

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: P332212

Luminaire Tested: **S123DIW-S1165D460U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332212  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1165D460U835-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6695.0 lumens  
Efficiency: N/A  
Efficacy: 127.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Direct

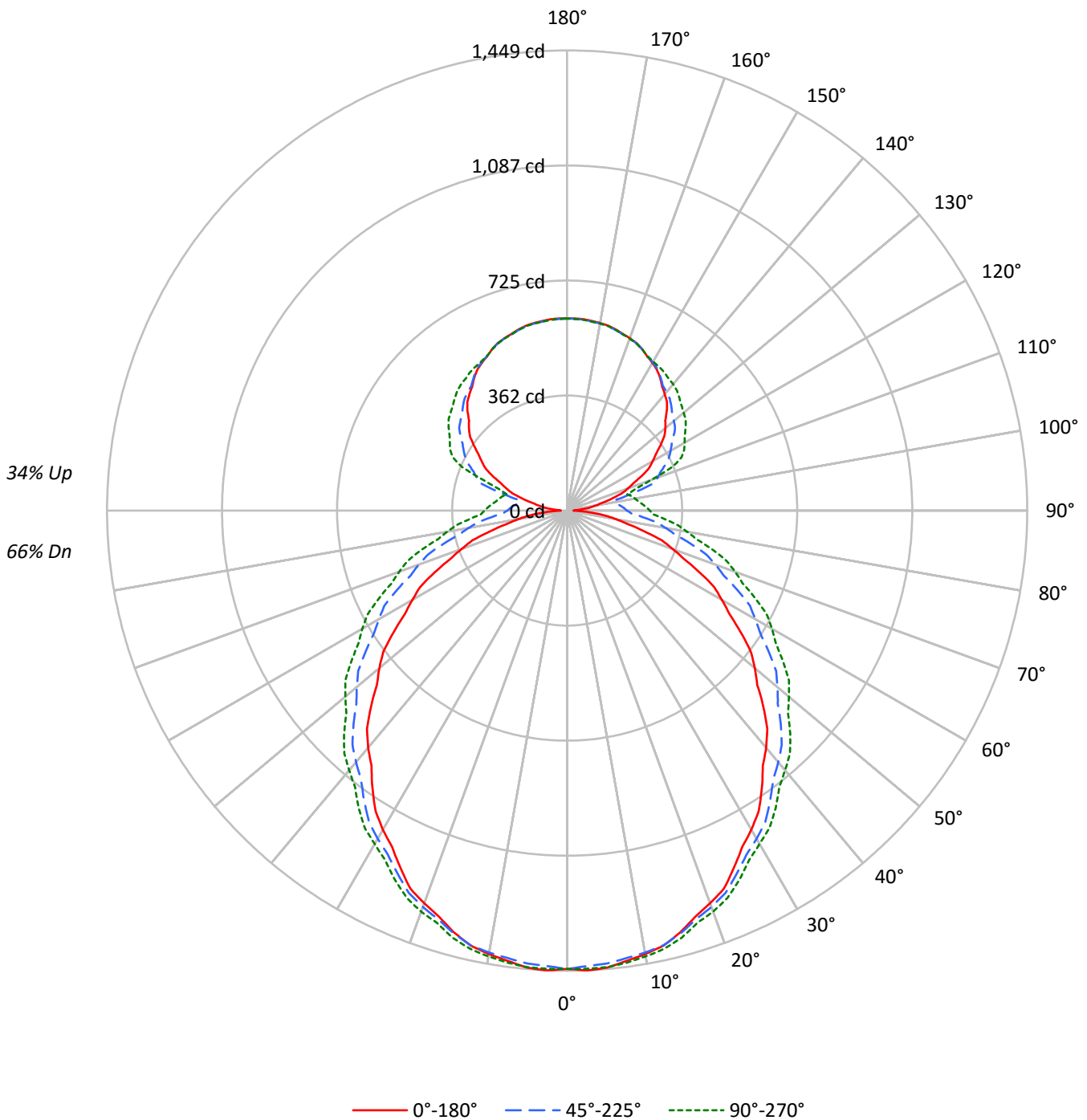
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66								
1	100	95	90	86	94	89	85	82	79	76	73	70	67	65	61	59	57	53								
2	91	82	75	69	85	77	71	66	69	64	60	60	57	53	53	50	47	43								
3	82	72	64	57	77	68	60	55	60	54	49	53	48	44	46	43	40	36								
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31								
5	69	56	48	41	64	53	45	39	47	41	36	42	37	33	37	33	29	26								
6	64	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23								
7	59	46	37	31	55	43	35	30	39	32	28	34	29	25	30	26	23	20								
8	55	41	33	28	51	39	32	27	35	29	24	32	26	22	28	24	20	18								
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16								
10	48	35	27	22	45	33	26	21	30	24	20	27	22	18	24	20	17	15								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	15532	15532	15532
5°	15581	15141	15150
10°	15441	14792	14718
15°	15242	14397	14247
20°	14958	13944	13729
25°	14607	13423	13185
30°	14248	12956	12632
35°	13844	12460	12191
40°	13459	12010	11719
45°	13033	11577	11342
50°	12611	11149	10926
55°	12146	10713	10553
60°	11692	10267	10169
65°	11230	9793	9712
70°	10529	9260	9244
75°	9643	8650	8768
80°	8626	8052	8224
85°	7681	7639	7911



