

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: P333086-935

Luminaire Tested: **S124RDIW-S1020D1050U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P333086-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S124RDIW-S1020D1050U935-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6724.3 lumens  
Efficiency: N/A  
Efficacy: 109.9 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

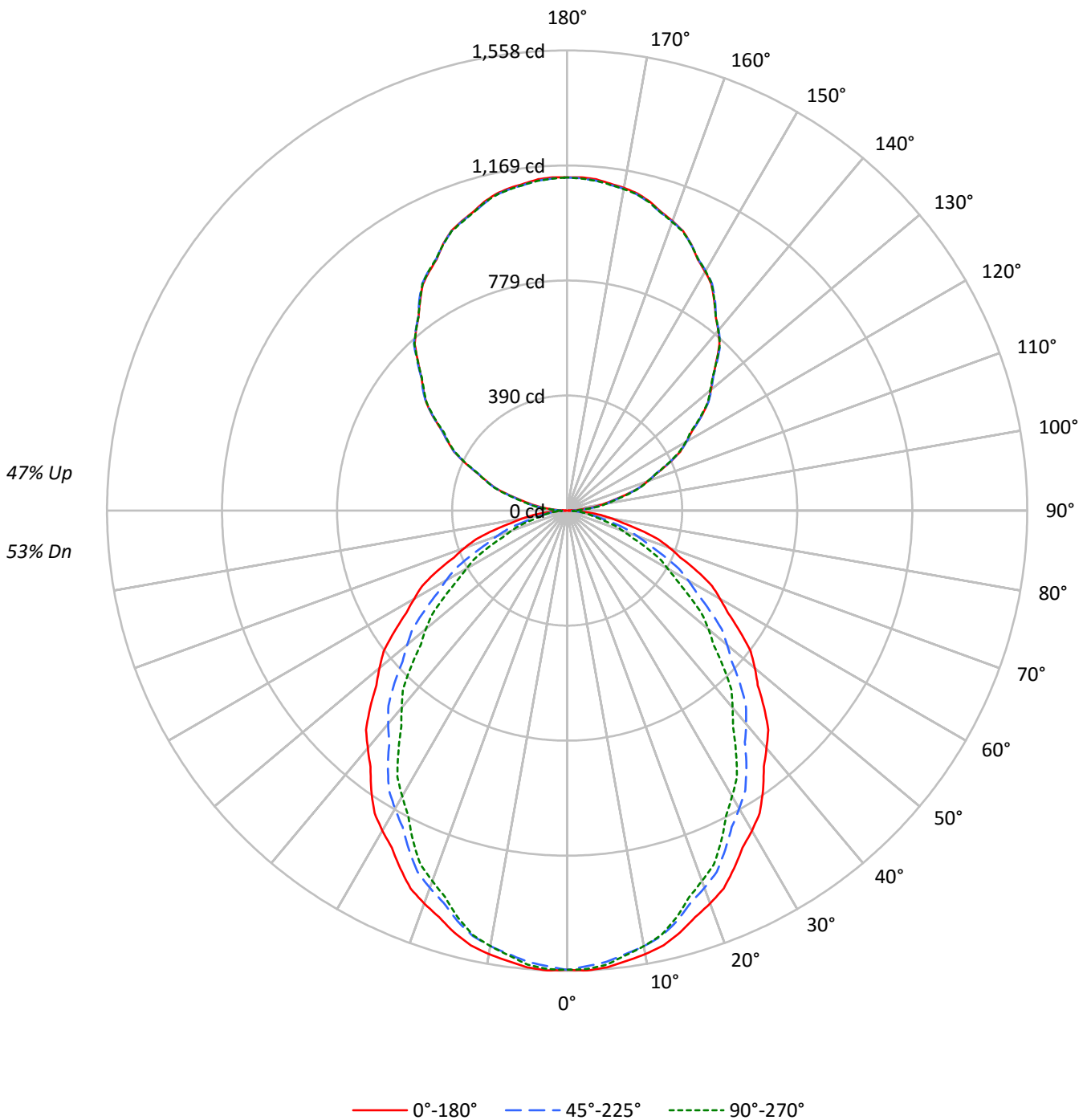
Input Watts (W): 61.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	99	95	91	87	91	88	85	82	75	73	71	64	62	60	53	52	51	46
2	90	83	77	72	83	77	72	67	66	62	59	56	53	51	47	45	43	39
3	82	73	66	60	76	68	62	57	59	54	50	50	46	43	42	39	37	33
4	76	65	57	51	70	61	54	48	52	47	43	45	41	37	37	35	32	29
5	69	58	50	44	64	54	47	42	47	41	37	40	36	33	34	31	28	25
6	64	52	44	38	59	49	42	36	42	37	32	36	32	29	31	27	25	22
7	59	47	39	34	55	44	37	32	38	33	29	33	29	25	28	25	22	20
8	55	43	35	30	51	40	33	28	35	30	26	30	26	23	26	23	20	18
9	51	39	32	27	48	37	30	25	32	27	23	28	24	21	24	21	18	16
10	48	36	29	24	45	34	27	23	30	24	21	26	22	19	22	19	16	15

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	12551	12551	12551
5°	12580	12426	12503
10°	12500	12276	12276
15°	12357	12018	11929
20°	12160	11679	11465
25°	11908	11282	10996
30°	11663	10864	10409
35°	11392	10430	9819
40°	11065	9936	9183
45°	10764	9445	8535
50°	10420	8881	7850
55°	10054	8294	7104
60°	9649	7650	6344
65°	9278	6844	5593
70°	8738	5958	4749
75°	8057	4938	3862
80°	7029	3761	3543
85°	5956	3418	3196



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	146.0	2.2
10°-20°	407.3	6.1
20°-30°	588.1	8.7
30°-40°	666.6	9.9
40°-50°	643.7	9.6
50°-60°	535.3	8.0
60°-70°	369.6	5.5
70°-80°	187.4	2.8
80°-90°	51.4	0.8
90°-100°	74.4	1.1
100°-110°	220.4	3.3
110°-120°	374.0	5.6
120°-130°	493.2	7.3
130°-140°	553.9	8.2
140°-150°	544.3	8.1
150°-160°	457.8	6.8
160°-170°	304.6	4.5
170°-180°	106.6	1.6
0°-30°	1141.4	17.0
0°-40°	1808.0	26.9
0°-60°	2987.0	44.4
0°-90°	3595.4	53.5
90°-120°	668.7	9.9
90°-150°	2260.0	33.6
90°-180°	3129.0	46.5
