

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: P331479-830

Luminaire Tested: **S122DIW-S290D970U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331479-830  
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-S290D970U830-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4777.8 lumens  
Efficiency: N/A  
Efficacy: 125.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

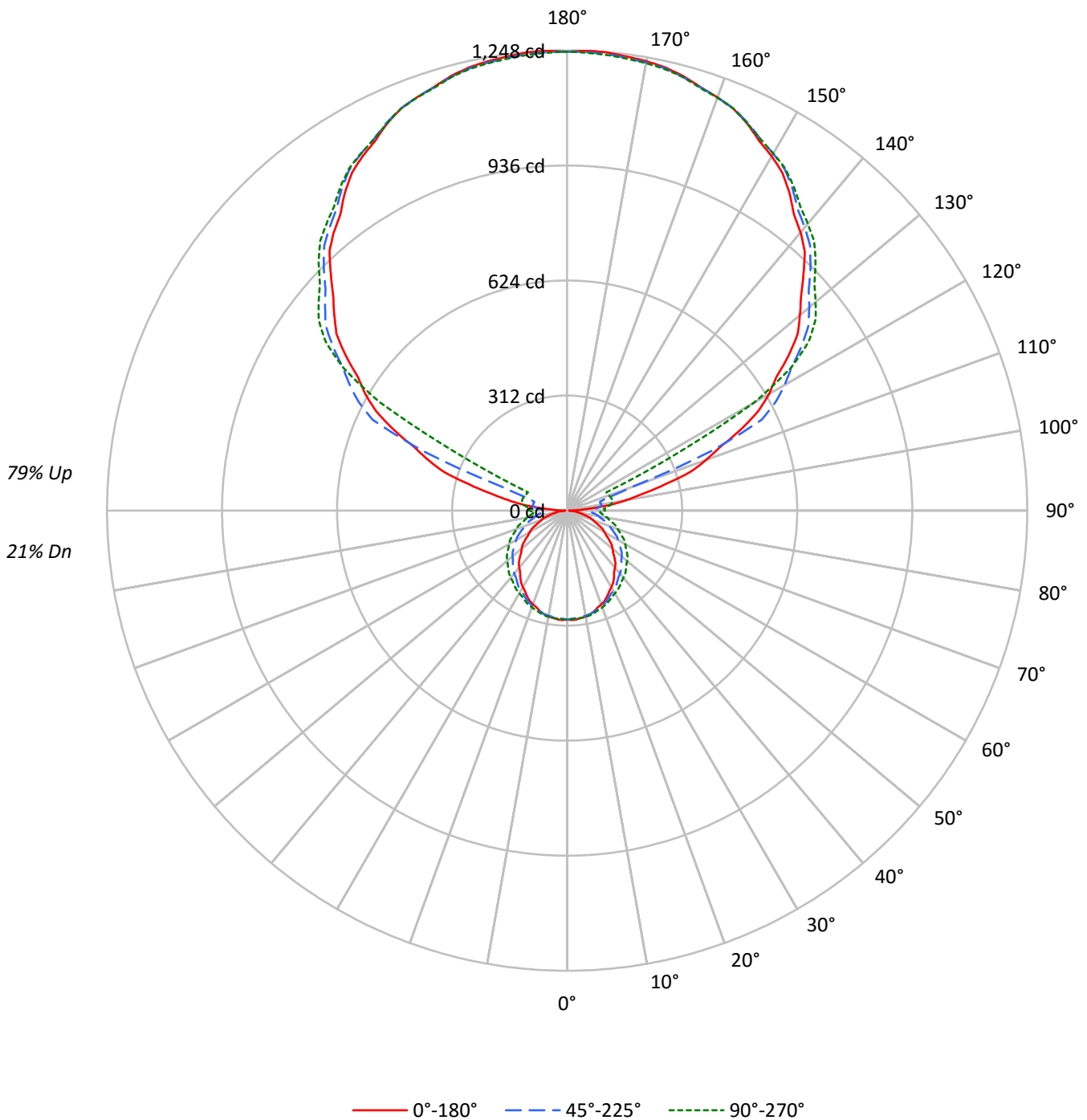
Input Watts (W): 38  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

**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	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21				
1	91	86	82	79	80	76	73	70	58	56	54	41	39	38	25	24	24	16				
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	22	20	19	13				
3	75	66	58	53	66	58	52	47	44	40	36	31	28	26	19	17	16	11				
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	17	15	14	9				
5	62	51	43	37	55	45	39	34	35	30	26	24	21	19	15	13	12	8				
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	14	12	10	7				
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	21	17	18	15	13	11	9	8	5				
9	45	34	26	21	40	30	24	19	23	18	15	16	13	11	10	8	7	5				
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	6	4				

