

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: P331511-840

Luminaire Tested: **S122DIW-S485D970U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331511-840  
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-S485D970U840-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5906.9 lumens  
Efficiency: N/A  
Efficacy: 130.7 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

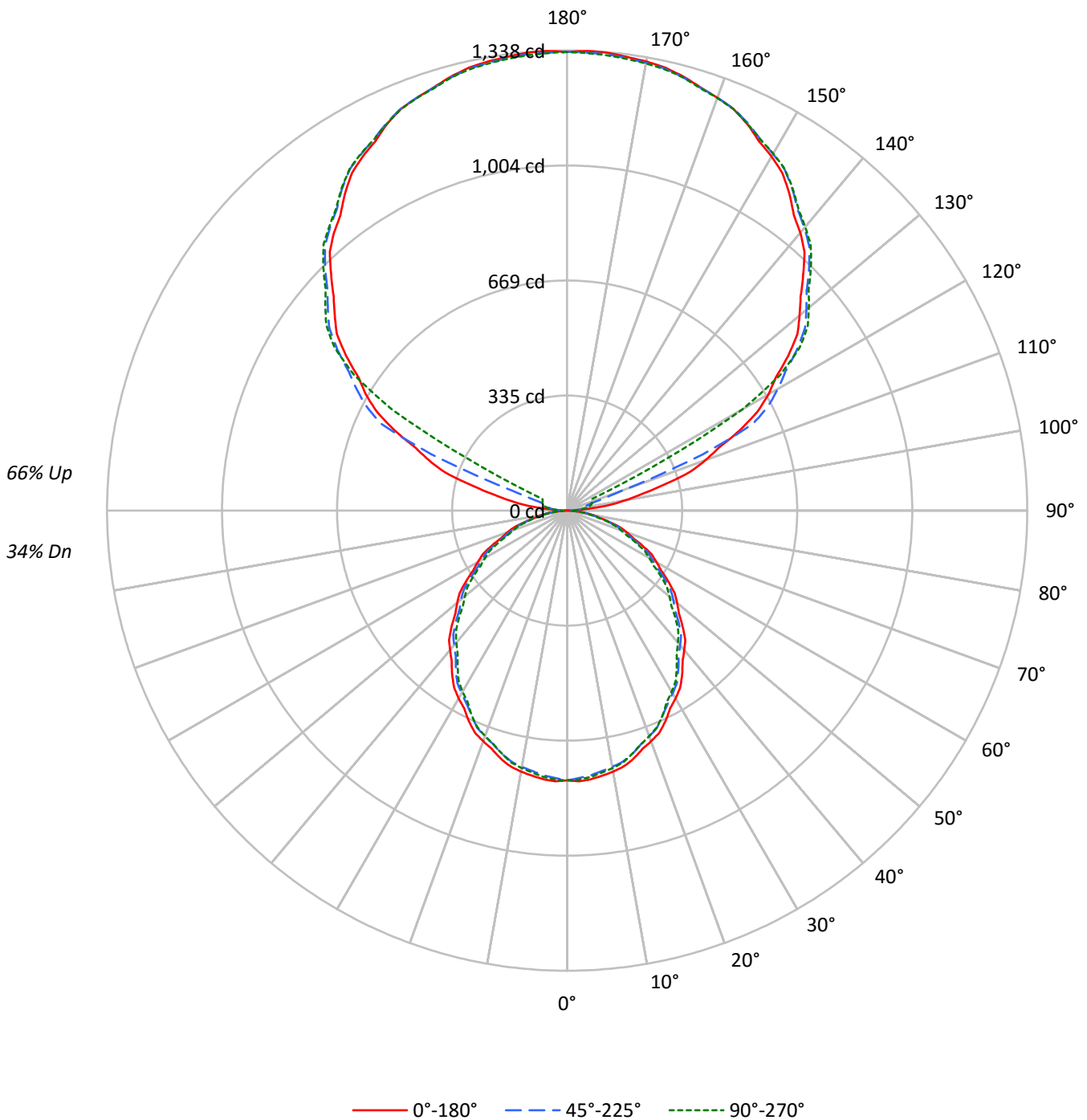
Input Watts (W): 45.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-F

