

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: P332650-927

Luminaire Tested: **S124DIP-S1020D810U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332650-927
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: S124DIP-S1020D810U927-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5731.8 lumens
Efficiency: N/A
Efficacy: 105.4 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: Semi-Direct

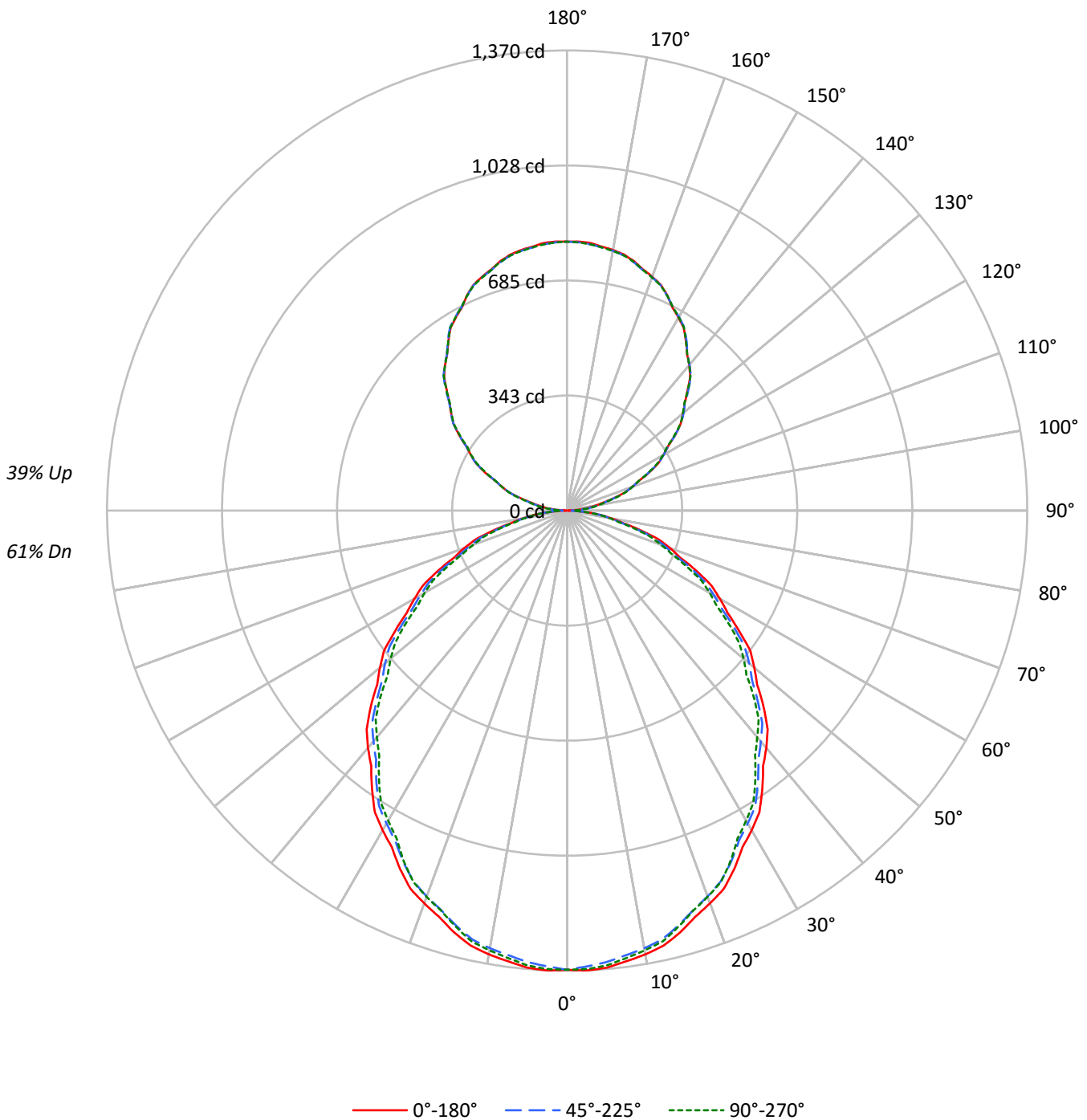
Input Watts (W): 54.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0		
RCR																										
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	66	66	66	66	66	66	66	66	66	61		
1	100	96	92	88	94	90	86	83	79	76	74	68	66	65	59	57	56	56	56	56	56	56	56	51		
2	91	84	77	72	85	79	73	68	69	65	61	60	57	54	52	49	47	47	47	47	47	47	47	43		
3	83	74	66	60	78	69	62	57	61	56	51	53	49	46	46	43	40	40	40	40	40	40	40	36		
4	76	65	57	51	71	61	54	48	54	48	44	47	43	39	41	37	35	35	35	35	35	35	35	31		
5	70	58	50	44	65	55	47	42	48	42	38	42	38	34	37	33	30	30	30	30	30	30	30	27		
6	65	52	44	38	60	49	42	36	44	38	33	38	34	30	33	30	27	27	27	27	27	27	27	24		
7	60	47	39	33	56	45	37	32	40	34	29	35	30	26	31	27	24	24	24	24	24	24	24	21		
8	56	43	35	30	52	41	33	28	36	30	26	32	27	24	28	24	21	21	21	21	21	21	21	19		
9	52	39	32	26	48	37	30	25	33	27	23	29	25	21	26	22	19	19	19	19	19	19	19	17		
10	48	36	29	24	45	34	27	23	31	25	21	27	23	19	24	20	17	17	17	17	17	17	17	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	2.2
10°-20°	362.7	6.3
20°-30°	533.8	9.3
30°-40°	620.6	10.8
40°-50°	620.6	10.8
50°-60°	542.9	9.5
60°-70°	403.2	7.0
70°-80°	229.1	4.0
80°-90°	68.5	1.2
90°-100°	52.8	0.9
100°-110°	156.5	2.7
110°-120°	265.6	4.6
120°-130°	350.2	6.1
130°-140°	393.3	6.9
140°-150°	386.4	6.7
150°-160°	325.0	5.7
160°-170°	216.2	3.8
170°-180°	75.7	1.3
0°-30°	1025.2	17.9
0°-40°	1645.9	28.7
0°-60°	2809.4	49.0
0°-90°	3510.1	61.2
90°-120°	474.9	8.3
90°-150°	1604.7	28.0
90°-180°	2222.0	38.8
0°-180°	5731.8	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	9	14	17	19	5
95°	37	43	47	49	49	41
105°	144	145	147	149	151	153
115°	270	270	269	268	268	266
125°	393	393	393	391	390	350
135°	507	511	511	510	508	392
145°	616	619	619	619	617	386
155°	706	706	705	708	705	325
165°	769	767	766	769	767	217
175°	800	797	796	800	796	76
180°	801	801	801	801	801	



