

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: P332221-940

Luminaire Tested: **S123DIW-S1165D755U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332221-940
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-S1165D755U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 755 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6578.7 lumens
Efficiency: N/A
Efficacy: 110.0 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: Semi-Direct

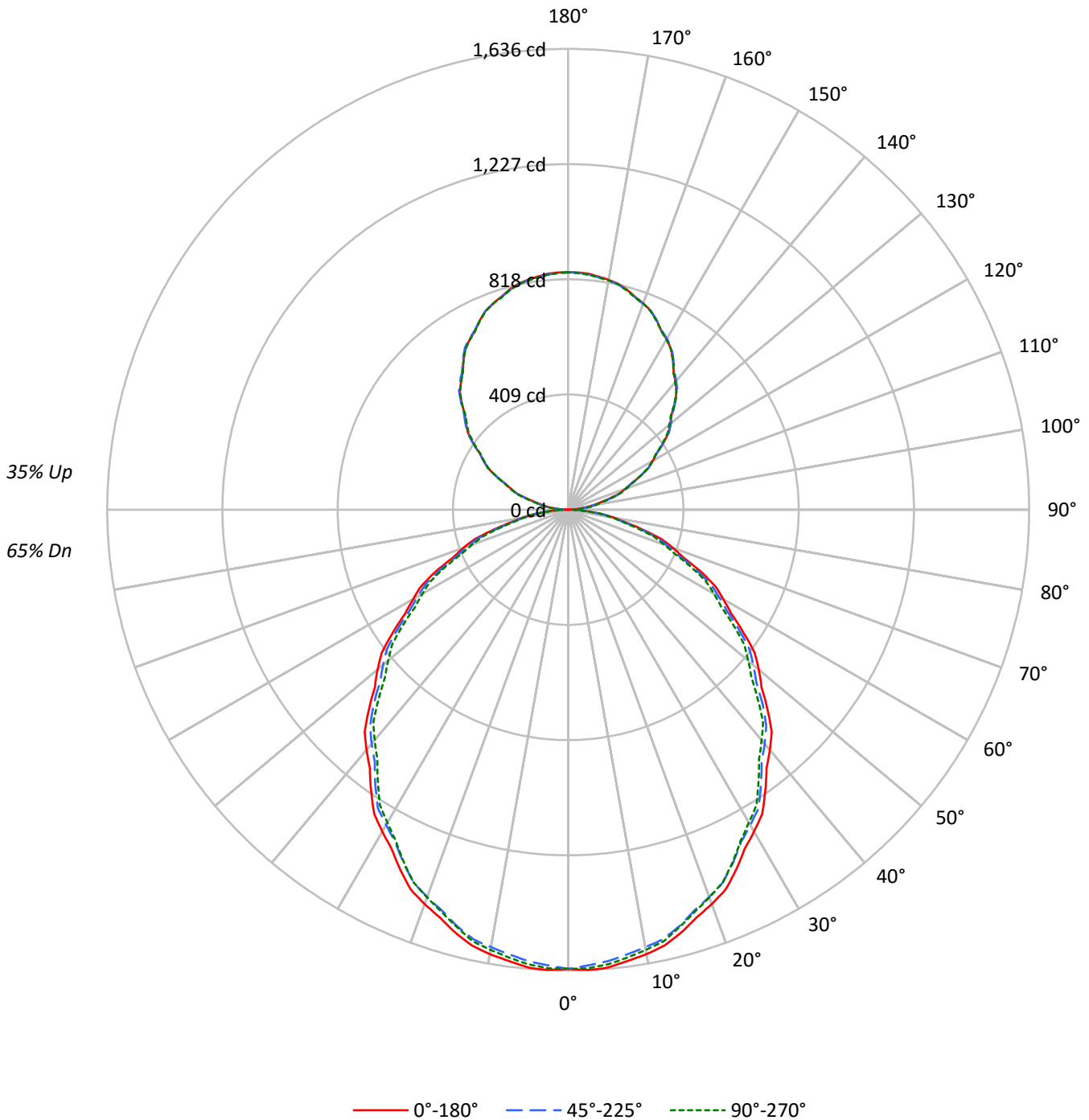
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	104	104	104	104	91	91	91	80	80	80	69	69	69	65
1	101	96	92	89	95	91	87	84	80	77	75	70	68	67	61	60	59	54
2	92	84	78	73	86	79	74	69	70	66	62	62	58	56	54	51	49	45
3	84	74	66	60	78	70	63	58	62	57	52	55	50	47	48	45	42	38
4	77	66	57	51	72	62	55	49	55	49	45	49	44	40	43	39	36	33
5	71	59	50	44	66	55	48	42	49	43	38	44	39	35	38	35	31	29
6	65	53	44	38	61	50	42	37	44	38	34	40	34	31	35	31	28	25
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	32	28	25	22
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22	20
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	27	23	20	18
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17546	17546	17546
5°	17629	17386	17507
10°	17511	17235	17343
15°	17307	17041	17072
20°	17068	16763	16778
25°	16747	16431	16397
30°	16394	16063	15940
35°	16025	15674	15471
40°	15638	15244	15008
45°	15213	14850	14487
50°	14788	14364	13966
55°	14230	13863	13440
60°	13670	13276	12854
65°	13173	12638	12246
70°	12441	11909	11383
75°	11366	10959	10493
80°	10253	9819	9732
85°	9003	8657	8312



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.6	2.3
10°-20°	433.6	6.6
20°-30°	640.5	9.7
30°-40°	748.2	11.4
40°-50°	752.2	11.4
50°-60°	660.7	10.0
60°-70°	492.2	7.5
70°-80°	280.4	4.3
80°-90°	83.0	1.3
90°-100°	54.9	0.8
100°-110°	164.3	2.5
110°-120°	279.4	4.2
120°-130°	367.5	5.6
130°-140°	413.1	6.3
140°-150°	406.1	6.2
150°-160°	341.9	5.2
160°-170°	227.6	3.5
170°-180°	79.7	1.2
0°-30°	1227.6	18.7
0°-40°	1975.8	30.0
0°-60°	3388.7	51.5
0°-90°	4244.3	64.5
90°-120°	498.6	7.6
90°-150°	1685.3	25.6
90°-180°	2334.0	35.5
0°-180°	6578.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1630	1630	1630	1630	1630	
5°	1632	1624	1609	1622	1620	155
15°	1553	1547	1529	1539	1532	438
25°	1410	1401	1384	1385	1381	649
35°	1220	1211	1193	1185	1177	763
45°	999	993	976	959	952	771
55°	758	756	739	724	716	679
65°	517	510	496	485	481	510
75°	273	268	264	257	252	292