0°-180°	6724.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1555	1555	1555	1555	1555	
5°	1552	1547	1533	1544	1543	147
15°	1478	1467	1438	1435	1427	416
25°	1337	1314	1267	1247	1234	616
35°	1156	1117	1058	1019	996	722
45°	943	897	827	771	748	727
55°	714	665	589	530	505	639
65°	486	433	358	309	293	479
75°	258	214	158	132	124	273
85°	64	42	37	35	34	72
90°	3	12	19	24	26	6
95°	52	60	66	69	69	58
105°	203	204	208	210	213	216
115°	380	380	379	378	377	375
125°	554	554	553	551	550	493
135°	714	719	720	718	715	552
145°	868	871	872	871	869	543
155°	994	994	994	997	994	457
165°	1082	1080	1078	1083	1080	305
175°	1126	1122	1121	1126	1121	107
180°	1128	1128	1128	1128	1128	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7
2.5°	1558.5	1557.6	1556.8	1556.0	1555.1	1553.5	1551.2	1548.9	1546.5	1544.2	1546.5
5°	1552.3	1551.3	1550.2	1549.1	1548.1	1545.9	1542.8	1539.6	1536.5	1533.3	1535.9
7.5°	1538.3	1537.1	1536.0	1534.9	1533.8	1531.2	1527.1	1522.9	1518.8	1514.7	1516.4
10°	1524.9	1523.6	1522.2	1521.0	1519.7	1516.6	1511.8	1507.1	1502.3	1497.5	1498.6
12.5°	1507.8	1506.2	1504.7	1503.2	1501.7	1498.1	1492.5	1486.9	1481.3	1475.7	1476.3
15°	1478.5	1476.1	1473.8	1471.4	1469.0	1464.5	1457.8	1451.2	1444.7	1438.0	1437.5
17.5°	1443.0	1439.6	1436.1	1432.7	1429.3	1423.6	1415.7	1407.7	1399.8	1391.8	1390.3
20°	1415.4	1412.0	1408.5	1405.1	1401.6	1395.4	1386.5	1377.4	1368.5	1359.4	1357.4
22.5°	1384.9	1381.0	1377.2	1373.4	1369.5	1362.7	1353.1	1343.5	1333.9	1324.2	1321.0
25°	1336.9	1332.1	1327.3	1322.6	1317.8	1310.0	1299.2	1288.3	1277.5	1266.6	1262.1
27.5°	1286.3	1280.4	1274.5	1268.4	1262.5	1253.7	1242.1	1230.5	1218.9	1207.3	1201.8
30°	1251.1	1244.5	1237.9	1231.3	1224.7	1215.1	1202.7	1190.2	1177.8	1165.4	1158.8
32.5°	1214.0	1206.5	1199.0	1191.6	1184.1	1174.0	1161.1	1148.3	1135.4	1122.6	1114.9
35°	1155.9	1147.5	1138.9	1130.5	1122.1	1111.2	1097.9	1084.8	1071.5	1058.3	1049.3
37.5°	1093.7	1085.0	1076.3	1067.6	1058.9	1047.1	1032.5	1017.9	1003.2	988.5	978.4
40°	1050.0	1041.2	1032.5	1023.7	1015.0	1003.2	988.1	972.9	957.9	942.8	931.7
