283.7	289.8	295.9	302.0	277.3	221.9	166.5	111.1	55.7	57.9
107.5°	354.9	359.8	364.7	369.6	374.6	343.8	277.3	210.9	144.4	78.0	75.7
110°	404.6	408.9	413.1	417.4	421.6	394.4	335.8	277.1	218.5	159.8	139.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	451.3	455.1	458.9	462.7	466.4	461.1	446.6	432.1	417.6	403.1	329.1
115°	525.1	528.6	532.0	535.5	538.9	543.2	548.3	553.4	558.4	563.5	469.5
117.5°	591.1	594.9	598.8	602.7	606.5	610.2	613.7	617.2	620.7	624.1	601.4
120°	639.3	642.3	645.4	648.4	651.5	654.8	658.5	662.1	665.8	669.4	671.9
122.5°	680.2	683.4	686.6	689.8	693.0	696.6	700.6	704.6	708.6	712.6	714.0
125°	742.5	745.1	747.8	750.4	753.1	756.3	760.2	764.0	767.9	771.7	773.2
127.5°	798.9	801.9	804.8	807.7	810.6	813.5	816.4	819.3	822.2	825.1	827.1
130°	834.8	838.0	841.2	844.5	847.7	850.5	852.7	854.9	857.2	859.4	861.6
132.5°	871.3	874.0	876.8	879.6	882.3	884.8	887.1	889.3	891.5	893.7	895.7
135°	918.8	922.0	925.3	928.5	931.8	934.3	936.1	938.0	939.8	941.6	943.6
137.5°	966.8	969.1	971.4	973.6	975.9	978.1	980.1	982.2	984.3	986.4	988.3
140°	998.2	999.9	1001.5	1003.1	1004.7	1006.7	1008.9	1011.1	1013.4	1015.6	1017.4
142.5°	1024.5	1026.0	1027.5	1028.9	1030.4	1032.4	1034.9	1037.5	1040.1	1042.6	1044.3
145°	1065.8	1065.6	1065.4	1065.2	1065.0	1066.6	1070.1	1073.5	1077.0	1080.4	1081.8
147.5°	1101.8	1101.0	1100.3	1099.5	1098.7	1100.0	1103.4	1106.9	1110.3	1113.7	1114.7
150°	1125.2	1123.8	1122.3	1120.9	1119.5	1120.4	1123.7	1126.9	1130.2	1133.4	1134.6
152.5°	1144.9	1143.3	1141.7	1140.2	1138.6	1139.3	1142.4	1145.5	1148.6	1151.7	1152.9
155°	1173.6	1171.8	1169.9	1168.1	1166.3	1166.6	1169.0	1171.5	1173.9	1176.3	1177.5
157.5°	1196.0	1194.5	1193.0	1191.4	1189.9	1190.0	1191.7	1193.4	1195.1	1196.8	1198.2
160°	1209.2	1208.0	1206.8	1205.5	1204.3	1204.3	1205.5	1206.8	1208.0	1209.2	1210.4
162.5°	1220.9	1219.7	1218.5	1217.2	1216.0	1215.9	1217.0	1218.0	1219.1	1220.2	1221.5
165°	1236.6	1235.4	1234.2	1232.9	1231.7	1231.4	1232.0	1232.6	1233.3	1233.9	1235.3
167.5°	1248.3	1247.1	1245.9	1244.6	1243.4	1243.1	1243.7	1244.2	1244.8	1245.4	1246.8
170°	1254.9	1253.6	1252.4	1251.2	1250.0	1249.6	1250.0	1250.4	1250.8	1251.2	1252.6
172.5°	1259.2	1258.0	1256.8	1255.6	1254.4	1254.0	1254.4	1254.8	1255.2	1255.6	1257.0
175°	1264.9	1263.5	1262.1	1260.6	1259.2	1258.7	1259.1	1259.5	1259.9	1260.3	1261.8
177.5°	1265.8	1264.7	1263.6	1262.4	1261.3	1260.8	1261.0	1261.1	1261.3	1261.4	1262.6
180°	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0
2.5°	499.6	500.4	501.2	501.5	501.4	501.2	501.0	500.9
5°	495.6	496.5	497.4	497.7	497.4	497.1	496.8	496.5
7.5°	487.6	487.9	488.1	488.0	487.5	486.9	486.4	485.9
10°	479.6	479.3	479.0	478.5	477.9	477.3	476.7	476.1
12.5°	470.4	469.8	469.3	468.5	467.5	466.5	465.5	464.5
15°	453.2	451.2	449.3	447.9	446.9	445.8	444.8	443.8
17.5°	433.7	431.4	429.2	427.2	425.4	423.7	421.9	420.2
20°	420.2	417.6	415.1	412.7	410.5	408.3	406.1	403.9
22.5°	405.3	402.0	398.8	396.3	394.6	393.0	391.3	389.7
25°	380.6	376.4	372.3	369.5	368.0	366.4	364.9	363.4
27.5°	357.0	352.2	347.4	343.8	341.4	339.0	336.6	334.2
30°	340.4	335.3	330.1	326.2	323.4	320.7	318.0	315.3
32.5°	323.7	317.8	311.9	307.7	305.2	302.6	300.0	297.5
35°	297.6	291.2	284.8	280.5	278.3	276.1	273.9	271.7
