

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: P331509-940

Luminaire Tested: **S122DIW-S485D970U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331509-940  
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-S485D970U940-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 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: 5206.8 lumens  
Efficiency: N/A  
Efficacy: 115.2 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: Semi-Indirect

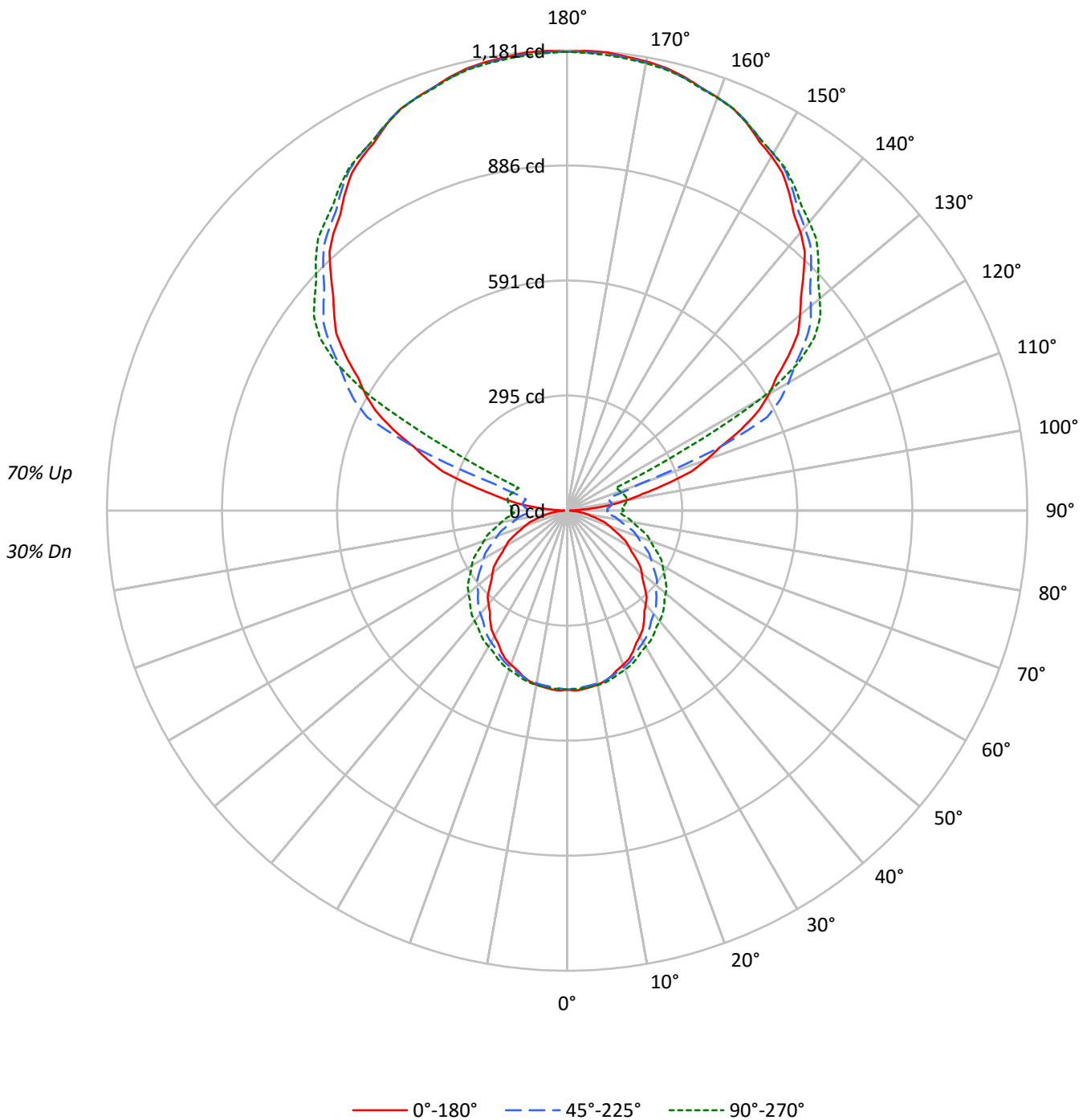
Input Watts (W): 45.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P331509-940

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38	30					30															
1	92	88	84	80	83	79	75	72	62	59	57	46	45	43	32	31	30	23					23															
2	84	76	70	65	75	68	63	58	54	50	47	40	38	35	27	26	25	19					19															
3	76	67	59	53	68	60	53	48	47	42	39	35	32	29	24	22	20	16					16															
4	69	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13					13															
5	64	52	44	38	57	47	40	34	37	32	28	28	24	21	19	17	15	11					11															
6	58	46	38	33	52	42	35	30	33	28	24	25	21	18	17	15	13	10					10															
7	54	42	34	28	48	38	31	26	30	25	21	22	19	16	16	13	11	9					9															
8	50	38	30	25	44	34	27	23	27	22	18	20	17	14	14	12	10	8					8															
9	46	34	27	22	41	31	24	20	25	20	16	19	15	13	13	11	9	7					7															
10	43	31	24	19	39	28	22	18	23	18	15	17	14	11	12	10	8	6					6															

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

	0°	45°	90°
0°	7419	7419	7419
5°	7455	7143	7115
10°	7408	6931	6854
15°	7306	6708	6577
20°	7177	6468	6312
25°	7050	6237	6072
30°	6870	5999	5829
35°	6689	5771	5659
40°	6498	5576	5488
45°	6317	5402	5343
50°	6123	5242	5199
55°	5916	5073	5052
60°	5666	4897	4897
65°	5405	4692	4714
70°	5117	4470	4516
75°	4741	4251	4334
80°	4149	4028	4148
85°	3591	3837	4006



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.5	0.8
10°-20°	124.9	2.4
20°-30°	189.2	3.6
30°-40°	230.5	4.4
40°-50°	247.9	4.8
50°-60°	240.8	4.6
60°-70°	210.2	4.0
