

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: P332822-927

Luminaire Tested: **S124DIW-S1020D1050U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332822-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D1050U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6389.7 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: General Diffuse

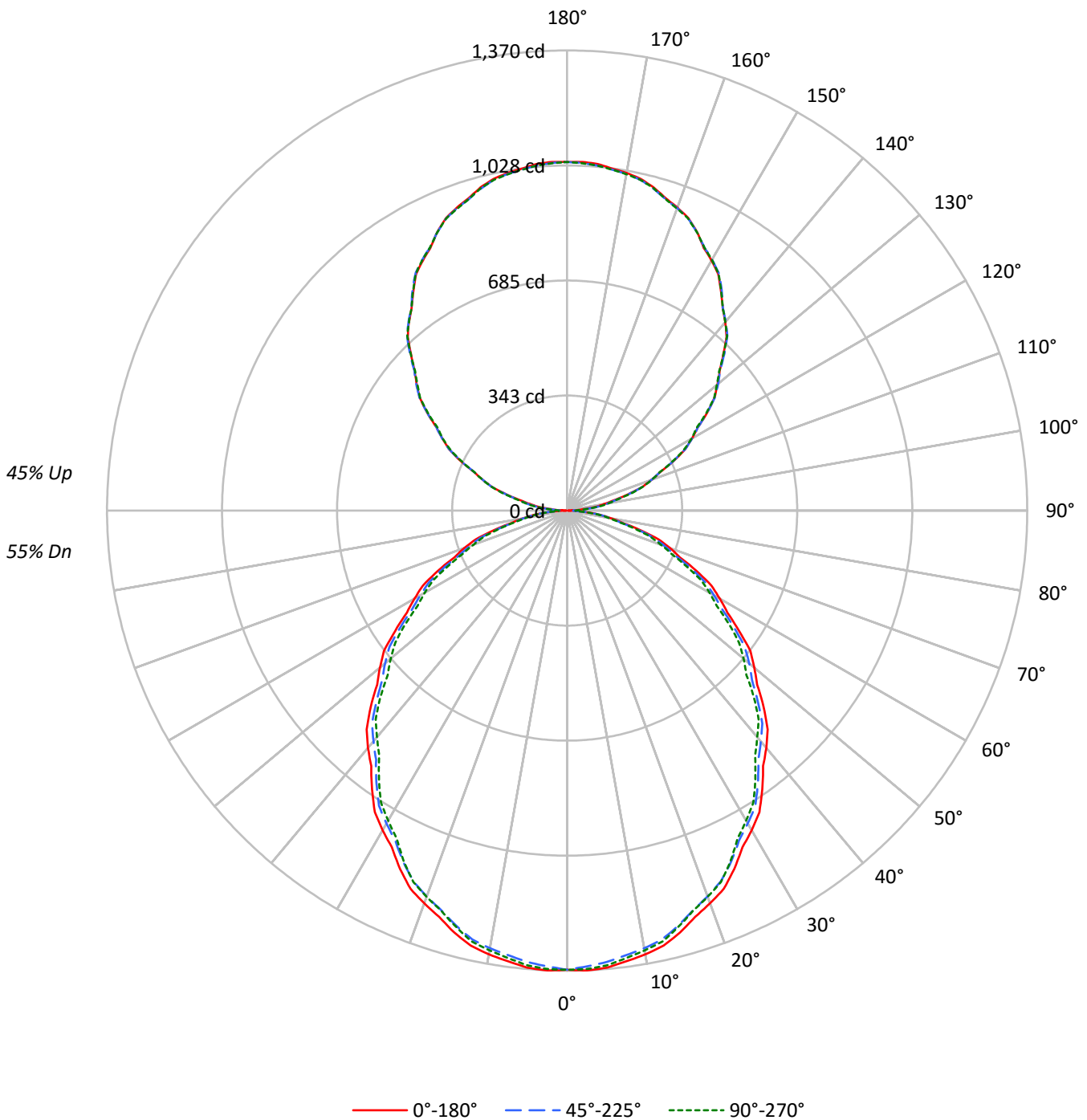
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55				
1	99	94	91	87	92	88	84	81	75	73	71	64	62	61	54	52	51	46				
2	90	82	76	71	83	77	71	67	66	62	58	56	53	51	47	45	43	39				
3	82	73	65	59	76	68	61	56	58	53	49	50	46	43	42	39	37	33				
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	32	28				
5	69	57	49	43	64	53	46	41	46	41	36	40	35	32	34	30	28	24				
6	64	51	43	37	59	48	41	35	42	36	32	36	31	28	31	27	24	21				
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	22	19				
8	55	42	34	29	51	40	32	28	35	29	25	30	25	22	26	22	19	17				
9	51	39	31	26	47	36	29	25	32	26	22	28	23	20	24	20	17	15				
10	48	35	28	23	44	33	27	22	29	24	20	26	21	18	22	18	16	14				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11035	11035	11035
5°	11068	10935	11015
10°	10999	10846	10900
15°	10866	10692	10719
20°	10689	10501	10510
25°	10488	10283	10253
30°	10241	10026	9934
35°	9984	9758	9629
40°	9720	9454	9280
45°	9442	9154	8978
50°	9134	8887	8611
55°	8802	8541	8263
60°	8472	8152	7905
65°	8097	7782	7469
70°	7678	7291	7006
75°	7037	6697	6525
80°	6267	6007	5858
85°	5483	5280	5169



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.7	2.0
10°-20°	362.7	5.7
20°-30°	533.8	8.4
30°-40°	620.6	9.7
40°-50°	620.6	9.7
50°-60°	542.9	8.5
60°-70°	403.2	6.3
70°-80°	229.1	3.6
80°-90°	69.2	1.1
90°-100°	68.4	1.1
100°-110°	202.7	3.2
110°-120°	344.1	5.4
120°-130°	453.7	7.1
130°-140°	509.6	8.0
140°-150°	500.8	7.8
150°-160°	421.2	6.6
160°-170°	280.2	4.4
170°-180°	98.1	1.5
0°-30°	1025.2	16.0
0°-40°	1645.9	25.8
0°-60°	2809.4	44.0
0°-90°	3510.8	54.9
90°-120°	615.3	9.6
90°-150°	2079.4	32.5
90°-180°	2879.0	45.1
0°-180°	6389.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1367	1367	1367	1367	1367	
5°	1366	1361	1349	1361	1359	129
15°	1300	1295	1279	1285	1282	366
25°	1177	1169	1154	1155	1151	541
35°	1013	1005	990	983	977	633
45°	827	819	802	790	786	637
55°	625	621	607	594	587	560
65°	424	418	407	397	391	420
75°	226	220	215	210	209	240
85°	59	59	57	57	56	65
90°	2	11	18	22	24	6
95°	48	55	61	63	63	54
