

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: P332816-927

Luminaire Tested: **S124DIW-S1020D770U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332816-927
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-S1020D770U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5619.2 lumens
Efficiency: N/A
Efficacy: 104.8 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: Semi-Direct

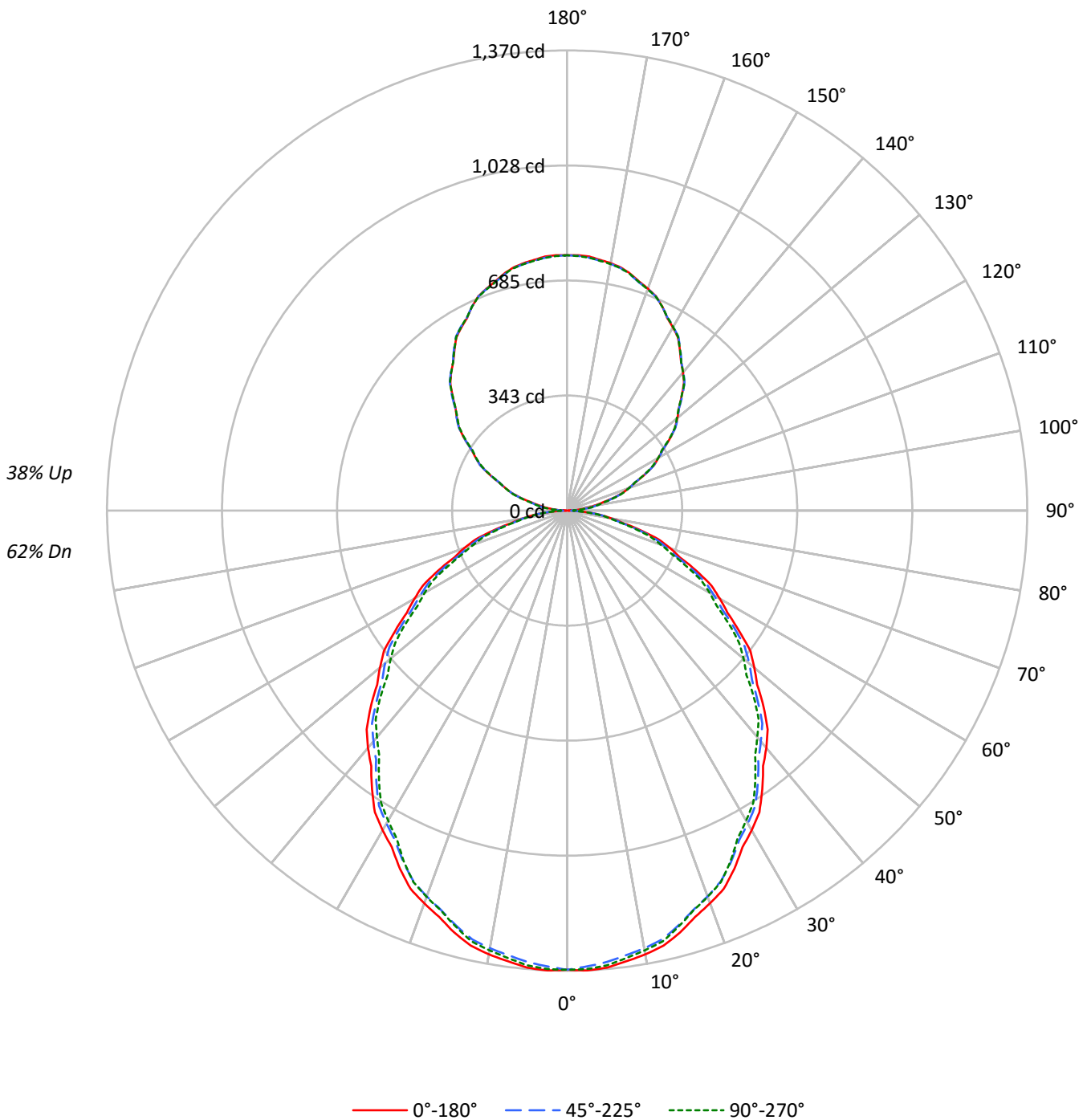
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	62
1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	53
2	92	84	78	72	86	79	73	69	69	65	61	61	57	55	52	50	48	44
3	84	74	66	60	78	69	63	57	61	56	52	54	50	46	47	43	41	37
4	76	65	57	51	71	62	54	49	54	49	44	48	43	40	42	38	35	32
5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	37	34	31	28
6	65	52	44	38	60	49	42	37	44	38	33	39	34	30	34	30	27	24
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24	22
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	29	25	22	19
9	52	39	32	27	49	37	30	26	34	28	24	30	25	22	26	22	20	17
10	49	36	29	24	46	34	28	23	31	25	21	28	23	19	25	21	18	16

