

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: P332227-935

Luminaire Tested: **S123DIW-S1165D1030U935-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332227-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1165D1030U935-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

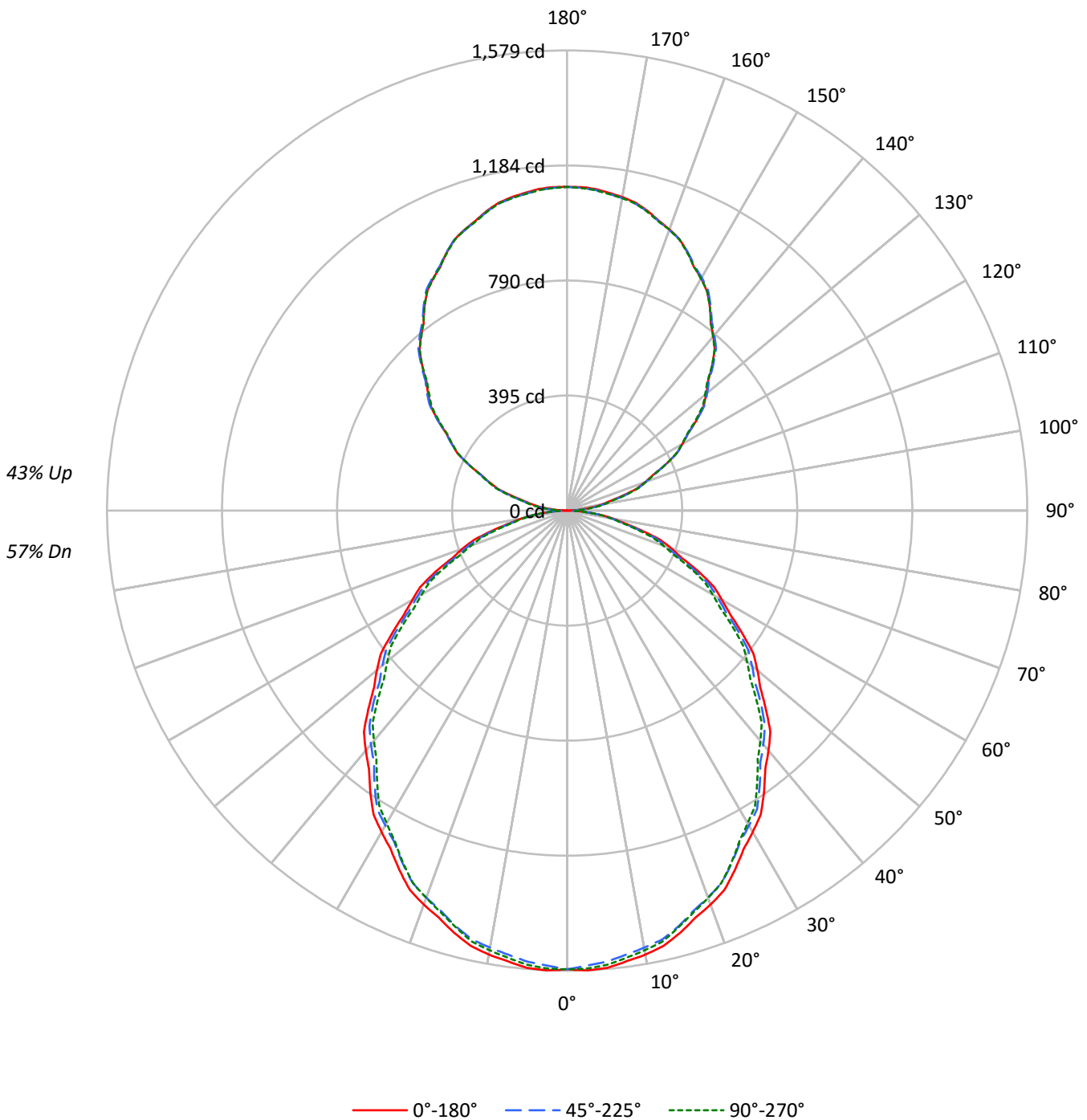
Lumens per Lamp: N/A  
Luminaire Lumens: 7175.6 lumens  
Efficiency: N/A  
Efficacy: 106.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (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	0
RCR																		
0	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	99	95	91	87	92	88	85	82	76	74	72	65	64	62	55	54	53	48
2	90	83	77	71	84	77	72	67	67	63	59	57	54	52	49	46	44	40
3	82	73	65	59	76	68	61	56	59	54	50	51	47	44	43	40	38	34
4	75	64	56	50	70	60	53	48	52	47	42	45	41	37	38	35	33	29
5	69	57	49	43	64	54	46	41	47	41	37	41	36	32	35	31	28	25
6	64	52	43	37	59	48	41	36	42	36	32	37	32	28	31	28	25	22
7	59	47	39	33	55	44	36	31	38	33	28	33	29	25	29	25	22	20
8	55	42	34	29	51	40	33	28	35	29	25	31	26	22	26	23	20	18
9	51	39	31	26	48	36	30	25	32	26	22	28	24	20	24	21	18	16
10	48	36	28	23	44	34	27	22	30	24	20	26	21	18	23	19	16	14

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

	0°	45°	90°
0°	16942	16942	16942
5°	17022	16788	16904
10°	16909	16642	16746
15°	16711	16454	16485
20°	16479	16186	16200
25°	16170	15865	15833
30°	15830	15509	15392
35°	15473	15135	14939
40°	15100	14720	14491
45°	14690	14338	13988
50°	14277	13870	13485
55°	13741	13386	12979
60°	13199	12820	12411
65°	12720	12202	11826
70°	12013	11500	10990
75°	10975	10580	10131
80°	9899	9478	9397
85°	8682	8361	8028



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.3	2.1
10°-20°	418.7	5.8
20°-30°	618.4	8.6
30°-40°	722.4	10.1
40°-50°	726.3	10.1
50°-60°	638.0	8.9
60°-70°	475.3	6.6
70°-80°	270.8	3.8
80°-90°	81.0	1.1
90°-100°	72.4	1.0
100°-110°	216.5	3.0
110°-120°	368.3	5.1
120°-130°	484.4	6.8
130°-140°	544.4	7.6
140°-150°	535.2	7.5
150°-160°	450.5	6.3
160°-170°	299.9	4.2
170°-180°	105.0	1.5
0°-30°	1185.3	16.5
0°-40°	1907.7	26.6
