

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: P331511-935

Luminaire Tested: **S122DIW-S485D970U935-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331511-935
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: S122DIW-S485D970U935-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 485 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5036.2 lumens
Efficiency: N/A
Efficacy: 111.4 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

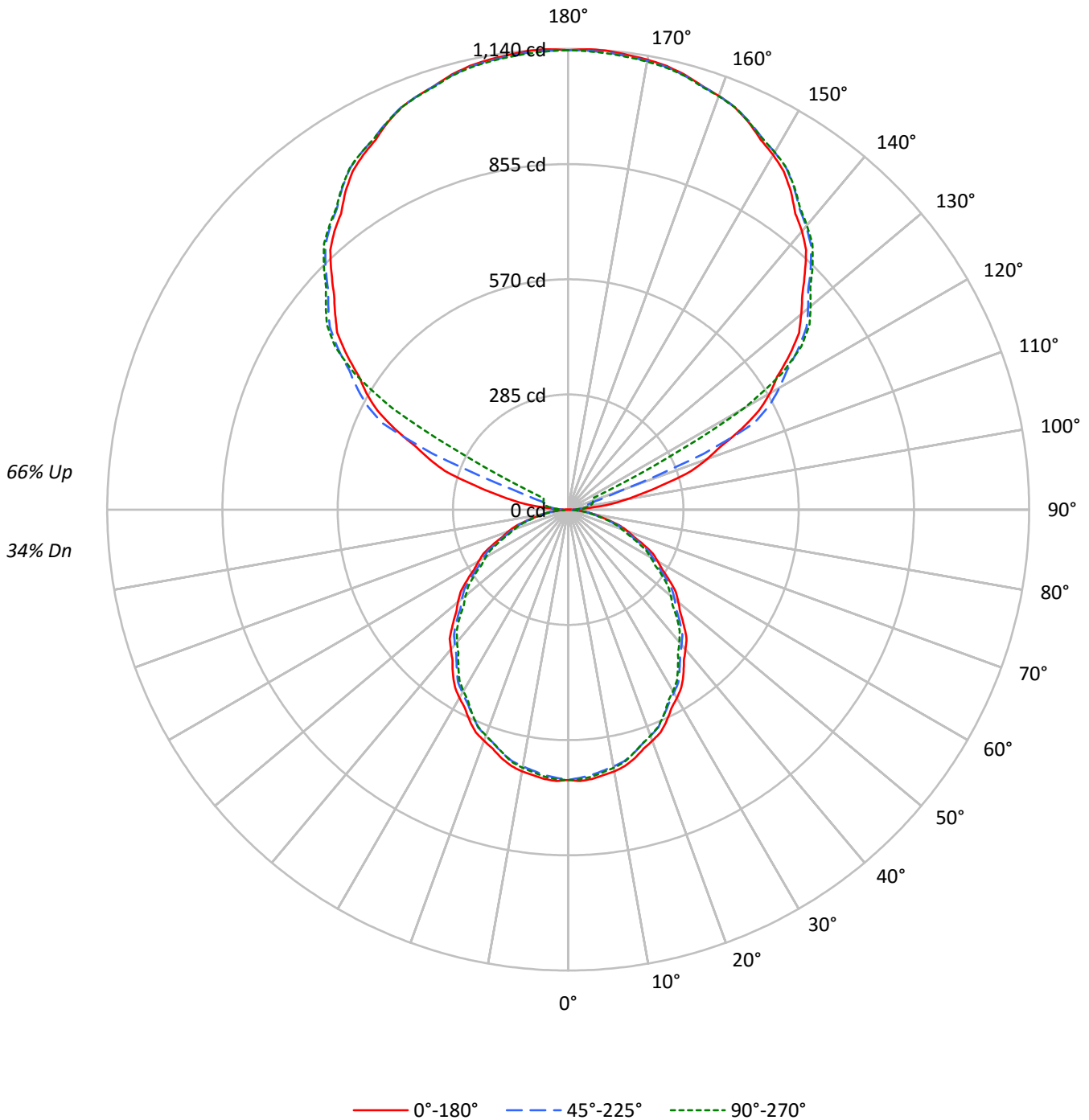
Input Watts (W): 45.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P331511-935

