

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: P331487-930

Luminaire Tested: **S122DIW-S290D1240U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331487-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S290D1240U930-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1240 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5022.5 lumens  
Efficiency: N/A  
Efficacy: 107.8 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

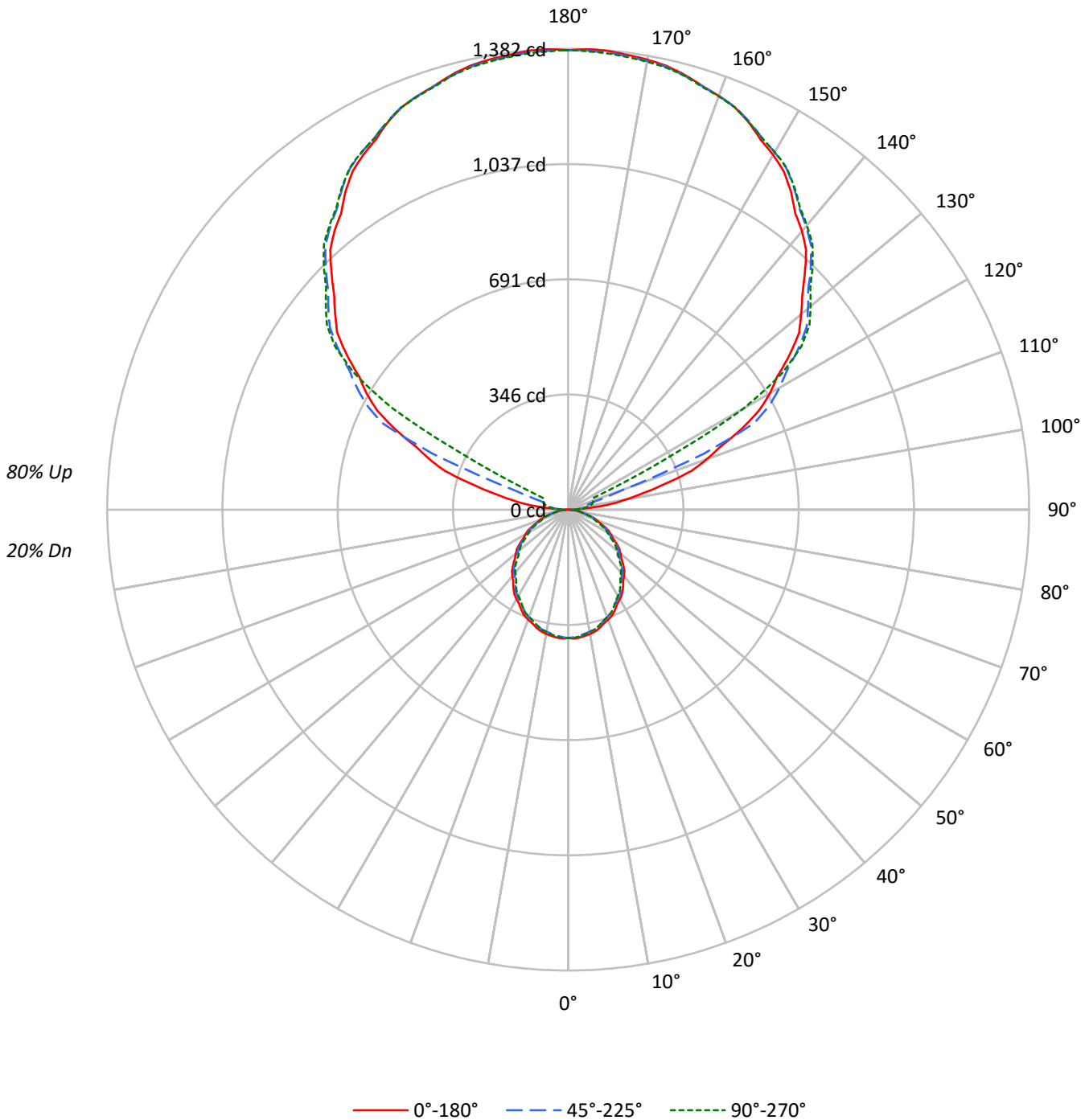
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

