

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: P331599-830

Luminaire Tested: **S122DIW-S1005D970U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331599-830  
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-S1005D970U830-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1005 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: 7453.1 lumens  
Efficiency: N/A  
Efficacy: 110.6 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

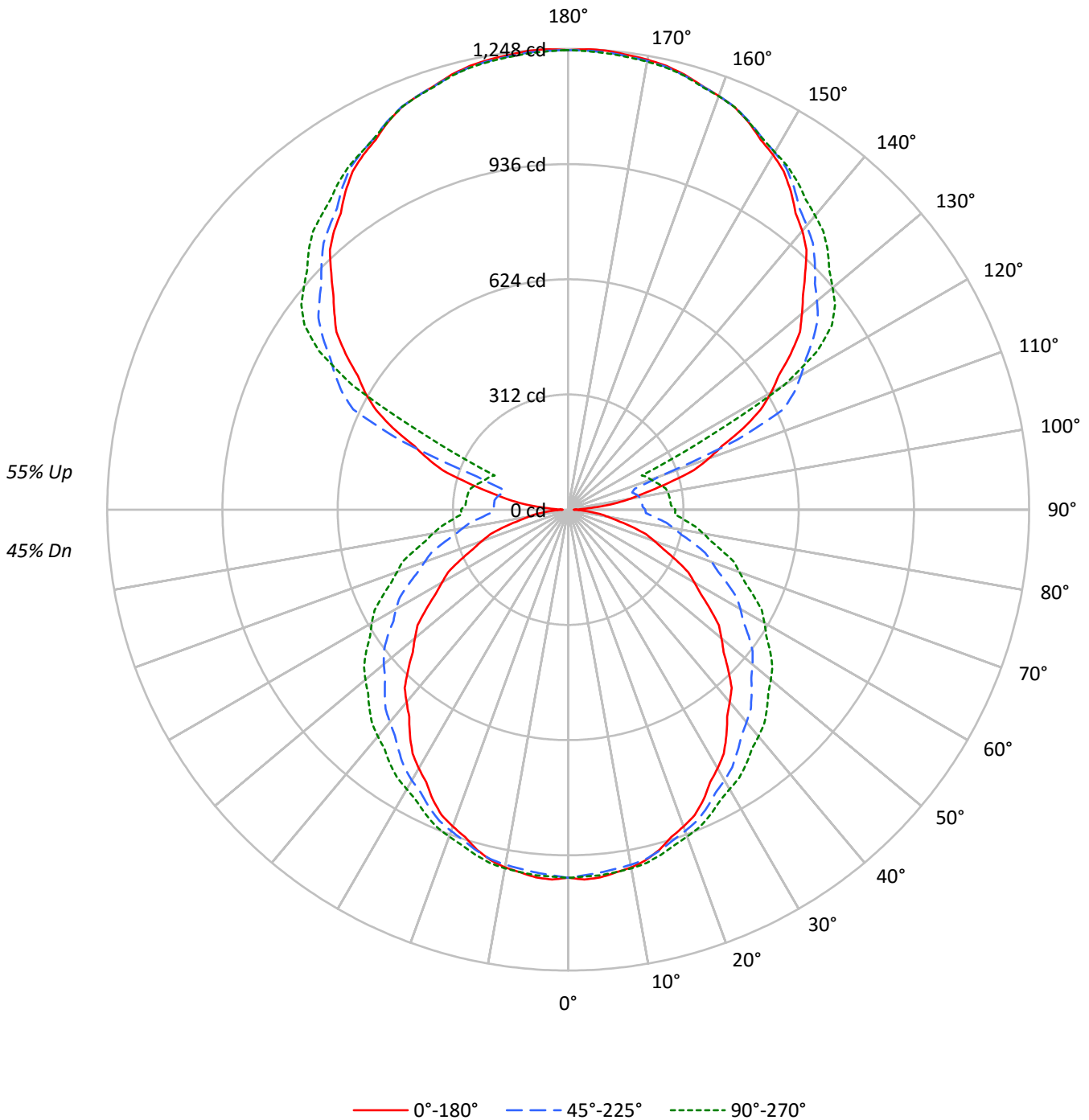
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331599-830