105°	187	188	191	193	196	198
115°	350	350	348	348	347	345
125°	510	510	509	507	506	454
135°	657	662	662	660	658	508
145°	798	802	802	802	799	500
155°	915	915	914	917	914	421
165°	996	994	992	996	994	281
175°	1036	1032	1031	1036	1031	98
180°	1038	1038	1038	1038	1038	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9
2.5°	1370.4	1369.8	1369.2	1368.7	1368.1	1366.7	1364.5	1362.4	1360.3	1358.1	1360.1
5°	1365.8	1364.9	1363.9	1362.9	1361.9	1360.1	1357.4	1354.7	1352.1	1349.4	1352.1
7.5°	1353.1	1352.1	1351.1	1350.2	1349.2	1347.3	1344.3	1341.3	1338.3	1335.4	1337.5
10°	1341.7	1340.8	1339.7	1338.8	1337.8	1335.8	1332.6	1329.4	1326.3	1323.1	1325.0
12.5°	1326.8	1325.9	1324.8	1323.9	1322.9	1320.7	1317.4	1314.1	1310.7	1307.3	1309.5
15°	1300.1	1299.1	1298.1	1297.2	1296.2	1293.9	1290.2	1286.6	1282.9	1279.3	1280.7
17.5°	1267.9	1266.7	1265.4	1264.2	1263.1	1260.7	1257.2	1253.8	1250.3	1246.9	1247.8
20°	1244.2	1243.0	1241.8	1240.6	1239.4	1236.9	1233.3	1229.6	1226.0	1222.3	1223.1
22.5°	1218.9	1217.2	1215.6	1214.0	1212.4	1209.7	1206.1	1202.5	1198.8	1195.2	1196.5
25°	1177.4	1175.8	1174.0	1172.3	1170.6	1168.1	1164.7	1161.3	1157.9	1154.4	1154.7
27.5°	1130.1	1128.4	1126.6	1124.8	1123.1	1120.6	1117.5	1114.3	1111.1	1107.9	1107.4
30°	1098.6	1096.6	1094.6	1092.7	1090.8	1088.2	1085.1	1081.9	1078.7	1075.5	1074.6
32.5°	1065.2	1063.5	1061.8	1060.0	1058.3	1055.7	1052.3	1049.0	1045.6	1042.3	1041.1
35°	1013.1	1011.5	1009.7	1008.1	1006.3	1003.8	1000.4	997.0	993.6	990.1	988.4
37.5°	958.1	956.6	955.1	953.5	951.9	949.4	945.6	942.0	938.3	934.7	932.9
40°	922.3	920.3	918.3	916.4	914.4	911.6	908.0	904.4	900.7	897.1	894.6
42.5°	883.7	882.5	881.3	880.2	879.0	876.4	872.4	868.3	864.3	860.2	857.4
45°	827.0	825.2	823.6	821.8	820.1	817.3	813.4	809.5	805.6	801.8	799.1
47.5°	767.5	766.4	765.2	764.1	762.9	760.5	756.9	753.3	749.7	746.1	743.1
50°	727.3	726.3	725.3	724.4	723.3	721.2	717.8	714.4	711.0	707.6	704.2
52.5°	687.9	686.7	685.5	684.4	683.2	680.8	677.2	673.6	669.9	666.4	663.4
55°	625.4	624.6	623.9	623.2	622.5	620.4	617.0	613.6	610.2	606.8	603.9
57.5°	565.9	565.0	564.2	563.3	562.5	560.4	557.1	553.7	550.3	547.0	544.2
60°	524.7	523.4	522.2	521.0	519.8	517.6	514.4	511.3	508.1	504.9	502.7
62.5°	484.3	483.3	482.3	481.3	480.2	478.1	474.7	471.3	467.9	464.6	462.6
65°	423.9	422.6	421.4	420.3	419.0	417.2	414.7	412.3	409.9	407.4	405.0
67.5°	363.0	361.9	360.8	359.7	358.5	356.8	354.4	352.1	349.7	347.5	345.1