0°-60°	3272.0	45.6
0°-90°	4099.0	57.1
90°-120°	657.1	9.2
90°-150°	2221.1	31.0
90°-180°	3077.0	42.9
0°-180°	7175.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1574	1574	1574	1574	1574	
5°	1575	1568	1554	1566	1564	149
15°	1500	1494	1476	1486	1479	423
25°	1362	1353	1336	1337	1333	627
35°	1178	1169	1152	1144	1137	736
45°	965	959	942	926	919	745
55°	732	730	713	699	692	656
65°	499	492	479	469	464	493
75°	264	259	254	248	244	282
85°	70	68	68	65	65	77
90°	1	10	21	24	26	7
95°	52	58	65	68	68	58
105°	196	198	206	206	208	210
115°	371	373	372	372	372	367
125°	543	545	544	540	536	484
135°	704	709	708	705	703	542
145°	854	856	858	857	854	533
155°	978	978	979	982	976	450
165°	1065	1063	1062	1067	1062	300
175°	1108	1104	1104	1109	1104	105
180°	1110	1110	1110	1110	1110	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0
2.5°	1579.4	1578.5	1577.5	1576.6	1575.5	1573.7	1571.2	1568.5	1565.8	1563.1	1565.6
5°	1575.4	1573.9	1572.4	1570.9	1569.3	1566.9	1563.7	1560.3	1557.0	1553.7	1556.7
7.5°	1560.0	1558.4	1556.9	1555.4	1553.9	1551.4	1548.0	1544.6	1541.2	1537.7	1540.4
10°	1547.0	1545.4	1543.9	1542.4	1540.9	1538.3	1534.3	1530.4	1526.5	1522.6	1525.3
12.5°	1529.7	1528.4	1527.1	1525.9	1524.6	1522.1	1518.5	1514.8	1511.1	1507.4	1509.4
15°	1499.6	1498.4	1497.2	1496.0	1494.8	1492.2	1488.3	1484.4	1480.5	1476.5	1478.9
17.5°	1464.6	1463.1	1461.5	1460.0	1458.4	1455.7	1451.7	1447.9	1443.9	1440.0	1441.7
20°	1438.6	1436.8	1435.0	1433.2	1431.5	1428.6	1424.7	1420.8	1416.9	1413.0	1414.2
22.5°	1409.5	1407.6	1405.8	1404.0	1402.2	1399.4	1395.4	1391.5	1387.7	1383.7	1384.7
25°	1361.5	1359.7	1357.9	1356.1	1354.4	1351.4	1347.6	1343.7	1339.7	1335.8	1336.1
27.5°	1310.4	1308.6	1306.9	1305.1	1303.4	1300.5	1296.2	1292.0	1287.8	1283.6	1283.8
30°	1273.6	1272.0	1270.6	1269.0	1267.6	1264.7	1260.5	1256.3	1252.1	1247.8	1247.8
32.5°	1236.7	1234.8	1232.8	1230.8	1228.8	1226.2	1223.0	1219.7	1216.4	1213.2	1211.5
35°	1177.5	1175.7	1173.9	1172.1	1170.3	1167.4	1163.5	1159.6	1155.6	1151.8	1150.0
37.5°	1116.8	1114.6	1112.2	1110.0	1107.7	1104.6	1100.6	1096.7	1092.7	1088.6	1086.5
