

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: P331775-935

Luminaire Tested: **S122RDIW-S290D970U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331775-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122RDIW-S290D970U935-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4223.7 lumens
Efficiency: N/A
Efficacy: 111.2 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

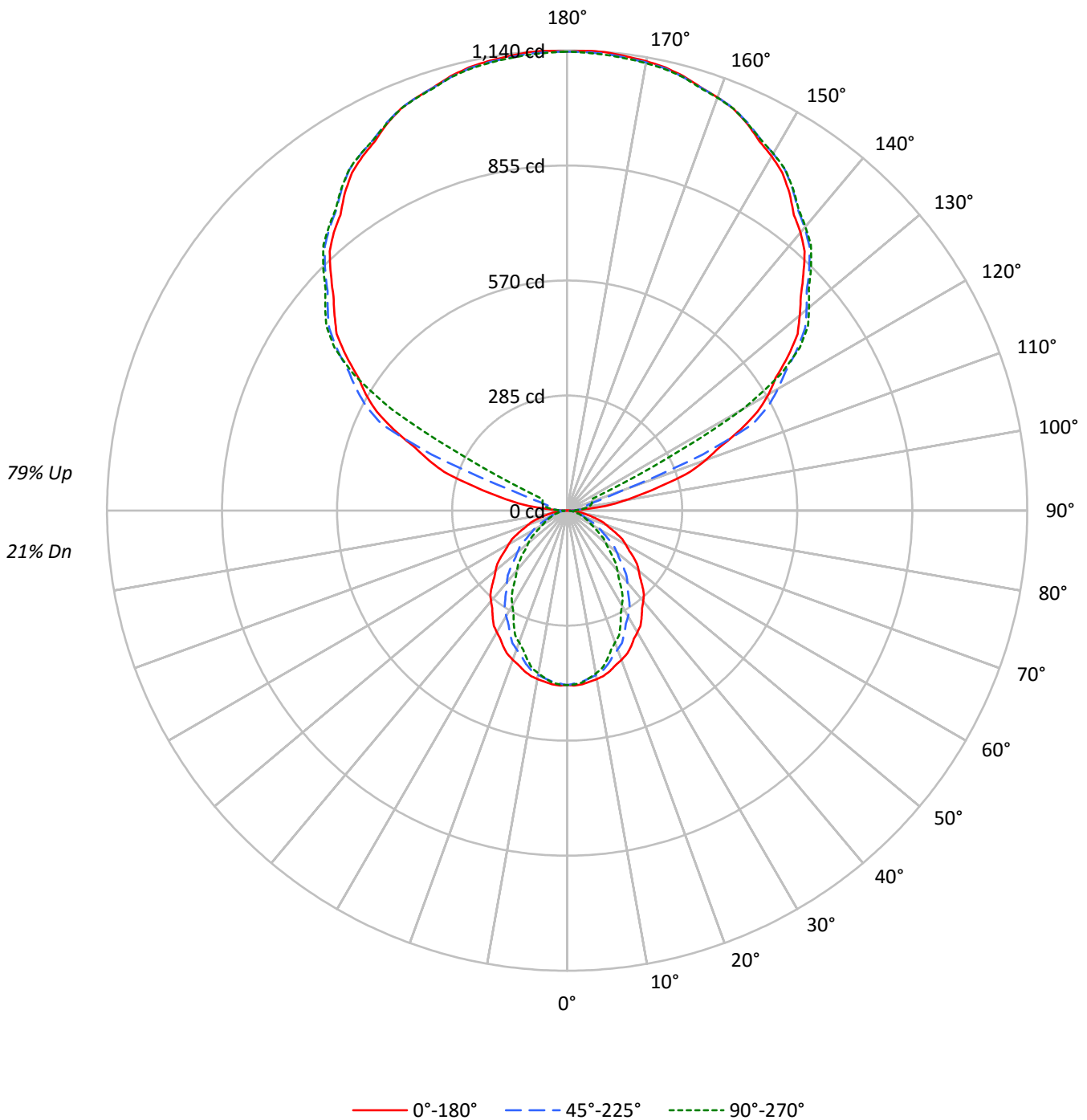
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	67	67	67	48	48	48	30	30	30	21
1	92	87	84	81	81	78	75	72	59	57	55	42	41	40	26	26	25	18
2	83	77	71	66	74	68	63	59	52	49	46	37	35	34	23	22	22	16
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19	13
4	70	60	52	47	61	53	47	42	41	37	33	29	27	25	19	17	16	12
5	64	53	45	40	56	47	41	36	36	32	29	26	24	21	17	15	14	10
6	59	47	40	34	52	42	36	31	33	28	25	24	21	19	15	14	12	9
7	54	43	35	30	48	38	32	27	30	25	22	22	19	16	14	12	11	8
8	50	39	31	26	44	35	28	24	27	22	19	20	17	15	13	11	10	7
9	47	35	28	23	41	32	25	21	25	20	17	18	15	13	12	10	9	7
10	43	32	25	21	39	29	23	19	23	18	15	17	14	12	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6978	6978	6978
5°	7005	6891	6929
10°	6951	6779	6720
15°	6870	6578	6387
20°	6761	6290	5976
25°	6649	5964	5574
30°	6490	5630	5062
35°	6337	5267	4610
40°	6182	4890	4089
45°	6003	4464	3617
50°	5815	4037	3152
55°	5624	3578	2711
60°	5406	3094	2251
65°	5154	2598	2048
70°	4858	2143	1884
75°	4492	1953	1759
80°	3961	1748	1599
85°	3112	1371	1371



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	1.0
10°-20°	111.1	2.6
20°-30°	156.0	3.7
30°-40°	170.1	4.0
40°-50°	156.4	3.7
50°-60°	122.8	2.9
60°-70°	80.1	1.9
70°-80°	41.3	1.0
80°-90°	13.5	0.3
90°-100°	37.9	0.9
100°-110°	139.1	3.3
110°-120°	371.8	8.8
120°-130°	613.7	14.5
130°-140°	652.7	15.5
140°-150°	606.6	14.4
150°-160°	487.7	11.5
160°-170°	314.3	7.4
170°-180°	108.2	2.6
0°-30°	307.5	7.3
0°-40°	477.6	11.3
0°-60°	756.8	17.9
0°-90°	891.7	21.1
90°-120°	548.8	13.0
90°-150°	2421.8	57.3
90°-180°	3332.0	78.9
0°-180°	4223.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	430	425	428	428	41
15°	411	406	394	386	382	116
25°	373	360	335	319	313	172
35°	322	301	267	243	234	201
45°	263	236	196	169	158	203
55°	200	169	127	104	96	179
65°	135	103	68	55	54	134
75°	72	45	31	29	28	76
85°	17	9	7	7	7	20
90°	1	10	16	20	22	3
95°	54	28	32	36	35	65
105°	250	261	50	59	62	267