85°	73	70	70	67	67	80
90°	1	7	16	18	20	6
95°	39	44	49	52	52	44
105°	149	150	156	156	158	159
115°	281	283	282	283	282	278
125°	412	414	412	410	407	367
135°	534	538	537	535	533	411
145°	648	649	651	650	648	405
155°	742	742	743	745	741	341
165°	808	806	806	810	806	228
175°	840	838	838	841	837	80
180°	843	843	843	843	843	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1635.8	1634.8	1633.8	1632.8	1631.7	1629.9	1627.2	1624.4	1621.7	1618.9	1621.4
5°	1631.6	1630.0	1628.4	1626.9	1625.3	1622.8	1619.4	1616.0	1612.6	1609.1	1612.2
7.5°	1615.6	1614.0	1612.5	1610.9	1609.4	1606.8	1603.2	1599.7	1596.2	1592.6	1595.4
10°	1602.1	1600.5	1599.0	1597.4	1595.9	1593.1	1589.0	1585.0	1580.9	1576.9	1579.7
12.5°	1584.2	1582.9	1581.5	1580.3	1579.0	1576.4	1572.6	1568.8	1565.0	1561.2	1563.3
15°	1553.1	1551.8	1550.6	1549.3	1548.1	1545.4	1541.4	1537.3	1533.3	1529.2	1531.7
17.5°	1516.9	1515.3	1513.7	1512.1	1510.4	1507.6	1503.5	1499.5	1495.4	1491.4	1493.2
20°	1490.0	1488.1	1486.2	1484.3	1482.6	1479.5	1475.5	1471.5	1467.4	1463.4	1464.6
22.5°	1459.7	1457.9	1456.0	1454.1	1452.2	1449.3	1445.2	1441.2	1437.2	1433.1	1434.0
25°	1410.1	1408.2	1406.3	1404.4	1402.7	1399.6	1395.6	1391.6	1387.5	1383.5	1383.8
27.5°	1357.1	1355.3	1353.5	1351.7	1349.9	1346.8	1342.5	1338.1	1333.7	1329.4	1329.6
30°	1319.0	1317.4	1315.9	1314.3	1312.8	1309.8	1305.5	1301.1	1296.7	1292.4	1292.4
32.5°	1280.9	1278.8	1276.8	1274.7	1272.6	1269.9	1266.6	1263.2	1259.8	1256.5	1254.7
35°	1219.5	1217.6	1215.8	1213.9	1212.0	1209.1	1205.0	1201.0	1196.9	1192.8	1191.0
37.5°	1156.6	1154.3	1151.9	1149.6	1147.2	1144.0	1139.9	1135.8	1131.7	1127.5	1125.2
40°	1112.9	1111.1	1109.2	1107.3	1105.5	1102.3	1098.0	1093.6	1089.2	1084.9	1082.4
42.5°	1069.2	1067.1	1065.0	1062.8	1060.7	1057.5	1053.1	1048.7	1044.4	1040.1	1037.6
45°	999.4	998.2	996.9	995.7	994.4	991.8	987.7	983.6	979.6	975.5	971.9
47.5°	930.1	928.4	926.6	924.7	922.9	920.2	916.3	912.5	908.7	904.9	901.3
50°	883.1	881.5	879.9	878.4	876.8	874.1	870.0	865.9	861.8	857.8	854.4
52.5°	833.7	832.7	831.6	830.5	829.5	826.8	822.5	818.2	814.0	809.6	806.6
55°	758.3	758.0	757.7	757.4	757.1	754.9	750.8	746.8	742.7	738.7	735.3
57.5°	686.5	685.5	684.4	683.4	682.3	680.2	676.9	673.7	670.5	667.2	664.1
60°	635.0	634.6	634.4	634.0	633.7	631.7	627.9	624.2	620.5	616.7	613.9
62.5°	589.0	588.2	587.4	586.6	585.8	583.4	579.7	576.0	572.3	568.6	565.7
65°	517.2	515.7	514.1	512.6	511.0	508.6	505.5	502.4	499.3	496.2	493.7