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	2.0
10°-20°	390.0	5.8
20°-30°	583.2	8.7
30°-40°	696.5	10.4
40°-50°	728.7	10.9
50°-60°	683.9	10.2
60°-70°	571.2	8.5
70°-80°	408.7	6.1
80°-90°	245.4	3.7
90°-100°	174.9	2.6
100°-110°	217.1	3.2
110°-120°	326.7	4.9
120°-130°	363.4	5.4
130°-140°	361.7	5.4
140°-150°	324.4	4.8
150°-160°	258.3	3.9
160°-170°	166.7	2.5
170°-180°	57.5	0.9
0°-30°	1110.0	16.6
0°-40°	1806.5	27.0
0°-60°	3219.1	48.1
0°-90°	4444.3	66.4
90°-120°	718.8	10.7
90°-150°	1768.2	26.4
90°-180°	2251.0	33.6
0°-180°	6695.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1443	1443	1443	1443	1443	
5°	1445	1441	1432	1444	1443	137
15°	1375	1380	1379	1393	1393	387
25°	1242	1257	1262	1282	1283	572
35°	1069	1094	1114	1137	1144	668
45°	874	912	951	980	993	674
55°	666	719	775	816	830	597
65°	461	522	591	636	654	455
75°	250	324	402	452	473	267
85°	77	156	239	290	308	81
90°	21	103	188	242	260	15
95°	45	90	170	219	237	47
105°	146	188	216	184	196	155
115°	259	283	341	382	398	256
125°	359	365	410	442	456	321
135°	444	446	464	492	500	342
145°	510	512	513	526	532	319
155°	560	559	560	562	559	258
165°	591	590	589	592	590	167
175°	605	603	603	606	602	58
180°	605	605	605	605	605	