70°	325.3	323.6	321.9	320.2	318.5	316.6	314.7	312.8	310.9	308.9	306.9
72.5°	285.0	283.3	281.6	279.9	278.2	276.6	275.0	273.5	271.9	270.3	268.8
75°	225.6	224.4	223.2	222.0	220.8	219.5	218.3	217.1	215.9	214.7	213.7
77.5°	168.9	168.3	167.8	167.3	166.8	166.0	164.9	163.8	162.7	161.7	161.4
80°	134.8	134.0	133.2	132.5	131.8	131.2	130.7	130.2	129.8	129.2	128.7
82.5°	101.4	101.1	100.8	100.4	100.1	99.8	99.7	99.7	99.6	99.4	99.2
85°	59.2	59.2	59.2	59.2	59.2	58.9	58.4	57.9	57.4	57.0	57.0
87.5°	23.3	23.4	23.7	23.8	24.1	24.2	24.3	24.4	24.5	24.6	24.8
90°	2.4	4.4	6.3	8.3	10.2	12.0	13.4	14.8	16.2	17.7	18.7
92.5°	17.2	19.4	21.7	23.9	26.1	27.8	28.8	29.8	30.8	31.8	32.4
95°	48.2	49.7	51.3	53.0	54.6	56.0	57.3	58.5	59.7	61.0	61.6
97.5°	84.1	85.4	86.7	87.9	89.3	90.6	92.1	93.6	95.0	96.5	97.1
100°	112.3	113.0	113.8	114.5	115.2	116.4	118.0	119.5	121.2	122.8	123.1
102.5°	141.9	142.2	142.4	142.8	143.0	143.9	145.4	146.8	148.3	149.7	150.3
105°	187.0	187.2	187.4	187.5	187.7	188.1	188.9	189.6	190.3	191.0	191.5
107.5°	234.3	234.6	234.7	235.0	235.2	235.4	235.4	235.6	235.7	235.8	236.3
110°	266.4	266.8	267.1	267.5	267.8	267.9	267.8	267.6	267.4	267.2	266.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	299.8	299.9	300.0	300.0	300.1	300.0	299.7	299.4	299.0	298.7	298.7
115°	349.9	349.9	349.9	349.9	349.9	349.7	349.4	349.0	348.6	348.3	348.1
117.5°	397.1	397.2	397.4	397.5	397.7	397.6	397.4	397.1	396.9	396.6	396.0
120°	428.6	429.3	430.0	430.7	431.4	431.5	430.9	430.4	429.9	429.4	428.5
122.5°	461.3	461.6	461.8	462.2	462.4	462.5	462.2	461.9	461.7	461.4	460.8
125°	509.6	509.6	509.6	509.6	509.6	509.5	509.3	509.1	509.0	508.8	508.4
127.5°	553.4	554.0	554.4	555.0	555.6	555.7	555.4	555.1	554.8	554.5	554.2
130°	584.2	584.8	585.3	585.8	586.4	586.6	586.6	586.6	586.6	586.6	586.3
132.5°	615.7	616.1	616.5	616.9	617.3	617.3	617.3	617.1	617.0	616.8	616.5
135°	657.3	658.3	659.4	660.4	661.6	662.1	662.1	662.1	662.1	662.1	661.7
137.5°	702.5	703.0	703.5	704.0	704.5	704.9	705.2	705.5	705.8	706.1	705.6
140°	732.7	733.1	733.4	733.8	734.1	734.3	734.3	734.3	734.3	734.3	734.1
142.5°	760.3	760.7	761.0	761.4	761.8	761.8	761.7	761.5	761.4	761.3	761.2
145°	798.5	799.2	799.9	800.7	801.4	801.8	802.0	802.2	802.3	802.5	802.3
147.5°	836.4	837.3	838.1	838.9	839.8	840.2	840.0	839.9	839.7	839.6	839.5
150°	859.5	860.2	860.9	861.7	862.4	862.7	862.7	862.7	862.7	862.7	862.7
152.5°	881.3	881.8	882.2	882.6	883.0	883.3	883.4	883.6	883.8	883.9	884.3
155°	914.9	914.9	914.9	914.9	914.9	914.8	914.6	914.4	914.3	914.1	914.8