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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	23.3	23.4	23.4	23.6	23.7	23.7	23.7	23.8	23.8	23.9
90°	1.8	3.4	4.9	6.4	7.9	9.2	10.3	11.4	12.5	13.6	14.4
92.5°	13.2	15.0	16.7	18.5	20.2	21.5	22.2	23.0	23.8	24.6	25.0
95°	37.2	38.4	39.6	40.9	42.1	43.3	44.2	45.2	46.1	47.1	47.5
97.5°	64.9	65.9	66.9	67.9	68.8	69.9	71.1	72.2	73.3	74.5	74.9
100°	86.7	87.2	87.8	88.3	88.9	89.8	91.0	92.3	93.5	94.7	95.1
102.5°	109.5	109.7	110.0	110.2	110.4	111.1	112.2	113.3	114.5	115.6	116.0
105°	144.3	144.4	144.6	144.7	144.9	145.2	145.8	146.3	146.9	147.4	147.8
107.5°	180.9	181.0	181.2	181.3	181.5	181.6	181.7	181.8	181.9	182.0	182.4
110°	205.7	205.9	206.1	206.4	206.7	206.8	206.7	206.5	206.4	206.2	206.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	231.4	231.4	231.5	231.6	231.6	231.5	231.2	231.0	230.8	230.5	230.4
115°	270.1	270.1	270.1	270.1	270.1	269.9	269.6	269.3	269.0	268.8	268.6
117.5°	306.4	306.6	306.7	306.7	306.9	306.8	306.7	306.4	306.3	306.1	305.6
120°	330.7	331.3	331.8	332.4	333.0	333.0	332.6	332.2	331.8	331.4	330.7
122.5°	356.0	356.2	356.4	356.6	356.9	356.9	356.7	356.5	356.3	356.1	355.6
125°	393.2	393.2	393.2	393.2	393.2	393.2	393.1	392.9	392.8	392.7	392.4
127.5°	427.1	427.5	427.9	428.3	428.7	428.8	428.6	428.4	428.2	427.9	427.7
130°	450.8	451.3	451.7	452.1	452.5	452.7	452.7	452.7	452.7	452.7	452.4
132.5°	475.2	475.5	475.8	476.0	476.3	476.4	476.3	476.3	476.1	476.0	475.7
135°	507.2	508.0	508.9	509.7	510.6	511.0	511.0	511.0	511.0	511.0	510.6
137.5°	542.2	542.6	542.9	543.3	543.7	544.0	544.2	544.5	544.6	544.9	544.5
140°	565.5	565.7	566.0	566.3	566.6	566.6	566.6	566.6	566.6	566.6	566.6
142.5°	586.8	587.0	587.3	587.6	587.9	588.0	587.8	587.7	587.6	587.5	587.5
145°	616.2	616.8	617.3	617.9	618.5	618.8	618.9	619.0	619.2	619.3	619.2
147.5°	645.5	646.1	646.7	647.5	648.1	648.4	648.2	648.2	648.0	647.9	647.8
150°	663.3	663.8	664.4	665.0	665.5	665.7	665.7	665.7	665.7	665.7	665.7
152.5°	680.2	680.5	680.8	681.1	681.4	681.7	681.8	681.9	682.0	682.1	682.5
155°	706.0	706.0	706.0	706.0	706.0	705.9	705.8	705.7	705.5	705.4	705.9
157.5°	727.9	727.5	727.3	727.1	726.8	726.7	726.7	726.7	726.6	726.6	727.0
160°	740.7	740.5	740.5	740.3	740.1	740.0	739.9	739.7	739.6	739.5	739.9
162.5°	752.6	752.3	751.9	751.5	751.1	750.9	750.8	750.7	750.5	750.4	751.1
165°	768.6	768.2	767.8	767.3	766.9	766.6	766.3	766.0	765.7	765.5	766.3
167.5°	780.9	780.2	779.7	779.1	778.6	778.2	778.2	778.3	778.3	778.3	779.2
170°	787.7	787.1	786.4	785.7	785.1	784.7	784.9	785.1	785.1	785.3	786.1
172.5°	792.7	792.2	791.5	791.0	790.4	790.1	790.2	790.2	790.2	790.3	791.2
175°	799.5	798.8	798.1	797.5	796.8	796.4	796.2	796.1	796.0	795.8	796.8
177.5°	801.8	801.2	800.7	800.1	799.5	799.3	799.3	799.3	799.3	799.3	800.0
180°	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7



