

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: P331762

Luminaire Tested: **SA2XXRDIP-C1005D1080U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331762  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXRDIP-C1005D1080U835-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7791.9 lumens  
Efficiency: N/A  
Efficacy: 108.7 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: General Diffuse

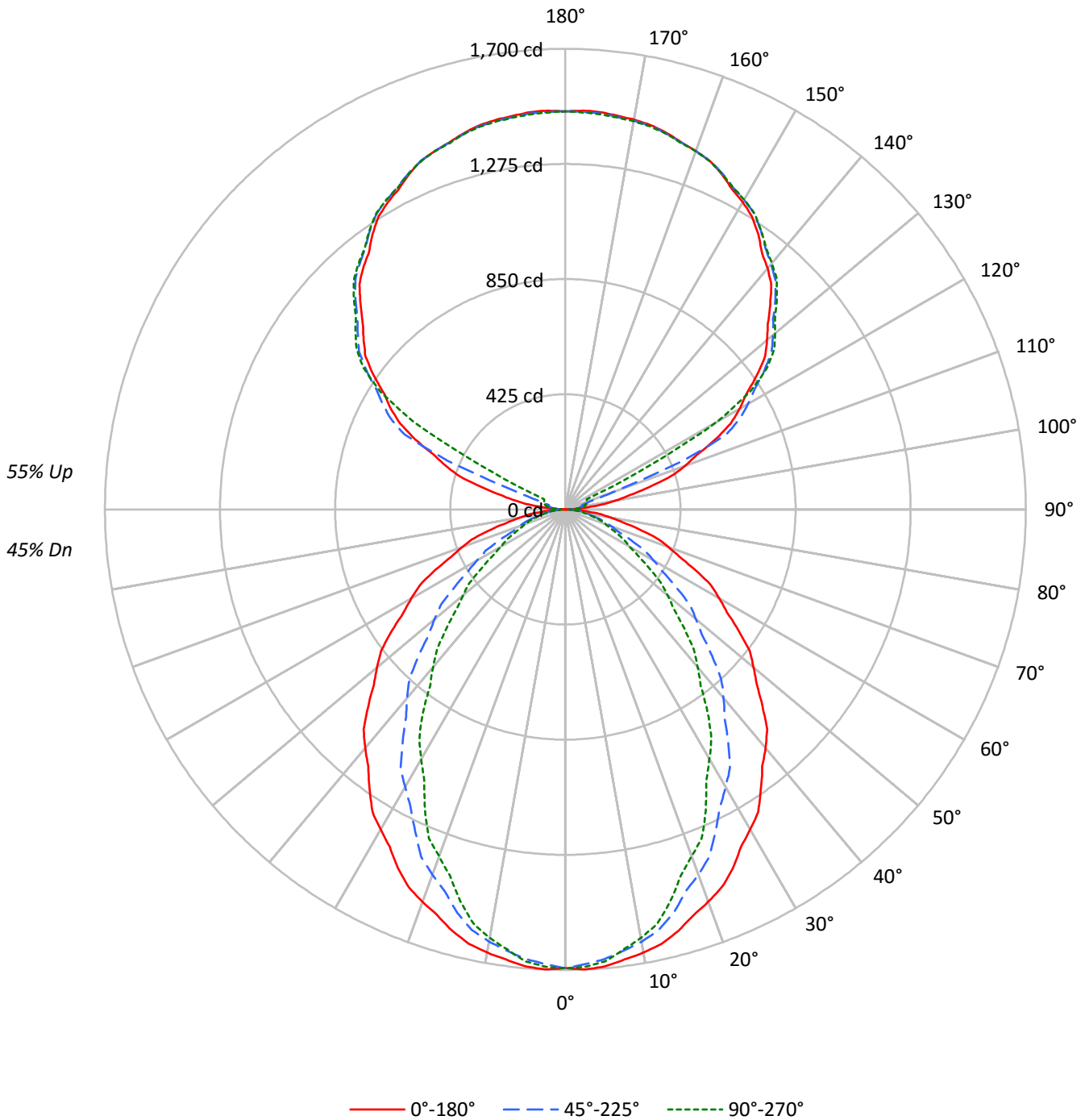
Input Watts (W): 71.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	45				45
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44	39				39
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38	33				33
3	81	72	65	59	74	66	60	55	56	51	48	46	43	40	37	35	33	28				28
4	74	64	56	51	68	59	52	47	50	45	41	41	38	35	33	31	29	25				25
5	68	57	49	44	63	53	46	41	45	40	36	37	33	30	30	27	25	22				22
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	25	22	19				19
7	58	47	39	33	54	43	36	32	37	31	28	31	27	24	25	22	20	17				17
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16				16
9	51	39	31	27	46	36	30	25	31	26	22	26	22	19	21	19	16	14				14
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15	13				13

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

	0°	45°	90°
0°	27341	27341	27341
5°	27446	27000	27149
10°	27237	26558	26332
15°	26924	25770	25028
20°	26490	24646	23409
25°	26045	23370	21841
30°	25430	22057	19829
35°	24829	20631	18065
40°	24226	19155	16021
45°	23516	17497	14173
50°	22790	15822	12356
55°	22044	14021	10612
60°	21180	12126	8809
65°	20199	10189	8023
70°	19029	8393	7378
75°	17592	7648	6881
80°	15528	6843	6267
85°	12208	5391	5391



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.5	2.0
10°-20°	435.2	5.6
20°-30°	611.2	7.8
30°-40°	666.5	8.6
40°-50°	612.8	7.9
50°-60°	481.3	6.2
60°-70°	313.8	4.0
70°-80°	161.8	2.1
80°-90°	45.6	0.6
90°-100°	49.0	0.6
100°-110°	179.7	2.3
110°-120°	480.4	6.2
120°-130°	793.0	10.2
130°-140°	843.3	10.8
140°-150°	783.8	10.1
150°-160°	630.2	8.1
160°-170°	406.1	5.2
170°-180°	139.8	1.8
0°-30°	1204.9	15.5
0°-40°	1871.4	24.0
0°-60°	2965.4	38.1