70°-80°	161.8	3.1
80°-90°	111.5	2.1
90°-100°	114.1	2.2
100°-110°	198.7	3.8
110°-120°	421.1	8.1
120°-130°	655.7	12.6
130°-140°	684.4	13.1
140°-150°	629.7	12.1
150°-160°	505.1	9.7
160°-170°	325.5	6.3
170°-180°	112.0	2.2
0°-30°	357.6	6.9
0°-40°	588.1	11.3
0°-60°	1076.8	20.7
0°-90°	1560.4	30.0
90°-120°	733.9	14.1
90°-150°	2703.8	51.9
90°-180°	3646.0	70.0
0°-180°	5206.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	460	460	460	460	460	
5°	461	459	455	459	458	44
15°	440	441	441	446	446	124
25°	400	404	410	418	420	184
35°	344	356	368	382	388	215
45°	282	301	324	344	351	218
55°	216	241	275	298	308	193
65°	148	181	220	246	256	147
75°	82	119	162	189	199	87
85°	24	65	108	135	145	26
90°	8	56	105	135	146	7
95°	61	66	110	138	146	72
105°	262	294	109	141	153	281
115°	493	516	566	209	137	485
125°	694	707	743	766	775	619
135°	858	872	886	907	912	663
145°	994	994	1008	1017	1017	622
155°	1095	1088	1097	1102	1096	504
165°	1154	1149	1151	1156	1151	326
175°	1180	1175	1176	1181	1173	112
180°	1178	1178	1178	1178	1178	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5
2.5°	462.2	461.8	461.5	461.1	460.7	460.1	459.3	458.5	457.7	456.8	457.4
5°	460.8	460.4	459.9	459.5	459.1	458.4	457.5	456.6	455.8	454.9	455.8
7.5°	456.7	456.4	456.1	455.8	455.6	455.0	454.3	453.7	453.0	452.3	453.3
10°	453.5	453.3	452.9	452.6	452.4	452.0	451.6	451.1	450.7	450.2	451.4
12.5°	448.2	448.3	448.4	448.4	448.4	448.3	448.0	447.6	447.3	447.0	448.2
15°	439.5	439.8	440.1	440.4	440.7	440.9	440.9	440.9	440.9	440.9	442.2
17.5°	428.4	429.0	429.6	430.3	430.9	431.4	431.9	432.3	432.8	433.3	434.6
20°	420.9	421.6	422.4	423.1	423.8	424.5	425.1	425.7	426.3	426.9	428.5
22.5°	412.9	413.8	414.6	415.4	416.3	417.1	418.0	418.8	419.6	420.5	422.1
25°	399.6	400.6	401.6	402.7	403.7	404.9	406.3	407.6	408.9	410.2	412.0
27.5°	383.6	385.3	387.0	388.7	390.3	392.0	393.5	395.1	396.6	398.2	400.5
30°	372.9	374.9	376.7	378.7	380.7	382.5	384.5	386.4	388.3	390.2	392.6
32.5°	361.2	363.4	365.5	367.7	369.9	372.1	374.3	376.7	378.9	381.2	383.9