TEST NUMBER: P332212

CATALOG NUMBER: S123DIW-S1165D460U835-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1449.3	1448.5	1447.6	1446.8	1445.9	1444.4	1442.2	1439.9	1437.7	1435.5	1437.7
5°	1444.6	1443.9	1443.2	1442.5	1441.8	1440.4	1438.3	1436.2	1434.1	1432.0	1434.8
7.5°	1430.4	1430.6	1430.7	1430.9	1431.0	1430.1	1428.0	1426.0	1424.0	1421.9	1425.4
10°	1417.9	1418.6	1419.3	1420.0	1420.7	1420.1	1418.4	1416.6	1414.9	1413.1	1416.6
12.5°	1402.8	1403.7	1404.7	1405.7	1406.7	1406.6	1405.4	1404.2	1403.0	1401.8	1405.0
15°	1375.4	1376.5	1377.5	1378.6	1379.6	1380.0	1379.6	1379.3	1378.9	1378.6	1382.1
17.5°	1340.8	1342.9	1345.0	1347.1	1349.2	1350.2	1350.1	1349.9	1349.8	1349.6	1352.8
20°	1315.7	1317.8	1319.9	1322.0	1324.1	1325.5	1326.2	1326.9	1327.6	1328.3	1331.4
22.5°	1289.3	1291.4	1293.5	1295.6	1297.7	1299.2	1300.2	1301.2	1302.1	1303.1	1307.1
25°	1241.8	1245.3	1248.8	1252.3	1255.8	1258.0	1259.1	1260.1	1261.2	1262.2	1266.8
27.5°	1194.0	1198.0	1202.0	1206.0	1209.9	1213.1	1215.3	1217.5	1219.8	1222.0	1225.9
30°	1160.1	1164.6	1169.1	1173.7	1178.2	1181.9	1184.7	1187.5	1190.3	1193.1	1197.3
32.5°	1122.3	1127.4	1132.5	1137.6	1142.7	1147.1	1150.7	1154.4	1158.0	1161.6	1166.1
35°	1068.9	1074.5	1080.1	1085.7	1091.3	1096.3	1100.9	1105.4	1109.9	1114.5	1119.7
37.5°	1012.3	1018.6	1024.9	1031.2	1037.5	1043.4	1049.0	1054.6	1060.2	1065.8	1071.7
40°	974.6	980.9	987.2	993.4	999.7	1006.4	1013.4	1020.3	1027.3	1034.3	1040.3
42.5°	933.1	940.8	948.5	956.1	963.8	971.3	978.6	985.8	993.1	1000.4	1006.9
45°	874.0	882.4	890.7	899.1	907.5	916.1	924.8	933.5	942.3	951.0	957.6
47.5°	812.0	821.5	831.0	840.6	850.1	859.8	869.8	879.8	889.8	899.8	907.2
50°	771.8	781.6	791.4	801.1	810.9	821.2	832.1	842.9	853.7	864.5	872.6
52.5°	729.1	739.4	749.7	760.1	770.4	781.6	793.5	805.4	817.4	829.3	837.7
55°	666.5	678.0	689.5	701.1	712.6	724.6	737.2	749.8	762.4	775.0	784.4
57.5°	605.5	617.5	629.5	641.5	653.6	666.5	680.2	694.0	707.7	721.5	731.0
60°	562.7	575.3	587.9	600.5	613.0	626.5	640.8	655.1	669.5	683.8	693.6
62.5°	522.5	535.4	548.2	561.1	573.9	587.9	603.1	618.2	633.4	648.6	658.3
65°	460.6	474.2	487.8	501.4	515.1	529.6	544.9	560.3	575.7	591.0	601.5
67.5°	397.7	412.2	426.6	441.1	455.5	470.6	486.2	501.9	517.5	533.2	544.6
70°	353.7	368.7	383.7	398.7	413.8	429.7	446.4	463.2	480.0	496.7	507.9
72.5°	313.4	328.5	343.5	358.5	373.5	389.7	407.0	424.3	441.7	459.0	470.5
75°	249.9	266.4	282.8	299.2	315.6	332.5	350.0	367.5	384.9	402.4	413.9
77.5°	194.6	211.2	227.7	244.3	260.8	277.9	295.5	313.1	330.7	348.3	360.5
80°	155.6	172.7	189.9	207.0	224.1	241.7	259.9	278.1	296.2	314.4	326.3
82.5°	121.7	139.1	156.5	173.9	191.2	209.2	227.6	246.1	264.5	282.9	294.8
85°	77.0	94.5	112.0	129.4	146.9	164.9	183.4	201.9	220.4	238.9	250.8
87.5°	41.9	59.5	77.1	94.7	112.3	130.1	148.2	166.3	184.3	202.4	214.4
90°	20.9	39.0	57.1	75.2	93.3	112.0	131.1	150.2	169.3	188.4	200.7
92.5°	27.5	42.7	57.9	73.0	88.2	105.0	123.5	142.0	160.6	179.1	191.3
95°	44.7	54.2	63.8	73.3	82.8	96.7	114.9	133.1	151.3	169.5	181.1
97.5°	70.5	80.9	91.4	101.9	112.3	122.1	131.3	140.4	149.6	158.8	170.0
100°	90.1	103.2	116.4	129.6	142.8	149.6	150.1	150.6	151.1	151.6	162.5
102.5°	112.5	124.0	135.5	147.0	158.5	163.7	162.4	161.2	160.0	158.8	166.1
105°	146.5	155.9	165.4	174.9	184.4	192.1	198.2	204.2	210.2	216.3	208.4
107.5°	180.7	188.7	196.7	204.7	212.7	224.6	240.2	255.9	271.6	287.2	283.6
110°	203.5	210.6	217.7	224.8	231.9	242.9	258.0	273.1	288.2	303.2	309.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	226.5	232.4	238.3	244.2	250.1	260.3	274.8	289.3	303.8	318.3	327.2
115°	259.0	263.8	268.6	273.4	278.2	287.3	300.8	314.2	327.7	341.2	350.6
117.5°	291.7	295.0	298.3	301.6	305.0	312.8	325.0	337.3	349.6	361.8	370.9
120°	310.9	313.5	316.2	318.8	321.5	328.7	340.5	352.4	364.2	376.0	384.9
122.5°	331.7	333.4	335.0	336.7	338.3	344.8	356.2	367.5	378.9	390.2	398.5
125°	358.7	359.5	360.3	361.1	361.9	367.6	378.1	388.7	399.2	409.7	417.3
127.5°	386.4	386.9	387.3	387.8	388.2	392.9	401.7	410.6	419.5	428.3	435.6