42.5°	1008.1	998.9	989.7	980.6	971.5	959.0	943.3	927.6	911.9	896.1	884.8
45°	942.8	933.1	923.3	913.4	903.6	890.8	874.9	859.1	843.2	827.3	814.4
47.5°	875.5	865.3	855.2	845.2	835.0	821.7	805.2	788.7	772.1	755.7	742.3
50°	829.7	819.4	809.1	798.7	788.4	774.8	757.9	741.0	724.0	707.1	693.9
52.5°	783.1	772.9	762.8	752.8	742.6	728.9	711.5	694.2	676.8	659.5	646.1
55°	714.3	703.7	693.1	682.5	671.9	658.1	640.8	623.6	606.5	589.3	575.5
57.5°	646.2	635.2	624.1	613.1	602.2	588.1	571.3	554.3	537.4	520.5	506.5
60°	597.6	587.0	576.4	565.8	555.3	541.5	524.6	507.6	490.7	473.8	460.0
62.5°	553.8	542.8	531.8	520.7	509.8	495.6	478.2	460.9	443.5	426.2	413.5
65°	485.7	474.3	463.0	451.6	440.2	426.0	409.1	392.2	375.2	358.3	347.0
67.5°	415.0	404.1	393.2	382.3	371.3	358.1	342.3	326.7	310.9	295.2	285.4
70°	370.2	359.1	348.0	336.9	325.8	312.7	297.6	282.5	267.4	252.4	243.7
72.5°	322.6	312.5	302.5	292.5	282.4	270.3	256.1	241.8	227.6	213.4	205.9
75°	258.3	248.6	238.8	228.9	219.2	208.0	195.6	183.2	170.7	158.3	152.2
77.5°	193.1	184.8	176.5	168.2	159.9	150.7	140.6	130.6	120.5	110.5	106.9
80°	151.2	143.5	135.9	128.2	120.5	112.7	104.8	96.9	88.9	80.9	80.2
82.5°	115.0	108.0	100.9	93.8	86.9	81.0	76.5	72.0	67.4	62.9	62.3
85°	64.3	59.0	53.7	48.4	43.1	40.0	39.3	38.5	37.7	36.9	36.3
87.5°	22.4	21.2	19.9	18.6	17.4	16.8	16.9	17.0	17.0	17.1	17.2
90°	2.6	4.7	6.9	9.0	11.1	13.0	14.6	16.1	17.7	19.2	20.3
92.5°	18.7	21.1	23.6	26.0	28.4	30.2	31.3	32.4	33.5	34.5	35.2
95°	52.3	54.1	55.8	57.6	59.3	60.9	62.3	63.5	64.9	66.3	66.9
97.5°	91.4	92.8	94.2	95.6	97.0	98.5	100.0	101.7	103.2	104.9	105.6
100°	122.1	122.9	123.6	124.4	125.2	126.5	128.2	129.9	131.7	133.5	133.8
102.5°	154.2	154.5	154.8	155.2	155.4	156.4	158.0	159.5	161.2	162.7	163.3
105°	203.2	203.5	203.6	203.8	204.0	204.5	205.3	206.0	206.8	207.6	208.2
107.5°	254.7	254.9	255.1	255.4	255.6	255.8	255.9	256.1	256.1	256.2	256.8
110°	289.6	290.0	290.3	290.8	291.1	291.2	291.0	290.8	290.7	290.4	290.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	325.9	326.0	326.1	326.1	326.1	326.1	325.7	325.4	325.0	324.7	324.6
