

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: P332221-927

Luminaire Tested: **S123DIW-S1165D755U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332221-927
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-S1165D755U927-4F0-1E-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: 5844.5 lumens
Efficiency: N/A
Efficacy: 97.7 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

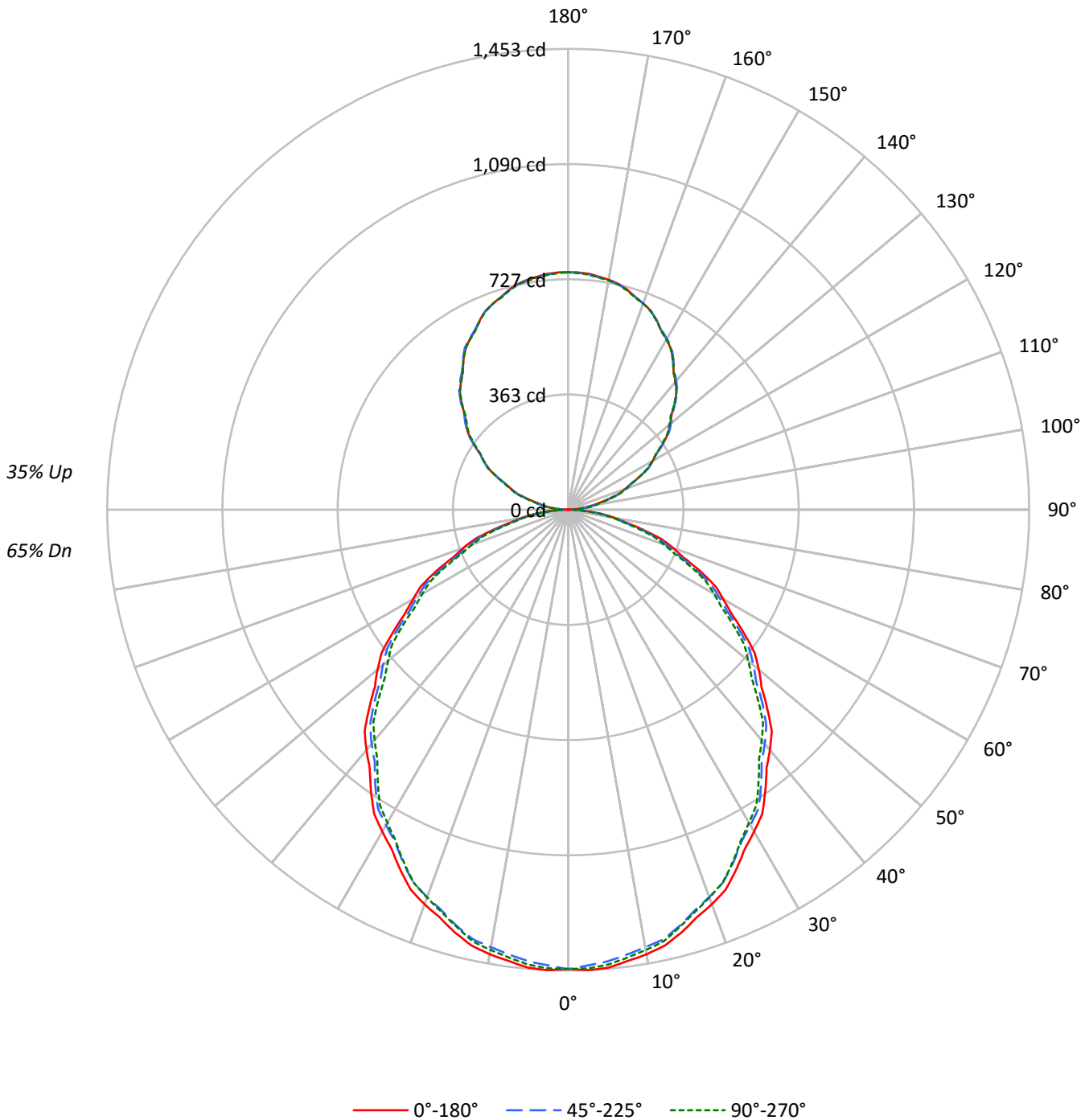
Input Watts (W): 59.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	15588	15588	15588
5°	15662	15446	15554
10°	15557	15312	15407
15°	15375	15139	15166
20°	15163	14892	14905
25°	14878	14598	14567
30°	14564	14270	14162
35°	14236	13925	13745
40°	13893	13543	13333
45°	13516	13192	12871
50°	13137	12762	12407
55°	12643	12314	11941
60°	12144	11795	11418
65°	11703	11227	10878
70°	11053	10581	10112
75°	10098	9736	9320
80°	9106	8722	8647
85°	7991	7694	7385



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.4	2.3
10°-20°	385.2	6.6
20°-30°	569.0	9.7
30°-40°	664.6	11.4
40°-50°	668.2	11.4
50°-60°	587.0	10.0
60°-70°	437.3	7.5
70°-80°	249.1	4.3
80°-90°	73.7	1.3
90°-100°	48.8	0.8
100°-110°	145.9	2.5
110°-120°	248.2	4.2
120°-130°	326.5	5.6
130°-140°	367.0	6.3
140°-150°	360.7	6.2
150°-160°	303.7	5.2
160°-170°	202.2	3.5
170°-180°	70.8	1.2
0°-30°	1090.6	18.7
0°-40°	1755.3	30.0
0°-60°	3010.4	51.5
0°-90°	3770.6	64.5
90°-120°	442.9	7.6
90°-150°	1497.2	25.6
90°-180°	2074.0	35.5
0°-180°	5844.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1448	1448	1448	1448	1448	
5°	1450	1443	1430	1441	1440	137
15°	1380	1374	1358	1368	1361	389
25°	1253	1245	1229	1230	1226	577
35°	1083	1075	1060	1052	1046	677
45°	888	882	867	852	846	685
55°	674	672	656	643	636	603
65°	460	453	441	431	427	453
75°	243	238	234	228	224	260
85°	65	62	62	60	60	71
90°	1	7	14	16	18	6
95°	35	39	44	46	46	39
105°	132	134	139	139	140	142
115°	250	251	250	251	250	247
125°	366	367	366	364	362	326
135°	474	478	477	475	474	366
145°	576	577	579	578	576	359
155°	659	659	660	662	658	303
165°	718	716	716	719	716	202
175°	747	745	744	748	744	71
180°	748	748	748	748	748	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2
2.5°	1453.2	1452.3	1451.4	1450.6	1449.6	1448.0	1445.6	1443.1	1440.7	1438.2	1440.4
5°	1449.5	1448.1	1446.7	1445.3	1443.9	1441.7	1438.7	1435.6	1432.6	1429.5	1432.3