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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°	24.1	24.2	24.4	24.6	24.6	24.6	24.7	24.7
90°	15.3	16.1	17.0	17.5	17.7	18.1	18.3	18.6
92.5°	25.5	26.0	26.5	26.9	27.0	27.2	27.3	27.5
95°	47.9	48.3	48.7	49.0	49.0	49.0	49.0	49.0
97.5°	75.4	75.9	76.4	76.7	76.7	76.7	76.7	76.7
100°	95.3	95.6	95.9	96.0	96.0	96.0	96.0	96.0
102.5°	116.4	116.7	117.1	117.3	117.5	117.6	117.7	117.8
105°	148.2	148.6	149.0	149.5	149.9	150.3	150.7	151.1
107.5°	182.8	183.1	183.5	183.7	183.6	183.6	183.6	183.5
110°	205.7	205.4	205.1	205.2	205.7	206.0	206.4	206.8



TEST NUMBER: P332650-927

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	230.4	230.4	230.3	230.3	230.4	230.4	230.5	230.6
115°	268.5	268.4	268.2	268.1	268.0	267.8	267.7	267.5
117.5°	305.1	304.7	304.2	303.8	303.6	303.2	303.0	302.7
120°	329.9	329.2	328.6	328.4	328.7	328.9	329.2	329.5
122.5°	355.1	354.7	354.3	353.8	353.2	352.8	352.3	351.8
125°	392.1	391.8	391.6	391.3	391.0	390.7	390.5	390.1
127.5°	427.4	427.1	426.8	426.6	426.4	426.2	426.0	425.7
130°	452.2	451.9	451.6	451.2	450.7	450.1	449.6	449.0
132.5°	475.5	475.2	474.9	474.7	474.4	474.2	474.0	473.8
135°	510.4	510.1	509.8	509.5	509.1	508.7	508.3	507.9
137.5°	544.2	543.8	543.4	543.3	543.4	543.4	543.5	543.7
140°	566.4	566.3	566.1	566.0	565.9	565.7	565.5	565.5
142.5°	587.4	587.4	587.4	587.3	587.3	587.3	587.2	587.2
145°	619.0	618.9	618.8	618.5	618.1	617.7	617.3	616.9
147.5°	647.7	647.6	647.5	647.4	647.2	647.1	647.0	646.8
150°	665.7	665.7	665.7	665.7	665.6	665.4	665.3	665.1
152.5°	682.8	683.1	683.4	683.4	683.1	682.7	682.4	682.0
155°	706.5	707.0	707.6	707.6	707.0	706.5	705.9	705.4
157.5°	727.4	727.9	728.3	728.2	727.8	727.3	726.8	726.4
160°	740.3	740.7	741.1	741.0	740.3	739.6	738.9	738.2
162.5°	751.9	752.6	753.4	753.4	752.7	752.0	751.3	750.6
165°	767.1	767.9	768.8	768.9	768.3	767.8	767.2	766.8
167.5°	780.0	780.9	781.6	781.6	780.8	779.9	779.1	778.2
170°	787.0	787.7	788.6	788.5	787.6	786.6	785.6	784.7
172.5°	792.1	793.1	794.0	794.0	793.1	792.0	791.1	790.1
175°	797.7	798.7	799.7	799.7	798.7	797.7	796.8	795.8
177.5°	800.8	801.6	802.4	802.3	801.5	800.6	799.7	798.8
180°	800.7	800.7	800.7	800.7	800.7	800.7	800.7	800.7

(END OF REPORT)