### Luminous Intensity Polar Plot





TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-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	50	30	10	0	
RCR																						
0	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34				
1	94	90	86	83	85	81	78	75	65	63	61	50	49	47	36	36	35	28				
2	86	78	73	67	77	71	66	62	57	53	50	44	42	40	32	31	29	24				
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	27	25	20				
4	71	61	53	47	64	55	49	44	45	40	36	35	31	29	25	23	21	17				
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	21	19	15				
6	60	48	41	35	54	44	37	32	36	31	27	28	24	22	21	18	16	13				
7	56	44	36	31	50	40	33	28	32	27	24	25	22	19	19	16	15	12				
8	52	40	32	27	46	36	29	25	29	24	21	23	20	17	17	15	13	11				
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	14	12	9				
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	12	11	9				

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

	0°	45°	90°
0°	12665	12665	12665
5°	12713	12530	12603
10°	12637	12403	12463
15°	12481	12242	12227
20°	12259	12000	11986
25°	12039	11703	11703
30°	11757	11432	11332
35°	11491	11105	10941
40°	11160	10779	10570
45°	10832	10453	10195
50°	10477	10115	9756
55°	10106	9723	9362
60°	9691	9255	8913
65°	9249	8787	8382
70°	8686	8224	7832
75°	7904	7573	7392
80°	7011	6797	6453
85°	5724	5446	4891



TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	73.8	1.2
10°-20°	207.5	3.5
20°-30°	305.0	5.2
30°-40°	354.3	6.0
40°-50°	354.0	6.0
50°-60°	308.7	5.2
60°-70°	228.2	3.9
70°-80°	129.3	2.2
80°-90°	38.0	0.6
90°-100°	44.5	0.8
100°-110°	163.1	2.8
110°-120°	436.1	7.4
120°-130°	719.8	12.2
130°-140°	765.5	13.0
140°-150°	711.5	12.0
150°-160°	572.1	9.7
160°-170°	368.6	6.2
170°-180°	126.9	2.1
0°-30°	586.3	9.9
0°-40°	940.7	15.9
0°-60°	1603.3	27.1
0°-90°	1998.8	33.8
90°-120°	643.7	10.9
90°-150°	2840.5	48.1
90°-180°	3908.0	66.2
0°-180°	5906.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	784	784	784	784	784	
5°	784	781	773	779	778	74
15°	747	742	732	735	732	210
25°	676	669	657	658	657	311
35°	583	575	563	559	555	364
45°	474	469	458	450	446	366
55°	359	354	345	337	333	321
65°	242	237	230	223	219	239
75°	127	125	121	117	118	135
85°	31	30	29	27	26	35
90°	1	11	19	24	26	4
95°	63	33	38	42	42	77
105°	293	306	59	69	73	313
115°	555	572	595	170	79	546
125°	784	797	815	822	825	699
135°	971	986	995	1004	1003	750
145°	1126	1126	1142	1148	1144	704
155°	1240	1232	1243	1248	1241	571
165°	1307	1301	1304	1310	1304	369
175°	1336	1330	1332	1338	1329	127
180°	1334	1334	1334	1334	1334	



TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	784.4	784.4	784.4	784.4	784.4	784.4	784.4	784.4	784.4	784.4	784.4
2.5°	788.0	787.3	786.7	786.0	785.3	784.3	782.7	781.3	779.8	778.3	779.7
5°	784.4	783.7	783.0	782.3	781.7	780.4	778.6	776.8	774.9	773.1	774.4
7.5°	777.4	776.4	775.4	774.3	773.3	771.8	769.9	768.1	766.2	764.3	765.7
10°	770.8	769.6	768.4	767.3	766.1	764.5	762.4	760.5	758.5	756.5	757.8
12.5°	761.7	760.7	759.6	758.6	757.6	756.1	754.1	752.0	750.0	748.0	748.9
15°	746.7	745.7	744.7	743.7	742.7	741.0	738.8	736.7	734.5	732.4	733.0
17.5°	727.3	726.4	725.4	724.4	723.4	721.8	719.5	717.3	715.1	712.9	713.7
20°	713.5	712.5	711.4	710.4	709.4	707.8	705.4	703.1	700.7	698.4	698.9
22.5°	699.6	698.2	696.8	695.4	694.0	692.2	689.9	687.7	685.5	683.3	683.4
25°	675.8	674.4	673.1	671.8	670.4	668.3	665.5	662.6	659.7	656.9	657.2
27.5°	648.6	647.4	646.2	645.0	643.8	642.1	639.9	637.5	635.3	633.1	632.6
30°	630.6	629.1	627.8	626.5	625.1	623.2	620.7	618.2	615.7	613.2	612.7
32.5°	611.2	610.2	609.0	607.9	606.9	605.0	602.4	599.8	597.1	594.5	593.6
35°	583.0	581.3	579.7	577.9	576.3	574.1	571.5	568.8	566.0	563.4	562.4
37.5°	551.2	549.7	548.3	546.7	545.2	543.2	540.5	537.9	535.1	532.5	531.2
40°	529.5	528.1	526.7	525.4	524.1	522.1	519.4	516.7	514.0	511.4	509.9
42.5°	508.4	507.0	505.6	504.3	503.0	501.0	498.3	495.6	492.9	490.2	488.6
45°	474.4	473.2	472.0	470.9	469.7	467.9	465.3	462.8	460.3	457.8	456.0
47.5°	440.6	439.5	438.4	437.3	436.2	434.3	431.7	429.1	426.5	423.8	421.9
50°	417.1	416.3	415.4	414.5	413.7	412.1	409.8	407.5	405.1	402.7	400.4
52.5°	394.2	393.0	391.9	390.8	389.7	388.1	385.9	383.6	381.4	379.2	377.3
55°	359.0	358.0	357.0	356.0	355.0	353.5	351.4	349.4	347.4	345.4	343.5
57.5°	323.7	322.9	322.0	321.3	320.5	319.0	316.8	314.6	312.4	310.1	308.1
60°	300.1	299.5	298.8	298.1	297.5	296.0	293.7	291.2	288.9	286.6	284.8
62.5°	277.2	276.2	275.1	274.0	273.0	271.6	269.7	267.9	266.1	264.3	262.6
65°	242.1	241.1	240.0	239.0	238.1	236.7	235.1	233.4	231.7	230.0	228.5
67.5°	206.3	205.5	204.7	203.9	203.1	202.0	200.5	198.9	197.4	195.9	194.8
70°	184.0	183.4	182.7	182.0	181.4	180.3	178.7	177.2	175.7	174.2	173.1
72.5°	161.1	160.5	159.8	159.1	158.4	157.6	156.6	155.6	154.7	153.7	152.5
75°	126.7	126.3	126.0	125.7	125.3	124.8	123.9	123.1	122.3	121.4	120.4
77.5°	95.9	95.3	94.8	94.2	93.6	93.2	92.9	92.5	92.2	91.9	91.4
80°	75.4	75.2	75.1	74.9	74.7	74.5	74.1	73.8	73.5	73.1	72.6
82.5°	56.1	56.0	56.0	56.0	55.9	55.8	55.6	55.4	55.2	55.0	54.4
85°	30.9	30.8	30.6	30.4	30.3	30.1	29.9	29.8	29.6	29.4	28.9
87.5°	11.0	11.2	11.4	11.7	11.9	12.0	12.1	12.1	12.2	12.3	12.1
90°	1.0	3.3	5.7	8.1	10.4	12.4	14.1	15.9	17.6	19.3	20.4
92.5°	19.5	19.3	19.1	18.9	18.7	19.0	19.8	20.7	21.5	22.4	22.9
95°	62.7	55.6	48.6	41.5	34.4	31.6	33.1	34.6	36.2	37.7	38.7
97.5°	124.5	104.5	84.6	64.6	44.7	36.5	40.0	43.4	46.9	50.4	51.2
100°	170.8	141.4	112.0	82.7	53.3	40.4	44.0	47.7	51.4	55.0	56.8
102.5°	221.8	215.5	209.3	203.1	196.8	178.5	148.0	117.5	87.1	56.6	58.8
105°	293.4	299.8	306.2	312.7	319.1	293.1	234.5	175.9	117.4	58.9	61.2
107.5°	375.0	380.2	385.4	390.5	395.8	363.2	293.1	222.8	152.6	82.4	80.0
110°	427.5	432.0	436.5	441.0	445.5	416.8	354.8	292.9	230.9	168.8	147.4



TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	476.9	480.9	484.8	488.9	492.8	487.2	471.9	456.6	441.2	426.0	347.7
115°	554.8	558.5	562.2	565.8	569.5	573.9	579.3	584.6	590.1	595.4	496.0
117.5°	624.5	628.6	632.7	636.7	640.9	644.7	648.4	652.1	655.8	659.4	635.4
120°	675.5	678.7	681.9	685.1	688.3	691.9	695.7	699.6	703.5	707.3	709.9
122.5°	718.7	722.1	725.5	728.8	732.3	736.1	740.2	744.5	748.6	752.9	754.4
125°	784.5	787.3	790.1	792.8	795.7	799.1	803.1	807.3	811.3	815.4	816.9
127.5°	844.1	847.3	850.3	853.4	856.5	859.6	862.6	865.7	868.7	871.7	873.9
130°	882.0	885.4	888.9	892.2	895.6	898.6	900.9	903.3	905.6	908.1	910.4
132.5°	920.6	923.5	926.5	929.3	932.2	934.8	937.3	939.6	941.9	944.3	946.3
135°	970.8	974.2	977.7	981.1	984.5	987.1	989.1	991.0	992.9	994.9	997.0
137.5°	1021.5	1023.9	1026.3	1028.7	1031.1	1033.4	1035.6	1037.7	1040.0	1042.2	1044.3
140°	1054.7	1056.4	1058.1	1059.9	1061.6	1063.6	1065.9	1068.3	1070.7	1073.1	1075.0
142.5°	1082.5	1084.0	1085.6	1087.1	1088.6	1090.8	1093.5	1096.2	1098.9	1101.6	1103.4
145°	1126.1	1125.9	1125.7	1125.5	1125.3	1127.0	1130.6	1134.3	1137.9	1141.6	1143.1
147.5°	1164.2	1163.3	1162.5	1161.6	1160.8	1162.3	1165.9	1169.4	1173.1	1176.7	1177.8
150°	1188.8	1187.3	1185.8	1184.4	1182.9	1183.8	1187.2	1190.6	1194.1	1197.5	1198.8
152.5°	1209.7	1208.0	1206.3	1204.7	1203.0	1203.8	1207.0	1210.3	1213.6	1216.8	1218.1
155°	1240.0	1238.0	1236.1	1234.2	1232.2	1232.5	1235.2	1237.7	1240.3	1242.8	1244.2
157.5°	1263.7	1262.1	1260.4	1258.8	1257.2	1257.3	1259.1	1260.9	1262.6	1264.5	1266.0
160°	1277.6	1276.4	1275.1	1273.7	1272.4	1272.4	1273.7	1275.1	1276.4	1277.6	1278.9
162.5°	1290.0	1288.7	1287.4	1286.1	1284.9	1284.8	1285.9	1287.0	1288.1	1289.2	1290.6
165°	1306.6	1305.3	1303.9	1302.7	1301.4	1301.1	1301.7	1302.3	1303.0	1303.6	1305.1
167.5°	1318.9	1317.6	1316.4	1315.0	1313.7	1313.4	1314.0	1314.6	1315.2	1315.9	1317.3
170°	1325.9	1324.5	1323.3	1322.0	1320.7	1320.3	1320.7	1321.1	1321.6	1322.0	1323.5
172.5°	1330.5	1329.2	1327.9	1326.7	1325.3	1324.9	1325.3	1325.8	1326.2	1326.7	1328.2
175°	1336.5	1334.9	1333.4	1332.0	1330.5	1329.9	1330.4	1330.8	1331.2	1331.6	1333.1
177.5°	1337.5	1336.3	1335.0	1333.8	1332.6	1332.1	1332.3	1332.4	1332.6	1332.8	1334.0
180°	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5



TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	784.4	784.4	784.4	784.4	784.4	784.4	784.4	784.4
2.5°	781.0	782.3	783.7	784.3	784.0	783.7	783.5	783.2
5°	775.8	777.1	778.4	778.9	778.6	778.2	777.9	777.6
7.5°	767.0	768.3	769.7	770.1	769.8	769.4	769.0	768.7
10°	759.1	760.5	761.8	762.2	761.7	761.2	760.7	760.2
12.5°	749.9	750.8	751.7	752.0	751.6	751.3	750.9	750.5
15°	733.7	734.4	735.0	734.9	734.1	733.3	732.5	731.5
17.5°	714.4	715.2	716.0	715.9	715.1	714.4	713.6	712.8
20°	699.4	699.9	700.4	700.3	699.6	698.9	698.3	697.6
22.5°	683.5	683.6	683.7	683.6	683.2	682.8	682.4	682.0
25°	657.6	657.9	658.2	658.2	657.9	657.6	657.2	656.9
27.5°	632.1	631.6	631.1	630.5	629.7	628.8	628.0	627.2
30°	612.2	611.7	611.2	610.6	609.9	609.3	608.5	607.8
32.5°	592.7	591.8	590.9	590.1	589.4	588.8	588.0	587.3
35°	561.4	560.4	559.4	558.5	557.6	556.7	555.9	555.1
37.5°	530.0	528.8	527.6	526.4	525.6	524.8	524.0	523.3
40°	508.4	506.9	505.3	504.2	503.5	502.9	502.2	501.5
42.5°	487.0	485.3	483.6	482.4	481.4	480.5	479.6	478.6
45°	454.1	452.3	450.4	449.2	448.5	447.9	447.2	446.5
47.5°	420.0	418.0	416.1	414.7	413.6	412.7	411.7	410.7
50°	398.1	395.7	393.3	391.7	390.9	390.1	389.2	388.4
52.5°	375.4	373.3	371.4	369.9	368.8	367.7	366.6	365.5
55°	341.4	339.4	337.4	336.0	335.1	334.3	333.5	332.6
57.5°	306.2	304.2	302.3	300.9	300.2	299.6	299.0	298.3
60°	282.9	281.0	279.2	278.0	277.5	277.0	276.5	276.0
62.5°	260.8	259.1	257.4	256.3	255.6	255.0	254.4	253.7
65°	227.0	225.5	224.0	222.8	222.0	221.2	220.4	219.4
67.5°	193.6	192.4	191.3	190.4	189.7	188.9	188.3	187.6
70°	171.9	170.7	169.6	168.6	167.9	167.2	166.6	165.9
72.5°	151.4	150.2	149.1	148.1	147.6	147.0	146.5	146.0
75°	119.4	118.5	117.4	117.0	117.4	117.8	118.1	118.5
77.5°	90.9	90.4	89.9	89.4	88.9	88.5	88.0	87.5
80°	72.1	71.6	71.2	70.7	70.4	70.1	69.7	69.4
82.5°	53.8	53.1	52.5	52.1	52.1	52.0	51.9	51.9
85°	28.4	27.9	27.4	27.1	26.9	26.8	26.6	26.4
87.5°	11.9	11.7	11.5	11.4	11.4	11.3	11.3	11.2
90°	21.4	22.5	23.6	24.3	24.7	25.1	25.7	26.1
92.5°	23.5	24.0	24.6	25.0	25.2	25.5	25.8	26.1
95°	39.8	40.9	41.9	42.3	42.1	41.9	41.7	41.5
97.5°	52.1	52.9	53.8	54.3	54.6	54.8	55.1	55.3
100°	58.5	60.2	61.9	62.9	63.3	63.8	64.2	64.6
102.5°	61.0	63.2	65.4	66.9	67.5	68.1	68.7	69.3
105°	63.6	65.9	68.3	69.9	70.8	71.6	72.5	73.3
107.5°	77.6	75.2	72.8	72.0	72.9	73.7	74.6	75.4
110°	125.9	104.5	83.1	72.8	73.6	74.5	75.3	76.2





