

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: P332433-840

Luminaire Tested: **S123RDIW-S775D460U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332433-840
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: S123RDIW-S775D460U840-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 775 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4561.2 lumens
Efficiency: N/A
Efficacy: 121.0 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

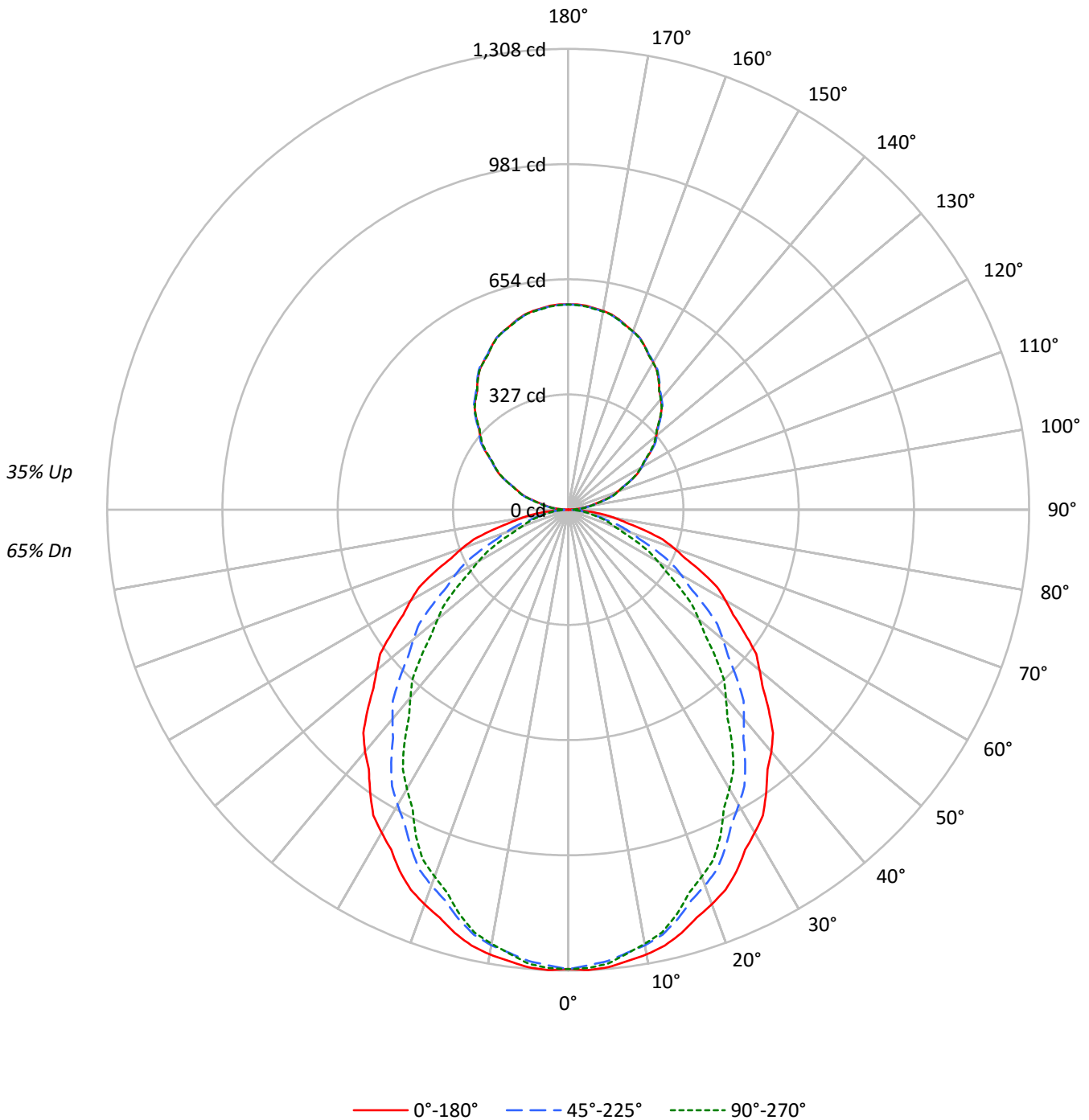
Input Watts (W): 37.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	70	70	70	65
1	101	97	93	90	95	92	88	85	81	78	76	71	69	68	62	61	60	55
2	93	85	79	74	87	81	75	71	71	67	64	63	60	57	55	53	51	47
3	85	75	68	62	80	71	65	60	63	58	54	56	52	49	49	46	44	40
4	78	67	59	53	73	63	56	51	57	51	46	50	46	42	44	41	38	35
5	72	60	52	46	67	57	50	44	51	45	40	45	41	37	40	36	33	31
6	66	54	46	40	62	51	44	39	46	40	36	41	36	33	37	33	30	27
7	61	49	41	35	58	47	39	34	42	36	32	38	33	29	33	29	26	24
8	57	45	37	32	54	43	35	30	38	32	28	34	30	26	31	27	24	22
9	53	41	33	28	50	39	32	27	35	29	25	32	27	23	29	25	22	20
10	50	38	30	26	47	36	29	25	33	27	23	29	25	21	27	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14034	14034	14034
5°	14088	13894	13973
10°	14008	13719	13672
15°	13857	13397	13256
20°	13651	12997	12693
25°	13438	12545	12144
30°	13155	12026	11368
35°	12867	11506	10657
40°	12600	10891	9777
45°	12250	10286	8983
50°	11863	9597	8092
55°	11470	8811	7263
60°	11108	7967	6351
65°	10639	7055	5440
70°	10049	5923	4393
75°	9191	4662	4134
80°	8195	4135	3800
85°	6916	3656	3396



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.4	2.7
10°-20°	340.6	7.5
20°-30°	490.5	10.8
30°-40°	552.5	12.1
40°-50°	528.6	11.6
50°-60°	432.9	9.5
60°-70°	292.0	6.4
70°-80°	146.9	3.2
80°-90°	40.6	0.9
90°-100°	37.9	0.8
100°-110°	113.6	2.5
110°-120°	193.2	4.2
120°-130°	254.1	5.6
130°-140°	285.6	6.3
140°-150°	280.8	6.2
150°-160°	236.4	5.2
160°-170°	157.3	3.4
170°-180°	55.1	1.2
0°-30°	953.6	20.9
0°-40°	1506.1	33.0
0°-60°	2467.5	54.1
0°-90°	2947.1	64.6
90°-120°	344.8	7.6
90°-150°	1165.3	25.5
90°-180°	1614.0	35.4
0°-180°	4561.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1304	1304	1304	1304	1304	
5°	1304	1298	1286	1295	1293	124
15°	1244	1231	1202	1197	1190	350
25°	1132	1104	1056	1035	1022	520
35°	979	940	876	832	811	613
45°	805	755	676	617	590	621
55°	611	557	470	410	387	548
65°	418	358	277	227	214	413