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

	0°	45°	90°
0°	4771	4771	4771
5°	4794	4593	4573
10°	4763	4457	4407
15°	4698	4312	4229
20°	4614	4159	4059
25°	4533	4009	3902
30°	4418	3857	3747
35°	4301	3711	3638
40°	4178	3584	3528
45°	4060	3473	3434
50°	3936	3371	3343
55°	3802	3261	3248
60°	3643	3149	3150
65°	3474	3016	3031
70°	3286	2872	2904
75°	3050	2735	2786
80°	2669	2592	2667
85°	2319	2468	2574



TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	28.0	0.6
10°-20°	80.3	1.7
20°-30°	121.6	2.5
30°-40°	148.2	3.1
40°-50°	159.4	3.3
50°-60°	154.8	3.2
60°-70°	135.2	2.8
70°-80°	104.1	2.2
80°-90°	72.9	1.5
90°-100°	89.6	1.9
100°-110°	187.4	3.9
110°-120°	430.2	9.0
120°-130°	684.8	14.3
130°-140°	719.9	15.1
140°-150°	665.0	13.9
150°-160°	533.9	11.2
160°-170°	344.1	7.2
170°-180°	118.4	2.5
0°-30°	229.9	4.8
0°-40°	378.1	7.9
0°-60°	692.3	14.5
0°-90°	1004.4	21.0
90°-120°	707.2	14.8
90°-150°	2776.9	58.1
90°-180°	3773.0	79.0
0°-180°	4777.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	296	295	292	295	294	28
15°	283	283	283	287	287	80
25°	257	260	264	269	270	118
35°	221	229	237	246	249	138
45°	182	193	208	221	226	140
55°	139	155	177	192	198	124
65°	95	116	141	158	164	94
75°	53	77	104	122	128	56
85°	16	42	69	87	93	17
90°	5	40	75	95	103	6
95°	62	55	84	104	109	74
105°	276	301	92	116	125	295
115°	520	541	581	196	117	511
125°	733	746	776	793	800	654
135°	906	921	933	950	953	700
145°	1051	1051	1066	1074	1072	657
155°	1157	1150	1160	1165	1158	533
165°	1220	1215	1217	1222	1217	344
175°	1247	1242	1243	1248	1240	119
180°	1245	1245	1245	1245	1245	



TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	297.2	296.9	296.7	296.4	296.2	295.9	295.3	294.8	294.3	293.7	294.1
5°	296.3	296.1	295.8	295.5	295.1	294.7	294.2	293.6	293.0	292.5	293.0
7.5°	293.6	293.4	293.2	293.0	292.8	292.6	292.1	291.7	291.2	290.8	291.5
10°	291.6	291.4	291.2	291.1	290.9	290.6	290.3	290.0	289.7	289.5	290.2
12.5°	288.1	288.2	288.2	288.3	288.3	288.2	288.0	287.9	287.6	287.4	288.1
15°	282.6	282.8	283.0	283.1	283.3	283.4	283.4	283.4	283.4	283.4	284.3
17.5°	275.4	275.8	276.2	276.6	277.0	277.4	277.7	278.0	278.2	278.6	279.5
20°	270.6	271.1	271.5	272.0	272.5	273.0	273.3	273.7	274.1	274.5	275.5
22.5°	265.5	266.0	266.6	267.1	267.7	268.2	268.7	269.3	269.8	270.3	271.4
25°	256.9	257.6	258.3	258.9	259.6	260.3	261.2	262.0	262.9	263.7	264.9
27.5°	246.7	247.7	248.8	249.9	251.0	252.0	253.0	254.0	255.1	256.1	257.5
30°	239.8	241.0	242.2	243.5	244.7	246.0	247.2	248.5	249.7	250.9	252.4
32.5°	232.2	233.7	235.0	236.4	237.8	239.2	240.7	242.1	243.6	245.1	246.9
35°	221.4	223.0	224.6	226.2	227.8	229.5	231.4	233.2	235.0	236.8	238.8
37.5°	209.5	211.4	213.3	215.2	217.0	219.1	221.5	223.8	226.1	228.5	230.8
40°	201.7	203.8	205.9	207.9	210.0	212.4	214.9	217.5	220.1	222.6	225.1
42.5°	194.2	196.2	198.3	200.4	202.6	205.0	208.0	210.9	213.9	216.8	219.5
45°	181.5	184.1	186.7	189.3	191.8	194.7	198.1	201.4	204.7	208.1	211.0
47.5°	169.1	171.9	174.7	177.5	180.3	183.7	187.6	191.4	195.4	199.3	202.4
50°	160.6	163.5	166.5	169.4	172.4	176.0	180.3	184.5	188.8	193.1	196.3
52.5°	152.3	155.4	158.5	161.6	164.8	168.5	173.1	177.6	182.1	186.6	189.9
55°	139.1	142.6	146.0	149.4	152.9	157.0	162.0	166.9	171.9	176.8	180.3
57.5°	126.1	130.0	133.8	137.7	141.6	146.0	151.1	156.1	161.2	166.3	169.9
60°	116.9	121.0	125.1	129.1	133.3	138.0	143.5	148.8	154.3	159.7	163.3
62.5°	108.7	112.9	117.2	121.4	125.6	130.4	135.9	141.3	146.8	152.2	156.0
65°	95.0	99.7	104.3	109.1	113.7	118.9	124.4	130.1	135.7	141.3	145.2
67.5°	82.6	87.5	92.3	97.2	102.1	107.4	113.1	118.9	124.6	130.4	134.3
70°	73.6	78.6	83.5	88.5	93.4	98.9	104.7	110.7	116.6	122.4	126.6
72.5°	65.4	70.5	75.6	80.7	85.9	91.3	97.4	103.3	109.3	115.3	119.3
75°	52.7	58.0	63.3	68.6	74.0	79.6	85.8	91.9	97.9	104.1	108.1
77.5°	40.3	45.9	51.5	57.0	62.7	68.5	74.7	80.9	87.1	93.2	97.4
80°	32.1	37.9	43.7	49.5	55.3	61.4	67.5	73.7	79.8	86.1	90.0
82.5°	25.3	31.0	36.8	42.4	48.2	54.2	60.4	66.7	73.0	79.2	83.2
85°	15.5	21.3	27.2	33.1	39.0	45.0	51.1	57.2	63.2	69.4	73.3
87.5°	8.6	14.7	20.8	26.9	33.0	39.3	45.7	52.1	58.5	64.9	69.0
90°	5.2	12.9	20.6	28.4	36.1	43.7	51.5	59.2	66.8	74.6	79.4
92.5°	22.1	27.1	32.0	36.9	41.8	47.7	54.4	61.0	67.7	74.4	78.6
95°	61.9	59.9	57.7	55.6	53.4	55.9	63.1	70.1	77.3	84.4	89.0
97.5°	119.1	104.5	89.9	75.3	60.6	57.7	66.4	75.1	83.9	92.6	96.9
100°	162.4	138.6	114.6	90.7	66.8	59.2	68.0	76.7	85.4	94.2	99.2
102.5°	209.6	207.1	204.4	201.9	199.3	186.3	163.1	139.8	116.5	93.2	98.7
105°	276.0	284.7	293.4	302.2	310.9	290.5	240.8	191.1	141.5	91.8	97.3
107.5°	352.0	359.1	366.2	373.2	380.2	353.4	292.6	231.8	171.0	110.2	111.2
110°	400.7	406.8	412.9	419.1	425.1	401.6	348.4	295.2	242.0	188.9	171.9



TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	446.8	452.1	457.4	462.8	468.1	465.8	456.0	446.1	436.2	426.4	356.5
115°	519.5	524.1	528.5	532.9	537.3	544.2	553.6	562.8	572.1	581.4	491.5
117.5°	584.2	588.6	593.1	597.7	602.1	608.0	615.5	622.8	630.3	637.6	618.0
120°	631.7	635.1	638.5	641.9	645.3	650.6	658.1	665.4	672.9	680.3	685.3
122.5°	672.0	675.4	678.7	682.0	685.3	690.7	698.2	705.8	713.2	720.8	724.8
125°	733.1	735.7	738.3	740.8	743.5	748.2	755.1	761.9	768.7	775.6	779.6
127.5°	788.7	791.5	794.3	797.1	799.8	803.9	809.2	814.5	819.8	825.1	829.5
130°	824.1	827.2	830.3	833.4	836.5	840.1	844.3	848.5	852.7	856.9	861.4
132.5°	860.1	862.7	865.3	867.9	870.5	873.7	877.5	881.3	885.0	888.7	892.8
135°	906.4	909.6	912.9	916.1	919.3	922.3	925.0	927.7	930.5	933.3	937.3
137.5°	953.9	956.0	958.3	960.5	962.7	965.1	967.5	970.0	972.4	974.9	978.6
140°	984.9	986.3	987.8	989.3	990.8	992.8	995.1	997.6	999.9	1002.4	1005.7
142.5°	1010.8	1012.1	1013.4	1014.8	1016.2	1018.1	1020.7	1023.2	1025.8	1028.3	1031.2
145°	1051.0	1050.8	1050.7	1050.5	1050.3	1051.9	1055.3	1058.7	1062.1	1065.5	1067.4
147.5°	1086.6	1085.7	1085.0	1084.2	1083.5	1084.8	1088.2	1091.5	1094.9	1098.3	1099.4
150°	1109.6	1108.1	1106.7	1105.4	1104.0	1104.8	1108.1	1111.3	1114.5	1117.7	1118.9
152.5°	1129.1	1127.5	1125.9	1124.4	1122.8	1123.5	1126.5	1129.6	1132.7	1135.7	1136.9
155°	1157.3	1155.5	1153.7	1151.9	1150.1	1150.4	1152.8	1155.2	1157.6	1160.0	1161.2
157.5°	1179.5	1178.0	1176.4	1174.9	1173.4	1173.5	1175.2	1176.9	1178.5	1180.2	1181.6
160°	1192.4	1191.3	1190.1	1188.8	1187.6	1187.6	1188.8	1190.1	1191.3	1192.4	1193.6
162.5°	1204.0	1202.8	1201.6	1200.3	1199.2	1199.1	1200.1	1201.2	1202.2	1203.2	1204.6
165°	1219.5	1218.2	1217.0	1215.9	1214.7	1214.4	1214.9	1215.5	1216.2	1216.7	1218.1
167.5°	1231.0	1229.7	1228.6	1227.4	1226.2	1225.9	1226.4	1227.0	1227.6	1228.1	1229.5
170°	1237.5	1236.2	1235.1	1233.9	1232.7	1232.3	1232.7	1233.0	1233.5	1233.9	1235.3
172.5°	1241.8	1240.6	1239.3	1238.2	1237.0	1236.6	1237.0	1237.4	1237.7	1238.2	1239.6
175°	1247.4	1245.9	1244.5	1243.2	1241.8	1241.2	1241.7	1242.1	1242.5	1242.8	1244.3
177.5°	1248.3	1247.2	1246.0	1244.9	1243.8	1243.3	1243.5	1243.6	1243.8	1244.0	1245.1
180°	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6



TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	294.5	294.8	295.2	295.4	295.2	295.0	294.9	294.7
5°	293.6	294.2	294.7	294.9	294.8	294.7	294.6	294.5
7.5°	292.2	292.8	293.6	293.9	293.8	293.7	293.6	293.5
10°	291.0	291.7	292.5	292.8	292.8	292.7	292.6	292.5
12.5°	288.9	289.6	290.4	290.8	290.7	290.6	290.5	290.4
15°	285.1	286.1	286.9	287.3	287.2	287.1	287.0	286.9
17.5°	280.4	281.3	282.1	282.6	282.6	282.6	282.6	282.6
20°	276.5	277.6	278.6	279.2	279.2	279.2	279.2	279.2
22.5°	272.5	273.5	274.6	275.1	275.3	275.4	275.6	275.8
25°	266.1	267.2	268.3	269.0	269.3	269.6	269.8	270.1
27.5°	258.9	260.4	261.8	262.7	262.9	263.1	263.3	263.5
30°	253.9	255.5	257.0	257.9	258.2	258.4	258.7	259.0
32.5°	248.5	250.3	252.1	253.3	253.7	254.3	254.8	255.2
35°	241.0	243.1	245.2	246.6	247.2	247.9	248.5	249.2
37.5°	233.1	235.4	237.8	239.3	240.0	240.7	241.4	242.0
40°	227.6	230.1	232.5	234.2	235.1	235.9	236.8	237.6
42.5°	222.3	224.9	227.6	229.4	230.3	231.1	232.0	232.8
45°	214.0	217.0	219.9	221.9	222.8	223.8	224.7	225.6
47.5°	205.5	208.5	211.6	213.7	214.7	215.7	216.8	217.8
50°	199.5	202.8	206.0	208.2	209.2	210.3	211.3	212.4
52.5°	193.2	196.5	199.8	202.1	203.2	204.3	205.5	206.5
55°	183.7	187.1	190.6	192.8	194.1	195.4	196.6	197.8
57.5°	173.6	177.3	181.0	183.4	184.7	186.0	187.2	188.5
60°	166.9	170.6	174.2	176.6	178.0	179.3	180.7	182.0
62.5°	159.9	163.7	167.6	170.1	171.4	172.6	173.9	175.1
65°	149.1	153.0	156.9	159.5	160.7	161.9	163.2	164.4
67.5°	138.2	142.1	146.1	148.7	150.0	151.3	152.6	153.9
70°	130.6	134.7	138.8	141.5	142.6	143.7	144.9	146.0
72.5°	123.3	127.3	131.3	134.0	135.3	136.8	138.2	139.5
75°	112.3	116.3	120.5	123.1	124.3	125.5	126.8	128.0
77.5°	101.4	105.5	109.5	112.3	113.6	114.9	116.2	117.5
80°	94.1	98.0	102.1	104.7	106.0	107.4	108.7	110.0
82.5°	87.2	91.2	95.2	97.8	99.1	100.4	101.6	102.8
85°	77.4	81.3	85.4	88.0	89.4	90.7	92.0	93.3
87.5°	73.0	77.2	81.2	84.0	85.2	86.5	87.8	89.2
90°	84.2	89.0	93.8	96.9	98.5	100.0	101.6	103.1
92.5°	82.8	87.1	91.3	94.2	95.6	96.9	98.3	99.7
95°	93.6	98.2	102.8	105.6	106.5	107.4	108.4	109.3
97.5°	101.2	105.6	109.9	112.7	114.0	115.5	116.8	118.2
100°	104.4	109.5	114.6	117.9	119.3	120.8	122.2	123.8
102.5°	104.2	109.8	115.3	118.9	120.5	122.1	123.7	125.3
105°	102.8	108.4	113.9	117.5	119.4	121.3	123.1	125.0
107.5°	112.2	113.1	114.0	115.5	117.3	119.1	121.0	122.8
110°	155.0	138.0	121.0	113.4	115.3	117.2	118.9	120.8