35°	344.3	346.8	349.4	351.9	354.4	357.0	359.8	362.7	365.4	368.3	371.5
37.5°	325.9	328.9	331.7	334.7	337.5	340.8	344.5	348.0	351.7	355.3	359.0
40°	313.7	316.9	320.2	323.4	326.7	330.3	334.3	338.3	342.3	346.3	350.2
42.5°	301.9	305.2	308.4	311.7	315.0	318.9	323.5	328.1	332.7	337.2	341.4
45°	282.4	286.3	290.3	294.4	298.4	302.9	308.1	313.3	318.5	323.7	328.2
47.5°	263.1	267.4	271.8	276.1	280.4	285.7	291.8	297.8	303.9	310.0	314.8
50°	249.8	254.3	259.0	263.5	268.0	273.7	280.4	287.0	293.7	300.3	305.4
52.5°	236.9	241.7	246.6	251.5	256.3	262.2	269.2	276.2	283.2	290.3	295.3
55°	216.4	221.8	227.1	232.4	237.7	244.2	252.0	259.7	267.3	275.0	280.4
57.5°	196.2	202.2	208.2	214.2	220.3	227.1	235.0	242.8	250.7	258.5	264.3
60°	181.8	188.2	194.6	200.9	207.2	214.6	223.1	231.5	240.0	248.4	254.0
62.5°	169.0	175.6	182.3	188.9	195.5	203.0	211.3	219.8	228.3	236.7	242.6
65°	147.8	155.1	162.4	169.6	176.8	184.9	193.6	202.3	211.1	219.8	225.9
67.5°	128.4	136.0	143.6	151.1	158.7	166.9	175.9	184.9	193.8	202.7	208.8
70°	114.6	122.3	129.9	137.6	145.3	153.7	162.9	172.1	181.3	190.5	196.8
72.5°	101.7	109.7	117.6	125.6	133.5	142.1	151.4	160.7	170.0	179.2	185.6
75°	81.9	90.2	98.4	106.7	115.0	123.9	133.4	142.9	152.4	161.8	168.2
77.5°	62.8	71.4	80.1	88.7	97.5	106.6	116.2	125.8	135.5	145.1	151.4
80°	49.9	58.9	68.0	77.0	86.1	95.4	105.0	114.6	124.2	133.8	140.1
82.5°	39.3	48.2	57.1	66.0	74.9	84.3	94.0	103.7	113.4	123.2	129.4
85°	24.0	33.2	42.4	51.5	60.6	70.0	79.5	88.9	98.4	107.9	114.1
87.5°	13.2	22.5	31.7	40.9	50.2	59.7	69.5	79.2	89.0	98.8	105.0
90°	7.5	18.2	28.8	39.5	50.2	61.0	72.0	83.0	94.0	105.0	111.8
92.5°	23.4	31.1	39.0	46.7	54.6	63.4	73.3	83.1	93.0	102.9	109.1
95°	60.7	61.4	62.2	62.9	63.6	69.0	79.2	89.4	99.6	109.9	116.4
97.5°	114.6	103.2	91.8	80.3	68.8	68.9	80.5	92.1	103.7	115.3	121.5
100°	155.5	135.0	114.6	94.1	73.7	69.1	80.6	92.1	103.6	115.1	122.2
102.5°	199.9	199.5	198.9	198.5	198.0	188.3	169.4	150.5	131.7	112.8	120.1
105°	262.3	272.3	282.3	292.3	302.2	285.3	241.2	197.2	153.3	109.2	116.5
107.5°	334.3	342.3	350.4	358.4	366.4	343.0	288.5	233.8	179.2	124.6	127.4