0°-90°	3486.6	44.7
90°-120°	709.1	9.1
90°-150°	3129.2	40.2
90°-180°	4305.0	55.2
0°-180°	7791.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1693	1693	1693	1693	1693	
5°	1693	1685	1666	1679	1675	160
15°	1611	1592	1542	1513	1497	454
25°	1462	1410	1312	1251	1226	672
35°	1260	1178	1047	954	916	788
45°	1030	924	766	661	621	795
55°	783	661	498	410	377	700
65°	529	404	267	217	210	524
75°	282	178	123	112	110	298
85°	66	35	29	29	29	78
90°	1	13	21	26	29	6
95°	69	36	42	46	46	85
105°	323	337	65	76	81	345
115°	611	630	656	187	87	602
125°	864	878	898	906	909	770
135°	1069	1086	1096	1106	1104	826
145°	1241	1241	1258	1264	1260	776
155°	1366	1358	1369	1375	1367	629
165°	1439	1434	1436	1443	1436	406
175°	1472	1465	1467	1473	1464	140
180°	1469	1469	1469	1469	1469	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4
2.5°	1699.6	1698.2	1696.8	1695.5	1694.1	1691.9	1688.9	1686.0	1683.0	1680.0	1682.7
5°	1693.4	1691.7	1690.0	1688.3	1686.6	1683.6	1679.1	1674.7	1670.3	1665.9	1668.9
7.5°	1676.0	1673.9	1671.8	1669.6	1667.5	1663.9	1658.7	1653.5	1648.4	1643.2	1644.1
10°	1661.3	1658.9	1656.5	1654.1	1651.7	1647.1	1640.3	1633.5	1626.7	1619.9	1618.9
12.5°	1642.9	1639.9	1637.0	1634.1	1631.2	1625.3	1616.6	1607.9	1599.2	1590.5	1588.6
15°	1610.7	1606.9	1603.2	1599.4	1595.7	1588.0	1576.5	1564.9	1553.3	1541.7	1535.3
17.5°	1571.1	1565.4	1559.7	1554.0	1548.3	1538.0	1523.1	1508.3	1493.4	1478.6	1470.9
20°	1541.7	1534.9	1528.1	1521.3	1514.5	1502.6	1485.5	1468.5	1451.5	1434.4	1425.9
22.5°	1509.8	1502.2	1494.6	1487.0	1479.3	1465.9	1446.7	1427.5	1408.3	1389.1	1378.1
25°	1462.0	1451.1	1440.2	1429.3	1418.4	1401.8	1379.3	1356.8	1334.3	1311.8	1297.9
27.5°	1404.4	1392.6	1380.7	1368.9	1357.0	1338.4	1313.1	1287.7	1262.4	1237.1	1220.8
30°	1364.0	1351.0	1338.1	1325.1	1312.2	1292.1	1264.8	1237.6	1210.4	1183.1	1165.7
32.5°	1324.7	1309.6	1294.5	1279.4	1264.2	1242.8	1215.0	1187.2	1159.4	1131.6	1111.8
35°	1259.7	1242.4	1225.0	1207.6	1190.3	1166.6	1136.6	1106.7	1076.7	1046.7	1025.3
37.5°	1194.8	1175.7	1156.6	1137.5	1118.5	1093.0	1061.0	1029.1	997.1	965.2	941.6