157.5°	943.1	942.8	942.5	942.1	941.8	941.7	941.6	941.6	941.5	941.5	942.1
160°	959.8	959.6	959.4	959.3	959.1	958.9	958.7	958.5	958.4	958.2	958.7
162.5°	975.2	974.8	974.3	973.8	973.4	973.0	972.9	972.7	972.5	972.3	973.3
165°	995.9	995.4	994.8	994.3	993.8	993.3	993.0	992.6	992.3	991.9	993.0
167.5°	1011.8	1011.1	1010.3	1009.6	1008.8	1008.4	1008.5	1008.5	1008.5	1008.6	1009.6
170°	1020.8	1019.9	1019.0	1018.1	1017.2	1016.8	1017.1	1017.2	1017.4	1017.6	1018.7
172.5°	1027.2	1026.4	1025.7	1025.0	1024.2	1023.9	1023.9	1024.0	1024.0	1024.0	1025.2
175°	1036.0	1035.1	1034.3	1033.4	1032.5	1032.0	1031.7	1031.6	1031.4	1031.3	1032.5
177.5°	1038.9	1038.2	1037.5	1036.8	1036.1	1035.7	1035.7	1035.7	1035.7	1035.7	1036.7
180°	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9	1366.9
2.5°	1362.0	1364.0	1366.0	1366.8	1366.6	1366.4	1366.2	1366.0
5°	1354.7	1357.4	1360.1	1361.2	1360.7	1360.2	1359.7	1359.2
7.5°	1339.7	1341.8	1343.9	1344.9	1344.6	1344.3	1343.9	1343.7
10°	1327.0	1329.0	1330.9	1331.6	1331.1	1330.6	1330.2	1329.7
12.5°	1311.6	1313.8	1315.9	1316.6	1316.0	1315.3	1314.5	1313.9
15°	1282.2	1283.7	1285.2	1285.5	1284.8	1284.0	1283.3	1282.5
17.5°	1248.7	1249.7	1250.5	1250.8	1250.3	1249.8	1249.4	1248.8
20°	1223.8	1224.6	1225.3	1225.3	1224.9	1224.4	1223.9	1223.4
22.5°	1197.8	1199.1	1200.4	1200.6	1199.8	1198.9	1198.0	1197.1
25°	1154.9	1155.2	1155.4	1155.0	1154.1	1153.1	1152.1	1151.1
27.5°	1106.8	1106.2	1105.6	1104.8	1103.5	1102.3	1101.1	1099.9
30°	1073.6	1072.6	1071.7	1070.6	1069.4	1068.1	1066.9	1065.7
32.5°	1039.9	1038.8	1037.6	1036.4	1035.1	1034.0	1032.8	1031.5
35°	986.7	985.0	983.3	981.8	980.6	979.5	978.2	977.0
37.5°	931.0	929.2	927.3	925.6	924.0	922.3	920.8	919.2
40°	892.2	889.7	887.3	885.5	884.2	883.0	881.9	880.6
42.5°	854.6	851.8	848.9	847.1	846.3	845.4	844.6	843.8
45°	796.4	793.7	791.0	789.3	788.6	787.9	787.1	786.4
47.5°	740.1	737.0	734.0	731.6	729.8	727.9	726.0	724.2
50°	700.8	697.4	694.0	691.5	690.0	688.6	687.1	685.6
52.5°	660.4	657.3	654.3	651.9	650.0	648.2	646.3	644.4
55°	600.9	598.0	595.1	592.9	591.4	590.0	588.5	587.1
57.5°	541.5	538.7	535.9	533.8	532.3	531.0	529.6	528.1
60°	500.6	498.4	496.1	494.5	493.2	492.0	490.8	489.6
62.5°	460.7	458.6	456.6	455.0	453.8	452.6	451.4	450.2
65°	402.6	400.1	397.7	395.9	394.7	393.5	392.2	391.0
67.5°	342.8	340.4	338.1	336.8	336.4	336.0	335.7	335.4
70°	305.0	303.0	301.1	299.8	299.0	298.3	297.5	296.8