40°	1074.6	1072.8	1071.0	1069.2	1067.4	1064.4	1060.1	1055.9	1051.7	1047.6	1045.2
42.5°	1032.3	1030.4	1028.3	1026.2	1024.2	1021.1	1016.8	1012.6	1008.4	1004.3	1001.9
45°	965.0	963.8	962.6	961.4	960.2	957.6	953.7	949.8	945.9	941.9	938.4
47.5°	898.1	896.4	894.7	892.9	891.1	888.5	884.8	881.1	877.4	873.7	870.2
50°	852.6	851.2	849.6	848.2	846.6	844.0	840.0	836.1	832.2	828.3	825.0
52.5°	805.0	804.0	803.0	801.9	800.9	798.3	794.2	790.1	785.9	781.7	778.9
55°	732.2	731.9	731.6	731.3	731.0	728.9	725.0	721.1	717.1	713.3	710.0
57.5°	662.9	661.9	660.8	659.9	658.8	656.8	653.6	650.5	647.4	644.2	641.3
60°	613.1	612.8	612.5	612.2	611.9	609.9	606.3	602.7	599.1	595.5	592.8
62.5°	568.7	567.9	567.1	566.4	565.6	563.4	559.7	556.1	552.6	549.0	546.2
65°	499.4	497.9	496.4	494.9	493.4	491.1	488.1	485.1	482.1	479.1	476.7
67.5°	426.0	424.7	423.4	422.1	420.8	419.0	416.6	414.4	412.1	409.8	407.7
70°	381.7	379.9	378.1	376.3	374.4	372.6	370.8	369.0	367.2	365.4	363.3
72.5°	335.1	333.8	332.4	331.1	329.8	328.1	326.1	324.0	322.0	319.9	318.1
75°	263.9	262.7	261.5	260.3	259.1	258.0	257.2	256.2	255.4	254.4	253.0
77.5°	200.9	200.2	199.5	198.9	198.2	197.3	196.2	195.2	194.1	193.0	192.0
80°	159.7	158.8	157.9	157.0	156.1	155.3	154.7	154.1	153.5	152.9	152.7
82.5°	119.7	119.4	119.2	119.1	118.9	118.7	118.6	118.6	118.4	118.3	117.8
85°	70.3	69.7	69.1	68.5	67.9	67.7	67.7	67.7	67.7	67.7	67.1
87.5°	28.3	28.0	27.6	27.3	26.9	26.9	27.2	27.5	27.7	28.0	27.9
90°	0.9	2.8	4.7	6.7	8.6	10.8	13.3	15.9	18.4	20.9	21.7
92.5°	21.1	22.4	23.8	25.1	26.3	27.7	29.2	30.7	32.0	33.5	34.1
95°	51.5	52.8	54.2	55.5	56.9	58.4	59.9	61.5	63.0	64.6	65.3
97.5°	91.4	92.4	93.4	94.5	95.5	96.5	97.6	98.8	99.9	101.0	101.9
100°	118.6	119.8	121.0	122.1	123.3	124.3	125.4	126.3	127.3	128.2	128.8
102.5°	150.1	150.8	151.4	152.1	152.8	153.8	155.1	156.4	157.6	158.9	159.5
105°	196.3	196.7	197.1	197.4	197.9	198.9	200.6	202.3	204.1	205.9	205.9
107.5°	250.0	250.2	250.5	250.7	250.9	251.4	252.1	252.8	253.5	254.2	254.8
110°	283.5	283.9	284.3	284.6	285.1	285.4	285.9	286.2	286.6	287.0	287.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	318.4	318.7	318.8	319.1	319.3	319.4	319.5	319.6	319.7	319.8	320.7
