

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: P332984-935

Luminaire Tested: **SA4XXRDIP-C1020D1205U935-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332984-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXRDIP-C1020D1205U935-4F0-1E-UDD-F4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1205 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7298.5 lumens  
Efficiency: N/A  
Efficacy: 111.6 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

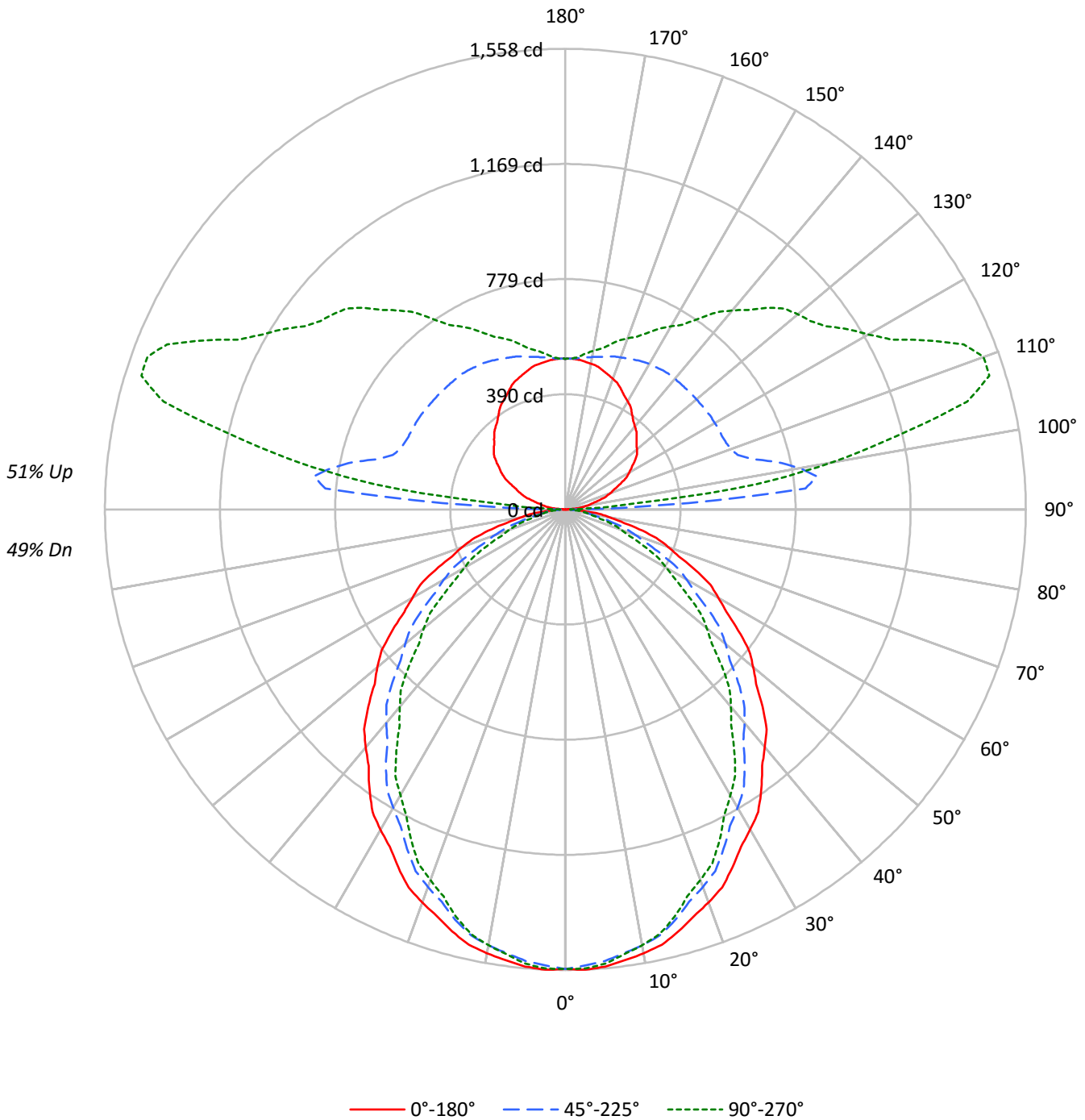
Input Watts (W): 65.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	55	55	55	49				49
1	98	94	90	86	90	87	83	80	73	71	69	61	59	58	49	48	47				42	
2	89	82	76	71	82	76	71	66	64	61	57	54	51	49	44	42	40				36	
3	82	72	65	59	75	67	61	56	57	52	48	48	44	41	39	37	35				30	
4	75	64	56	50	69	60	53	47	51	46	41	43	39	36	35	32	30				26	
5	69	57	49	43	63	53	46	41	46	40	36	38	34	31	32	29	26				23	
6	63	51	43	38	58	48	41	36	41	36	31	35	30	27	29	26	23				20	
7	59	47	39	33	54	43	36	31	37	32	28	32	27	24	26	23	21				18	
8	54	42	35	29	50	39	33	28	34	29	25	29	25	22	24	21	19				16	
9	51	39	31	26	47	36	29	25	31	26	22	27	23	19	22	19	17				15	
10	47	35	28	24	44	33	27	22	29	24	20	25	21	18	21	18	15				13	