115°	380.3	380.3	380.3	380.3	380.3	380.1	379.7	379.4	378.9	378.6	378.3
117.5°	431.6	431.7	431.9	432.0	432.2	432.1	431.9	431.6	431.4	431.0	430.4
120°	465.8	466.6	467.4	468.1	468.9	469.0	468.4	467.8	467.3	466.7	465.7
122.5°	501.4	501.7	502.0	502.3	502.6	502.7	502.3	502.0	501.8	501.5	500.8
125°	553.9	553.9	553.9	553.9	553.9	553.8	553.5	553.4	553.2	553.0	552.6
127.5°	601.5	602.1	602.6	603.2	603.8	604.0	603.6	603.3	603.0	602.7	602.4
130°	635.0	635.6	636.1	636.7	637.3	637.6	637.6	637.6	637.6	637.6	637.2
132.5°	669.2	669.6	670.0	670.5	670.9	671.0	670.9	670.7	670.5	670.4	670.0
135°	714.4	715.5	716.7	717.8	719.0	719.6	719.6	719.6	719.6	719.6	719.2
137.5°	763.5	764.1	764.7	765.2	765.7	766.1	766.5	766.8	767.1	767.4	766.9
140°	796.3	796.8	797.1	797.5	797.9	798.1	798.1	798.1	798.1	798.1	797.9
142.5°	826.4	826.7	827.2	827.5	827.9	828.0	827.9	827.7	827.6	827.4	827.3
145°	867.9	868.7	869.4	870.2	871.0	871.4	871.7	871.8	872.0	872.2	872.0
147.5°	909.0	910.0	910.9	911.8	912.7	913.2	913.0	912.8	912.7	912.5	912.4
150°	934.2	935.0	935.7	936.5	937.3	937.6	937.6	937.6	937.6	937.6	937.6
152.5°	957.9	958.4	958.8	959.2	959.8	960.0	960.2	960.4	960.5	960.7	961.1
155°	994.4	994.4	994.4	994.4	994.4	994.3	994.0	993.9	993.7	993.5	994.3
157.5°	1025.0	1024.7	1024.3	1024.0	1023.6	1023.5	1023.4	1023.4	1023.3	1023.3	1023.9
160°	1043.2	1043.0	1042.8	1042.6	1042.4	1042.2	1042.0	1041.8	1041.6	1041.5	1042.0
162.5°	1059.9	1059.5	1058.9	1058.4	1057.9	1057.6	1057.4	1057.2	1057.0	1056.8	1057.8
165°	1082.4	1081.8	1081.2	1080.7	1080.1	1079.6	1079.3	1078.8	1078.5	1078.1	1079.3
167.5°	1099.7	1098.9	1098.1	1097.3	1096.5	1096.1	1096.1	1096.1	1096.1	1096.2	1097.3
170°	1109.5	1108.5	1107.5	1106.6	1105.6	1105.2	1105.4	1105.6	1105.8	1106.0	1107.2
172.5°	1116.5	1115.6	1114.8	1114.0	1113.2	1112.8	1112.8	1112.9	1112.9	1112.9	1114.3
175°	1126.0	1125.1	1124.1	1123.2	1122.1	1121.6	1121.4	1121.2	1121.0	1120.8	1122.1
177.5°	1129.2	1128.4	1127.7	1126.9	1126.1	1125.7	1125.7	1125.7	1125.7	1125.7	1126.8
180°	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7	1554.7