67.5°	441.2	439.9	438.5	437.1	435.8	433.9	431.5	429.2	426.8	424.5	422.2
70°	395.3	393.4	391.6	389.7	387.8	385.9	384.1	382.2	380.3	378.4	376.3
72.5°	347.1	345.7	344.3	343.0	341.6	339.8	337.7	335.6	333.5	331.4	329.4
75°	273.3	272.1	270.8	269.6	268.3	267.2	266.4	265.4	264.5	263.5	262.0
77.5°	208.0	207.3	206.6	206.0	205.3	204.4	203.2	202.2	201.0	199.9	198.9
80°	165.4	164.4	163.5	162.6	161.7	160.9	160.2	159.6	159.0	158.4	158.1
82.5°	123.9	123.7	123.5	123.3	123.1	123.0	122.9	122.8	122.6	122.5	122.0
85°	72.9	72.2	71.6	71.0	70.4	70.1	70.1	70.1	70.1	70.1	69.5
87.5°	29.2	28.8	28.4	27.9	27.5	27.3	27.5	27.6	27.7	27.8	27.7
90°	0.6	2.1	3.6	5.1	6.5	8.2	10.2	12.0	14.0	15.9	16.5
92.5°	16.1	17.0	18.0	19.0	20.0	21.0	22.1	23.3	24.3	25.4	25.9
95°	39.1	40.0	41.1	42.2	43.2	44.2	45.5	46.6	47.8	49.0	49.6
97.5°	69.4	70.1	70.9	71.7	72.4	73.2	74.1	74.9	75.8	76.7	77.3
100°	90.0	90.9	91.8	92.6	93.5	94.3	95.1	95.9	96.6	97.3	97.7
102.5°	113.9	114.4	114.9	115.4	115.9	116.7	117.7	118.7	119.6	120.6	121.0
105°	148.9	149.2	149.5	149.8	150.1	150.9	152.2	153.6	154.9	156.2	156.2
107.5°	189.7	189.8	190.0	190.2	190.4	190.7	191.3	191.8	192.3	192.9	193.3
110°	215.1	215.4	215.7	216.0	216.2	216.6	216.9	217.1	217.5	217.8	218.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	241.6	241.7	241.9	242.1	242.3	242.4	242.5	242.5	242.5	242.6	243.3
115°	281.3	281.7	282.1	282.6	283.0	283.1	282.9	282.6	282.2	282.0	282.1
117.5°	321.3	321.6	321.8	322.2	322.4	322.4	322.0	321.6	321.3	320.8	320.8
120°	346.2	347.1	347.9	348.8	349.7	349.7	349.0	348.3	347.6	346.8	346.7
122.5°	372.1	372.7	373.4	374.1	374.7	374.8	374.4	374.1	373.7	373.3	372.9
125°	411.7	412.1	412.6	413.0	413.5	413.5	413.2	413.0	412.6	412.3	411.8
127.5°	448.2	449.2	450.1	451.0	452.0	452.3	452.0	451.7	451.3	451.0	450.1
130°	472.6	473.8	474.9	476.1	477.2	477.7	477.2	476.8	476.4	475.9	475.3
132.5°	497.0	498.1	499.3	500.4	501.7	502.0	501.8	501.4	501.1	500.8	500.1
135°	534.1	535.0	535.9	536.8	537.6	538.1	537.9	537.7	537.6	537.4	536.8
137.5°	568.6	569.3	570.0	570.8	571.5	572.0	572.4	572.8	573.2	573.5	572.9
140°	592.4	593.1	593.9	594.6	595.3	595.8	595.9	596.0	596.2	596.4	596.2
142.5°	614.1	614.8	615.5	616.3	617.0	617.5	617.8	618.0	618.3	618.6	618.4
145°	648.0	648.3	648.5	648.8	649.2	649.5	650.0	650.4	650.9	651.3	651.1
147.5°	677.6	678.1	678.7	679.2	679.8	680.2	680.6	681.0	681.4	681.9	681.9
150°	698.3	698.6	698.8	699.2	699.5	699.7	700.0	700.3	700.6	700.9	700.9
152.5°	715.2	715.6	716.0	716.5	716.8	717.1	717.3	717.5	717.6	717.8	718.1