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### Luminous Intensity Polar Plot





TEST NUMBER: P331599-830

CATALOG NUMBER: S122DIW-S1005D970U830-4F0-1E-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	0
RCR																		
0	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	45
1	95	90	86	82	87	83	79	76	69	66	63	56	54	52	44	42	41	35
2	86	78	72	66	79	72	66	61	59	55	51	48	45	42	38	35	34	29
3	78	68	61	54	71	63	56	50	52	47	43	42	38	35	33	30	28	24
4	71	60	52	45	65	55	48	42	46	40	36	37	33	30	29	26	24	20
5	65	53	45	39	60	49	42	36	41	35	31	33	29	25	26	23	20	17
6	60	48	39	33	55	44	36	31	37	31	27	30	25	22	24	20	18	15
7	56	43	35	29	51	40	32	27	33	27	23	27	23	19	21	18	16	13
8	51	39	31	25	47	36	29	24	30	24	20	25	20	17	20	16	14	11
9	48	35	28	23	44	33	26	21	28	22	18	23	18	15	18	15	13	10
10	45	32	25	20	41	30	23	19	25	20	16	21	17	14	17	14	11	9

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

	0°	45°	90°
0°	16091	16091	16091
5°	16172	15491	15432
10°	16069	15033	14865
15°	15848	14548	14266
20°	15567	14030	13691
25°	15292	13528	13167
30°	14902	13015	12643
35°	14508	12517	12274
40°	14092	12094	11903
45°	13700	11715	11587
50°	13277	11373	11276
55°	12834	11004	10959
60°	12292	10623	10624
65°	11728	10173	10227
70°	11096	9693	9797
75°	10286	9222	9401
80°	9006	8739	9001
85°	7780	8321	8687



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.4	1.3
10°-20°	270.8	3.6
20°-30°	410.4	5.5
30°-40°	499.9	6.7
40°-50°	537.8	7.2
50°-60°	522.2	7.0
60°-70°	456.0	6.1
70°-80°	351.0	4.7
80°-90°	238.7	3.2
90°-100°	203.8	2.7
100°-110°	270.8	3.6
110°-120°	485.3	6.5
120°-130°	715.5	9.6
130°-140°	732.8	9.8
140°-150°	667.3	9.0
150°-160°	533.9	7.2
160°-170°	344.1	4.6
170°-180°	118.4	1.6
0°-30°	775.7	10.4
0°-40°	1275.5	17.1
0°-60°	2335.5	31.3
0°-90°	3381.2	45.4
90°-120°	959.9	12.9
90°-150°	3075.4	41.3
90°-180°	4072.0	54.6
0°-180°	7453.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	997	997	997	997	997	
5°	1000	995	987	995	994	95
15°	953	956	956	968	968	268
25°	867	877	890	906	911	398
35°	747	772	799	829	841	467
45°	612	652	702	745	761	473
55°	470	523	596	647	667	420
65°	321	392	477	534	555	318
75°	178	259	351	411	432	188
85°	52	142	234	292	315	56
90°	15	109	209	269	290	12
95°	70	111	201	258	277	81
105°	281	337	179	237	259	301
115°	524	558	642	287	220	515
125°	735	750	810	854	871	656
135°	908	922	944	982	994	701
145°	1051	1051	1066	1080	1083	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	