### Luminous Intensity Polar Plot





TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

**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	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	54	41	40	38	25	24	24	16
2	83	76	70	65	73	67	62	58	51	48	45	36	34	32	22	21	20	14
3	75	66	60	54	66	59	53	48	45	41	38	32	29	27	19	18	17	12
4	69	59	51	46	61	52	46	41	40	35	32	28	25	23	17	16	15	10
5	63	52	44	39	55	46	40	35	35	31	27	25	22	20	15	14	13	9
6	58	47	39	33	51	41	35	30	32	27	24	23	20	17	14	12	11	8
7	53	42	34	29	47	37	31	26	29	24	21	20	17	15	13	11	10	7
8	49	38	30	25	44	34	27	23	26	21	18	19	16	13	12	10	9	6
9	46	34	27	22	40	31	24	20	24	19	16	17	14	12	11	9	8	5
10	43	31	24	20	38	28	22	18	22	17	14	16	13	11	10	8	7	5

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

	0°	45°	90°
0°	6218	6218	6218
5°	6242	6152	6190
10°	6205	6091	6120
15°	6128	6011	6006
20°	6019	5893	5887
25°	5911	5747	5747
30°	5774	5614	5565
35°	5643	5452	5373
40°	5480	5292	5191
45°	5318	5133	5005
50°	5144	4968	4793
55°	4963	4777	4597
60°	4760	4543	4379
65°	4542	4317	4118
70°	4263	4036	3843
75°	3880	3718	3624
80°	3440	3347	3171
85°	2816	2668	2408



TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	36.2	0.7
10°-20°	101.9	2.0
20°-30°	149.8	3.0
30°-40°	174.0	3.5
40°-50°	173.8	3.5
50°-60°	151.6	3.0
60°-70°	112.1	2.2
70°-80°	63.5	1.3
80°-90°	20.5	0.4
90°-100°	46.0	0.9
100°-110°	168.6	3.4
110°-120°	450.7	9.0
120°-130°	744.0	14.8
130°-140°	791.2	15.8
140°-150°	735.4	14.6
150°-160°	591.2	11.8
160°-170°	381.0	7.6
170°-180°	131.1	2.6
0°-30°	287.9	5.7
0°-40°	461.9	9.2
0°-60°	787.3	15.7
0°-90°	983.4	19.6
90°-120°	665.3	13.2
90°-150°	2935.8	58.5
90°-180°	4039.0	80.4
0°-180°	5022.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	385	385	385	385	385	
5°	385	384	380	382	382	37
15°	367	364	360	361	359	103
25°	332	329	323	323	323	153
35°	286	282	277	274	273	179
45°	233	230	225	221	219	180
55°	176	174	170	165	163	158
65°	119	117	113	110	108	118
75°	62	61	60	58	58	66
85°	15	15	14	13	13	17
90°	1	12	20	25	27	4
95°	65	34	39	44	43	79
105°	303	316	61	71	76	324
115°	574	591	615	175	82	564
125°	811	824	843	850	853	723
135°	1003	1019	1028	1038	1036	775
145°	1164	1164	1180	1186	1182	728
155°	1282	1274	1285	1290	1282	590
165°	1350	1345	1347	1354	1347	381
175°	1381	1375	1376	1382	1373	131
180°	1378	1378	1378	1378	1378	



TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	386.9	386.6	386.3	386.0	385.6	385.1	384.4	383.7	382.9	382.2	382.9
5°	385.1	384.8	384.5	384.2	383.8	383.3	382.4	381.5	380.5	379.6	380.3
7.5°	381.8	381.2	380.7	380.3	379.8	379.0	378.1	377.2	376.3	375.4	376.0
10°	378.5	378.0	377.4	376.8	376.2	375.4	374.5	373.5	372.5	371.5	372.1
12.5°	374.1	373.6	373.1	372.5	372.0	371.3	370.3	369.3	368.4	367.4	367.8
15°	366.6	366.2	365.7	365.2	364.7	363.9	362.8	361.7	360.7	359.6	360.0
17.5°	357.2	356.7	356.2	355.7	355.2	354.4	353.4	352.2	351.1	350.1	350.4
20°	350.3	349.8	349.4	348.9	348.4	347.6	346.4	345.3	344.1	343.0	343.2
22.5°	343.6	342.8	342.2	341.4	340.8	339.9	338.8	337.7	336.6	335.6	335.6
25°	331.8	331.2	330.5	329.9	329.2	328.2	326.8	325.4	324.0	322.6	322.8
27.5°	318.5	318.0	317.3	316.7	316.2	315.3	314.2	313.1	312.0	310.9	310.6
30°	309.7	309.0	308.3	307.7	307.0	306.1	304.8	303.6	302.3	301.1	300.8
32.5°	300.1	299.6	299.1	298.6	298.1	297.1	295.8	294.6	293.3	292.0	291.5
35°	286.3	285.4	284.6	283.8	283.0	281.9	280.6	279.3	278.0	276.6	276.1
37.5°	270.7	269.9	269.2	268.5	267.7	266.8	265.5	264.2	262.8	261.5	260.9
40°	260.0	259.3	258.7	258.0	257.4	256.4	255.0	253.7	252.4	251.1	250.4
42.5°	249.6	249.0	248.3	247.7	247.0	246.0	244.7	243.4	242.1	240.8	239.9
45°	232.9	232.4	231.8	231.2	230.6	229.8	228.5	227.3	226.1	224.8	223.9
47.5°	216.4	215.8	215.3	214.7	214.2	213.3	212.0	210.8	209.5	208.1	207.2
50°	204.8	204.4	204.0	203.6	203.2	202.4	201.2	200.1	198.9	197.8	196.7
52.5°	193.6	193.0	192.5	191.9	191.4	190.5	189.5	188.4	187.3	186.2	185.2
55°	176.3	175.8	175.3	174.8	174.3	173.6	172.6	171.6	170.6	169.7	168.6
57.5°	159.0	158.6	158.2	157.8	157.4	156.6	155.6	154.5	153.4	152.3	151.3
60°	147.4	147.1	146.8	146.4	146.1	145.4	144.2	143.1	141.9	140.7	139.8
62.5°	136.2	135.6	135.1	134.6	134.0	133.3	132.4	131.6	130.7	129.8	128.9
65°	118.9	118.4	117.9	117.4	116.9	116.3	115.4	114.6	113.8	113.0	112.2
67.5°	101.3	100.9	100.5	100.1	99.8	99.2	98.4	97.7	96.9	96.2	95.6
70°	90.3	90.0	89.7	89.4	89.0	88.5	87.8	87.1	86.3	85.5	85.0
72.5°	79.1	78.8	78.4	78.1	77.8	77.4	76.9	76.5	76.0	75.5	74.9
75°	62.2	62.0	61.9	61.7	61.6	61.3	60.9	60.4	60.0	59.6	59.1
77.5°	47.1	46.8	46.6	46.3	46.0	45.7	45.6	45.4	45.2	45.1	44.8
80°	37.0	36.9	36.9	36.8	36.7	36.6	36.4	36.3	36.1	36.0	35.7
82.5°	27.6	27.6	27.6	27.5	27.5	27.4	27.3	27.2	27.1	27.1	26.7
85°	15.2	15.1	15.0	14.9	14.8	14.8	14.7	14.6	14.5	14.4	14.2
87.5°	5.5	5.9	6.3	6.6	6.9	7.3	7.5	7.7	7.9	8.2	8.2
90°	1.0	3.4	5.9	8.3	10.8	12.9	14.6	16.4	18.2	20.0	21.0
92.5°	20.1	19.9	19.7	19.5	19.2	19.6	20.5	21.4	22.3	23.2	23.7
95°	64.8	57.5	50.2	42.9	35.5	32.7	34.2	35.8	37.3	38.9	40.0
97.5°	128.7	108.0	87.4	66.9	46.2	37.7	41.3	44.8	48.5	52.1	52.9
100°	176.5	146.2	115.8	85.4	55.1	41.7	45.6	49.3	53.1	56.8	58.6
102.5°	229.2	222.7	216.3	209.9	203.5	184.5	153.0	121.5	89.9	58.5	60.7
105°	303.2	309.8	316.5	323.1	329.8	302.9	242.4	181.8	121.3	60.8	63.3
107.5°	387.6	392.9	398.3	403.7	409.0	375.4	302.9	230.3	157.8	85.2	82.7
110°	441.8	446.5	451.1	455.8	460.4	430.7	366.7	302.6	238.6	174.6	152.4



TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	492.8	497.0	501.1	505.2	509.4	503.5	487.7	471.9	456.1	440.2	359.4
115°	573.5	577.2	581.0	584.7	588.6	593.2	598.8	604.3	609.8	615.4	512.7
117.5°	645.5	649.7	653.9	658.1	662.3	666.3	670.1	673.9	677.8	681.6	656.7
120°	698.1	701.5	704.7	708.1	711.4	715.1	719.1	723.1	727.1	731.0	733.7
122.5°	742.8	746.3	749.8	753.3	756.8	760.8	765.1	769.4	773.8	778.1	779.7
125°	810.8	813.7	816.6	819.5	822.3	825.9	830.1	834.3	838.5	842.8	844.3
127.5°	872.5	875.6	878.8	882.1	885.3	888.4	891.5	894.7	897.8	901.0	903.3
130°	911.6	915.1	918.7	922.2	925.8	928.7	931.2	933.6	936.0	938.5	940.9
132.5°	951.5	954.5	957.5	960.5	963.5	966.2	968.7	971.1	973.5	976.0	978.0
135°	1003.3	1006.8	1010.4	1013.9	1017.5	1020.3	1022.2	1024.3	1026.2	1028.3	1030.5
137.5°	1055.7	1058.3	1060.7	1063.2	1065.7	1068.0	1070.3	1072.6	1074.8	1077.1	1079.3
140°	1090.1	1091.8	1093.6	1095.4	1097.1	1099.3	1101.7	1104.2	1106.6	1109.1	1111.0
142.5°	1118.8	1120.4	1122.0	1123.6	1125.2	1127.4	1130.2	1132.9	1135.7	1138.6	1140.4
145°	1163.8	1163.7	1163.4	1163.2	1163.0	1164.7	1168.6	1172.3	1176.1	1179.8	1181.4
147.5°	1203.1	1202.3	1201.5	1200.6	1199.8	1201.3	1204.9	1208.7	1212.4	1216.1	1217.3
150°	1228.7	1227.2	1225.6	1224.0	1222.5	1223.5	1227.0	1230.6	1234.1	1237.7	1239.0
152.5°	1250.3	1248.5	1246.8	1245.0	1243.3	1244.1	1247.5	1250.9	1254.3	1257.6	1259.0
155°	1281.6	1279.5	1277.6	1275.5	1273.6	1273.9	1276.6	1279.2	1281.9	1284.6	1285.9
157.5°	1306.1	1304.4	1302.7	1301.1	1299.3	1299.4	1301.3	1303.2	1305.0	1306.9	1308.4
160°	1320.5	1319.2	1317.8	1316.5	1315.2	1315.2	1316.5	1317.8	1319.2	1320.5	1321.8
162.5°	1333.3	1331.9	1330.6	1329.3	1327.9	1327.8	1328.9	1330.1	1331.3	1332.4	1333.9
165°	1350.4	1349.1	1347.7	1346.4	1345.1	1344.8	1345.4	1346.1	1346.7	1347.4	1348.9
167.5°	1363.2	1361.8	1360.5	1359.2	1357.8	1357.5	1358.1	1358.7	1359.3	1359.9	1361.5
170°	1370.4	1369.0	1367.7	1366.4	1365.0	1364.6	1365.0	1365.5	1365.9	1366.4	1367.9
172.5°	1375.1	1373.8	1372.5	1371.1	1369.8	1369.4	1369.8	1370.2	1370.7	1371.1	1372.6
175°	1381.3	1379.7	1378.2	1376.6	1375.1	1374.5	1375.0	1375.4	1375.9	1376.3	1377.9
177.5°	1382.3	1381.0	1379.8	1378.6	1377.3	1376.8	1377.0	1377.1	1377.3	1377.5	1378.8
180°	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3



TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	385.1	385.1	385.1	385.1	385.1	385.1	385.1	385.1
2.5°	383.5	384.2	384.8	385.1	385.0	384.8	384.7	384.6
5°	381.0	381.6	382.3	382.5	382.4	382.2	382.0	381.9
7.5°	376.7	377.3	378.0	378.2	378.1	377.8	377.6	377.5
10°	372.8	373.5	374.1	374.3	374.1	373.8	373.6	373.3
12.5°	368.3	368.7	369.2	369.3	369.2	368.9	368.8	368.6
15°	360.3	360.6	360.9	360.9	360.5	360.1	359.7	359.3
17.5°	350.8	351.2	351.6	351.6	351.1	350.8	350.4	350.0
20°	343.5	343.7	344.0	343.9	343.6	343.2	342.9	342.6
22.5°	335.7	335.7	335.7	335.7	335.5	335.3	335.1	334.9
25°	322.9	323.1	323.3	323.3	323.1	322.9	322.8	322.6
27.5°	310.4	310.1	309.9	309.6	309.2	308.8	308.4	308.0
30°	300.6	300.4	300.1	299.9	299.5	299.2	298.9	298.5
32.5°	291.1	290.6	290.2	289.8	289.4	289.1	288.8	288.5
35°	275.7	275.2	274.7	274.3	273.9	273.5	273.0	272.6
37.5°	260.2	259.7	259.0	258.5	258.1	257.7	257.4	257.0
40°	249.6	248.9	248.2	247.6	247.3	247.0	246.6	246.3
42.5°	239.1	238.3	237.5	236.8	236.4	235.9	235.5	235.1
45°	223.0	222.1	221.2	220.5	220.2	219.9	219.6	219.2
47.5°	206.3	205.3	204.3	203.6	203.2	202.7	202.2	201.7
50°	195.5	194.3	193.1	192.4	192.0	191.6	191.2	190.8
52.5°	184.3	183.4	182.4	181.6	181.1	180.6	180.0	179.4
55°	167.6	166.6	165.7	165.0	164.6	164.1	163.7	163.3
57.5°	150.3	149.4	148.4	147.7	147.5	147.2	146.8	146.5
60°	138.9	138.0	137.1	136.6	136.3	136.1	135.8	135.6
62.5°	128.1	127.3	126.5	125.9	125.6	125.2	124.9	124.6
65°	111.5	110.7	110.0	109.4	109.0	108.6	108.2	107.8
67.5°	95.1	94.5	93.9	93.4	93.1	92.8	92.5	92.1
70°	84.4	83.8	83.2	82.8	82.5	82.1	81.8	81.4
72.5°	74.4	73.8	73.2	72.7	72.5	72.2	72.0	71.7
75°	58.6	58.1	57.6	57.5	57.6	57.8	58.0	58.1
77.5°	44.6	44.4	44.1	43.9	43.6	43.5	43.2	43.0
80°	35.5	35.2	35.0	34.7	34.6	34.4	34.2	34.1
82.5°	26.4	26.1	25.8	25.6	25.6	25.5	25.5	25.5
85°	13.9	13.7	13.5	13.3	13.2	13.1	13.0	13.0
87.5°	8.2	8.2	8.2	8.2	8.3	8.3	8.3	8.3
90°	22.2	23.2	24.4	25.2	25.6	26.0	26.5	26.9
92.5°	24.3	24.9	25.4	25.8	26.1	26.4	26.7	26.9
95°	41.1	42.2	43.3	43.8	43.5	43.3	43.1	42.9
97.5°	53.8	54.7	55.6	56.2	56.4	56.7	57.0	57.2
100°	60.4	62.1	63.9	65.1	65.5	66.0	66.4	66.9
102.5°	63.0	65.4	67.7	69.1	69.7	70.4	71.0	71.6
105°	65.7	68.2	70.6	72.2	73.1	74.0	74.9	75.8
107.5°	80.2	77.7	75.3	74.4	75.3	76.2	77.1	78.0
110°	130.2	108.0	85.9	75.3	76.1	77.0	77.9	78.8