130°	403.7	404.1	404.6	405.0	405.5	409.4	416.8	424.2	431.5	438.9	446.0
132.5°	419.0	419.7	420.4	421.1	421.9	425.2	431.1	437.0	442.9	448.8	455.6
135°	443.9	444.1	444.4	444.6	444.9	447.1	451.4	455.6	459.9	464.1	470.7
137.5°	465.1	465.6	466.1	466.6	467.1	468.5	470.9	473.3	475.6	478.0	484.0
140°	478.3	478.9	479.5	480.1	480.7	481.6	483.0	484.3	485.7	487.0	492.7
142.5°	491.6	491.9	492.2	492.5	492.8	493.2	493.8	494.3	494.8	495.3	500.3
145°	510.2	510.5	510.9	511.2	511.6	511.8	512.0	512.2	512.4	512.6	515.6
147.5°	526.1	526.6	527.0	527.5	527.9	528.3	528.5	528.7	528.9	529.1	530.1
150°	536.9	537.2	537.5	537.8	538.1	538.3	538.5	538.7	538.9	539.1	539.3
152.5°	546.6	546.7	546.9	547.0	547.2	547.3	547.4	547.5	547.6	547.8	548.1
155°	560.2	560.0	559.8	559.7	559.5	559.4	559.5	559.6	559.7	559.8	560.3
157.5°	570.9	570.8	570.8	570.8	570.8	570.7	570.6	570.5	570.4	570.3	570.9
160°	577.3	577.2	577.1	577.0	576.9	576.8	576.7	576.6	576.5	576.4	577.0
162.5°	583.4	583.2	582.9	582.7	582.4	582.2	582.1	582.0	581.9	581.8	582.5
165°	590.8	590.5	590.2	589.9	589.6	589.4	589.3	589.2	589.1	589.0	589.8
167.5°	596.6	596.2	595.8	595.4	595.0	594.8	594.8	594.8	594.8	594.8	595.6
170°	599.8	599.4	599.0	598.6	598.2	598.0	598.0	598.0	598.0	598.0	598.8
172.5°	601.9	601.5	601.0	600.5	600.0	599.8	599.9	600.0	600.1	600.1	600.9
175°	604.7	604.2	603.7	603.2	602.7	602.5	602.6	602.7	602.8	602.9	603.6
177.5°	605.4	605.0	604.6	604.2	603.8	603.7	603.8	603.8	603.9	604.0	604.6
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1439.9	1442.2	1444.4	1445.4	1445.1	1444.8	1444.5	1444.3
5°	1437.6	1440.4	1443.2	1444.4	1444.1	1443.7	1443.4	1443.0
7.5°	1428.9	1432.4	1435.9	1437.5	1437.0	1436.6	1436.2	1435.8
10°	1420.1	1423.6	1427.1	1428.5	1427.8	1427.1	1426.4	1425.7
12.5°	1408.3	1411.5	1414.7	1415.9	1415.2	1414.5	1413.8	1413.1
15°	1385.5	1389.0	1392.5	1394.1	1393.8	1393.4	1393.1	1392.7
17.5°	1355.9	1359.1	1362.2	1363.5	1363.1	1362.6	1362.1	1361.6
20°	1334.5	1337.7	1340.8	1342.6	1342.9	1343.3	1343.6	1344.0
22.5°	1311.1	1315.1	1319.0	1320.9	1320.7	1320.5	1320.3	1320.1
25°	1271.3	1275.9	1280.4	1282.7	1282.7	1282.7	1282.7	1282.7
27.5°	1229.8	1233.7	1237.6	1239.7	1240.0	1240.3	1240.6	1240.9
30°	1201.5	1205.7	1209.8	1211.9	1211.9	1211.9	1211.9	1211.9
32.5°	1170.6	1175.1	1179.5	1182.2	1183.0	1183.9	1184.7	1185.5
35°	1125.0	1130.2	1135.4	1138.8	1140.2	1141.6	1143.0	1144.3
37.5°	1077.6	1083.6	1089.5	1093.0	1094.2	1095.3	1096.4	1097.5
40°	1046.2	1052.1	1058.1	1061.7	1063.1	1064.5	1065.9	1067.3
42.5°	1013.4	1019.9	1026.4	1030.6	1032.5	1034.5	1036.4	1038.4
45°	964.3	970.9	977.6	982.3	985.1	987.9	990.7	993.4
47.5°	914.7	922.2	929.7	934.5	936.6	938.8	941.0	943.1
50°	880.6	888.7	896.7	901.9	904.4	906.8	909.3	911.7
52.5°	846.0	854.3	862.6	868.3	871.3	874.3	877.3	880.3
55°	793.8	803.2	812.7	818.8	821.6	824.4	827.2	830.0
57.5°	740.5	750.0	759.5	765.9	769.2	772.5	775.8	779.0
60°	703.3	713.1	722.9	729.7	733.6	737.4	741.2	745.1
62.5°	668.1	677.9	687.7	694.4	697.9	701.5	705.1	708.6
65°	612.0	622.5	633.0	639.9	643.4	646.9	650.4	653.9
67.5°	556.1	567.6	579.0	586.2	589.2	592.1	595.0	598.0
70°	519.1	530.3	541.4	548.8	552.3	555.8	559.2	562.7
72.5°	481.9	493.4	504.8	512.3	515.8	519.3	522.8	526.3
75°	425.5	437.0	448.5	456.4	460.6	464.8	469.0	473.1
77.5°	372.6	384.8	397.0	404.6	407.9	411.1	414.3	417.5
80°	338.1	350.0	361.9	369.6	373.1	376.6	380.1	383.5
82.5°	306.7	318.6	330.4	338.1	341.6	345.1	348.6	352.1
85°	262.7	274.6	286.4	294.1	297.6	301.1	304.6	308.1
87.5°	226.3	238.3	250.2	258.0	261.5	265.1	268.6	272.1
90°	213.0	225.2	237.5	245.5	249.2	252.9	256.6	260.3
92.5°	203.5	215.8	228.0	235.8	239.1	242.5	245.8	249.1
95°	192.6	204.1	215.7	223.2	226.7	230.2	233.6	237.1
97.5°	181.2	192.4	203.6	211.0	214.6	218.2	221.8	225.4
100°	173.4	184.4	195.3	202.6	206.2	209.7	213.3	216.9
102.5°	173.5	180.9	188.3	193.8	197.5	201.1	204.8	208.5
105°	200.5	192.6	184.7	182.4	185.8	189.1	192.5	195.8
107.5°	280.0	276.4	272.8	265.9	255.7	245.4	235.2	224.9
110°	314.8	320.6	326.4	323.5	312.0	300.6	289.1	277.6