37.5°	272.1	265.1	258.1	253.3	250.8	248.2	245.7	243.1
40°	255.1	247.9	240.7	235.8	233.2	230.6	227.9	225.3
42.5°	237.8	230.4	223.0	218.1	215.5	213.0	210.4	207.9
45°	212.8	205.6	198.5	193.7	191.3	188.8	186.4	184.0
47.5°	188.4	181.3	174.2	169.5	167.3	165.1	162.9	160.7
50°	172.8	165.8	158.8	154.3	152.2	150.1	147.9	145.8
52.5°	158.0	151.3	144.6	140.2	138.3	136.3	134.3	132.4
55°	135.5	129.5	123.4	119.4	117.5	115.6	113.7	111.8
57.5°	115.1	109.5	104.0	100.4	98.8	97.2	95.6	93.9
60°	101.0	95.9	90.7	87.3	85.7	84.1	82.5	80.9
62.5°	88.8	83.9	79.0	76.0	75.0	74.1	73.1	72.1
65°	72.2	68.7	65.3	63.4	63.1	62.8	62.5	62.2
67.5°	58.3	56.7	55.1	54.2	53.8	53.5	53.2	52.9
70°	50.7	49.7	48.7	48.0	47.5	47.1	46.7	46.3
72.5°	44.1	43.2	42.4	41.9	41.6	41.4	41.1	40.9
75°	34.9	34.2	33.5	33.1	33.0	32.9	32.8	32.7
77.5°	26.4	26.0	25.6	25.4	25.2	25.0	24.9	24.7
80°	21.0	20.6	20.2	20.0	20.0	20.0	20.0	20.0
82.5°	15.9	15.6	15.4	15.3	15.3	15.3	15.3	15.3
85°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
87.5°	6.8	6.9	7.0	7.2	7.2	7.3	7.4	7.5
90°	20.3	21.3	22.3	23.0	23.4	23.8	24.3	24.7
92.5°	22.2	22.8	23.3	23.7	23.9	24.2	24.4	24.7
95°	37.6	38.7	39.7	40.1	39.9	39.7	39.5	39.3
97.5°	49.3	50.1	50.9	51.4	51.7	51.9	52.2	52.4
100°	55.3	56.9	58.6	59.6	60.0	60.4	60.8	61.2
102.5°	57.7	59.9	62.0	63.3	63.9	64.4	65.0	65.6
105°	60.2	62.4	64.6	66.2	67.0	67.8	68.6	69.4
107.5°	73.4	71.2	68.9	68.2	69.0	69.8	70.6	71.4
110°	119.2	98.9	78.6	68.9	69.7	70.5	71.3	72.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	255.1	181.0	107.0	70.3	70.9	71.6	72.2	72.9
115°	375.6	281.6	187.6	133.3	118.7	104.1	89.5	74.9
117.5°	578.7	556.0	533.2	497.8	449.8	401.8	353.8	305.8
120°	674.3	676.8	679.2	666.7	639.3	611.9	584.5	557.1
122.5°	715.5	716.9	718.4	716.5	711.2	705.8	700.5	695.2
125°	774.6	776.0	777.4	778.4	779.0	779.6	780.3	780.9
127.5°	829.2	831.3	833.4	834.4	834.6	834.7	834.8	834.9
130°	863.9	866.1	868.3	869.4	869.2	868.9	868.7	868.5
132.5°	897.6	899.5	901.4	902.2	902.0	901.8	901.6	901.4
135°	945.7	947.7	949.7	950.5	950.1	949.7	949.3	948.9
137.5°	990.3	992.3	994.3	995.0	994.3	993.6	992.9	992.2
140°	1019.2	1021.1	1022.9	1023.3	1022.3	1021.3	1020.3	1019.2
142.5°	1045.9	1047.6	1049.3	1049.6	1048.6	1047.6	1046.6	1045.5
145°	1083.3	1084.7	1086.1	1086.3	1085.3	1084.3	1083.3	1082.3
147.5°	1115.8	1116.8	1117.9	1118.0	1117.1	1116.3	1115.4	1114.6
150°	1135.8	1137.1	1138.3	1138.4	1137.4	1136.3	1135.3	1134.3
152.5°	1154.1	1155.3	1156.5	1156.5	1155.1	1153.8	1152.5	1151.1
155°	1178.8	1180.0	1181.2	1181.0	1179.4	1177.7	1176.1	1174.5
157.5°	1199.5	1200.9	1202.3	1202.2	1200.6	1199.0	1197.4	1195.9
160°	1211.6	1212.9	1214.1	1214.0	1212.5	1211.1	1209.7	1208.3
162.5°	1222.9	1224.3	1225.7	1225.5	1223.8	1222.0	1220.3	1218.5
165°	1236.7	1238.1	1239.5	1239.5	1238.1	1236.7	1235.3	1233.9
167.5°	1248.2	1249.6	1251.1	1250.8	1249.0	1247.2	1245.4	1243.5
170°	1254.1	1255.5	1256.9	1256.7	1254.9	1253.0	1251.2	1249.4
172.5°	1258.4	1259.9	1261.3	1261.1	1259.2	1257.4	1255.6	1253.8
175°	1263.2	1264.6	1266.0	1265.7	1263.7	1261.7	1259.6	1257.6
177.5°	1263.7	1264.9	1266.0	1265.8	1264.4	1262.9	1261.4	1260.0
180°	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2	1262.2

(END OF REPORT)