110°	380.1	387.1	394.0	400.9	407.9	387.6	340.1	292.7	245.2	197.7	183.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	423.7	429.7	435.8	441.8	447.8	447.5	440.9	434.3	427.6	421.0	356.7
115°	492.6	497.5	502.3	507.1	512.0	520.1	531.5	542.9	554.3	565.7	482.4
117.5°	553.5	558.1	562.8	567.4	572.1	579.2	588.5	598.0	607.3	616.8	599.9
120°	598.4	601.9	605.3	608.8	612.2	618.6	627.9	637.2	646.5	655.9	662.3
122.5°	636.6	639.8	643.1	646.3	649.5	655.8	665.0	674.3	683.6	692.9	698.3
125°	694.0	696.5	699.0	701.4	703.9	709.3	717.6	725.9	734.3	742.6	748.0
127.5°	746.7	749.3	751.9	754.5	757.1	761.6	768.1	774.5	781.0	787.6	793.2
130°	780.1	783.0	785.9	788.7	791.7	795.7	800.8	806.0	811.3	816.5	822.1
132.5°	814.2	816.6	819.0	821.4	823.9	827.3	831.9	836.3	840.8	845.3	850.5
135°	857.8	860.9	863.9	866.9	870.0	873.1	876.3	879.4	882.6	885.8	890.8
137.5°	902.7	904.7	906.9	908.9	911.1	913.4	916.0	918.6	921.1	923.7	928.3
140°	931.9	933.4	934.7	936.0	937.5	939.3	941.6	944.1	946.5	948.8	952.9
142.5°	956.5	957.7	958.9	960.2	961.4	963.2	965.6	968.1	970.5	972.9	976.4
145°	994.3	994.2	994.0	993.8	993.6	995.1	998.4	1001.6	1004.8	1008.0	1010.2
147.5°	1028.0	1027.2	1026.4	1025.7	1025.0	1026.3	1029.5	1032.6	1035.8	1039.0	1040.1
150°	1049.7	1048.4	1047.0	1045.8	1044.5	1045.3	1048.3	1051.3	1054.4	1057.4	1058.5
152.5°	1068.2	1066.7	1065.1	1063.7	1062.2	1062.9	1065.8	1068.7	1071.6	1074.4	1075.6
155°	1094.9	1093.1	1091.5	1089.8	1088.1	1088.3	1090.7	1092.9	1095.2	1097.4	1098.6
157.5°	1115.9	1114.5	1112.9	1111.5	1110.1	1110.2	1111.8	1113.4	1114.9	1116.5	1117.8
160°	1128.1	1127.0	1125.9	1124.7	1123.6	1123.6	1124.7	1125.9	1127.0	1128.1	1129.3
162.5°	1139.1	1137.9	1136.8	1135.6	1134.5	1134.4	1135.4	1136.4	1137.4	1138.4	1139.6
165°	1153.7	1152.5	1151.4	1150.3	1149.1	1148.9	1149.4	1150.0	1150.6	1151.1	1152.4
167.5°	1164.6	1163.4	1162.3	1161.2	1160.0	1159.8	1160.3	1160.8	1161.4	1161.9	1163.1
170°	1170.7	1169.6	1168.5	1167.3	1166.2	1165.8	1166.2	1166.5	1167.0	1167.3	1168.7
172.5°	1174.8	1173.7	1172.5	1171.4	1170.3	1169.9	1170.3	1170.6	1171.0	1171.4	1172.8