40°	1149.4	1129.0	1108.5	1088.1	1067.7	1040.9	1007.9	974.9	941.8	908.8	884.6
42.5°	1102.8	1081.3	1059.8	1038.2	1016.7	988.9	954.8	920.6	886.5	852.4	827.4
45°	1029.9	1007.0	984.2	961.4	938.6	909.3	873.5	837.8	802.0	766.3	742.1
47.5°	958.7	934.6	910.4	886.2	862.0	831.5	794.6	757.6	720.7	683.8	659.8
50°	907.3	883.1	858.9	834.7	810.5	779.7	742.3	704.8	667.3	629.9	606.4
52.5°	857.0	831.7	806.5	781.2	755.9	725.0	688.3	651.7	615.0	578.4	555.7
55°	783.1	756.6	730.0	703.4	676.9	645.2	608.4	571.6	534.9	498.1	477.6
57.5°	707.4	680.2	652.9	625.7	598.4	567.1	531.8	496.4	461.1	425.7	407.0
60°	655.9	628.7	601.4	574.2	546.9	515.8	480.7	445.6	410.5	375.5	358.1
62.5°	605.7	578.4	551.2	523.9	496.7	466.3	432.9	399.4	366.0	332.6	316.0
65°	528.7	501.1	473.6	446.0	418.4	389.3	358.6	328.0	297.3	266.7	255.1
67.5°	454.5	427.2	399.8	372.4	345.0	317.5	290.0	262.4	234.8	207.2	201.9
70°	403.1	376.5	349.9	323.4	296.8	271.8	248.3	224.8	201.3	177.8	174.4
72.5°	354.0	328.5	303.1	277.6	252.1	229.9	211.1	192.2	173.3	154.5	151.6
75°	282.0	258.1	234.3	210.5	186.6	168.9	157.3	145.8	134.2	122.6	120.2
77.5°	211.2	190.3	169.4	148.5	127.5	114.3	108.7	103.1	97.5	92.0	90.6
80°	167.0	149.7	132.3	114.9	97.6	87.2	83.8	80.4	77.0	73.6	72.2
82.5°	126.6	113.0	99.5	85.9	72.4	64.4	62.1	59.8	57.5	55.2	54.4
85°	65.9	58.7	51.6	44.4	37.3	33.2	32.2	31.2	30.1	29.1	29.1
87.5°	19.8	18.2	16.5	14.8	13.2	12.5	12.9	13.3	13.7	14.1	14.0
90°	1.1	3.7	6.3	8.9	11.5	13.7	15.6	17.5	19.4	21.3	22.4
92.5°	21.5	21.2	21.0	20.8	20.5	20.9	21.8	22.8	23.7	24.7	25.3
95°	69.1	61.3	53.5	45.7	37.9	34.8	36.5	38.2	39.8	41.5	42.6
97.5°	137.1	115.2	93.2	71.2	49.3	40.2	44.0	47.8	51.7	55.5	56.4
100°	188.2	155.8	123.4	91.1	58.7	44.5	48.5	52.6	56.6	60.6	62.5
102.5°	244.3	237.4	230.6	223.7	216.9	196.7	163.1	129.5	95.9	62.3	64.8
105°	323.2	330.3	337.3	344.4	351.5	322.8	258.3	193.8	129.3	64.8	67.4
107.5°	413.1	418.8	424.5	430.2	436.0	400.2	322.8	245.5	168.1	90.8	88.1
110°	470.9	475.9	480.9	485.8	490.8	459.1	390.8	322.6	254.3	186.0	162.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	525.4	529.8	534.1	538.5	542.9	536.7	519.8	503.0	486.1	469.2	383.1