2.5°	1548.9	1551.2	1553.5	1554.6	1554.4	1554.2	1553.9	1553.8
5°	1538.5	1541.2	1543.9	1544.9	1544.4	1543.9	1543.3	1542.8
7.5°	1518.1	1519.8	1521.5	1521.9	1521.0	1520.2	1519.3	1518.5
10°	1499.7	1500.7	1501.8	1501.8	1500.7	1499.7	1498.6	1497.5
12.5°	1476.9	1477.6	1478.2	1477.7	1476.3	1474.8	1473.3	1471.9
15°	1437.0	1436.4	1435.9	1434.7	1432.9	1431.0	1429.2	1427.3
17.5°	1388.9	1387.4	1386.0	1383.8	1381.0	1378.2	1375.4	1372.5
20°	1355.2	1353.1	1351.0	1348.2	1344.8	1341.4	1337.9	1334.5
22.5°	1317.8	1314.7	1311.6	1308.5	1305.7	1303.0	1300.1	1297.4
25°	1257.6	1253.1	1248.6	1245.0	1242.4	1239.8	1237.1	1234.5
27.5°	1196.2	1190.7	1185.1	1180.4	1176.6	1172.8	1169.0	1165.2
30°	1152.2	1145.6	1138.9	1133.5	1129.3	1125.1	1120.8	1116.6
32.5°	1107.2	1099.6	1091.9	1086.1	1082.0	1078.0	1074.0	1070.0
35°	1040.3	1031.3	1022.3	1015.5	1010.6	1005.9	1001.2	996.3
37.5°	968.5	958.4	948.3	940.9	936.2	931.3	926.6	921.9
40°	920.6	909.5	898.4	890.4	885.7	880.9	876.2	871.4
42.5°	873.5	862.2	850.8	842.7	837.8	832.8	827.8	822.9
45°	801.4	788.4	775.5	766.6	761.9	757.1	752.3	747.6
47.5°	728.8	715.4	701.9	692.6	687.3	682.1	676.8	671.7
50°	680.6	667.4	654.2	645.1	640.1	635.0	630.0	625.0
52.5°	632.6	619.1	605.7	596.4	591.2	585.9	580.7	575.5
55°	561.7	548.0	534.3	524.9	519.8	514.8	509.8	504.7
57.5°	492.5	478.5	464.6	455.7	451.9	448.1	444.3	440.5
60°	446.3	432.5	418.8	409.7	405.5	401.3	397.1	392.9
62.5°	400.8	388.1	375.4	367.3	363.9	360.6	357.1	353.8
65°	335.5	324.2	312.8	305.6	302.4	299.2	296.0	292.8
67.5°	275.6	265.9	256.1	249.4	245.9	242.5	238.9	235.5
70°	234.9	226.2	217.5	211.7	209.1	206.5	203.8	201.2
72.5°	198.4	191.0	183.5	178.6	176.1	173.7	171.3	168.8
75°	146.2	140.1	134.0	130.2	128.5	127.0	125.4	123.8
77.5°	103.4	99.9	96.3	94.3	93.8	93.3	92.8	92.4
80°	79.4	78.6	77.7	77.2	77.0	76.7	76.5	76.2
82.5°	61.6	61.1	60.5	60.1	59.8	59.6	59.3	59.1
85°	35.8	35.3	34.8	34.5	34.5	34.5	34.5	34.5
87.5°	17.2	17.2	17.2	17.4	17.7	18.0	18.3	18.6
90°	21.5	22.6	23.8	24.6	25.0	25.4	25.7	26.2
92.5°	35.9	36.6	37.4	37.8	38.1	38.2	38.5	38.7