75°	221	170	112	102	99	236
85°	56	34	30	28	28	63
90°	0	5	11	13	14	4
95°	27	30	34	36	36	30
105°	103	104	108	108	109	110
115°	194	196	195	195	195	192
125°	285	286	285	283	281	254
135°	369	372	372	370	369	284
145°	448	449	450	450	448	280
155°	513	513	514	515	512	236
165°	559	557	557	560	557	157
175°	581	580	579	582	579	55
180°	583	583	583	583	583	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8
2.5°	1308.0	1307.3	1306.5	1305.8	1305.0	1303.5	1301.2	1299.0	1296.8	1294.4	1296.6
5°	1303.8	1302.6	1301.4	1300.3	1299.1	1297.1	1294.2	1291.4	1288.6	1285.9	1287.9
7.5°	1291.7	1290.5	1289.2	1287.9	1286.7	1284.1	1280.5	1276.9	1273.2	1269.5	1270.7
10°	1281.6	1279.9	1278.3	1276.7	1275.0	1272.0	1267.8	1263.6	1259.4	1255.2	1255.4
12.5°	1267.2	1265.4	1263.5	1261.7	1259.9	1256.4	1251.2	1246.1	1240.8	1235.7	1235.6
15°	1243.5	1240.9	1238.3	1235.8	1233.1	1228.6	1222.0	1215.5	1208.8	1202.2	1201.1
17.5°	1213.7	1210.7	1207.7	1204.7	1201.6	1196.0	1187.6	1179.2	1170.8	1162.6	1160.0
20°	1191.7	1187.9	1184.2	1180.4	1176.7	1170.3	1161.3	1152.5	1143.6	1134.6	1131.6
22.5°	1167.2	1162.9	1158.5	1154.2	1149.8	1143.0	1133.5	1124.0	1114.5	1105.0	1101.2
25°	1131.5	1125.6	1119.6	1113.8	1107.9	1099.5	1088.7	1077.9	1067.1	1056.3	1051.4
27.5°	1088.0	1081.6	1075.1	1068.6	1062.2	1052.9	1040.9	1028.9	1016.7	1004.7	997.8
30°	1058.4	1051.4	1044.4	1037.3	1030.3	1020.2	1007.0	993.8	980.7	967.6	959.6
32.5°	1028.9	1020.9	1012.9	1004.9	996.9	985.9	972.0	958.2	944.2	930.3	921.6
35°	979.2	970.7	962.2	953.8	945.3	933.8	919.3	904.6	890.1	875.6	865.5
37.5°	928.9	919.4	910.0	900.6	891.2	878.8	863.2	847.7	832.1	816.6	805.1
40°	896.7	886.4	876.0	865.7	855.4	841.8	825.2	808.5	791.7	775.1	762.9
42.5°	860.3	850.0	839.6	829.3	819.0	805.2	787.9	770.6	753.5	736.2	722.9
45°	804.7	794.2	783.6	773.0	762.3	748.1	729.9	711.9	693.8	675.7	662.3
47.5°	749.1	737.5	725.9	714.3	702.7	687.8	669.7	651.6	633.5	615.4	600.9
50°	708.4	697.4	686.4	675.3	664.3	649.2	630.3	611.2	592.2	573.1	558.6
52.5°	672.1	660.1	648.1	636.1	624.2	608.7	589.9	571.1	552.2	533.3	518.3
55°	611.2	599.7	588.1	576.6	565.1	549.4	529.4	509.5	489.5	469.5	455.9
57.5°	554.9	542.4	529.9	517.3	504.7	488.5	468.4	448.3	428.2	408.2	395.3
60°	516.0	503.1	490.2	477.3	464.3	448.1	428.6	409.1	389.6	370.1	357.4
62.5°	477.1	464.1	451.2	438.3	425.5	409.2	389.7	370.2	350.7	331.1	319.2
65°	417.7	404.8	391.8	378.9	366.0	350.3	332.0	313.7	295.4	277.0	265.5