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CATALOG NUMBER: S122DIW-S1005D970U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6
2.5°	1002.5	1001.7	1000.9	1000.1	999.4	998.1	996.3	994.5	992.7	990.9	992.2
5°	999.6	998.6	997.7	996.6	995.7	994.3	992.4	990.4	988.5	986.6	988.5
7.5°	990.6	990.0	989.3	988.7	988.1	987.0	985.5	984.0	982.6	981.1	983.4
10°	983.7	983.1	982.4	981.8	981.1	980.3	979.4	978.4	977.4	976.5	979.0
12.5°	972.1	972.2	972.4	972.5	972.6	972.3	971.7	970.9	970.3	969.5	972.1
15°	953.4	954.0	954.6	955.3	955.9	956.2	956.2	956.2	956.2	956.2	959.1
17.5°	929.1	930.5	931.8	933.1	934.4	935.7	936.7	937.7	938.8	939.8	942.8
20°	912.9	914.5	916.2	917.8	919.4	920.8	922.1	923.3	924.6	926.0	929.4
22.5°	895.6	897.4	899.3	901.2	903.1	904.8	906.6	908.4	910.2	912.0	915.6
25°	866.7	868.9	871.2	873.5	875.7	878.3	881.1	884.0	886.9	889.8	893.6
27.5°	832.0	835.7	839.3	843.0	846.7	850.2	853.6	857.0	860.4	863.8	868.6
30°	808.9	813.0	817.3	821.4	825.6	829.8	834.0	838.1	842.3	846.5	851.6
32.5°	783.4	788.2	792.9	797.6	802.2	807.0	812.0	816.9	821.9	826.8	832.7
35°	746.8	752.2	757.7	763.2	768.6	774.4	780.5	786.6	792.7	798.8	805.9
37.5°	706.9	713.2	719.5	725.8	732.1	739.1	747.1	755.0	762.9	770.8	778.6
40°	680.3	687.4	694.5	701.5	708.6	716.4	725.1	733.8	742.4	751.1	759.5
42.5°	655.0	661.9	669.0	676.1	683.2	691.6	701.6	711.6	721.5	731.5	740.6
45°	612.5	621.1	629.8	638.5	647.1	657.0	668.4	679.6	690.8	702.0	712.0
47.5°	570.6	580.0	589.5	598.9	608.3	619.6	632.8	645.9	659.1	672.2	682.7
50°	541.7	551.7	561.6	571.6	581.5	593.7	608.1	622.5	637.0	651.5	662.4
52.5°	514.0	524.4	534.9	545.4	555.8	568.6	583.8	599.1	614.3	629.5	640.6
55°	469.5	481.0	492.6	504.2	515.7	529.8	546.5	563.2	579.9	596.5	608.1
57.5°	425.6	438.6	451.6	464.7	477.7	492.7	509.7	526.7	543.8	560.7	573.2
60°	394.4	408.1	422.0	435.7	449.6	465.6	483.9	502.2	520.5	538.8	551.0
62.5°	366.6	380.9	395.2	409.5	423.9	440.2	458.5	476.7	495.1	513.4	526.3
65°	320.7	336.4	352.1	367.9	383.6	401.0	419.9	438.8	457.7	476.6	489.8
67.5°	278.5	294.9	311.3	327.8	344.2	362.1	381.5	401.0	420.3	439.7	453.0
70°	248.5	265.1	281.8	298.5	315.2	333.5	353.5	373.3	393.2	413.1	426.9
72.5°	220.7	237.9	255.1	272.3	289.5	308.2	328.4	348.6	368.7	388.9	402.4
75°	177.7	195.7	213.6	231.6	249.6	268.8	289.4	309.9	330.5	351.0	364.8
77.5°	136.1	154.9	173.7	192.5	211.3	231.1	252.0	272.9	293.7	314.6	328.4
80°	108.3	127.9	147.5	167.1	186.6	206.9	227.7	248.6	269.5	290.3	303.8
82.5°	85.2	104.5	123.9	143.2	162.5	182.8	203.9	225.0	246.1	267.2	280.7
85°	52.0	71.9	91.8	111.7	131.6	151.8	172.4	192.9	213.5	234.0	247.5
87.5°	28.5	48.1	67.7	87.2	106.8	127.0	147.9	168.7	189.5	210.5	223.8
90°	15.4	36.2	57.0	77.8	98.6	120.1	142.2	164.4	186.5	208.7	222.5
92.5°	31.5	48.6	65.8	82.8	100.0	118.9	139.4	160.0	180.6	201.1	214.2
95°	70.1	78.6	87.1	95.6	104.1	118.6	139.2	159.9	180.6	201.2	214.4
97.5°	126.3	121.1	115.9	110.7	105.5	113.8	135.5	157.2	179.0	200.7	213.4
100°	169.6	154.0	138.5	122.9	107.4	110.3	131.7	153.1	174.4	195.8	209.2
102.5°	215.9	220.9	226.0	231.0	236.1	233.1	222.2	211.1	200.1	189.2	202.8
105°	281.0	296.3	311.6	327.0	342.2	330.9	293.0	255.1	217.1	179.2	192.6
107.5°	356.9	369.2	381.5	393.8	406.0	387.5	337.9	288.4	238.8	189.3	197.8
110°	404.7	415.4	426.0	436.6	447.2	431.5	389.4	347.3	305.2	263.1	253.4