7.5°	1435.3	1433.8	1432.5	1431.1	1429.7	1427.4	1424.3	1421.2	1418.0	1414.8	1417.3
10°	1423.3	1421.9	1420.5	1419.1	1417.8	1415.3	1411.7	1408.1	1404.5	1400.9	1403.4
12.5°	1407.4	1406.2	1405.0	1403.9	1402.7	1400.4	1397.1	1393.7	1390.3	1387.0	1388.8
15°	1379.7	1378.6	1377.5	1376.4	1375.3	1372.9	1369.4	1365.7	1362.2	1358.5	1360.7
17.5°	1347.6	1346.2	1344.7	1343.3	1341.8	1339.3	1335.7	1332.1	1328.5	1324.9	1326.5
20°	1323.7	1322.0	1320.3	1318.7	1317.1	1314.4	1310.8	1307.3	1303.6	1300.1	1301.2
22.5°	1296.8	1295.1	1293.5	1291.8	1290.1	1287.5	1283.9	1280.3	1276.8	1273.1	1274.0
25°	1252.7	1251.0	1249.4	1247.7	1246.1	1243.4	1239.8	1236.3	1232.6	1229.1	1229.3
27.5°	1205.6	1204.0	1202.5	1200.8	1199.2	1196.5	1192.6	1188.7	1184.9	1181.0	1181.2
30°	1171.8	1170.4	1169.0	1167.6	1166.3	1163.6	1159.8	1155.9	1152.0	1148.1	1148.1
32.5°	1137.9	1136.1	1134.2	1132.4	1130.6	1128.1	1125.2	1122.2	1119.2	1116.3	1114.7
35°	1083.4	1081.7	1080.1	1078.4	1076.7	1074.1	1070.5	1066.9	1063.3	1059.7	1058.0
37.5°	1027.5	1025.5	1023.3	1021.3	1019.1	1016.3	1012.6	1009.0	1005.4	1001.6	999.7
40°	988.7	987.1	985.4	983.7	982.1	979.3	975.4	971.5	967.7	963.8	961.6
42.5°	949.8	948.0	946.1	944.2	942.3	939.4	935.6	931.7	927.8	924.0	921.8
45°	887.9	886.8	885.7	884.6	883.4	881.1	877.5	873.9	870.3	866.6	863.4
47.5°	826.3	824.7	823.2	821.5	819.9	817.5	814.0	810.6	807.3	803.9	800.7
50°	784.5	783.2	781.7	780.4	779.0	776.5	772.9	769.3	765.6	762.1	759.1
52.5°	740.7	739.7	738.8	737.8	736.9	734.5	730.7	726.9	723.1	719.2	716.6
55°	673.7	673.4	673.1	672.9	672.6	670.7	667.0	663.5	659.8	656.2	653.2
57.5°	609.9	609.0	608.0	607.1	606.2	604.3	601.3	598.5	595.6	592.7	590.0
60°	564.1	563.8	563.6	563.2	563.0	561.2	557.9	554.5	551.2	547.9	545.4
62.5°	523.2	522.5	521.8	521.1	520.4	518.3	515.0	511.7	508.4	505.1	502.6
65°	459.5	458.1	456.7	455.3	453.9	451.9	449.1	446.3	443.5	440.8	438.6
67.5°	392.0	390.8	389.6	388.3	387.1	385.5	383.3	381.3	379.1	377.1	375.1
70°	351.2	349.5	347.8	346.2	344.5	342.9	341.2	339.5	337.9	336.2	334.3
72.5°	308.3	307.1	305.9	304.7	303.5	301.9	300.0	298.1	296.3	294.4	292.6
75°	242.8	241.7	240.6	239.5	238.4	237.4	236.6	235.8	235.0	234.1	232.7
77.5°	184.8	184.2	183.5	183.0	182.4	181.6	180.5	179.6	178.6	177.6	176.7
80°	146.9	146.1	145.3	144.4	143.6	142.9	142.4	141.8	141.2	140.7	140.5