TEST NUMBER: P332212

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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	336.0	344.9	353.8	358.2	358.3	358.4	358.4	358.5
115°	360.0	369.3	378.7	385.0	388.2	391.4	394.6	397.8
117.5°	380.0	389.2	398.3	404.2	407.0	409.8	412.6	415.4
120°	393.7	402.5	411.4	417.0	419.4	421.9	424.3	426.8
122.5°	406.8	415.2	423.5	428.9	431.4	433.9	436.5	439.0
125°	424.8	432.3	439.9	445.0	447.6	450.2	452.9	455.5
127.5°	442.8	450.0	457.3	462.0	464.2	466.3	468.5	470.7
130°	453.0	460.0	467.1	471.5	473.4	475.3	477.2	479.1
132.5°	462.3	469.1	475.8	480.3	482.4	484.5	486.6	488.7
135°	477.3	483.9	490.4	494.5	495.9	497.4	498.8	500.3
137.5°	490.0	496.0	502.0	505.8	507.3	508.9	510.4	512.0
140°	498.3	503.9	509.6	513.2	514.7	516.3	517.8	519.4
142.5°	505.3	510.3	515.3	518.5	520.0	521.5	522.9	524.4
145°	518.6	521.6	524.6	526.8	528.2	529.6	531.0	532.4
147.5°	531.1	532.2	533.2	534.1	534.9	535.7	536.5	537.3
150°	539.5	539.7	539.9	540.2	540.6	541.0	541.4	541.8
152.5°	548.5	548.8	549.2	549.2	548.9	548.6	548.3	547.9
155°	560.8	561.3	561.8	561.7	561.1	560.5	559.9	559.4
157.5°	571.5	572.1	572.7	572.6	571.8	571.1	570.3	569.5
160°	577.6	578.2	578.8	578.8	578.1	577.4	576.7	576.0
162.5°	583.2	583.9	584.5	584.6	583.9	583.3	582.7	582.1
165°	590.6	591.4	592.2	592.2	591.5	590.9	590.2	589.5
167.5°	596.4	597.1	597.9	597.9	597.1	596.4	595.6	594.8
170°	599.6	600.4	601.2	601.2	600.4	599.6	598.8	598.0
172.5°	601.7	602.5	603.3	603.3	602.4	601.5	600.7	599.8
175°	604.3	605.0	605.7	605.7	604.9	604.1	603.3	602.5
177.5°	605.3	605.9	606.6	606.5	605.7	604.9	604.1	603.3
180°	604.7	604.7	604.7	604.7	604.7	604.7	604.7	604.7

(END OF REPORT)