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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	103	103	103	103	93	93	93	93	74	74	74		57	57	57		41	41	41	34
1	94	90	86	83	85	81	78	75	65	63	61		50	49	47		36	36	35	28
2	86	78	73	67	77	71	66	62	57	53	50		44	42	40		32	31	29	24
3	78	69	62	56	70	62	56	51	50	46	42		39	36	33		28	27	25	20
4	71	61	53	47	64	55	49	44	45	40	36		35	31	29		25	23	21	17
5	65	54	46	40	59	49	42	37	40	35	31		31	27	25		23	21	19	15
6	60	48	41	35	54	44	37	32	36	31	27		28	24	22		21	18	16	13
7	56	44	36	31	50	40	33	28	32	27	24		25	22	19		19	16	15	12
8	52	40	32	27	46	36	29	25	29	24	21		23	20	17		17	15	13	11
9	48	36	29	24	43	33	26	22	27	22	19		21	18	15		16	14	12	9
10	45	33	26	21	40	30	24	20	25	20	17		20	16	14		15	12	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	10797	10797	10797
5°	10838	10682	10746
10°	10775	10575	10627
15°	10641	10437	10425
20°	10452	10232	10220
25°	10265	9978	9978
30°	10023	9747	9661
35°	9798	9469	9329
40°	9514	9190	9012
45°	9236	8912	8690
50°	8932	8626	8317
55°	8617	8290	7983
60°	8263	7892	7598
65°	7885	7492	7148
70°	7407	7010	6680
75°	6744	6457	6301
80°	5979	5793	5504
85°	4872	4650	4168



