

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: P332958-935

Luminaire Tested: **SA4XXRDIP-C1020D365U935-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P332958-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA4XXRDIP-C1020D365U935-4F0-1E-UDD-F  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 365 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

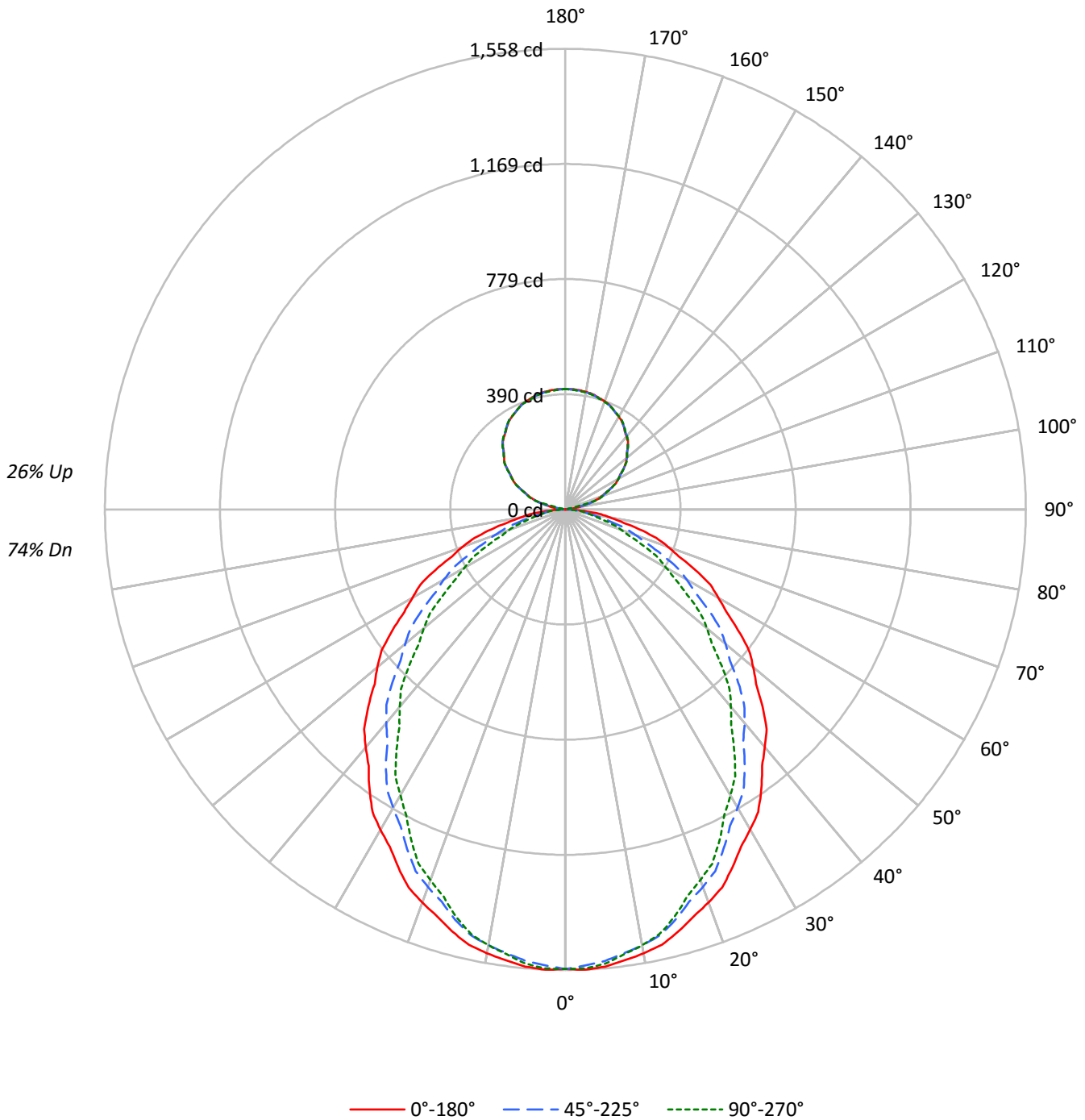
Lumens per Lamp: N/A  
Luminaire Lumens: 4851.6 lumens  
Efficiency: N/A  
Efficacy: 111.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 43.5  
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	50	30	10	0	
RCR																						
0	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78	74				74
1	104	99	95	92	98	95	91	88	86	83	81	77	75	74	70	68	67				63	
2	95	87	81	76	90	83	78	73	75	71	67	68	65	62	62	59	57				54	
3	87	77	70	64	82	74	67	61	67	62	57	61	57	53	55	52	49				46	
4	80	69	60	54	75	65	58	53	60	54	49	55	50	46	50	46	42				40	
5	73	61	53	47	69	59	51	46	54	48	43	49	44	40	45	41	37				35	
6	68	55	47	41	64	53	45	40	49	42	38	45	39	35	41	36	33				31	
7	63	50	42	36	60	48	41	35	44	38	33	41	35	31	37	33	29				27	
8	58	46	38	32	55	44	37	32	41	34	30	37	32	28	34	30	27				24	
9	55	42	34	29	52	40	33	28	37	31	27	35	29	26	32	27	24				22	
10	51	39	31	26	49	37	30	26	35	29	24	32	27	23	30	25	22				20	