67.5°	358.3	345.2	332.1	319.0	306.0	290.6	273.1	255.5	237.9	220.4	211.8
70°	319.3	306.7	294.0	281.2	268.6	254.0	237.5	221.2	204.7	188.2	180.0
72.5°	280.4	267.9	255.4	242.9	230.5	216.7	201.8	186.8	171.9	156.9	150.2
75°	221.0	209.7	198.4	187.1	175.9	163.8	150.9	137.9	125.0	112.1	109.8
77.5°	166.8	156.6	146.4	136.2	126.0	116.8	108.5	100.2	91.9	83.5	82.3
80°	132.2	122.5	112.9	103.3	93.6	86.3	81.4	76.4	71.6	66.7	65.9
82.5°	99.2	90.9	82.5	74.2	65.9	60.6	58.3	55.9	53.7	51.4	50.7
85°	56.0	50.9	45.7	40.5	35.3	32.4	31.7	31.0	30.3	29.6	29.2
87.5°	20.4	18.5	16.7	14.8	12.9	12.1	12.4	12.6	12.9	13.2	13.1
90°	0.5	1.5	2.5	3.5	4.5	5.7	7.0	8.4	9.7	11.0	11.4
92.5°	11.1	11.8	12.4	13.1	13.8	14.5	15.3	16.1	16.9	17.6	17.9
95°	27.0	27.7	28.4	29.2	29.9	30.6	31.4	32.2	33.0	33.8	34.2
97.5°	48.0	48.5	49.0	49.6	50.1	50.6	51.2	51.8	52.4	53.0	53.4
100°	62.2	62.8	63.4	64.0	64.6	65.2	65.7	66.2	66.8	67.3	67.6
102.5°	78.7	79.1	79.5	79.8	80.2	80.7	81.4	82.0	82.7	83.4	83.7
105°	103.0	103.2	103.4	103.6	103.8	104.3	105.2	106.1	107.0	108.0	108.0
107.5°	131.2	131.3	131.4	131.5	131.7	131.9	132.3	132.6	133.0	133.4	133.7
110°	148.8	149.0	149.2	149.4	149.6	149.8	150.0	150.2	150.4	150.6	151.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	167.0	167.1	167.3	167.4	167.5	167.6	167.6	167.7	167.7	167.7	168.2
115°	194.5	194.8	195.1	195.4	195.7	195.8	195.6	195.4	195.2	195.0	195.1
117.5°	222.2	222.4	222.6	222.8	223.0	222.9	222.7	222.4	222.2	221.9	221.9
120°	239.3	239.9	240.5	241.2	241.8	241.9	241.4	240.9	240.3	239.8	239.7
122.5°	257.3	257.7	258.2	258.6	259.0	259.1	258.9	258.6	258.4	258.1	257.8
125°	284.7	285.0	285.3	285.6	285.9	285.9	285.7	285.5	285.3	285.1	284.7
127.5°	309.9	310.5	311.2	311.8	312.6	312.8	312.6	312.3	312.0	311.8	311.2
130°	326.8	327.6	328.4	329.2	330.0	330.2	329.9	329.6	329.3	329.0	328.6
132.5°	343.6	344.4	345.3	346.1	346.9	347.2	346.9	346.7	346.5	346.3	345.8
135°	369.3	369.9	370.5	371.1	371.7	372.0	371.9	371.8	371.7	371.6	371.2
137.5°	393.1	393.6	394.2	394.7	395.2	395.6	395.8	396.1	396.4	396.6	396.2
140°	409.6	410.1	410.6	411.1	411.6	411.9	412.0	412.1	412.2	412.3	412.2
142.5°	424.6	425.2	425.7	426.2	426.7	427.0	427.2	427.4	427.6	427.7	427.6
145°	448.1	448.3	448.5	448.7	448.9	449.1	449.4	449.7	450.0	450.3	450.2
147.5°	468.6	468.9	469.3	469.6	470.0	470.3	470.6	470.9	471.2	471.5	471.5
150°	482.8	483.0	483.2	483.4	483.6	483.8	484.0	484.2	484.4	484.6	484.6