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	450.9	460.0	469.1	478.2	487.3	492.2	492.9	493.5	494.3	494.9	432.2
115°	523.7	530.6	537.5	544.4	551.4	564.6	584.0	603.4	622.9	642.3	559.3
117.5°	587.2	593.3	599.5	605.6	611.7	623.1	639.9	656.8	673.5	690.3	677.4
120°	634.8	639.0	643.4	647.6	652.0	662.3	678.7	695.1	711.6	728.0	739.4
122.5°	675.1	678.8	682.5	686.2	689.8	699.6	715.7	731.6	747.6	763.6	773.8
125°	735.1	737.7	740.3	742.9	745.6	753.8	767.9	782.0	796.1	810.1	820.2
127.5°	790.8	793.3	795.9	798.4	801.0	807.9	819.0	830.1	841.2	852.3	862.3
130°	826.0	829.0	831.8	834.7	837.5	843.5	852.4	861.4	870.3	879.3	889.2
132.5°	862.0	864.5	866.9	869.3	871.7	876.6	884.0	891.4	898.8	906.2	915.5
135°	907.5	910.7	913.9	917.1	920.3	924.4	929.4	934.4	939.4	944.4	953.2
137.5°	954.9	957.1	959.2	961.4	963.6	966.4	969.9	973.3	976.8	980.1	988.1
140°	985.8	987.1	988.4	989.7	991.0	993.0	995.9	998.7	1001.5	1004.4	1011.3
142.5°	1011.7	1012.9	1014.0	1015.1	1016.2	1018.1	1020.8	1023.4	1026.1	1028.7	1034.4
145°	1051.0	1050.8	1050.7	1050.5	1050.3	1051.9	1055.3	1058.7	1062.1	1065.5	1068.7
147.5°	1086.6	1085.7	1085.0	1084.2	1083.5	1084.8	1088.2	1091.5	1094.9	1098.3	1099.6
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



