

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: P332821-927

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332821-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
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-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6830.3 lumens
Efficiency: N/A
Efficacy: 111.6 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

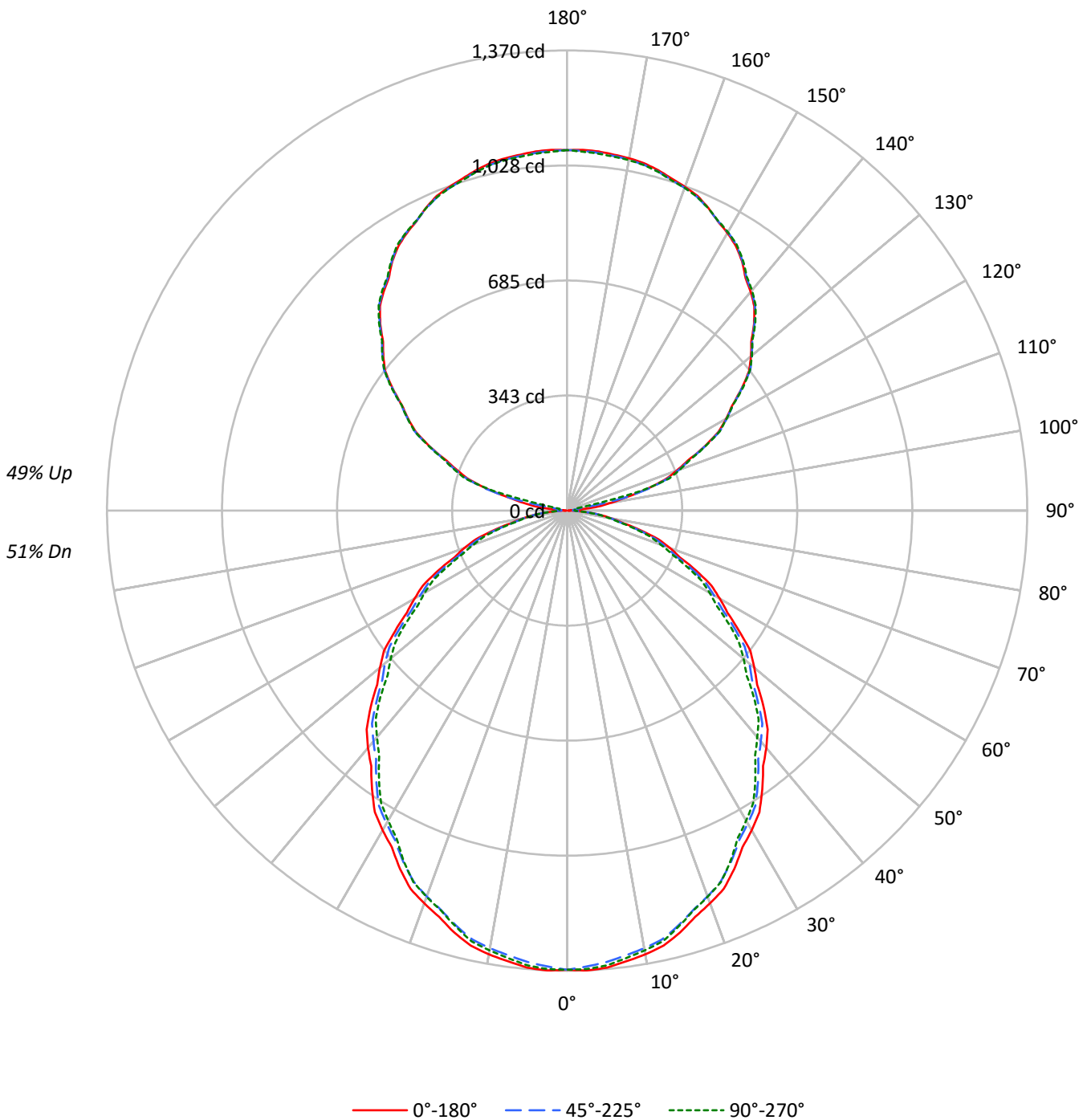
Input Watts (W): 61.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																				
0	107	107	107	107	99	99	99	99	84	84	84		70	70	70		57	57	57	51
1	98	94	90	86	90	87	83	80	74	71	69		62	60	58		51	49	48	43
2	89	82	76	70	82	76	70	66	65	61	57		54	51	49		45	43	41	36
3	81	72	65	59	75	67	60	55	57	52	48		48	44	41		39	37	35	31
4	75	64	56	50	69	59	52	47	51	45	41		43	39	35		35	32	30	26
5	68	57	49	43	63	53	46	40	45	40	35		38	34	31		32	29	26	23
6	63	51	43	37	58	47	40	35	41	35	31		35	30	27		29	26	23	20
7	58	46	38	32	54	43	36	31	37	31	27		32	27	24		26	23	20	18
8	54	42	34	29	50	39	32	27	34	28	24		29	24	21		24	21	18	16
9	50	38	31	25	47	36	29	24	31	25	22		27	22	19		22	19	16	14
10	47	35	28	23	44	33	26	22	29	23	19		25	20	17		21	17	15	13