152.5°	494.5	494.8	495.1	495.3	495.6	495.8	495.9	496.1	496.2	496.3	496.6
155°	513.0	513.0	513.0	513.0	513.0	513.1	513.2	513.3	513.4	513.5	513.9
157.5°	528.8	528.7	528.6	528.4	528.3	528.3	528.4	528.5	528.5	528.6	529.0
160°	538.7	538.5	538.3	538.1	537.9	537.8	537.8	537.8	537.8	537.8	538.3
162.5°	547.4	547.1	546.8	546.5	546.3	546.2	546.2	546.3	546.4	546.5	547.0
165°	558.8	558.5	558.2	557.8	557.5	557.4	557.4	557.4	557.4	557.4	558.1
167.5°	567.8	567.4	567.0	566.6	566.2	566.0	566.1	566.2	566.3	566.3	567.0
170°	573.0	572.6	572.2	571.8	571.4	571.2	571.2	571.2	571.2	571.2	571.9
172.5°	577.0	576.6	576.2	575.8	575.3	575.1	575.1	575.1	575.1	575.1	575.8
175°	581.2	580.8	580.4	580.0	579.6	579.4	579.4	579.4	579.4	579.4	580.0
177.5°	583.0	582.6	582.3	582.0	581.7	581.5	581.5	581.5	581.5	581.5	582.0
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8	1303.8
2.5°	1298.6	1300.7	1302.7	1303.6	1303.2	1302.8	1302.4	1302.1
5°	1290.0	1292.1	1294.2	1295.1	1294.6	1294.1	1293.6	1293.2
7.5°	1271.9	1273.0	1274.2	1274.4	1273.6	1272.8	1272.0	1271.2
10°	1255.7	1255.9	1256.1	1255.7	1254.5	1253.2	1252.1	1250.9
12.5°	1235.4	1235.3	1235.2	1234.4	1233.0	1231.6	1230.3	1228.9
15°	1199.9	1198.7	1197.6	1196.2	1194.6	1192.9	1191.2	1189.6
17.5°	1157.5	1155.1	1152.6	1150.1	1147.6	1145.2	1142.8	1140.3
20°	1128.5	1125.4	1122.4	1119.4	1116.6	1113.8	1111.0	1108.1
22.5°	1097.4	1093.6	1089.7	1086.5	1083.9	1081.3	1078.6	1076.0
25°	1046.5	1041.6	1036.6	1032.9	1030.3	1027.6	1025.1	1022.5
27.5°	991.0	984.2	977.3	971.9	968.0	964.0	960.1	956.1
30°	951.6	943.5	935.5	929.7	925.9	922.2	918.4	914.6
32.5°	912.8	904.1	895.3	889.0	885.0	881.1	877.2	873.2
35°	855.4	845.3	835.2	828.0	823.7	819.5	815.3	811.0
37.5°	793.6	782.1	770.6	762.3	757.1	751.8	746.7	741.4
40°	750.6	738.4	726.2	717.4	712.0	706.6	701.1	695.8
42.5°	709.4	696.1	682.8	673.7	668.8	664.0	659.1	654.3
45°	648.9	635.5	622.1	612.6	606.9	601.3	595.7	590.1
47.5°	586.2	571.7	557.1	547.3	542.3	537.2	532.3	527.3
50°	544.0	529.4	514.8	504.8	499.5	494.0	488.7	483.2
52.5°	503.1	488.0	472.8	462.8	458.0	453.1	448.3	443.4
55°	442.2	428.6	415.0	405.8	401.1	396.4	391.7	387.0
57.5°	382.4	369.5	356.7	348.2	344.3	340.2	336.2	332.2
60°	344.7	332.0	319.3	311.0	307.0	303.0	299.0	295.0
62.5°	307.3	295.4	283.5	275.4	271.1	267.0	262.9	258.6
65°	254.0	242.5	231.0	223.9	221.4	218.7	216.2	213.6
67.5°	203.2	194.6	185.9	180.3	177.5	174.7	172.0	169.2
70°	171.8	163.5	155.3	150.0	147.3	144.7	142.2	139.6