TEST NUMBER: P331487-930

CATALOG NUMBER: S122DIW-S290D1240U930-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	278.5	197.7	116.8	76.7	77.5	78.2	78.8	79.6
115°	410.1	307.5	204.9	145.6	129.6	113.7	97.8	81.8
117.5°	631.9	607.1	582.3	543.6	491.2	438.8	386.4	333.9
120°	736.4	739.0	741.7	728.1	698.1	668.2	638.3	608.4
122.5°	781.3	782.9	784.5	782.4	776.6	770.8	765.0	759.1
125°	845.9	847.4	849.0	850.0	850.7	851.4	852.1	852.7
127.5°	905.5	907.8	910.0	911.3	911.3	911.5	911.6	911.7
130°	943.4	945.8	948.2	949.3	949.1	948.9	948.7	948.4
132.5°	980.2	982.2	984.3	985.2	985.0	984.8	984.6	984.4
135°	1032.7	1034.9	1037.1	1038.0	1037.5	1037.1	1036.7	1036.2
137.5°	1081.4	1083.6	1085.8	1086.5	1085.7	1085.0	1084.3	1083.5
140°	1113.0	1115.0	1117.0	1117.4	1116.3	1115.2	1114.1	1113.0
142.5°	1142.2	1144.0	1145.8	1146.1	1145.1	1143.9	1142.8	1141.7
145°	1182.9	1184.5	1186.0	1186.3	1185.1	1184.1	1182.9	1181.9
147.5°	1218.5	1219.6	1220.7	1220.8	1219.9	1219.0	1218.1	1217.2
150°	1240.3	1241.7	1243.0	1243.1	1242.0	1240.9	1239.7	1238.7
152.5°	1260.3	1261.6	1263.0	1262.9	1261.4	1260.0	1258.5	1257.0
155°	1287.2	1288.6	1289.9	1289.6	1287.8	1286.1	1284.3	1282.5
157.5°	1309.9	1311.4	1313.0	1312.8	1311.1	1309.4	1307.7	1305.9
160°	1323.1	1324.5	1325.8	1325.7	1324.1	1322.6	1321.0	1319.5
162.5°	1335.5	1336.9	1338.5	1338.2	1336.4	1334.4	1332.5	1330.6
165°	1350.5	1352.0	1353.6	1353.6	1352.0	1350.5	1348.9	1347.4
167.5°	1363.0	1364.6	1366.1	1366.0	1363.9	1362.0	1359.9	1358.0
170°	1369.5	1371.0	1372.6	1372.3	1370.4	1368.3	1366.4	1364.3
172.5°	1374.2	1375.7	1377.3	1377.1	1375.1	1373.1	1371.1	1369.1
175°	1379.4	1381.0	1382.5	1382.2	1380.0	1377.8	1375.5	1373.3
177.5°	1380.0	1381.2	1382.5	1382.3	1380.7	1379.1	1377.5	1375.9
180°	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3	1378.3

(END OF REPORT)