TEST NUMBER: P331479-830

CATALOG NUMBER: S122DIW-S290D970U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	286.4	216.5	146.6	112.4	114.0	115.7	117.4	119.1
115°	401.7	312.0	222.2	170.5	157.2	143.8	130.4	117.1
117.5°	598.5	578.9	559.3	526.3	479.9	433.5	387.1	340.7
120°	690.4	695.5	700.6	690.1	664.1	638.2	612.2	586.2
122.5°	728.8	732.8	736.9	736.7	732.4	728.0	723.7	719.3
125°	783.5	787.5	791.5	794.2	795.6	797.1	798.5	800.0
127.5°	833.9	838.3	842.7	845.4	846.3	847.3	848.3	849.2
130°	865.9	870.3	874.9	877.4	878.0	878.5	879.0	879.6
132.5°	896.9	901.0	905.0	907.4	908.0	908.5	909.1	909.6
135°	941.2	945.3	949.2	951.4	951.8	952.2	952.5	952.9
137.5°	982.3	986.1	989.8	991.6	991.6	991.6	991.5	991.5
140°	1009.0	1012.3	1015.7	1017.1	1016.6	1016.2	1015.8	1015.4
142.5°	1034.1	1036.9	1039.8	1040.9	1040.5	1039.9	1039.4	1039.0
145°	1069.4	1071.4	1073.4	1074.0	1073.6	1073.0	1072.5	1072.0
147.5°	1100.4	1101.5	1102.7	1103.0	1102.3	1101.7	1101.1	1100.5
150°	1120.1	1121.2	1122.5	1122.6	1121.6	1120.6	1119.6	1118.6
152.5°	1138.1	1139.3	1140.5	1140.5	1139.2	1137.8	1136.5	1135.2
155°	1162.4	1163.6	1164.8	1164.6	1163.0	1161.4	1159.8	1158.2
157.5°	1182.9	1184.3	1185.6	1185.5	1183.9	1182.4	1180.8	1179.3
160°	1194.9	1196.0	1197.2	1197.1	1195.7	1194.3	1193.0	1191.6
162.5°	1206.0	1207.3	1208.7	1208.5	1206.7	1205.0	1203.3	1201.6
165°	1219.6	1221.0	1222.4	1222.4	1221.0	1219.6	1218.1	1216.7
167.5°	1230.9	1232.3	1233.7	1233.5	1231.7	1229.9	1228.1	1226.3
170°	1236.7	1238.0	1239.4	1239.3	1237.5	1235.7	1233.9	1232.1
172.5°	1241.0	1242.4	1243.8	1243.6	1241.8	1240.0	1238.2	1236.4
175°	1245.7	1247.1	1248.5	1248.2	1246.1	1244.2	1242.2	1240.2
177.5°	1246.2	1247.3	1248.4	1248.3	1246.8	1245.4	1244.0	1242.6
180°	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6	1244.6

(END OF REPORT)