72.5°	143.5	136.7	130.1	126.1	125.0	124.0	122.9	121.8
75°	107.3	105.0	102.7	101.3	100.8	100.4	99.9	99.4
77.5°	81.0	79.7	78.5	77.6	77.2	76.6	76.1	75.7
80°	65.2	64.5	63.8	63.2	62.7	62.3	61.8	61.3
82.5°	50.0	49.3	48.6	48.2	48.1	48.0	47.9	47.8
85°	28.7	28.2	27.8	27.5	27.5	27.5	27.5	27.5
87.5°	13.0	12.8	12.7	12.6	12.5	12.3	12.2	12.0
90°	11.8	12.2	12.6	12.9	13.1	13.3	13.5	13.7
92.5°	18.2	18.6	18.9	19.0	18.9	18.7	18.6	18.5
95°	34.6	35.0	35.4	35.6	35.6	35.6	35.6	35.6
97.5°	53.9	54.4	54.8	55.0	55.0	55.0	54.9	54.9
100°	67.9	68.2	68.5	68.8	69.0	69.2	69.4	69.6
102.5°	84.0	84.3	84.6	84.7	84.7	84.6	84.6	84.5
105°	108.0	108.0	108.0	108.1	108.4	108.6	108.8	109.0
107.5°	134.0	134.3	134.6	134.7	134.6	134.5	134.4	134.3
110°	151.4	151.8	152.2	152.3	152.1	151.9	151.7	151.5



TEST NUMBER: P332433-840

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	168.7	169.3	169.8	170.0	169.9	169.9	169.9	169.8
115°	195.2	195.3	195.4	195.4	195.3	195.2	195.1	195.0
117.5°	221.9	221.8	221.8	221.7	221.4	221.1	220.8	220.5
120°	239.6	239.5	239.4	239.2	239.0	238.8	238.6	238.4
122.5°	257.6	257.3	257.0	256.8	256.5	256.2	255.9	255.6
125°	284.3	283.9	283.5	283.1	282.7	282.3	281.9	281.4
127.5°	310.7	310.1	309.5	309.0	308.6	308.1	307.6	307.2
130°	328.2	327.8	327.4	326.9	326.2	325.5	324.8	324.0
132.5°	345.3	344.8	344.3	343.8	343.3	342.6	342.1	341.5
135°	370.8	370.4	370.0	369.7	369.5	369.3	369.1	368.9
137.5°	395.8	395.4	394.9	394.5	394.0	393.7	393.3	392.9
140°	412.1	412.0	411.9	411.5	410.8	410.1	409.4	408.7
142.5°	427.5	427.4	427.3	427.0	426.5	425.9	425.4	424.7
145°	450.1	450.0	449.9	449.7	449.3	448.9	448.5	448.1
147.5°	471.5	471.5	471.5	471.2	470.6	469.9	469.3	468.7
150°	484.6	484.6	484.6	484.3	483.7	483.1	482.5	481.9
152.5°	496.7	496.9	497.1	496.9	496.3	495.7	495.2	494.7
155°	514.3	514.7	515.1	514.9	514.2	513.5	512.8	512.1
157.5°	529.5	529.9	530.3	530.2	529.7	529.1	528.5	528.0
160°	538.8	539.3	539.8	539.8	539.4	539.0	538.6	538.2
162.5°	547.5	548.1	548.6	548.5	547.9	547.1	546.5	545.8
165°	558.7	559.3	559.9	559.8	559.1	558.4	557.6	556.9
167.5°	567.6	568.3	568.9	568.9	568.3	567.6	567.0	566.3
170°	572.6	573.3	574.0	574.0	573.3	572.6	571.9	571.2
172.5°	576.4	577.0	577.6	577.6	576.9	576.2	575.5	574.8
175°	580.6	581.2	581.8	581.8	581.1	580.4	579.7	579.0
177.5°	582.5	583.0	583.4	583.4	582.8	582.3	581.7	581.1
180°	582.6	582.6	582.6	582.6	582.6	582.6	582.6	582.6

(END OF REPORT)