115°	611.3	615.3	619.3	623.3	627.3	632.3	638.2	644.1	650.0	655.9	546.5
117.5°	688.0	692.5	697.0	701.5	706.0	710.2	714.3	718.4	722.4	726.5	700.0
120°	744.1	747.7	751.2	754.8	758.3	762.2	766.5	770.7	775.0	779.2	782.0
122.5°	791.8	795.5	799.2	803.0	806.7	810.9	815.5	820.1	824.8	829.4	831.1
125°	864.3	867.3	870.4	873.5	876.5	880.3	884.8	889.3	893.8	898.3	899.9
127.5°	930.0	933.4	936.8	940.2	943.6	946.9	950.3	953.6	957.0	960.4	962.8
130°	971.6	975.4	979.2	983.0	986.7	989.9	992.5	995.1	997.7	1000.3	1002.9
132.5°	1014.1	1017.4	1020.6	1023.8	1027.0	1029.9	1032.5	1035.1	1037.7	1040.3	1042.5
135°	1069.4	1073.2	1077.0	1080.8	1084.5	1087.5	1089.6	1091.7	1093.9	1096.0	1098.4
137.5°	1125.3	1128.0	1130.6	1133.3	1135.9	1138.4	1140.9	1143.3	1145.7	1148.1	1150.4
140°	1161.9	1163.8	1165.7	1167.6	1169.5	1171.7	1174.3	1176.9	1179.5	1182.1	1184.2
142.5°	1192.5	1194.2	1195.9	1197.6	1199.3	1201.7	1204.6	1207.6	1210.6	1213.6	1215.5
145°	1240.6	1240.3	1240.1	1239.9	1239.6	1241.5	1245.5	1249.5	1253.6	1257.6	1259.2
147.5°	1282.5	1281.6	1280.7	1279.8	1278.9	1280.4	1284.4	1288.3	1292.3	1296.3	1297.5
150°	1309.7	1308.0	1306.4	1304.7	1303.1	1304.1	1307.9	1311.7	1315.5	1319.2	1320.7
152.5°	1332.6	1330.8	1328.9	1327.1	1325.3	1326.1	1329.7	1333.3	1336.9	1340.5	1341.9
155°	1366.0	1363.9	1361.8	1359.6	1357.5	1357.9	1360.7	1363.5	1366.4	1369.2	1370.6
157.5°	1392.2	1390.4	1388.6	1386.8	1385.0	1385.1	1387.1	1389.0	1391.0	1393.0	1394.6
160°	1407.5	1406.1	1404.6	1403.2	1401.8	1401.8	1403.2	1404.6	1406.1	1407.5	1408.9
162.5°	1421.1	1419.7	1418.2	1416.8	1415.4	1415.3	1416.5	1417.8	1419.0	1420.2	1421.8
165°	1439.4	1437.9	1436.5	1435.1	1433.7	1433.3	1434.0	1434.8	1435.5	1436.2	1437.8
167.5°	1453.0	1451.6	1450.1	1448.7	1447.3	1446.9	1447.6	1448.2	1448.9	1449.6	1451.2
170°	1460.6	1459.2	1457.8	1456.4	1455.0	1454.5	1455.0	1455.4	1455.9	1456.4	1458.0
172.5°	1465.7	1464.3	1462.9	1461.5	1460.1	1459.6	1460.1	1460.5	1461.0	1461.5	1463.1
175°	1472.3	1470.7	1469.0	1467.4	1465.7	1465.1	1465.6	1466.1	1466.5	1467.0	1468.7
177.5°	1473.4	1472.1	1470.7	1469.4	1468.1	1467.5	1467.7	1467.9	1468.1	1468.3	1469.6