115°	473	487	508	145	68	466
125°	669	680	695	701	703	596
135°	828	840	848	856	855	639
145°	960	960	973	978	975	600
155°	1057	1051	1060	1064	1058	487
165°	1114	1109	1112	1117	1112	315
175°	1139	1134	1135	1140	1133	108
180°	1137	1137	1137	1137	1137	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	433.8	433.4	433.1	432.7	432.4	431.8	431.0	430.3	429.6	428.8	429.5
5°	432.2	431.8	431.4	430.9	430.5	429.6	428.5	427.4	426.3	425.2	425.9
7.5°	427.7	427.2	426.6	426.1	425.6	424.6	423.4	422.0	420.7	419.4	419.6
10°	424.0	423.4	422.8	422.1	421.5	420.3	418.6	416.9	415.2	413.5	413.2
12.5°	419.3	418.5	417.8	417.1	416.3	414.8	412.6	410.4	408.1	405.9	405.4
15°	411.0	410.1	409.1	408.2	407.3	405.3	402.3	399.4	396.4	393.5	391.8
17.5°	401.0	399.5	398.0	396.6	395.1	392.5	388.7	385.0	381.2	377.4	375.4
20°	393.5	391.8	390.0	388.2	386.5	383.5	379.1	374.8	370.5	366.1	363.9
22.5°	385.4	383.4	381.4	379.5	377.5	374.1	369.2	364.3	359.5	354.6	351.7
25°	373.2	370.3	367.6	364.8	362.1	357.7	352.0	346.3	340.5	334.8	331.2
27.5°	358.4	355.4	352.4	349.4	346.3	341.6	335.1	328.6	322.2	315.7	311.6
30°	348.1	344.8	341.5	338.2	334.9	329.8	322.8	315.9	308.9	302.0	297.6
32.5°	338.1	334.2	330.4	326.5	322.6	317.2	310.1	303.0	295.9	288.8	283.8
35°	321.5	317.1	312.6	308.2	303.8	297.7	290.1	282.4	274.8	267.2	261.7
37.5°	305.0	300.1	295.2	290.3	285.4	279.0	270.8	262.6	254.5	246.3	240.3
40°	293.3	288.2	282.9	277.7	272.5	265.7	257.3	248.8	240.4	232.0	225.8
42.5°	281.5	276.0	270.4	265.0	259.5	252.4	243.7	235.0	226.3	217.6	211.2
45°	262.9	257.0	251.2	245.4	239.5	232.0	222.9	213.8	204.7	195.5	189.4
47.5°	244.7	238.5	232.4	226.2	220.0	212.2	202.8	193.4	183.9	174.5	168.4
50°	231.5	225.4	219.2	213.0	206.9	199.0	189.4	179.9	170.3	160.7	154.7
52.5°	218.7	212.2	205.9	199.4	193.0	185.0	175.6	166.3	157.0	147.6	141.8
55°	199.8	193.1	186.3	179.5	172.7	164.7	155.2	145.9	136.5	127.1	121.9
57.5°	180.6	173.6	166.6	159.7	152.7	144.7	135.7	126.7	117.7	108.7	103.8
60°	167.4	160.5	153.5	146.5	139.6	131.6	122.7	113.7	104.8	95.8	91.4
62.5°	154.5	147.7	140.7	133.7	126.7	119.0	110.5	101.9	93.4	84.9	80.7
65°	134.9	127.9	120.9	113.8	106.8	99.4	91.5	83.7	75.9	68.0	65.1
67.5°	116.0	109.0	102.0	95.1	88.1	81.0	74.0	67.0	59.9	52.9	51.5
70°	102.9	96.1	89.3	82.6	75.8	69.4	63.4	57.3	51.4	45.4	44.5
72.5°	90.3	83.9	77.3	70.9	64.3	58.7	53.9	49.1	44.3	39.4	38.7