155°	742.0	742.0	742.0	742.0	742.0	742.0	742.2	742.3	742.4	742.6	743.2
157.5°	764.7	764.6	764.4	764.2	764.0	764.0	764.1	764.2	764.4	764.5	765.1
160°	779.0	778.7	778.5	778.1	777.8	777.7	777.7	777.7	777.7	777.7	778.5
162.5°	791.8	791.3	790.9	790.5	790.1	790.0	790.1	790.1	790.3	790.4	791.1
165°	808.2	807.7	807.3	806.8	806.4	806.1	806.1	806.1	806.1	806.1	807.0
167.5°	821.3	820.6	820.1	819.5	818.9	818.7	818.8	818.9	819.0	819.1	820.0
170°	828.7	828.0	827.5	826.9	826.3	826.0	826.0	826.0	826.0	826.0	827.1
172.5°	834.5	833.9	833.3	832.7	832.1	831.8	831.8	831.8	831.8	831.8	832.8
175°	840.5	840.0	839.4	838.8	838.2	837.9	837.9	837.9	837.9	837.9	838.8
177.5°	843.1	842.6	842.1	841.7	841.2	841.0	841.0	841.0	841.0	841.0	841.7
180°	842.6	842.6	842.6	842.6	842.6	842.6	842.6	842.6	842.6	842.6	842.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1623.9	1626.4	1628.9	1630.0	1629.8	1629.5	1629.2	1629.1
5°	1615.3	1618.5	1621.6	1622.8	1622.2	1621.6	1621.0	1620.3
7.5°	1598.2	1601.0	1603.8	1605.0	1604.6	1604.3	1603.9	1603.6
10°	1582.5	1585.3	1588.1	1589.2	1588.6	1588.0	1587.3	1586.7
12.5°	1565.3	1567.4	1569.4	1570.3	1569.9	1569.5	1569.1	1568.8
15°	1534.2	1536.7	1539.2	1539.5	1537.7	1535.8	1533.9	1532.0
17.5°	1494.9	1496.6	1498.3	1498.9	1498.3	1497.5	1496.8	1496.2
20°	1465.9	1467.1	1468.4	1468.5	1467.6	1466.6	1465.7	1464.7
22.5°	1435.1	1436.1	1437.1	1437.0	1435.8	1434.6	1433.4	1432.3
25°	1384.1	1384.4	1384.7	1384.4	1383.5	1382.5	1381.6	1380.6
27.5°	1329.9	1330.1	1330.3	1329.9	1328.7	1327.5	1326.3	1325.2
30°	1292.4	1292.4	1292.4	1291.3	1289.1	1286.9	1284.7	1282.5
32.5°	1252.9	1251.2	1249.5	1248.0	1246.9	1245.6	1244.5	1243.3
35°	1189.1	1187.2	1185.4	1183.7	1182.1	1180.5	1178.9	1177.4
37.5°	1123.0	1120.8	1118.6	1117.0	1115.9	1114.9	1113.9	1112.9
40°	1080.0	1077.5	1075.0	1073.1	1071.8	1070.6	1069.3	1068.1
42.5°	1035.1	1032.6	1030.1	1028.2	1027.0	1025.7	1024.5	1023.2
45°	968.1	964.4	960.6	958.0	956.4	954.8	953.3	951.7
47.5°	897.6	893.9	890.2	887.7	886.4	884.9	883.6	882.3
50°	851.0	847.6	844.1	841.5	839.6	837.8	835.9	834.0
52.5°	803.8	800.8	797.9	795.5	793.6	791.8	789.9	788.0
55°	731.8	728.4	725.0	722.5	720.9	719.3	717.8	716.2
57.5°	661.1	658.1	655.0	652.6	650.8	649.0	647.1	645.3
60°	611.2	608.3	605.6	603.3	601.8	600.2	598.7	597.1
62.5°	562.9	560.1	557.3	555.4	554.3	553.2	552.2	551.2
65°	491.2	488.7	486.2	484.6	483.6	482.7	481.7	480.8
67.5°	420.1	417.9	415.7	413.9	412.7	411.3	410.0	408.8