72.5°	267.2	265.6	264.1	262.9	262.2	261.5	260.8	260.0
75°	212.7	211.8	210.8	210.2	209.9	209.7	209.5	209.2
77.5°	161.1	160.8	160.5	160.0	159.4	158.8	158.1	157.5
80°	128.3	127.8	127.3	126.9	126.7	126.4	126.2	126.0
82.5°	98.9	98.5	98.3	98.0	97.8	97.5	97.3	97.0
85°	57.0	57.0	57.0	56.8	56.6	56.3	56.1	55.8
87.5°	25.0	25.2	25.4	25.6	25.7	25.7	25.7	25.8
90°	19.8	20.8	21.9	22.7	23.0	23.4	23.7	24.1
92.5°	33.0	33.7	34.4	34.8	35.0	35.2	35.4	35.6
95°	62.0	62.6	63.1	63.4	63.4	63.4	63.4	63.4
97.5°	97.8	98.4	99.0	99.3	99.3	99.3	99.3	99.3
100°	123.5	123.8	124.2	124.4	124.4	124.4	124.4	124.4
102.5°	150.8	151.2	151.8	152.1	152.2	152.3	152.5	152.7
105°	192.1	192.6	193.1	193.7	194.2	194.7	195.3	195.8
107.5°	236.8	237.3	237.8	238.0	238.0	238.0	237.9	237.9
110°	266.5	266.2	265.8	265.9	266.4	267.0	267.5	268.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	298.6	298.5	298.4	298.4	298.6	298.7	298.7	298.9
115°	347.9	347.8	347.6	347.4	347.2	347.1	346.9	346.7
117.5°	395.4	394.7	394.2	393.7	393.3	393.0	392.6	392.3
120°	427.5	426.7	425.8	425.5	425.9	426.2	426.6	426.9
122.5°	460.3	459.6	459.0	458.4	457.7	457.1	456.5	455.8
125°	508.1	507.7	507.4	507.0	506.7	506.3	506.0	505.6
127.5°	553.8	553.5	553.1	552.8	552.5	552.2	551.9	551.7
130°	585.9	585.6	585.2	584.7	584.0	583.3	582.6	581.9
132.5°	616.1	615.8	615.4	615.1	614.8	614.5	614.2	613.9
135°	661.4	661.0	660.7	660.2	659.7	659.1	658.6	658.1
137.5°	705.1	704.6	704.2	704.0	704.1	704.3	704.3	704.4
140°	734.0	733.8	733.6	733.4	733.2	733.1	732.8	732.7
142.5°	761.2	761.1	761.1	761.0	761.0	761.0	761.0	761.0
145°	802.2	802.0	801.8	801.5	800.9	800.3	799.9	799.3
147.5°	839.3	839.2	839.0	838.8	838.7	838.5	838.3	838.1
150°	862.7	862.7	862.7	862.6	862.4	862.3	862.1	861.9
152.5°	884.7	885.2	885.6	885.6	885.1	884.6	884.2	883.8
155°	915.5	916.2	917.0	917.0	916.2	915.5	914.8	914.1
157.5°	942.6	943.1	943.6	943.6	943.0	942.4	941.8	941.2
160°	959.3	959.8	960.4	960.1	959.3	958.4	957.5	956.6
162.5°	974.2	975.2	976.2	976.2	975.3	974.5	973.5	972.6
165°	994.0	995.1	996.2	996.3	995.6	994.9	994.2	993.5
167.5°	1010.7	1011.8	1012.9	1012.9	1011.8	1010.7	1009.6	1008.4
170°	1019.7	1020.8	1021.8	1021.8	1020.6	1019.3	1018.0	1016.8
172.5°	1026.4	1027.6	1028.9	1028.8	1027.6	1026.4	1025.1	1023.8
175°	1033.7	1035.0	1036.3	1036.3	1035.0	1033.7	1032.5	1031.3
177.5°	1037.8	1038.7	1039.7	1039.7	1038.5	1037.4	1036.3	1035.1
180°	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7	1037.7

(END OF REPORT)