75°	72.0	65.9	59.8	53.7	47.6	43.1	40.1	37.2	34.3	31.3	30.7
77.5°	53.9	48.6	43.2	37.9	32.5	29.2	27.7	26.3	24.9	23.5	23.2
80°	42.6	38.2	33.8	29.4	24.9	22.2	21.4	20.5	19.6	18.8	18.4
82.5°	32.3	28.8	25.4	22.0	18.5	16.4	15.8	15.2	14.6	14.1	13.9
85°	16.8	15.0	13.2	11.4	9.6	8.4	8.2	7.9	7.7	7.4	7.4
87.5°	5.2	5.0	4.8	4.7	4.6	4.6	4.9	5.3	5.5	5.8	5.9
90°	0.9	2.8	4.8	6.9	8.9	10.6	12.1	13.5	15.0	16.4	17.4
92.5°	16.6	16.4	16.3	16.1	15.9	16.2	16.9	17.7	18.3	19.1	19.5
95°	53.5	47.4	41.4	35.4	29.4	26.9	28.2	29.5	30.8	32.1	33.0
97.5°	106.2	89.1	72.2	55.1	38.1	31.1	34.1	37.0	40.0	43.0	43.7
100°	145.6	120.5	95.5	70.5	45.5	34.4	37.5	40.6	43.8	46.9	48.4
102.5°	189.1	183.7	178.5	173.1	167.8	152.2	126.2	100.2	74.2	48.2	50.1
105°	250.1	255.6	261.1	266.6	272.1	249.9	199.9	150.0	100.1	50.2	52.2
107.5°	319.7	324.2	328.6	332.9	337.4	309.7	249.9	189.9	130.1	70.3	68.2
110°	364.5	368.3	372.1	376.0	379.8	355.3	302.5	249.7	196.8	144.0	125.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	406.6	410.0	413.4	416.8	420.2	415.3	402.3	389.3	376.2	363.2	296.4
115°	473.0	476.1	479.3	482.4	485.5	489.3	493.9	498.4	503.1	507.6	422.9
117.5°	532.4	536.0	539.4	542.9	546.4	549.7	552.8	555.9	559.1	562.2	541.7
120°	575.9	578.7	581.3	584.1	586.9	589.9	593.1	596.5	599.8	603.0	605.3
122.5°	612.8	615.6	618.5	621.4	624.3	627.6	631.1	634.7	638.3	641.9	643.2
125°	668.8	671.2	673.6	676.0	678.4	681.3	684.8	688.3	691.7	695.2	696.5
127.5°	719.7	722.4	725.0	727.6	730.2	732.9	735.5	738.0	740.6	743.2	745.1
130°	752.0	754.9	757.9	760.7	763.6	766.1	768.1	770.2	772.1	774.2	776.2
132.5°	784.9	787.4	789.9	792.3	794.8	797.0	799.1	801.1	803.1	805.1	806.8
135°	827.7	830.6	833.5	836.5	839.4	841.6	843.3	844.9	846.5	848.3	850.1
137.5°	870.9	873.0	875.0	877.1	879.1	881.1	883.0	884.8	886.7	888.6	890.4
140°	899.2	900.7	902.2	903.6	905.1	906.8	908.8	910.9	912.8	914.9	916.5
142.5°	922.9	924.2	925.6	926.9	928.2	930.0	932.3	934.6	936.9	939.2	940.7
145°	960.1	959.9	959.8	959.6	959.4	960.9	964.0	967.1	970.2	973.3	974.6
147.5°	992.6	991.8	991.1	990.4	989.7	990.9	994.0	997.0	1000.1	1003.2	1004.2
150°	1013.6	1012.3	1011.0	1009.8	1008.5	1009.3	1012.2	1015.1	1018.0	1021.0	1022.1
152.5°	1031.4	1029.9	1028.5	1027.1	1025.6	1026.3	1029.1	1031.9	1034.7	1037.4	1038.5
155°	1057.2	1055.5	1053.9	1052.2	1050.6	1050.9	1053.1	1055.2	1057.5	1059.6	1060.8