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	1.9
10°-20°	362.7	5.3
20°-30°	533.8	7.8
30°-40°	620.6	9.1
40°-50°	620.6	9.1
50°-60°	542.9	7.9
60°-70°	403.2	5.9
70°-80°	229.1	3.4
80°-90°	69.2	1.0
90°-100°	36.7	0.5
100°-110°	234.0	3.4
110°-120°	447.7	6.6
120°-130°	568.3	8.3
130°-140°	608.0	8.9
140°-150°	568.6	8.3
150°-160°	458.5	6.7
160°-170°	295.7	4.3
170°-180°	101.9	1.5
0°-30°	1025.2	15.0
0°-40°	1645.9	24.1
0°-60°	2809.4	41.1
0°-90°	3510.8	51.4
90°-120°	718.4	10.5
90°-150°	2463.3	36.1
90°-180°	3319.0	48.6
0°-180°	6830.3	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	5
95°	44	18	18	22	23	57
105°	242	246	250	256	229	253
115°	451	453	453	454	454	444
125°	634	637	636	638	639	566
135°	787	786	789	791	792	606
145°	907	909	909	910	912	567
155°	994	995	993	996	994	458
165°	1049	1045	1045	1051	1044	296
175°	1073	1069	1069	1075	1067	102
180°	1073	1073	1073	1073	1073	



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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°	10.1	10.2	10.3	10.5	10.5	11.3	12.8	14.2	15.6	17.0	18.1
95°	44.1	38.1	32.0	26.0	19.9	17.0	17.1	17.3	17.5	17.7	18.7
97.5°	93.7	97.5	101.3	105.1	108.8	100.8	80.9	61.0	41.1	21.2	21.3
100°	131.7	134.8	138.1	141.2	144.5	133.8	109.2	84.5	60.0	35.3	32.3
102.5°	174.0	176.3	178.7	181.1	183.4	183.0	179.8	176.6	173.3	170.2	137.4
105°	241.6	242.6	243.8	244.8	245.9	246.8	247.7	248.7	249.5	250.4	252.0
107.5°	304.4	304.9	305.4	305.9	306.5	307.4	308.6	309.8	311.0	312.2	313.0
110°	346.7	347.3	347.8	348.3	348.9	349.7	350.8	351.8	352.9	353.9	354.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	387.9	388.8	389.8	390.7	391.7	392.4	392.9	393.4	393.9	394.4	394.3
115°	451.1	451.6	452.2	452.7	453.2	453.4	453.2	453.0	452.9	452.7	453.0
117.5°	508.0	508.7	509.5	510.2	510.9	511.4	511.8	512.2	512.6	513.0	512.9
120°	546.6	547.3	548.0	548.7	549.5	549.7	549.5	549.4	549.1	549.0	549.4
122.5°	582.6	583.0	583.4	583.8	584.2	584.6	584.9	585.1	585.3	585.6	585.8
125°	634.1	634.8	635.5	636.2	636.9	637.1	636.8	636.4	636.0	635.6	636.2
127.5°	682.9	683.0	683.3	683.4	683.6	684.0	684.9	685.7	686.5	687.4	687.3
130°	714.3	714.5	714.7	714.9	715.0	715.4	716.0	716.4	717.0	717.6	717.7
132.5°	743.2	743.5	743.9	744.2	744.5	745.0	745.7	746.4	747.0	747.7	747.9
135°	786.6	786.4	786.2	786.0	785.8	786.2	786.9	787.6	788.3	789.0	789.3
137.5°	824.9	825.0	825.1	825.1	825.2	825.6	826.4	827.2	828.0	828.8	829.2
140°	850.0	850.3	850.7	851.0	851.4	851.8	852.2	852.5	852.9	853.2	853.7
142.5°	872.4	873.1	873.7	874.4	875.0	875.4	875.7	875.8	876.1	876.3	876.7
145°	907.0	907.5	908.0	908.6	909.1	909.3	909.3	909.3	909.3	909.3	909.6
147.5°	934.4	935.4	936.4	937.4	938.4	938.8	938.7	938.5	938.3	938.1	938.3
150°	954.3	955.1	955.8	956.5	957.2	957.4	957.3	957.1	956.9	956.7	956.7
152.5°	971.0	971.6	972.2	972.7	973.3	973.4	973.1	972.8	972.5	972.2	972.4
155°	994.4	994.7	994.8	995.0	995.1	995.0	994.4	994.0	993.4	992.8	993.6
157.5°	1014.2	1014.1	1014.0	1013.8	1013.8	1013.4	1012.8	1012.2	1011.6	1011.0	1011.9
160°	1025.7	1025.2	1024.7	1024.1	1023.6	1023.3	1023.1	1022.9	1022.7	1022.5	1023.6
162.5°	1036.0	1035.4	1034.7	1034.0	1033.3	1032.8	1032.7	1032.5	1032.4	1032.1	1033.2
165°	1049.0	1048.1	1047.3	1046.3	1045.4	1045.0	1045.0	1045.0	1045.0	1045.0	1046.5
167.5°	1059.3	1058.4	1057.5	1056.5	1055.6	1055.1	1054.9	1054.9	1054.8	1054.6	1056.2
170°	1065.1	1064.0	1063.0	1061.8	1060.8	1060.3	1060.5	1060.7	1060.9	1061.0	1062.5
172.5°	1068.9	1067.9	1066.8	1065.7	1064.6	1064.2	1064.4	1064.5	1064.8	1064.9	1066.4
175°	1073.1	1072.1	1071.0	1069.9	1068.8	1068.4	1068.6	1068.7	1068.9	1069.1	1070.7
177.5°	1075.0	1074.0	1073.0	1072.1	1071.0	1070.7	1071.0	1071.3	1071.5	1071.8	1072.9
180°	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1