**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	2.0
10°-20°	407.3	5.6
20°-30°	588.1	8.1
30°-40°	666.6	9.1
40°-50°	643.7	8.8
50°-60°	535.3	7.3
60°-70°	369.6	5.1
70°-80°	187.4	2.6
80°-90°	50.9	0.7
90°-100°	367.8	5.0
100°-110°	765.5	10.5
110°-120°	685.7	9.4
120°-130°	576.8	7.9
130°-140°	480.9	6.6
140°-150°	367.4	5.0
150°-160°	258.2	3.5
160°-170°	151.9	2.1
170°-180°	49.4	0.7
0°-30°	1141.4	15.6
0°-40°	1808.0	24.8
0°-60°	2987.0	40.9
0°-90°	3594.8	49.3
90°-120°	1819.0	24.9
90°-150°	3244.1	44.4
90°-180°	3704.0	50.8
0°-180°	7298.5	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°	1	8	18	20	21	5
95°	33	104	815	404	244	37
105°	117	170	656	1413	1408	125
115°	206	259	585	1125	1352	204
125°	287	341	582	957	1078	256
135°	341	406	577	849	964	264
145°	393	450	574	716	787	247
155°	447	483	558	632	659	206
165°	487	502	535	567	575	138
175°	508	509	513	520	518	48
180°	509	509	509	509	509	



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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°	22.1	20.8	19.7	18.3	16.7	15.8	16.8	16.5	16.7	17.0	16.5
90°	1.0	3.0	6.0	7.0	8.0	8.0	14.0	14.0	16.0	18.0	17.0
92.5°	11.4	16.6	26.0	38.2	52.9	73.6	124.5	202.1	277.8	317.4	264.3
95°	33.0	36.0	46.1	59.1	83.0	125.1	212.1	376.2	615.3	815.4	838.4
97.5°	59.2	59.2	67.8	79.8	100.5	135.7	202.7	338.2	575.8	858.8	1053.3
100°	76.0	76.0	83.0	95.1	114.1	146.1	205.1	318.1	522.3	804.3	1060.5
102.5°	92.0	93.7	99.9	111.1	129.2	159.7	213.1	312.5	486.2	736.3	1000.5
105°	117.1	120.0	125.1	137.1	155.1	184.1	232.1	315.1	455.2	656.3	891.4
107.5°	144.6	146.6	151.7	164.5	181.7	210.3	254.3	329.9	449.6	611.5	803.4
110°	163.1	165.1	170.0	182.1	200.1	227.1	271.1	341.1	451.3	596.3	759.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	180.7	182.7	188.5	199.7	217.7	244.7	287.1	353.2	456.0	589.1	734.5
115°	206.1	209.1	216.1	226.1	245.1	272.2	312.1	372.2	465.2	585.3	711.4
117.5°	232.5	235.3	241.5	252.5	270.4	298.3	336.4	391.6	475.0	584.3	700.9
120°	250.1	252.1	259.2	270.1	287.1	315.1	353.2	405.2	482.2	584.3	695.3
122.5°	266.1	268.1	275.2	285.3	303.9	331.1	369.2	418.0	489.5	583.5	689.0
125°	287.1	291.1	297.1	308.2	327.2	355.2	391.2	437.2	500.2	582.3	678.3
127.5°	305.7	308.9	316.2	328.7	348.5	376.8	411.6	453.8	508.9	580.1	664.1
130°	316.2	320.1	328.1	343.2	362.1	391.2	425.2	464.3	515.2	579.3	655.3
132.5°	326.6	329.8	340.2	354.4	375.0	402.4	436.4	474.7	520.8	578.5	647.3
135°	341.1	345.2	355.2	372.2	393.2	419.2	452.2	488.3	529.3	577.3	635.3
137.5°	355.8	359.6	370.6	386.8	408.6	433.4	464.3	497.8	534.3	577.0	624.9
140°	366.2	369.2	380.2	397.2	418.2	442.2	472.3	504.2	538.3	576.3	619.3
142.5°	377.4	380.4	390.5	406.8	427.0	450.2	479.4	509.0	541.5	576.3	614.5
145°	393.2	396.2	406.2	420.2	439.2	461.2	487.2	514.3	543.3	574.3	606.3
147.5°	411.0	412.0	420.8	435.2	451.0	470.8	495.2	518.8	544.2	570.7	598.9
150°	422.2	423.2	431.2	443.2	458.2	477.3	499.2	521.2	544.2	568.3	593.3
152.5°	432.6	432.8	440.8	452.0	465.5	482.8	502.5	522.9	542.7	564.3	586.9
155°	447.2	448.2	454.2	464.3	475.3	490.3	507.2	524.3	540.3	558.3	577.3
157.5°	461.4	461.4	467.0	474.8	484.4	496.3	510.7	524.3	537.7	552.1	567.5
160°	470.2	470.2	474.2	481.2	489.2	500.2	512.2	524.3	535.3	547.3	560.3
162.5°	478.2	477.4	480.6	486.8	494.0	502.7	513.8	524.3	532.9	542.4	553.9
165°	487.2	487.2	489.2	494.2	499.2	505.2	514.3	522.3	528.2	535.3	543.3
167.5°	496.3	495.2	496.3	500.1	502.8	507.5	514.0	519.9	523.5	528.1	533.6
170°	500.2	499.2	500.2	503.3	505.2	508.2	513.2	518.2	520.2	523.2	527.3
172.5°	504.2	503.3	503.4	505.7	506.9	509.0	512.5	516.7	517.0	518.4	521.7
175°	508.2	507.2	507.2	508.2	509.3	509.3	511.3	514.3	513.2	513.2	515.2
177.5°	510.1	509.3	508.4	509.3	509.3	509.3	510.1	511.6	510.1	510.1	510.8
180°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3