82.5°	110.1	109.9	109.7	109.6	109.4	109.2	109.2	109.1	108.9	108.8	108.4
85°	64.7	64.2	63.6	63.1	62.5	62.3	62.3	62.3	62.3	62.3	61.7
87.5°	26.0	25.6	25.2	24.8	24.4	24.2	24.4	24.5	24.6	24.7	24.6
90°	0.6	1.9	3.2	4.5	5.8	7.3	9.0	10.7	12.4	14.1	14.7
92.5°	14.3	15.1	16.0	16.9	17.7	18.7	19.6	20.7	21.6	22.6	23.0
95°	34.7	35.6	36.5	37.5	38.3	39.3	40.4	41.4	42.5	43.5	44.0
97.5°	61.6	62.3	63.0	63.7	64.3	65.0	65.8	66.5	67.3	68.1	68.7
100°	79.9	80.7	81.5	82.3	83.1	83.8	84.4	85.2	85.8	86.4	86.8
102.5°	101.2	101.6	102.1	102.5	103.0	103.7	104.6	105.4	106.2	107.1	107.5
105°	132.3	132.5	132.8	133.1	133.3	134.0	135.2	136.4	137.6	138.8	138.8
107.5°	168.5	168.7	168.8	169.0	169.1	169.4	169.9	170.4	170.9	171.3	171.7
110°	191.1	191.4	191.6	191.9	192.1	192.4	192.7	192.9	193.2	193.5	194.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	214.6	214.8	214.9	215.1	215.2	215.3	215.4	215.5	215.5	215.6	216.2
115°	249.9	250.3	250.6	251.0	251.4	251.5	251.3	251.0	250.7	250.5	250.6
117.5°	285.4	285.7	285.9	286.2	286.5	286.5	286.1	285.7	285.4	285.0	285.0
120°	307.5	308.3	309.1	309.9	310.7	310.7	310.1	309.4	308.8	308.1	308.0
122.5°	330.6	331.1	331.7	332.3	332.9	333.0	332.6	332.3	332.0	331.6	331.3
125°	365.8	366.1	366.5	366.9	367.3	367.3	367.1	366.9	366.5	366.3	365.8
127.5°	398.2	399.0	399.9	400.7	401.6	401.8	401.6	401.2	400.9	400.7	399.9
130°	419.9	420.9	421.9	422.9	424.0	424.4	424.0	423.6	423.2	422.8	422.2
132.5°	441.5	442.5	443.5	444.6	445.7	446.0	445.8	445.4	445.1	444.9	444.3
135°	474.5	475.3	476.1	476.9	477.6	478.0	477.8	477.7	477.6	477.4	476.9
137.5°	505.1	505.7	506.4	507.1	507.7	508.2	508.5	508.9	509.2	509.5	509.0
140°	526.2	526.9	527.6	528.2	528.9	529.3	529.4	529.5	529.7	529.8	529.7
142.5°	545.6	546.2	546.8	547.5	548.1	548.6	548.8	549.1	549.3	549.5	549.4
145°	575.7	575.9	576.2	576.4	576.7	577.0	577.4	577.8	578.2	578.6	578.5
147.5°	602.0	602.5	602.9	603.4	603.9	604.3	604.7	605.0	605.4	605.8	605.8
150°	620.4	620.6	620.8	621.2	621.4	621.6	621.9	622.2	622.4	622.7	622.7
152.5°	635.4	635.7	636.1	636.5	636.8	637.1	637.2	637.4	637.5	637.7	637.9
155°	659.2	659.2	659.2	659.2	659.2	659.2	659.3	659.5	659.6	659.7	660.3
157.5°	679.4	679.2	679.1	678.9	678.7	678.7	678.8	678.9	679.1	679.1	679.7
160°	692.1	691.8	691.6	691.3	691.0	690.9	690.9	690.9	690.9	690.9	691.6