180°	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4	1693.4
2.5°	1685.4	1688.1	1690.9	1691.9	1691.4	1690.9	1690.3	1689.8
5°	1672.0	1675.1	1678.1	1679.1	1678.1	1677.1	1676.1	1675.1
7.5°	1644.9	1645.8	1646.7	1646.3	1644.5	1642.7	1641.0	1639.2
10°	1617.8	1616.8	1615.8	1614.3	1612.2	1610.2	1608.1	1606.1
12.5°	1586.8	1584.9	1583.1	1580.5	1577.1	1573.7	1570.3	1566.9
15°	1528.8	1522.3	1515.8	1510.9	1507.5	1504.1	1500.7	1497.3
17.5°	1463.2	1455.5	1447.8	1441.0	1435.2	1429.3	1423.4	1417.6
20°	1417.4	1408.9	1400.4	1392.4	1384.9	1377.4	1369.9	1362.4
22.5°	1367.2	1356.2	1345.2	1336.9	1331.4	1325.8	1320.2	1314.6
25°	1283.9	1270.0	1256.0	1246.5	1241.3	1236.2	1231.1	1226.0
27.5°	1204.5	1188.2	1171.9	1159.7	1151.6	1143.5	1135.4	1127.3
30°	1148.4	1131.0	1113.6	1100.4	1091.2	1082.0	1072.8	1063.6
32.5°	1092.0	1072.2	1052.3	1038.1	1029.5	1020.8	1012.1	1003.5
35°	1003.8	982.4	960.9	946.4	938.9	931.4	923.9	916.5
37.5°	917.9	894.3	870.6	854.5	846.0	837.4	828.8	820.2
40°	860.4	836.2	812.1	795.6	786.7	777.8	769.0	760.1
42.5°	802.4	777.4	752.4	735.6	727.0	718.4	709.9	701.3
45°	717.9	693.7	669.5	653.4	645.2	637.0	628.8	620.7
47.5°	635.7	611.7	587.6	571.9	564.5	557.1	549.6	542.2
50°	582.9	559.4	535.9	520.5	513.4	506.2	499.1	491.9
52.5°	533.0	510.3	487.7	473.0	466.4	459.8	453.2	446.6
55°	457.2	436.8	416.3	402.9	396.4	389.9	383.5	377.0
57.5°	388.3	369.5	350.8	338.7	333.3	327.8	322.4	316.9
60°	340.7	323.4	306.0	294.6	289.1	283.7	278.2	272.8
62.5°	299.5	282.9	266.4	256.4	253.2	249.9	246.6	243.4
65°	243.5	231.9	220.3	214.0	213.0	212.0	211.0	210.0
67.5°	196.6	191.3	185.9	182.7	181.7	180.6	179.5	178.4
70°	171.0	167.6	164.2	161.8	160.4	159.0	157.7	156.3
72.5°	148.8	145.9	143.0	141.2	140.4	139.6	138.7	137.9
75°	117.8	115.5	113.1	111.7	111.4	111.0	110.7	110.3
77.5°	89.2	87.9	86.5	85.5	85.0	84.5	83.9	83.4
80°	70.8	69.5	68.1	67.4	67.4	67.4	67.4	67.4
82.5°	53.5	52.7	51.9	51.5	51.5	51.5	51.5	51.5
85°	29.1	29.1	29.1	29.1	29.1	29.1	29.1	29.1
87.5°	14.0	14.0	13.9	13.9	14.0	14.1	14.2	14.3
90°	23.6	24.8	26.0	26.8	27.3	27.8	28.2	28.7
92.5°	25.9	26.5	27.1	27.6	27.9	28.1	28.4	28.7