TEST NUMBER: P331511-840

CATALOG NUMBER: S122DIW-S485D970U840-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	269.4	191.3	113.0	74.2	74.9	75.6	76.3	77.1
115°	396.8	297.5	198.2	140.9	125.4	110.0	94.5	79.2
117.5°	611.4	587.4	563.4	526.0	475.2	424.5	373.9	323.1
120°	712.5	715.0	717.6	704.4	675.5	646.5	617.5	588.7
122.5°	756.0	757.5	759.0	757.0	751.3	745.8	740.1	734.6
125°	818.4	819.9	821.4	822.4	823.1	823.7	824.4	825.1
127.5°	876.2	878.3	880.5	881.6	881.8	881.9	882.0	882.1
130°	912.7	915.1	917.5	918.6	918.3	918.1	917.9	917.7
132.5°	948.4	950.4	952.4	953.3	953.0	952.8	952.6	952.4
135°	999.2	1001.3	1003.4	1004.3	1003.9	1003.4	1003.0	1002.6
137.5°	1046.3	1048.4	1050.6	1051.3	1050.6	1049.8	1049.0	1048.3
140°	1076.9	1078.8	1080.8	1081.2	1080.2	1079.0	1077.9	1076.9
142.5°	1105.1	1106.9	1108.6	1108.9	1107.9	1106.8	1105.8	1104.7
145°	1144.6	1146.1	1147.5	1147.8	1146.7	1145.6	1144.6	1143.5
147.5°	1178.9	1180.0	1181.1	1181.2	1180.3	1179.4	1178.5	1177.6
150°	1200.1	1201.3	1202.6	1202.7	1201.7	1200.6	1199.5	1198.5
152.5°	1219.4	1220.6	1221.9	1221.9	1220.5	1219.1	1217.7	1216.3
155°	1245.5	1246.7	1248.0	1247.8	1246.1	1244.4	1242.6	1240.9
157.5°	1267.4	1268.9	1270.3	1270.2	1268.5	1266.9	1265.2	1263.5
160°	1280.2	1281.4	1282.7	1282.6	1281.1	1279.6	1278.2	1276.7
162.5°	1292.1	1293.5	1295.1	1294.8	1292.9	1291.1	1289.3	1287.5
165°	1306.7	1308.2	1309.7	1309.7	1308.2	1306.7	1305.1	1303.6
167.5°	1318.8	1320.3	1321.8	1321.6	1319.7	1317.8	1315.9	1313.9
170°	1325.0	1326.5	1328.0	1327.8	1325.9	1323.9	1322.0	1320.1
172.5°	1329.6	1331.1	1332.6	1332.4	1330.5	1328.6	1326.7	1324.7
175°	1334.6	1336.2	1337.7	1337.4	1335.1	1333.0	1330.9	1328.8
177.5°	1335.2	1336.4	1337.6	1337.5	1335.8	1334.3	1332.8	1331.3
180°	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5	1333.5

(END OF REPORT)