**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	3.0
10°-20°	407.3	8.4
20°-30°	588.1	12.1
30°-40°	666.6	13.7
40°-50°	643.7	13.3
50°-60°	535.3	11.0
60°-70°	369.6	7.6
70°-80°	187.4	3.9
80°-90°	49.2	1.0
90°-100°	13.9	0.3
100°-110°	88.7	1.8
110°-120°	169.7	3.5
120°-130°	215.4	4.4
130°-140°	230.5	4.8
140°-150°	215.6	4.4
150°-160°	173.8	3.6
160°-170°	112.1	2.3
170°-180°	38.6	0.8
0°-30°	1141.4	23.5
0°-40°	1808.0	37.3
0°-60°	2987.0	61.6
0°-90°	3593.2	74.1
90°-120°	272.4	5.6
90°-150°	933.9	19.2
90°-180°	1258.0	25.9
0°-180°	4851.6	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	4	7	8	9	4
95°	17	7	7	8	9	22
105°	92	93	95	97	87	96
115°	171	172	172	172	172	168
125°	240	242	241	242	242	215
135°	298	298	299	300	300	230
145°	344	345	345	345	346	215
155°	377	377	376	378	377	174
165°	398	396	396	398	396	112
175°	407	405	405	408	404	39
180°	407	407	407	407	407	



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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	20.6	19.0	17.5	15.9	15.1	15.0	14.9	14.8	14.6	14.6
90°	0.9	1.6	2.4	3.2	3.9	4.6	5.1	5.6	6.1	6.7	7.1
92.5°	3.9	3.9	3.9	4.0	4.0	4.3	4.8	5.3	5.9	6.5	6.9
95°	16.7	14.5	12.1	9.8	7.6	6.5	6.5	6.5	6.6	6.7	7.1
97.5°	35.6	36.9	38.4	39.9	41.2	38.2	30.7	23.2	15.6	8.0	8.1
100°	49.9	51.1	52.3	53.6	54.8	50.7	41.4	32.0	22.7	13.4	12.2
102.5°	66.0	66.9	67.8	68.6	69.6	69.4	68.2	67.0	65.7	64.5	52.1
105°	91.6	92.0	92.4	92.8	93.2	93.6	93.9	94.3	94.6	95.0	95.6
107.5°	115.4	115.5	115.8	116.0	116.2	116.5	117.0	117.4	117.9	118.4	118.6
110°	131.5	131.6	131.8	132.1	132.2	132.6	132.9	133.4	133.8	134.2	134.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	147.1	147.4	147.7	148.1	148.5	148.8	149.0	149.1	149.3	149.6	149.5
115°	171.0	171.3	171.4	171.6	171.9	171.9	171.9	171.8	171.7	171.6	171.8
117.5°	192.6	192.9	193.1	193.5	193.7	193.9	194.1	194.2	194.3	194.5	194.5
120°	207.2	207.5	207.8	208.0	208.3	208.4	208.4	208.3	208.2	208.1	208.3
122.5°	220.8	221.0	221.2	221.4	221.5	221.6	221.7	221.8	221.9	222.1	222.1
125°	240.4	240.6	240.9	241.2	241.5	241.5	241.4	241.3	241.2	241.0	241.2
127.5°	258.9	259.0	259.0	259.1	259.2	259.3	259.7	259.9	260.3	260.6	260.5
130°	270.8	270.9	271.0	271.0	271.1	271.2	271.4	271.6	271.8	272.1	272.1
132.5°	281.8	281.9	282.0	282.1	282.2	282.4	282.7	282.9	283.2	283.4	283.5
135°	298.2	298.2	298.1	298.0	297.9	298.0	298.3	298.6	298.9	299.1	299.3
137.5°	312.7	312.8	312.8	312.8	312.9	313.1	313.3	313.6	313.9	314.2	314.4
140°	322.3	322.4	322.5	322.6	322.8	322.9	323.0	323.2	323.3	323.5	323.6
142.5°	330.8	331.0	331.2	331.5	331.7	331.9	332.0	332.1	332.2	332.3	332.3
145°	343.9	344.1	344.2	344.5	344.7	344.7	344.7	344.7	344.7	344.7	344.8
147.5°	354.2	354.6	355.0	355.4	355.8	355.9	355.9	355.8	355.7	355.7	355.7
150°	361.8	362.1	362.3	362.7	362.9	363.0	362.9	362.8	362.7	362.7	362.7
152.5°	368.2	368.3	368.6	368.8	369.0	369.0	368.9	368.8	368.7	368.6	368.7
155°	377.0	377.1	377.1	377.2	377.3	377.2	377.0	376.8	376.6	376.4	376.7
157.5°	384.5	384.4	384.4	384.4	384.4	384.2	384.0	383.7	383.5	383.3	383.7
160°	388.9	388.7	388.5	388.3	388.1	388.0	387.9	387.8	387.7	387.6	388.1
162.5°	392.8	392.5	392.3	392.0	391.8	391.6	391.5	391.4	391.4	391.3	391.8
165°	397.7	397.4	397.0	396.7	396.3	396.1	396.1	396.1	396.1	396.1	396.7
167.5°	401.6	401.2	400.9	400.5	400.2	400.0	399.9	399.9	399.8	399.8	400.5
170°	403.8	403.4	402.9	402.6	402.2	402.0	402.1	402.2	402.2	402.3	402.8
172.5°	405.3	404.8	404.4	404.1	403.6	403.5	403.6	403.6	403.6	403.7	404.2
175°	406.8	406.4	406.0	405.6	405.2	405.0	405.1	405.2	405.3	405.3	406.0
177.5°	407.6	407.2	406.8	406.4	406.0	405.9	406.0	406.1	406.2	406.3	406.8
180°	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8