115°	370.7	371.3	371.9	372.5	373.1	373.2	372.7	372.4	372.0	371.6	371.8
117.5°	423.4	423.8	424.2	424.6	425.0	424.9	424.4	423.9	423.4	422.9	422.8
120°	456.2	457.4	458.6	459.7	460.9	461.0	459.9	459.0	458.1	457.1	456.8
122.5°	490.4	491.3	492.1	492.9	493.8	494.0	493.5	493.0	492.5	492.0	491.5
125°	542.6	543.1	543.7	544.3	544.9	545.0	544.6	544.2	543.8	543.5	542.7
127.5°	590.7	591.9	593.2	594.4	595.6	596.1	595.6	595.2	594.8	594.3	593.3
130°	622.8	624.4	625.9	627.5	629.0	629.5	629.0	628.4	627.8	627.2	626.4
132.5°	654.9	656.4	658.0	659.6	661.2	661.7	661.2	660.8	660.4	660.0	659.0
135°	704.0	705.1	706.3	707.4	708.6	709.0	708.9	708.7	708.5	708.3	707.5
137.5°	749.3	750.3	751.2	752.2	753.2	753.9	754.4	754.9	755.4	756.0	755.1
140°	780.7	781.7	782.6	783.6	784.5	785.1	785.3	785.6	785.7	785.9	785.7
142.5°	809.3	810.3	811.2	812.2	813.2	813.8	814.2	814.5	814.9	815.3	815.0
145°	853.9	854.4	854.7	855.1	855.5	856.0	856.6	857.2	857.7	858.3	858.2
147.5°	893.0	893.7	894.4	895.2	895.9	896.5	897.0	897.6	898.1	898.6	898.6
150°	920.2	920.7	921.0	921.4	921.8	922.2	922.6	923.0	923.3	923.8	923.8
152.5°	942.6	943.1	943.7	944.3	944.8	945.1	945.4	945.6	945.9	946.1	946.4
155°	977.8	977.8	977.8	977.8	977.8	977.9	978.1	978.4	978.5	978.7	979.5
157.5°	1007.9	1007.6	1007.4	1007.1	1006.9	1006.9	1007.0	1007.2	1007.4	1007.5	1008.3
160°	1026.7	1026.3	1025.9	1025.5	1025.1	1024.9	1024.9	1024.9	1024.9	1024.9	1025.9
162.5°	1043.4	1042.9	1042.3	1041.8	1041.3	1041.0	1041.2	1041.4	1041.6	1041.7	1042.7
165°	1065.1	1064.5	1063.9	1063.3	1062.7	1062.5	1062.5	1062.5	1062.5	1062.5	1063.6
167.5°	1082.4	1081.6	1080.8	1080.0	1079.3	1078.9	1079.1	1079.3	1079.4	1079.5	1080.7
170°	1092.1	1091.3	1090.5	1089.8	1089.0	1088.6	1088.6	1088.6	1088.6	1088.6	1089.9
172.5°	1099.8	1099.0	1098.2	1097.4	1096.7	1096.3	1096.3	1096.3	1096.3	1096.3	1097.5
175°	1107.8	1107.1	1106.3	1105.5	1104.7	1104.3	1104.3	1104.3	1104.3	1104.3	1105.5
177.5°	1111.1	1110.5	1109.9	1109.2	1108.6	1108.4	1108.4	1108.4	1108.4	1108.4	1109.2