95°	43.8	45.0	46.2	46.7	46.4	46.2	45.9	45.7
97.5°	57.4	58.3	59.3	59.9	60.2	60.5	60.7	61.0
100°	64.4	66.3	68.2	69.3	69.8	70.3	70.8	71.2
102.5°	67.2	69.7	72.1	73.7	74.3	75.0	75.7	76.3
105°	70.0	72.6	75.2	77.0	78.0	78.9	79.8	80.8
107.5°	85.5	82.8	80.2	79.4	80.3	81.2	82.2	83.1
110°	138.8	115.2	91.5	80.2	81.1	82.1	83.0	84.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	296.9	210.7	124.5	81.8	82.6	83.3	84.1	84.8
115°	437.1	327.8	218.4	155.2	138.2	121.2	104.2	87.2
117.5°	673.6	647.1	620.7	579.5	523.6	467.7	411.8	355.9
120°	784.9	787.7	790.6	776.0	744.1	712.2	680.3	648.5
122.5°	832.8	834.5	836.2	833.9	827.8	821.6	815.4	809.2
125°	901.6	903.2	904.9	906.1	906.8	907.5	908.2	908.9
127.5°	965.2	967.6	970.0	971.3	971.4	971.6	971.7	971.8
130°	1005.5	1008.1	1010.7	1011.9	1011.7	1011.4	1011.2	1011.0
132.5°	1044.7	1047.0	1049.2	1050.2	1049.9	1049.7	1049.5	1049.2
135°	1100.7	1103.1	1105.4	1106.4	1105.9	1105.4	1105.0	1104.5
137.5°	1152.7	1155.0	1157.3	1158.1	1157.3	1156.5	1155.7	1154.9
140°	1186.4	1188.5	1190.6	1191.1	1189.9	1188.7	1187.5	1186.4
142.5°	1217.4	1219.4	1221.3	1221.7	1220.5	1219.3	1218.2	1217.0
145°	1260.9	1262.5	1264.2	1264.4	1263.3	1262.1	1260.9	1259.7
147.5°	1298.7	1300.0	1301.2	1301.3	1300.3	1299.3	1298.3	1297.3
150°	1322.1	1323.5	1324.9	1325.0	1323.8	1322.7	1321.5	1320.3
152.5°	1343.3	1344.8	1346.2	1346.1	1344.5	1343.0	1341.4	1339.9
155°	1372.0	1373.5	1374.9	1374.6	1372.7	1370.9	1369.0	1367.1
157.5°	1396.2	1397.8	1399.4	1399.3	1397.5	1395.6	1393.8	1391.9
160°	1410.3	1411.7	1413.1	1413.0	1411.4	1409.7	1408.1	1406.4
162.5°	1423.4	1425.0	1426.7	1426.4	1424.4	1422.4	1420.3	1418.3
165°	1439.5	1441.1	1442.8	1442.8	1441.1	1439.5	1437.8	1436.2
167.5°	1452.9	1454.5	1456.2	1455.9	1453.8	1451.7	1449.6	1447.4
170°	1459.7	1461.3	1463.0	1462.7	1460.6	1458.5	1456.4	1454.2
172.5°	1464.8	1466.4	1468.1	1467.9	1465.7	1463.6	1461.5	1459.3
175°	1470.3	1472.0	1473.6	1473.3	1470.9	1468.5	1466.2	1463.8
177.5°	1470.9	1472.2	1473.6	1473.4	1471.7	1470.0	1468.3	1466.6
180°	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1	1469.1

(END OF REPORT)