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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°	19.2	20.2	21.3	21.9	21.9	22.0	22.1	22.2
95°	19.8	20.8	21.9	22.6	22.7	22.9	23.1	23.3
97.5°	21.4	21.5	21.6	21.8	21.9	22.1	22.3	22.5
100°	29.2	26.2	23.2	21.8	21.9	22.1	22.3	22.5
102.5°	104.7	72.0	39.3	23.0	23.0	23.1	23.1	23.1
105°	253.7	255.2	256.8	254.4	248.0	241.6	235.2	228.8
107.5°	313.8	314.6	315.4	316.1	316.8	317.4	318.1	318.8
110°	354.7	355.1	355.4	355.8	356.4	356.9	357.4	358.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	394.3	394.2	394.1	394.4	395.1	395.8	396.5	397.1
115°	453.4	453.8	454.1	454.3	454.3	454.3	454.3	454.3
117.5°	512.9	512.9	512.8	512.7	512.6	512.5	512.5	512.4
120°	549.7	550.1	550.4	550.4	550.1	549.7	549.4	549.0
122.5°	586.1	586.2	586.5	586.4	586.1	585.7	585.3	584.9
125°	636.8	637.3	637.8	638.2	638.3	638.5	638.7	638.9
127.5°	687.1	687.1	686.9	686.8	686.7	686.5	686.3	686.3
130°	717.9	718.1	718.3	718.4	718.4	718.4	718.4	718.4
132.5°	748.1	748.3	748.5	748.5	748.3	748.1	748.1	747.9
135°	789.7	790.0	790.4	790.8	791.2	791.5	791.9	792.2
137.5°	829.6	830.0	830.4	830.5	830.4	830.3	830.2	830.0
140°	854.3	854.8	855.3	855.7	855.9	856.0	856.2	856.4
142.5°	877.1	877.5	877.9	878.1	878.1	878.1	878.2	878.2
145°	909.7	909.9	910.1	910.4	910.7	911.1	911.4	911.8
147.5°	938.4	938.5	938.7	938.8	939.1	939.2	939.4	939.5
150°	956.7	956.7	956.7	956.8	957.0	957.2	957.4	957.5
152.5°	972.7	973.0	973.3	973.4	973.3	973.1	973.0	973.0
155°	994.3	995.0	995.7	995.8	995.2	994.7	994.2	993.6
157.5°	1012.8	1013.8	1014.7	1014.7	1013.8	1012.8	1011.9	1011.0
160°	1024.7	1025.7	1026.8	1026.8	1025.7	1024.7	1023.6	1022.5
162.5°	1034.3	1035.4	1036.4	1036.4	1035.1	1034.0	1032.8	1031.5
165°	1047.9	1049.3	1050.8	1050.6	1049.0	1047.4	1045.8	1044.2
167.5°	1057.8	1059.4	1060.9	1060.8	1059.1	1057.2	1055.5	1053.7
170°	1063.9	1065.3	1066.8	1066.6	1064.8	1063.0	1061.2	1059.5
172.5°	1067.8	1069.2	1070.6	1070.4	1068.4	1066.5	1064.6	1062.6
175°	1072.3	1073.9	1075.5	1075.2	1073.1	1071.0	1068.8	1066.7
177.5°	1074.1	1075.2	1076.4	1076.1	1074.4	1072.7	1071.0	1069.3
180°	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1	1073.1

(END OF REPORT)