180°	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0	1574.0
2.5°	1568.0	1570.4	1572.8	1573.9	1573.6	1573.4	1573.1	1573.0
5°	1559.7	1562.7	1565.7	1566.9	1566.3	1565.7	1565.1	1564.5
7.5°	1543.2	1545.8	1548.6	1549.7	1549.4	1549.0	1548.7	1548.3
10°	1528.0	1530.7	1533.4	1534.5	1533.9	1533.3	1532.7	1532.1
12.5°	1511.4	1513.4	1515.4	1516.2	1515.8	1515.4	1515.1	1514.8
15°	1481.4	1483.8	1486.2	1486.5	1484.7	1482.9	1481.1	1479.3
17.5°	1443.4	1445.1	1446.7	1447.3	1446.7	1446.0	1445.3	1444.7
20°	1415.4	1416.6	1417.8	1417.9	1417.0	1416.1	1415.2	1414.3
22.5°	1385.7	1386.6	1387.6	1387.5	1386.4	1385.2	1384.1	1382.9
25°	1336.4	1336.7	1337.0	1336.7	1335.8	1334.9	1334.0	1333.1
27.5°	1284.1	1284.3	1284.5	1284.1	1283.0	1281.8	1280.7	1279.5
30°	1247.8	1247.8	1247.8	1246.8	1244.7	1242.6	1240.4	1238.4
32.5°	1209.8	1208.2	1206.4	1205.1	1203.9	1202.7	1201.6	1200.5
35°	1148.1	1146.3	1144.5	1142.9	1141.3	1139.9	1138.3	1136.9
37.5°	1084.3	1082.2	1080.0	1078.5	1077.5	1076.5	1075.6	1074.6
40°	1042.8	1040.3	1037.9	1036.1	1034.9	1033.7	1032.5	1031.3
42.5°	999.4	997.0	994.6	992.8	991.6	990.4	989.2	988.0
45°	934.8	931.2	927.6	925.0	923.5	922.0	920.5	918.9
47.5°	866.7	863.2	859.5	857.1	855.8	854.5	853.2	851.9
50°	821.7	818.4	815.0	812.5	810.7	808.9	807.1	805.3
52.5°	776.1	773.3	770.4	768.1	766.3	764.5	762.7	760.9
55°	706.6	703.4	700.0	697.6	696.1	694.6	693.1	691.6
57.5°	638.3	635.4	632.4	630.1	628.4	626.6	624.8	623.1
60°	590.1	587.4	584.7	582.6	581.1	579.5	578.1	576.5
62.5°	543.5	540.8	538.1	536.2	535.2	534.2	533.2	532.2
65°	474.3	471.9	469.5	467.9	466.9	466.1	465.1	464.3
67.5°	405.6	403.5	401.4	399.7	398.5	397.2	395.9	394.7
70°	361.2	359.1	357.0	355.2	353.7	352.1	350.7	349.2
72.5°	316.2	314.4	312.5	311.2	310.4	309.6	308.8	308.1
75°	251.4	249.9	248.4	247.2	246.3	245.4	244.5	243.6
77.5°	191.0	189.9	188.9	188.4	188.4	188.4	188.4	188.4
80°	152.3	152.1	151.7	151.6	151.6	151.6	151.6	151.6
82.5°	117.2	116.7	116.1	115.7	115.5	115.3	115.0	114.8
85°	66.5	65.9	65.3	65.0	65.0	65.0	65.0	65.0
87.5°	27.8	27.7	27.6	27.6	27.7	27.8	27.9	28.0
90°	22.5	23.2	24.0	24.6	25.0	25.4	25.7	26.2