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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°	14.4	14.3	14.1	14.2	14.5	14.7	14.9	15.2
90°	7.5	7.9	8.4	8.6	8.7	8.9	9.0	9.1
92.5°	7.2	7.7	8.1	8.3	8.4	8.4	8.4	8.4
95°	7.5	7.9	8.4	8.5	8.6	8.7	8.8	8.8
97.5°	8.1	8.2	8.2	8.3	8.4	8.4	8.4	8.5
100°	11.1	9.9	8.8	8.3	8.4	8.4	8.4	8.5
102.5°	39.7	27.3	14.9	8.7	8.7	8.7	8.8	8.8
105°	96.2	96.8	97.4	96.4	94.0	91.6	89.1	86.7
107.5°	119.0	119.2	119.6	119.9	120.1	120.4	120.6	120.9
110°	134.5	134.6	134.7	134.9	135.1	135.3	135.5	135.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	149.5	149.5	149.4	149.6	149.8	150.1	150.3	150.6
115°	171.9	172.0	172.2	172.2	172.2	172.2	172.2	172.2
117.5°	194.4	194.4	194.4	194.3	194.3	194.3	194.3	194.2
120°	208.4	208.5	208.7	208.7	208.5	208.4	208.3	208.1
122.5°	222.1	222.2	222.3	222.3	222.1	222.1	221.9	221.8
125°	241.4	241.6	241.8	241.9	242.0	242.1	242.1	242.2
127.5°	260.5	260.5	260.5	260.4	260.4	260.3	260.2	260.2
130°	272.2	272.2	272.3	272.3	272.3	272.3	272.3	272.3
132.5°	283.6	283.7	283.8	283.8	283.7	283.6	283.6	283.5
135°	299.4	299.5	299.6	299.8	299.9	300.1	300.2	300.3
137.5°	314.5	314.7	314.8	314.9	314.8	314.8	314.7	314.7
140°	323.8	324.1	324.3	324.4	324.5	324.5	324.6	324.7
142.5°	332.5	332.7	332.8	332.9	332.9	332.9	332.9	332.9
145°	344.9	345.0	345.0	345.1	345.3	345.4	345.5	345.7
147.5°	355.8	355.9	355.9	355.9	356.0	356.0	356.1	356.2
150°	362.7	362.7	362.7	362.7	362.8	362.9	362.9	363.0
152.5°	368.8	368.9	369.0	369.0	368.9	368.9	368.9	368.9
155°	376.9	377.2	377.5	377.5	377.3	377.1	376.9	376.7
157.5°	384.0	384.4	384.7	384.7	384.4	384.0	383.7	383.3
160°	388.5	388.9	389.3	389.3	388.9	388.5	388.1	387.6
162.5°	392.1	392.5	393.0	392.9	392.4	392.0	391.5	391.1
165°	397.3	397.8	398.4	398.3	397.7	397.1	396.5	395.9
167.5°	401.1	401.7	402.2	402.2	401.5	400.8	400.1	399.5
170°	403.4	403.9	404.4	404.3	403.7	403.0	402.3	401.7
172.5°	404.8	405.4	405.9	405.8	405.1	404.3	403.6	402.9
175°	406.6	407.2	407.8	407.7	406.8	406.0	405.2	404.4
177.5°	407.3	407.7	408.1	407.9	407.3	406.7	406.0	405.4
180°	406.8	406.8	406.8	406.8	406.8	406.8	406.8	406.8

(END OF REPORT)