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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°	16.5	16.5	16.4	16.4	16.9	17.3	17.3	17.6
90°	18.0	19.0	20.0	20.0	21.0	22.0	21.0	21.0
92.5°	196.5	147.8	117.7	97.6	85.8	80.4	77.1	77.1
95°	741.3	586.3	452.2	355.2	306.2	275.2	257.1	244.1
97.5°	1095.4	1037.7	939.9	835.4	763.5	703.4	673.3	652.6
100°	1206.6	1226.6	1177.6	1103.5	1016.5	955.5	925.5	917.5
102.5°	1201.0	1300.2	1314.4	1283.6	1230.2	1185.9	1154.3	1148.0
105°	1120.5	1293.7	1392.7	1433.7	1435.7	1427.7	1413.7	1407.6
107.5°	1006.3	1190.6	1330.1	1419.3	1468.7	1491.5	1501.5	1504.2
110°	937.5	1110.5	1255.6	1365.6	1436.7	1478.7	1496.8	1505.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	887.0	1040.1	1177.2	1287.2	1367.9	1418.7	1443.9	1458.5
115°	836.4	959.5	1076.5	1172.6	1251.6	1311.6	1343.7	1351.7
117.5°	811.6	913.4	1005.5	1086.9	1154.3	1204.8	1237.2	1243.4
120°	800.4	893.5	973.4	1044.5	1101.6	1145.6	1171.6	1182.6
122.5°	790.7	880.6	953.5	1015.7	1063.9	1101.6	1123.5	1134.5
125°	774.4	860.4	929.4	984.5	1024.5	1053.5	1072.5	1078.5
127.5°	754.3	836.6	905.4	957.7	997.9	1023.7	1039.7	1045.7
130°	738.4	817.4	885.5	938.5	979.5	1004.4	1020.5	1026.5
132.5°	721.5	795.8	862.2	915.2	955.5	983.7	998.8	1004.9
135°	698.4	763.4	824.4	874.4	914.5	942.5	958.5	964.5
137.5°	677.3	732.4	783.8	829.0	866.4	894.1	907.2	914.5
140°	665.3	712.3	757.3	799.4	834.4	856.4	870.4	878.4
142.5°	654.1	695.5	734.2	770.6	801.6	822.0	834.4	840.0
145°	638.3	672.4	702.3	730.4	755.4	772.4	782.4	787.4
147.5°	625.3	652.3	676.3	698.4	716.8	731.3	739.0	740.7
150°	617.3	640.3	660.3	678.3	694.3	707.3	713.3	714.4
152.5°	608.5	628.3	646.7	661.5	675.1	685.7	689.3	690.3
155°	595.3	611.3	626.3	638.3	648.3	656.3	659.4	659.4
157.5°	581.1	594.5	607.1	616.7	624.3	630.3	632.1	632.1
160°	572.3	583.2	594.3	602.3	608.3	614.3	615.3	615.3
162.5°	563.4	572.9	581.5	588.7	593.1	599.1	600.1	599.3
165°	551.3	557.2	564.3	569.3	573.3	577.3	576.3	575.3
167.5°	539.5	544.1	549.7	552.7	554.7	557.2	557.1	556.3
170°	532.3	535.3	539.2	542.3	544.2	545.3	544.2	544.2
172.5°	525.8	528.1	530.5	532.6	533.8	534.9	533.8	532.3
175°	517.3	518.2	520.2	520.2	520.2	522.3	520.2	518.2
177.5°	511.6	512.5	512.5	513.2	512.5	513.2	511.6	510.1
180°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3

(END OF REPORT)