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	2.3
10°-20°	362.7	6.5
20°-30°	533.8	9.5
30°-40°	620.6	11.0
40°-50°	620.6	11.0
50°-60°	542.9	9.7
60°-70°	403.2	7.2
70°-80°	229.1	4.1
80°-90°	68.4	1.2
90°-100°	50.1	0.9
100°-110°	148.5	2.6
110°-120°	252.1	4.5
120°-130°	332.4	5.9
130°-140°	373.3	6.6
140°-150°	366.9	6.5
150°-160°	308.6	5.5
160°-170°	205.3	3.7
170°-180°	71.9	1.3
0°-30°	1025.2	18.2
0°-40°	1645.9	29.3
0°-60°	2809.4	50.0
0°-90°	3510.0	62.5
90°-120°	450.8	8.0
90°-150°	1523.4	27.1
90°-180°	2109.0	37.5
0°-180°	5619.2	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	8	13	16	18	5
95°	35	40	45	46	46	39
105°	137	138	140	142	144	145
115°	256	256	255	255	254	253
125°	373	373	373	372	370	333
135°	482	485	485	484	482	372
145°	585	587	588	587	586	366
155°	670	670	670	672	670	308
165°	730	728	727	730	728	206
175°	759	756	756	759	756	72
180°	760	760	760	760	760	



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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°	23.1	23.2	23.3	23.4	23.5	23.5	23.6	23.6	23.6	23.6	23.8
90°	1.7	3.2	4.7	6.1	7.5	8.8	9.8	10.9	11.9	12.9	13.7
92.5°	12.6	14.3	15.8	17.5	19.2	20.4	21.1	21.8	22.6	23.3	23.8
95°	35.3	36.4	37.6	38.8	40.0	41.0	41.9	42.9	43.8	44.7	45.1
97.5°	61.6	62.6	63.5	64.4	65.4	66.4	67.5	68.5	69.6	70.7	71.1
100°	82.3	82.9	83.3	83.9	84.4	85.2	86.4	87.6	88.8	90.0	90.2
102.5°	103.9	104.2	104.3	104.6	104.8	105.4	106.5	107.6	108.6	109.7	110.1
105°	137.0	137.1	137.3	137.4	137.5	137.8	138.4	138.9	139.4	139.9	140.3
107.5°	171.7	171.8	172.0	172.1	172.3	172.5	172.5	172.6	172.7	172.8	173.1
110°	195.2	195.4	195.7	196.0	196.2	196.3	196.1	196.1	195.9	195.7	195.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.7	219.7	219.8	219.8	219.8	219.8	219.5	219.3	219.0	218.8	218.8
115°	256.4	256.4	256.4	256.4	256.4	256.2	256.0	255.7	255.4	255.2	255.0
117.5°	290.9	291.0	291.1	291.2	291.4	291.3	291.1	291.0	290.7	290.6	290.1
120°	313.9	314.5	315.0	315.5	316.1	316.1	315.8	315.4	315.0	314.6	313.9
122.5°	337.9	338.2	338.3	338.6	338.8	338.8	338.7	338.4	338.3	338.1	337.6
125°	373.4	373.4	373.4	373.4	373.4	373.3	373.1	373.0	372.9	372.7	372.5
127.5°	405.4	405.8	406.2	406.6	407.0	407.1	406.9	406.7	406.5	406.3	406.0
130°	428.0	428.4	428.8	429.2	429.6	429.8	429.8	429.8	429.8	429.8	429.5
132.5°	451.1	451.4	451.6	451.9	452.3	452.3	452.2	452.1	452.0	451.9	451.6
135°	481.6	482.3	483.1	483.9	484.7	485.1	485.1	485.1	485.1	485.1	484.8
137.5°	514.7	515.1	515.4	515.8	516.2	516.4	516.7	516.8	517.1	517.3	516.9
140°	536.8	537.0	537.3	537.6	537.8	538.0	538.0	538.0	538.0	538.0	537.8
142.5°	557.0	557.3	557.5	557.8	558.1	558.2	558.0	557.9	557.9	557.7	557.7
145°	585.0	585.5	586.1	586.6	587.1	587.4	587.6	587.7	587.8	588.0	587.8
147.5°	612.8	613.4	614.0	614.7	615.3	615.5	615.4	615.3	615.2	615.1	615.0
150°	629.7	630.2	630.7	631.3	631.8	632.1	632.1	632.1	632.1	632.1	632.1
152.5°	645.7	646.0	646.3	646.7	647.0	647.1	647.2	647.4	647.5	647.5	647.8
155°	670.3	670.3	670.3	670.3	670.3	670.2	670.0	669.9	669.8	669.7	670.2
157.5°	690.9	690.7	690.5	690.2	690.0	689.9	689.8	689.8	689.8	689.8	690.1
160°	703.2	703.1	702.9	702.8	702.7	702.5	702.4	702.3	702.1	702.0	702.4
162.5°	714.5	714.2	713.8	713.4	713.1	712.9	712.7	712.6	712.5	712.3	713.0
165°	729.7	729.3	728.9	728.5	728.1	727.8	727.5	727.2	727.0	726.7	727.5
167.5°	741.2	740.8	740.2	739.7	739.1	738.8	738.9	738.9	738.9	738.9	739.7
170°	747.9	747.2	746.6	745.9	745.3	745.0	745.1	745.3	745.4	745.5	746.3
172.5°	752.6	752.0	751.5	750.9	750.4	750.1	750.1	750.2	750.2	750.2	751.1
175°	759.1	758.4	757.7	757.1	756.5	756.1	755.9	755.7	755.7	755.5	756.5
177.5°	761.1	760.7	760.1	759.6	759.1	758.8	758.8	758.8	758.8	758.8	759.5
180°	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2