157.5°	1077.5	1076.1	1074.6	1073.2	1071.9	1071.9	1073.5	1075.0	1076.5	1078.1	1079.3
160°	1089.3	1088.2	1087.1	1086.0	1084.9	1084.9	1086.0	1087.1	1088.2	1089.3	1090.4
162.5°	1099.8	1098.7	1097.6	1096.5	1095.5	1095.4	1096.3	1097.3	1098.2	1099.2	1100.4
165°	1114.0	1112.8	1111.7	1110.7	1109.6	1109.3	1109.8	1110.3	1110.9	1111.5	1112.8
167.5°	1124.5	1123.3	1122.3	1121.2	1120.1	1119.8	1120.3	1120.8	1121.4	1121.9	1123.1
170°	1130.4	1129.3	1128.3	1127.1	1126.0	1125.7	1126.0	1126.4	1126.8	1127.1	1128.4
172.5°	1134.4	1133.2	1132.1	1131.1	1130.0	1129.6	1130.0	1130.3	1130.7	1131.1	1132.4
175°	1139.4	1138.2	1136.9	1135.7	1134.4	1133.9	1134.3	1134.6	1135.0	1135.3	1136.6
177.5°	1140.3	1139.3	1138.2	1137.2	1136.2	1135.7	1135.9	1136.0	1136.2	1136.3	1137.4
180°	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	432.2	432.2	432.2	432.2	432.2	432.2	432.2	432.2
2.5°	430.2	430.8	431.5	431.8	431.7	431.5	431.4	431.3
5°	426.7	427.5	428.3	428.5	428.3	428.0	427.7	427.5
7.5°	419.8	420.1	420.3	420.2	419.7	419.2	418.8	418.4
10°	412.9	412.7	412.4	412.0	411.5	411.0	410.4	409.9
12.5°	405.0	404.5	404.1	403.4	402.5	401.7	400.8	399.9
15°	390.2	388.5	386.8	385.6	384.8	383.8	383.0	382.1
17.5°	373.4	371.4	369.5	367.8	366.3	364.8	363.3	361.8
20°	361.8	359.6	357.4	355.3	353.4	351.5	349.7	347.8
22.5°	349.0	346.1	343.4	341.2	339.8	338.4	336.9	335.5
25°	327.7	324.1	320.6	318.1	316.8	315.5	314.2	312.9
27.5°	307.4	303.2	299.1	296.0	293.9	291.9	289.8	287.7
30°	293.1	288.7	284.2	280.9	278.4	276.1	273.8	271.5
32.5°	278.7	273.6	268.5	264.9	262.8	260.5	258.3	256.1
35°	256.2	250.7	245.2	241.5	239.6	237.7	235.8	233.9
37.5°	234.3	228.3	222.2	218.1	215.9	213.7	211.5	209.3
40°	219.6	213.4	207.2	203.0	200.8	198.5	196.2	194.0
42.5°	204.7	198.4	192.0	187.8	185.5	183.4	181.2	179.0
45°	183.2	177.0	170.9	166.8	164.7	162.6	160.5	158.4
47.5°	162.2	156.1	150.0	145.9	144.0	142.2	140.3	138.4
50°	148.8	142.8	136.7	132.9	131.0	129.2	127.3	125.5
52.5°	136.0	130.3	124.5	120.7	119.1	117.4	115.6	114.0
55°	116.7	111.5	106.2	102.8	101.2	99.5	97.9	96.3
57.5°	99.1	94.3	89.5	86.4	85.1	83.7	82.3	80.8
60°	87.0	82.6	78.1	75.2	73.8	72.4	71.0	69.7
62.5°	76.5	72.2	68.0	65.4	64.6	63.8	62.9	62.1
65°	62.2	59.2	56.2	54.6	54.3	54.1	53.8	53.6
67.5°	50.2	48.8	47.4	46.7	46.3	46.1	45.8	45.5
70°	43.7	42.8	41.9	41.3	40.9	40.6	40.2	39.9
72.5°	38.0	37.2	36.5	36.1	35.8	35.6	35.4	35.2
75°	30.0	29.4	28.8	28.5	28.4	28.3	28.2	28.2