92.5°	34.7	35.4	36.0	36.2	35.9	35.7	35.5	35.2
95°	66.1	66.9	67.7	68.0	68.0	68.0	68.0	68.0
97.5°	102.8	103.7	104.6	105.0	104.9	104.9	104.8	104.7
100°	129.4	130.0	130.5	131.0	131.4	131.8	132.2	132.6
102.5°	160.1	160.7	161.3	161.5	161.4	161.4	161.3	161.2
105°	205.9	205.9	205.9	206.0	206.5	206.8	207.2	207.6
107.5°	255.5	256.1	256.7	256.8	256.7	256.4	256.1	255.9
110°	288.5	289.3	290.1	290.2	289.9	289.5	289.1	288.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	321.7	322.5	323.5	323.9	323.8	323.7	323.7	323.6
115°	372.0	372.2	372.4	372.4	372.2	372.0	371.8	371.6
117.5°	422.8	422.8	422.8	422.4	421.9	421.4	420.8	420.3
120°	456.7	456.5	456.3	456.0	455.6	455.2	454.9	454.4
122.5°	490.9	490.4	490.0	489.4	488.9	488.4	487.8	487.2
125°	541.9	541.1	540.4	539.6	538.8	538.0	537.3	536.5
127.5°	592.2	591.2	590.0	589.0	588.1	587.3	586.3	585.5
130°	625.6	624.8	624.1	623.0	621.6	620.3	619.0	617.6
132.5°	658.1	657.2	656.3	655.3	654.2	653.2	652.1	651.1
135°	706.7	705.9	705.2	704.6	704.2	703.9	703.4	703.1
137.5°	754.3	753.5	752.7	751.9	751.1	750.4	749.7	749.0
140°	785.6	785.3	785.1	784.4	783.0	781.7	780.3	778.9
142.5°	814.9	814.7	814.5	813.8	812.8	811.8	810.7	809.7
145°	858.0	857.7	857.6	857.0	856.3	855.5	854.7	853.9
147.5°	898.6	898.6	898.6	898.0	896.9	895.7	894.6	893.4
150°	923.8	923.8	923.8	923.2	922.0	920.8	919.7	918.5
152.5°	946.7	947.0	947.4	947.0	946.0	944.9	943.9	943.0
155°	980.2	981.0	981.8	981.5	980.2	978.8	977.5	976.1
157.5°	1009.1	1010.0	1010.7	1010.6	1009.5	1008.5	1007.4	1006.3
160°	1026.9	1027.9	1028.8	1028.9	1028.1	1027.3	1026.6	1025.8
162.5°	1043.6	1044.6	1045.6	1045.4	1044.2	1042.9	1041.7	1040.4
165°	1064.8	1065.9	1067.1	1067.0	1065.7	1064.3	1062.9	1061.6
167.5°	1081.9	1083.1	1084.3	1084.3	1083.1	1081.9	1080.7	1079.5
170°	1091.3	1092.7	1094.1	1094.1	1092.7	1091.3	1089.9	1088.6
172.5°	1098.7	1099.9	1101.1	1101.0	1099.7	1098.3	1096.9	1095.6
175°	1106.6	1107.8	1109.0	1108.9	1107.5	1106.1	1104.8	1103.5
177.5°	1110.2	1111.1	1112.1	1112.0	1110.9	1109.8	1108.7	1107.7
180°	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4	1110.4

(END OF REPORT)