70°	374.1	371.9	369.7	367.8	366.3	364.7	363.2	361.7
72.5°	327.5	325.6	323.6	322.3	321.5	320.7	319.9	319.1
75°	260.4	258.9	257.3	256.0	255.1	254.1	253.2	252.3
77.5°	197.8	196.7	195.6	195.1	195.1	195.1	195.1	195.1
80°	157.7	157.5	157.1	157.0	157.0	157.0	157.0	157.0
82.5°	121.4	120.8	120.3	119.8	119.6	119.4	119.1	118.9
85°	68.8	68.2	67.6	67.3	67.3	67.3	67.3	67.3
87.5°	27.6	27.5	27.3	27.3	27.4	27.4	27.5	27.6
90°	17.0	17.7	18.3	18.6	19.0	19.3	19.5	19.9
92.5°	26.4	26.8	27.3	27.5	27.3	27.1	26.9	26.8
95°	50.1	50.7	51.4	51.6	51.6	51.6	51.6	51.6
97.5°	78.0	78.6	79.4	79.6	79.6	79.5	79.5	79.5
100°	98.2	98.6	99.1	99.4	99.7	100.0	100.3	100.6
102.5°	121.5	121.9	122.3	122.5	122.5	122.4	122.3	122.3
105°	156.2	156.2	156.2	156.3	156.7	156.9	157.2	157.6
107.5°	193.8	194.3	194.7	194.9	194.7	194.6	194.4	194.2
110°	218.9	219.5	220.1	220.3	220.0	219.6	219.4	219.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	244.1	244.8	245.5	245.8	245.8	245.7	245.6	245.6
115°	282.2	282.4	282.6	282.6	282.4	282.2	282.1	282.0
117.5°	320.8	320.7	320.7	320.6	320.1	319.7	319.3	318.9
120°	346.5	346.3	346.3	346.0	345.7	345.4	345.1	344.8
122.5°	372.6	372.1	371.8	371.4	371.0	370.5	370.1	369.7
125°	411.2	410.5	410.0	409.4	408.8	408.2	407.6	407.1
127.5°	449.3	448.5	447.7	446.9	446.3	445.6	445.0	444.3
130°	474.7	474.1	473.5	472.7	471.7	470.6	469.7	468.6
132.5°	499.4	498.6	497.9	497.2	496.4	495.6	494.8	494.0
135°	536.3	535.7	535.1	534.7	534.3	534.0	533.8	533.4
137.5°	572.3	571.7	571.1	570.5	570.0	569.4	568.8	568.3
140°	596.0	595.9	595.8	595.1	594.1	593.1	592.1	591.0
142.5°	618.3	618.1	618.0	617.5	616.7	615.9	615.1	614.3
145°	650.9	650.9	650.7	650.3	649.7	649.2	648.5	648.0
147.5°	681.9	681.9	681.9	681.4	680.6	679.7	678.8	677.9
150°	700.9	700.9	700.9	700.4	699.5	698.7	697.9	697.0
152.5°	718.4	718.5	718.8	718.5	717.7	717.0	716.2	715.5
155°	743.8	744.4	744.9	744.8	743.7	742.7	741.6	740.7
157.5°	765.7	766.3	767.0	766.8	766.0	765.2	764.4	763.5
160°	779.2	779.9	780.6	780.7	780.2	779.5	778.9	778.4
162.5°	791.8	792.6	793.4	793.3	792.3	791.4	790.4	789.4
165°	807.9	808.8	809.7	809.6	808.6	807.5	806.6	805.5
167.5°	820.9	821.9	822.8	822.8	821.9	820.9	820.0	819.1
170°	828.0	829.1	830.1	830.1	829.1	828.0	827.1	826.0
172.5°	833.7	834.6	835.4	835.4	834.4	833.4	832.3	831.3
175°	839.7	840.5	841.4	841.4	840.3	839.3	838.3	837.2
177.5°	842.4	843.1	843.8	843.7	842.9	842.0	841.2	840.4
180°	842.6	842.6	842.6	842.6	842.6	842.6	842.6	842.6

(END OF REPORT)