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.9	1.2
10°-20°	176.9	3.5
20°-30°	260.1	5.2
30°-40°	302.1	6.0
40°-50°	301.8	6.0
50°-60°	263.2	5.2
60°-70°	194.6	3.9
70°-80°	110.2	2.2
80°-90°	32.4	0.6
90°-100°	37.9	0.8
100°-110°	139.1	2.8
110°-120°	371.8	7.4
120°-130°	613.7	12.2
130°-140°	652.7	13.0
140°-150°	606.6	12.0
150°-160°	487.7	9.7
160°-170°	314.3	6.2
170°-180°	108.2	2.1
0°-30°	499.9	9.9
0°-40°	802.0	15.9
0°-60°	1366.9	27.1
0°-90°	1704.2	33.8
90°-120°	548.8	10.9
90°-150°	2421.8	48.1
90°-180°	3332.0	66.2
0°-180°	5036.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	669	669	669	669	669	
5°	669	666	659	664	663	63
15°	637	632	624	627	624	179
25°	576	571	560	561	560	265
35°	497	490	480	476	473	310
45°	404	400	390	384	381	312
55°	306	302	294	287	284	274
65°	206	202	196	190	187	204
75°	108	107	104	100	101	115
85°	26	26	25	23	22	30
90°	1	10	16	20	22	4
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°	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7
2.5°	671.8	671.2	670.7	670.1	669.5	668.7	667.4	666.2	664.9	663.6	664.8
5°	668.7	668.1	667.6	667.0	666.5	665.4	663.8	662.3	660.6	659.1	660.2
7.5°	662.8	661.9	661.1	660.1	659.3	658.1	656.4	654.9	653.2	651.6	652.8
10°	657.2	656.2	655.1	654.2	653.2	651.8	650.1	648.4	646.7	645.0	646.1
12.5°	649.5	648.6	647.6	646.8	645.9	644.6	642.9	641.2	639.5	637.7	638.5
15°	636.6	635.8	634.9	634.0	633.2	631.8	629.9	628.1	626.2	624.4	624.9
17.5°	620.1	619.3	618.5	617.6	616.7	615.4	613.5	611.6	609.7	607.8	608.5
20°	608.3	607.4	606.6	605.7	604.9	603.5	601.4	599.4	597.4	595.5	595.9
22.5°	596.5	595.3	594.1	592.9	591.7	590.1	588.2	586.3	584.4	582.6	582.6
25°	576.2	575.0	573.9	572.7	571.6	569.8	567.4	564.9	562.5	560.1	560.3
27.5°	553.0	552.0	551.0	549.9	548.9	547.4	545.5	543.5	541.7	539.8	539.3
30°	537.6	536.4	535.3	534.2	533.0	531.3	529.2	527.1	525.0	522.8	522.4
32.5°	521.1	520.2	519.3	518.3	517.5	515.8	513.6	511.3	509.1	506.9	506.1
35°	497.1	495.6	494.2	492.8	491.4	489.5	487.2	484.9	482.6	480.4	479.5
37.5°	469.9	468.6	467.4	466.1	464.9	463.1	460.8	458.6	456.2	454.0	452.9
40°	451.4	450.2	449.1	448.0	446.9	445.1	442.8	440.6	438.2	436.0	434.7
42.5°	433.4	432.2	431.1	430.0	428.9	427.1	424.8	422.6	420.3	417.9	416.6
45°	404.5	403.5	402.4	401.5	400.5	398.9	396.7	394.6	392.4	390.3	388.7
47.5°	375.7	374.7	373.8	372.8	371.9	370.3	368.1	365.8	363.6	361.4	359.7
50°	355.6	354.9	354.1	353.4	352.8	351.4	349.4	347.4	345.3	343.4	341.4
52.5°	336.0	335.1	334.2	333.2	332.3	330.9	329.0	327.1	325.2	323.3	321.7
55°	306.1	305.2	304.4	303.5	302.6	301.4	299.6	297.9	296.2	294.5	292.8
57.5°	276.0	275.3	274.6	274.0	273.3	272.0	270.1	268.2	266.3	264.4	262.7
60°	255.9	255.4	254.8	254.2	253.7	252.4	250.4	248.3	246.3	244.4	242.8
62.5°	236.3	235.5	234.5	233.6	232.7	231.5	230.0	228.4	226.9	225.3	223.9
65°	206.4	205.5	204.7	203.8	203.0	201.8	200.4	199.0	197.5	196.1	194.8
67.5°	175.9	175.2	174.5	173.8	173.1	172.2	170.9	169.6	168.3	167.0	166.1
70°	156.9	156.4	155.8	155.2	154.6	153.7	152.4	151.1	149.8	148.5	147.6
72.5°	137.3	136.8	136.2	135.6	135.1	134.4	133.5	132.7	131.9	131.0	130.0
75°	108.1	107.7	107.5	107.2	106.9	106.4	105.6	105.0	104.3	103.5	102.6
77.5°	81.8	81.3	80.8	80.3	79.8	79.5	79.2	78.9	78.6	78.4	77.9
80°	64.3	64.1	64.1	63.9	63.7	63.5	63.2	62.9	62.7	62.3	61.9
82.5°	47.9	47.8	47.8	47.8	47.7	47.6	47.4	47.3	47.1	46.9	46.4
85°	26.3	26.3	26.1	25.9	25.8	25.7	25.5	25.4	25.2	25.1	24.6
87.5°	9.4	9.6	9.7	10.0	10.2	10.2	10.3	10.3	10.4	10.5	10.3
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°	668.7	668.7	668.7	668.7	668.7	668.7	668.7	668.7
2.5°	665.9	667.0	668.1	668.7	668.4	668.1	668.0	667.7
5°	661.4	662.5	663.7	664.1	663.8	663.5	663.2	663.0
7.5°	653.9	655.0	656.3	656.6	656.3	656.0	655.7	655.4
10°	647.2	648.4	649.5	649.9	649.5	649.0	648.6	648.2
12.5°	639.4	640.2	640.9	641.2	640.8	640.6	640.2	639.9
15°	625.5	626.1	626.6	626.5	625.9	625.2	624.5	623.7
17.5°	609.1	609.8	610.4	610.4	609.7	609.1	608.4	607.7
20°	596.3	596.8	597.2	597.1	596.5	595.9	595.4	594.8
22.5°	582.7	582.8	582.9	582.8	582.5	582.1	581.8	581.4
25°	560.7	560.9	561.2	561.2	560.9	560.7	560.3	560.1
27.5°	538.9	538.5	538.0	537.5	536.8	536.1	535.5	534.8
30°	521.9	521.5	521.1	520.6	520.0	519.4	518.8	518.2
32.5°	505.3	504.5	503.8	503.1	502.5	502.0	501.4	500.8
35°	478.6	477.8	476.9	476.1	475.4	474.7	474.0	473.3
37.5°	451.9	450.8	449.8	448.8	448.2	447.5	446.8	446.2
40°	433.4	432.1	430.8	429.9	429.3	428.8	428.2	427.6
42.5°	415.2	413.8	412.3	411.3	410.4	409.7	408.9	408.0
45°	387.2	385.6	384.0	383.0	382.4	381.9	381.3	380.6
47.5°	358.1	356.4	354.7	353.5	352.7	351.9	351.0	350.2
50°	339.4	337.3	335.4	334.0	333.3	332.6	331.8	331.1
52.5°	320.0	318.3	316.7	315.4	314.4	313.5	312.5	311.6
55°	291.1	289.4	287.7	286.5	285.7	285.0	284.3	283.6
57.5°	261.1	259.3	257.7	256.6	256.0	255.5	254.9	254.3
60°	241.2	239.6	238.1	237.0	236.6	236.2	235.7	235.3
62.5°	222.4	220.9	219.5	218.5	217.9	217.4	216.9	216.3
65°	193.6	192.3	191.0	189.9	189.2	188.6	187.9	187.1
67.5°	165.1	164.0	163.1	162.3	161.7	161.1	160.6	160.0
70°	146.5	145.5	144.6	143.8	143.2	142.6	142.1	141.5
72.5°	129.1	128.0	127.1	126.3	125.9	125.4	124.9	124.5
75°	101.8	101.0	100.1	99.8	100.1	100.4	100.7	101.0
77.5°	77.5	77.1	76.6	76.2	75.8	75.4	75.0	74.6
80°	61.5	61.0	60.7	60.3	60.0	59.8	59.4	59.2
82.5°	45.9	45.3	44.8	44.4	44.4	44.3	44.3	44.3
85°	24.2	23.8	23.3	23.1	22.9	22.8	22.6	22.5
87.5°	10.2	10.0	9.8	9.7	9.7	9.6	9.6	9.6
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)