162.5°	703.4	703.0	702.6	702.3	701.9	701.8	701.9	702.0	702.1	702.2	702.8
165°	718.0	717.6	717.2	716.8	716.4	716.1	716.1	716.1	716.1	716.1	716.9
167.5°	729.6	729.0	728.6	728.0	727.5	727.3	727.4	727.5	727.6	727.7	728.5
170°	736.2	735.6	735.1	734.6	734.0	733.8	733.8	733.8	733.8	733.8	734.7
172.5°	741.3	740.8	740.3	739.7	739.3	738.9	738.9	738.9	738.9	738.9	739.8
175°	746.7	746.2	745.7	745.2	744.7	744.4	744.4	744.4	744.4	744.4	745.2
177.5°	749.0	748.5	748.1	747.7	747.3	747.1	747.1	747.1	747.1	747.1	747.7
180°	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2
2.5°	1442.6	1444.9	1447.1	1448.1	1447.9	1447.6	1447.4	1447.2
5°	1435.0	1437.8	1440.6	1441.7	1441.1	1440.6	1440.0	1439.5
7.5°	1419.8	1422.3	1424.8	1425.8	1425.5	1425.2	1424.9	1424.6
10°	1405.9	1408.3	1410.9	1411.8	1411.3	1410.7	1410.2	1409.6
12.5°	1390.6	1392.4	1394.2	1395.0	1394.6	1394.3	1394.0	1393.7
15°	1362.9	1365.2	1367.4	1367.7	1366.0	1364.4	1362.7	1361.0
17.5°	1328.0	1329.6	1331.1	1331.6	1331.0	1330.4	1329.8	1329.2
20°	1302.3	1303.4	1304.5	1304.6	1303.8	1302.9	1302.1	1301.2
22.5°	1274.9	1275.8	1276.7	1276.6	1275.6	1274.5	1273.4	1272.4
25°	1229.6	1229.9	1230.2	1229.9	1229.1	1228.2	1227.4	1226.5
27.5°	1181.5	1181.6	1181.9	1181.5	1180.4	1179.3	1178.3	1177.3
30°	1148.1	1148.1	1148.1	1147.2	1145.2	1143.3	1141.3	1139.4
32.5°	1113.1	1111.6	1110.0	1108.7	1107.7	1106.6	1105.6	1104.5
35°	1056.4	1054.7	1053.0	1051.5	1050.1	1048.8	1047.3	1046.0
37.5°	997.7	995.7	993.7	992.3	991.3	990.5	989.6	988.7
40°	959.4	957.2	955.0	953.3	952.2	951.1	950.0	948.9
42.5°	919.6	917.3	915.1	913.5	912.4	911.2	910.1	909.0
45°	860.1	856.7	853.4	851.0	849.7	848.3	846.9	845.5
47.5°	797.4	794.2	790.8	788.6	787.4	786.2	785.0	783.8
50°	756.0	753.0	749.9	747.6	745.9	744.3	742.6	740.9
52.5°	714.1	711.5	708.8	706.7	705.0	703.4	701.7	700.1
55°	650.1	647.1	644.0	641.8	640.5	639.1	637.7	636.3
57.5°	587.3	584.6	581.9	579.7	578.1	576.6	574.9	573.3
60°	543.0	540.4	538.0	536.0	534.6	533.2	531.9	530.4
62.5°	500.1	497.6	495.1	493.4	492.4	491.5	490.6	489.6
65°	436.4	434.2	432.0	430.5	429.6	428.8	427.9	427.1
67.5°	373.2	371.2	369.3	367.7	366.6	365.4	364.2	363.1
70°	332.3	330.4	328.4	326.8	325.4	324.0	322.7	321.3
72.5°	291.0	289.2	287.5	286.3	285.6	284.9	284.2	283.4
75°	231.3	230.0	228.5	227.4	226.6	225.8	225.0	224.1