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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°	23.9	24.1	24.2	24.3	24.4	24.5	24.5	24.6
90°	14.5	15.3	16.1	16.6	16.9	17.1	17.3	17.7
92.5°	24.2	24.7	25.2	25.5	25.7	25.8	26.0	26.1
95°	45.5	45.9	46.3	46.4	46.4	46.4	46.4	46.4
97.5°	71.6	72.1	72.6	72.8	72.8	72.8	72.8	72.8
100°	90.5	90.7	91.0	91.1	91.1	91.1	91.1	91.1
102.5°	110.4	110.8	111.1	111.4	111.5	111.6	111.7	111.9
105°	140.7	141.1	141.5	141.9	142.3	142.7	143.1	143.5
107.5°	173.5	173.8	174.2	174.4	174.4	174.4	174.3	174.3
110°	195.3	195.0	194.7	194.8	195.2	195.6	196.0	196.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	218.7	218.6	218.6	218.6	218.7	218.8	218.9	219.0
115°	254.9	254.8	254.6	254.5	254.4	254.3	254.1	254.0
117.5°	289.7	289.2	288.8	288.4	288.2	287.9	287.6	287.4
120°	313.2	312.6	312.0	311.7	312.0	312.3	312.5	312.8
122.5°	337.2	336.8	336.3	335.8	335.3	334.9	334.5	334.0
125°	372.2	372.0	371.7	371.5	371.2	370.9	370.7	370.4
127.5°	405.8	405.5	405.2	405.0	404.8	404.6	404.3	404.2
130°	429.3	429.0	428.7	428.3	427.9	427.3	426.7	426.3
132.5°	451.4	451.1	450.8	450.6	450.4	450.2	450.0	449.8
135°	484.5	484.3	484.0	483.7	483.3	482.9	482.5	482.1
137.5°	516.6	516.3	515.9	515.8	515.9	515.9	516.0	516.1
140°	537.7	537.6	537.4	537.3	537.2	537.0	536.9	536.8
142.5°	557.7	557.6	557.6	557.6	557.5	557.5	557.5	557.5
145°	587.7	587.6	587.4	587.2	586.8	586.4	586.0	585.6
147.5°	614.9	614.8	614.7	614.6	614.4	614.3	614.2	614.0
150°	632.1	632.1	632.1	632.0	631.8	631.7	631.6	631.4
152.5°	648.2	648.5	648.8	648.8	648.5	648.2	647.8	647.5
155°	670.7	671.2	671.8	671.8	671.2	670.7	670.2	669.7
157.5°	690.5	690.9	691.3	691.3	690.9	690.5	690.0	689.5
160°	702.8	703.2	703.6	703.5	702.8	702.1	701.5	700.8
162.5°	713.8	714.5	715.2	715.2	714.5	713.9	713.3	712.6
165°	728.3	729.0	729.8	730.0	729.4	728.9	728.4	727.9
167.5°	740.5	741.2	742.0	742.0	741.2	740.5	739.7	738.8
170°	747.1	747.9	748.7	748.6	747.7	746.8	745.8	745.0
172.5°	752.0	752.9	753.8	753.8	752.8	751.9	751.0	750.1
175°	757.3	758.3	759.1	759.1	758.3	757.3	756.5	755.5
177.5°	760.3	761.0	761.8	761.7	760.8	760.0	759.1	758.4
180°	760.2	760.2	760.2	760.2	760.2	760.2	760.2	760.2

(END OF REPORT)