77.5°	22.7	22.4	22.0	21.9	21.7	21.5	21.4	21.3
80°	18.1	17.7	17.4	17.2	17.2	17.2	17.2	17.2
82.5°	13.7	13.4	13.3	13.2	13.2	13.2	13.2	13.2
85°	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
87.5°	6.0	6.1	6.3	6.4	6.4	6.5	6.5	6.6
90°	18.3	19.2	20.1	20.8	21.1	21.4	21.9	22.2
92.5°	20.1	20.5	21.0	21.4	21.5	21.8	22.0	22.2
95°	33.9	34.9	35.7	36.1	35.9	35.7	35.6	35.4
97.5°	44.4	45.1	45.9	46.3	46.6	46.8	47.0	47.2
100°	49.9	51.3	52.8	53.6	54.0	54.4	54.8	55.1
102.5°	52.0	53.9	55.8	57.0	57.5	58.0	58.5	59.1
105°	54.2	56.2	58.2	59.6	60.4	61.0	61.8	62.5
107.5°	66.1	64.1	62.1	61.4	62.2	62.9	63.6	64.3
110°	107.4	89.1	70.9	62.1	62.8	63.5	64.2	65.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	229.7	163.1	96.3	63.3	63.9	64.5	65.1	65.7
115°	338.3	253.7	169.0	120.1	106.9	93.8	80.6	67.5
117.5°	521.2	500.8	480.4	448.5	405.2	362.0	318.7	275.4
120°	607.4	609.6	611.8	600.5	575.9	551.2	526.5	501.9
122.5°	644.5	645.8	647.1	645.4	640.6	635.8	631.0	626.3
125°	697.8	699.0	700.3	701.2	701.8	702.3	702.8	703.4
127.5°	747.0	748.8	750.7	751.7	751.8	751.9	752.0	752.1
130°	778.2	780.2	782.2	783.2	782.9	782.7	782.6	782.4
132.5°	808.6	810.3	812.0	812.8	812.5	812.4	812.2	812.0
135°	851.9	853.7	855.5	856.3	855.9	855.5	855.1	854.8
137.5°	892.1	893.9	895.7	896.3	895.7	895.0	894.4	893.8
140°	918.2	919.8	921.4	921.8	920.9	920.0	919.0	918.2
142.5°	942.2	943.7	945.2	945.5	944.6	943.7	942.8	941.8
145°	975.9	977.1	978.4	978.6	977.7	976.7	975.9	974.9
147.5°	1005.1	1006.1	1007.0	1007.1	1006.3	1005.6	1004.8	1004.0
150°	1023.2	1024.2	1025.4	1025.5	1024.6	1023.6	1022.7	1021.8
152.5°	1039.7	1040.7	1041.8	1041.8	1040.6	1039.4	1038.2	1037.0
155°	1061.9	1062.9	1064.0	1063.9	1062.4	1060.9	1059.5	1058.0
157.5°	1080.6	1081.8	1083.1	1083.0	1081.5	1080.1	1078.7	1077.3
160°	1091.5	1092.5	1093.6	1093.6	1092.3	1091.0	1089.8	1088.5
162.5°	1101.6	1102.9	1104.1	1104.0	1102.3	1100.8	1099.2	1097.7
165°	1114.0	1115.3	1116.6	1116.6	1115.3	1114.0	1112.8	1111.5
167.5°	1124.4	1125.7	1127.0	1126.8	1125.2	1123.5	1121.9	1120.2
170°	1129.7	1130.9	1132.2	1132.0	1130.4	1128.8	1127.1	1125.5
172.5°	1133.6	1134.9	1136.2	1136.0	1134.4	1132.7	1131.1	1129.5
175°	1137.9	1139.2	1140.5	1140.2	1138.3	1136.5	1134.7	1132.9
177.5°	1138.4	1139.4	1140.4	1140.3	1138.9	1137.6	1136.3	1135.1
180°	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0	1137.0

(END OF REPORT)