77.5°	175.7	174.8	173.8	173.3	173.3	173.3	173.3	173.3
80°	140.1	139.9	139.6	139.5	139.5	139.5	139.5	139.5
82.5°	107.8	107.3	106.9	106.5	106.2	106.1	105.8	105.6
85°	61.2	60.6	60.0	59.8	59.8	59.8	59.8	59.8
87.5°	24.5	24.4	24.2	24.2	24.3	24.3	24.4	24.5
90°	15.1	15.7	16.2	16.6	16.9	17.1	17.3	17.7
92.5°	23.4	23.8	24.2	24.4	24.2	24.1	23.9	23.8
95°	44.5	45.1	45.6	45.9	45.9	45.9	45.9	45.9
97.5°	69.3	69.9	70.5	70.7	70.7	70.7	70.6	70.6
100°	87.2	87.6	88.0	88.3	88.6	88.9	89.1	89.4
102.5°	107.9	108.3	108.7	108.8	108.8	108.8	108.7	108.7
105°	138.8	138.8	138.8	138.9	139.2	139.4	139.7	140.0
107.5°	172.1	172.6	173.0	173.2	173.0	172.9	172.7	172.5
110°	194.5	195.0	195.5	195.7	195.4	195.1	194.9	194.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	216.8	217.5	218.1	218.3	218.3	218.2	218.2	218.2
115°	250.7	250.9	251.0	251.0	250.9	250.7	250.6	250.5
117.5°	285.0	284.9	284.9	284.8	284.4	284.0	283.7	283.3
120°	307.8	307.7	307.6	307.4	307.1	306.9	306.6	306.3
122.5°	331.0	330.6	330.3	329.9	329.5	329.2	328.8	328.4
125°	365.3	364.7	364.2	363.7	363.2	362.7	362.1	361.6
127.5°	399.2	398.5	397.8	397.0	396.5	395.9	395.3	394.7
130°	421.8	421.2	420.6	419.9	419.1	418.1	417.2	416.3
132.5°	443.6	443.0	442.4	441.7	441.0	440.3	439.6	438.9
135°	476.4	475.9	475.4	475.0	474.7	474.4	474.2	473.9
137.5°	508.4	507.9	507.4	506.8	506.4	505.8	505.3	504.9
140°	529.5	529.4	529.3	528.7	527.8	526.9	526.0	525.1
142.5°	549.3	549.1	549.0	548.6	547.9	547.2	546.4	545.7
145°	578.3	578.2	578.1	577.7	577.2	576.7	576.2	575.7
147.5°	605.8	605.8	605.8	605.4	604.6	603.8	603.0	602.2
150°	622.7	622.7	622.7	622.3	621.5	620.8	620.0	619.2
152.5°	638.2	638.3	638.6	638.3	637.6	637.0	636.3	635.6
155°	660.8	661.3	661.8	661.6	660.7	659.8	658.9	658.0
157.5°	680.2	680.8	681.4	681.2	680.5	679.8	679.1	678.3
160°	692.2	692.8	693.5	693.6	693.1	692.5	692.0	691.5
162.5°	703.5	704.2	704.8	704.7	703.9	703.1	702.2	701.3
165°	717.7	718.5	719.3	719.2	718.4	717.4	716.5	715.6
167.5°	729.3	730.2	730.9	730.9	730.2	729.3	728.5	727.7
170°	735.6	736.6	737.4	737.4	736.6	735.6	734.7	733.8
172.5°	740.6	741.4	742.2	742.2	741.2	740.4	739.4	738.6
175°	746.0	746.7	747.5	747.5	746.6	745.6	744.7	743.8
177.5°	748.4	749.0	749.6	749.6	748.8	748.1	747.3	746.6
180°	748.5	748.5	748.5	748.5	748.5	748.5	748.5	748.5

(END OF REPORT)