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	996.6	996.6	996.6	996.6	996.6	996.6	996.6	996.6
2.5°	993.4	994.8	996.1	996.5	995.9	995.4	994.9	994.4
5°	990.4	992.4	994.3	995.0	994.8	994.5	994.1	993.8
7.5°	985.7	988.1	990.3	991.4	991.0	990.7	990.3	990.0
10°	981.6	984.2	986.7	987.9	987.5	987.2	986.9	986.6
12.5°	974.7	977.2	979.8	980.9	980.6	980.2	980.0	979.7
15°	962.1	964.9	967.8	969.1	968.7	968.5	968.1	967.8
17.5°	945.8	948.9	951.9	953.4	953.4	953.4	953.4	953.4
20°	932.9	936.5	940.0	941.8	941.8	941.8	941.8	941.8
22.5°	919.1	922.7	926.1	928.2	928.7	929.3	929.7	930.3
25°	897.5	901.4	905.2	907.6	908.6	909.6	910.5	911.4
27.5°	873.5	878.4	883.4	886.1	886.8	887.5	888.3	888.9
30°	856.8	861.9	867.0	870.1	871.0	871.9	873.0	873.9
32.5°	838.7	844.5	850.5	854.2	856.0	857.7	859.5	861.2
35°	812.9	820.0	827.1	831.7	834.0	836.2	838.5	840.7
37.5°	786.5	794.3	802.1	807.2	809.5	812.0	814.4	816.7
40°	767.8	776.2	784.5	790.1	793.1	795.9	798.8	801.7
42.5°	749.7	758.8	768.0	773.9	776.8	779.8	782.6	785.5
45°	721.9	731.9	741.8	748.4	751.6	754.8	758.0	761.2
47.5°	693.1	703.4	713.9	720.9	724.3	727.9	731.4	735.0
50°	673.3	684.2	695.1	702.4	705.9	709.4	712.9	716.4
52.5°	651.9	663.0	674.2	681.6	685.4	689.3	693.1	696.8
55°	619.7	631.2	642.8	650.6	654.8	659.0	663.2	667.3
57.5°	585.7	598.1	610.6	618.9	623.1	627.4	631.6	635.8
60°	563.2	575.4	587.6	596.0	600.4	604.9	609.4	613.9
62.5°	539.3	552.2	565.2	573.8	578.1	582.3	586.5	590.8
65°	503.0	516.1	529.3	538.0	542.2	546.3	550.5	554.7
67.5°	466.3	479.6	492.9	501.7	506.1	510.4	514.8	519.2
70°	440.7	454.5	468.3	477.1	481.0	484.8	488.7	492.6
72.5°	415.9	429.5	443.0	452.1	456.8	461.4	466.0	470.6
75°	378.6	392.4	406.2	415.2	419.3	423.6	427.7	431.9
77.5°	342.0	355.8	369.6	378.7	383.1	387.7	392.2	396.6
80°	317.3	330.8	344.3	353.3	357.8	362.2	366.7	371.3
82.5°	294.2	307.6	321.1	330.0	334.2	338.5	342.7	346.9
85°	261.0	274.5	287.9	296.9	301.4	305.9	310.4	314.9
87.5°	237.0	250.3	263.6	272.4	276.5	280.8	284.9	289.2
90°	236.4	250.2	264.0	273.1	277.4	281.6	285.9	290.1
92.5°	227.3	240.4	253.5	262.2	266.3	270.3	274.5	278.5
95°	227.6	240.8	254.0	262.5	266.1	269.8	273.4	277.1
97.5°	226.0	238.7	251.4	259.8	263.8	267.8	271.8	275.9
100°	222.7	236.2	249.7	258.4	262.3	266.3	270.2	274.1
102.5°	216.5	230.3	243.9	252.9	256.9	261.0	265.1	269.2
105°	206.0	219.5	232.9	241.8	246.1	250.4	254.8	259.1
107.5°	206.4	214.9	223.5	229.9	234.2	238.6	242.9	247.2
110°	243.6	233.8	224.0	221.4	225.7	230.1	234.4	238.7





TEST NUMBER: P331599-830

CATALOG NUMBER: S122DIW-S1005D970U830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	369.4	306.7	243.9	214.6	218.9	223.0	227.2	231.3
115°	476.3	393.2	310.2	263.3	252.4	241.5	230.6	219.7
117.5°	664.5	651.6	638.7	610.2	566.1	522.0	478.0	433.9
120°	750.8	762.2	773.6	767.6	744.0	720.6	697.1	673.6
122.5°	784.0	794.2	804.3	808.3	806.1	803.8	801.6	799.4
125°	830.3	840.4	850.5	857.1	860.7	864.2	867.7	871.2
127.5°	872.3	882.3	892.3	898.8	901.7	904.7	907.7	910.6
130°	899.1	909.0	918.9	925.0	927.4	929.7	932.2	934.5
132.5°	924.8	934.2	943.5	949.3	951.7	954.1	956.5	958.8
135°	962.0	970.6	979.4	984.9	987.0	989.2	991.4	993.5
137.5°	995.9	1003.8	1011.6	1016.3	1017.9	1019.4	1020.9	1022.4
140°	1018.2	1025.2	1032.2	1036.0	1037.0	1037.9	1038.9	1039.8
142.5°	1040.2	1045.9	1051.7	1055.0	1055.6	1056.3	1057.0	1057.6
145°	1072.1	1075.4	1078.7	1080.7	1081.3	1081.9	1082.5	1083.2
147.5°	1100.8	1102.1	1103.4	1104.0	1104.0	1103.9	1103.8	1103.7
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)