95°	67.4	68.0	68.6	68.9	68.9	68.9	68.9	68.9
97.5°	106.2	106.9	107.6	108.0	108.0	108.0	108.0	108.0
100°	134.2	134.6	135.0	135.2	135.2	135.2	135.2	135.2
102.5°	163.8	164.4	165.0	165.3	165.4	165.6	165.7	165.9
105°	208.8	209.3	209.9	210.5	211.1	211.6	212.2	212.8
107.5°	257.4	257.9	258.5	258.6	258.6	258.6	258.6	258.6
110°	289.6	289.3	288.9	289.0	289.6	290.2	290.8	291.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	324.5	324.4	324.3	324.3	324.5	324.6	324.7	324.9
115°	378.2	378.0	377.8	377.5	377.4	377.2	377.0	376.8
117.5°	429.7	429.0	428.4	427.9	427.5	427.1	426.7	426.4
120°	464.7	463.7	462.8	462.4	462.9	463.2	463.6	464.0
122.5°	500.2	499.6	498.9	498.2	497.5	496.8	496.1	495.4
125°	552.2	551.8	551.5	551.0	550.7	550.3	549.9	549.5
127.5°	601.9	601.6	601.2	600.8	600.5	600.2	599.9	599.6
130°	636.8	636.5	636.0	635.5	634.7	634.0	633.2	632.4
132.5°	669.6	669.3	668.8	668.5	668.2	667.9	667.5	667.3
135°	718.8	718.4	718.1	717.6	717.0	716.4	715.8	715.2
137.5°	766.4	765.9	765.3	765.2	765.3	765.4	765.5	765.6
140°	797.7	797.5	797.3	797.1	796.9	796.8	796.5	796.3
142.5°	827.3	827.2	827.2	827.2	827.2	827.2	827.1	827.1
145°	871.8	871.7	871.4	871.1	870.5	869.9	869.4	868.7
147.5°	912.2	912.1	911.9	911.7	911.5	911.4	911.1	910.9
150°	937.6	937.6	937.6	937.5	937.4	937.2	936.9	936.8
152.5°	961.6	962.1	962.5	962.5	962.0	961.5	961.0	960.5
155°	995.1	995.8	996.6	996.6	995.8	995.1	994.3	993.5
157.5°	1024.5	1025.0	1025.6	1025.6	1024.9	1024.2	1023.6	1023.0
160°	1042.6	1043.2	1043.8	1043.5	1042.6	1041.6	1040.7	1039.7
162.5°	1058.9	1059.9	1061.0	1061.0	1060.1	1059.1	1058.1	1057.1
165°	1080.4	1081.6	1082.7	1082.9	1082.1	1081.3	1080.6	1079.8
167.5°	1098.5	1099.7	1100.9	1100.9	1099.7	1098.5	1097.3	1096.1
170°	1108.3	1109.5	1110.6	1110.5	1109.2	1107.8	1106.5	1105.1
172.5°	1115.6	1116.9	1118.3	1118.2	1116.9	1115.5	1114.1	1112.8
175°	1123.5	1124.9	1126.3	1126.3	1124.9	1123.5	1122.1	1120.8
177.5°	1127.9	1128.9	1130.1	1130.0	1128.7	1127.5	1126.3	1125.0
180°	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8	1127.8

(END OF REPORT)