175°	1180.1	1178.8	1177.4	1176.2	1174.8	1174.3	1174.7	1175.1	1175.5	1175.8	1177.1
177.5°	1181.0	1179.9	1178.8	1177.8	1176.7	1176.3	1176.4	1176.5	1176.7	1176.9	1177.9
180°	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5
2.5°	458.1	458.6	459.2	459.4	459.1	459.0	458.7	458.4
5°	456.6	457.5	458.4	458.8	458.6	458.5	458.3	458.2
7.5°	454.4	455.5	456.6	457.0	456.9	456.7	456.6	456.5
10°	452.5	453.7	455.0	455.5	455.3	455.1	455.0	454.9
12.5°	449.3	450.6	451.7	452.3	452.1	451.9	451.8	451.7
15°	443.5	444.9	446.2	446.7	446.7	446.5	446.3	446.2
17.5°	436.0	437.5	438.8	439.5	439.5	439.5	439.5	439.5
20°	430.2	431.8	433.4	434.2	434.2	434.2	434.2	434.2
22.5°	423.7	425.3	427.0	427.9	428.2	428.4	428.6	428.9
25°	413.8	415.5	417.3	418.5	418.9	419.4	419.8	420.3
27.5°	402.8	405.0	407.2	408.5	408.8	409.2	409.5	409.8
30°	395.0	397.3	399.8	401.1	401.5	402.0	402.4	402.9
32.5°	386.6	389.3	392.1	393.9	394.7	395.5	396.3	397.1
35°	374.8	378.1	381.3	383.4	384.5	385.5	386.6	387.6
37.5°	362.6	366.2	369.8	372.1	373.3	374.3	375.4	376.6
40°	354.0	357.8	361.7	364.3	365.6	366.9	368.3	369.6
42.5°	345.6	349.8	354.0	356.9	358.1	359.4	360.8	362.1
45°	332.9	337.4	342.0	345.0	346.5	348.0	349.5	351.0
47.5°	319.5	324.3	329.1	332.3	333.9	335.6	337.2	338.9
50°	310.4	315.4	320.5	323.8	325.5	327.1	328.7	330.3
52.5°	300.5	305.7	310.9	314.2	316.0	317.8	319.5	321.3
55°	285.7	291.1	296.3	300.0	301.9	303.8	305.8	307.6
57.5°	270.0	275.7	281.5	285.3	287.3	289.3	291.2	293.2
60°	259.7	265.3	270.9	274.7	276.8	278.9	281.0	283.0
62.5°	248.6	254.6	260.6	264.6	266.5	268.5	270.5	272.4
65°	231.9	238.0	244.1	248.1	249.9	251.9	253.8	255.7
67.5°	215.0	221.1	227.2	231.3	233.3	235.3	237.4	239.3
70°	203.2	209.6	215.9	220.0	221.8	223.6	225.3	227.1
72.5°	191.8	198.0	204.3	208.5	210.5	212.7	214.8	217.0
75°	174.6	180.9	187.3	191.5	193.3	195.3	197.2	199.1
77.5°	157.7	164.1	170.4	174.6	176.6	178.7	180.8	182.9
80°	146.3	152.5	158.7	162.8	165.0	167.0	169.1	171.1
82.5°	135.6	141.9	148.0	152.1	154.1	156.0	158.0	160.0
85°	120.3	126.5	132.8	136.9	138.9	141.1	143.1	145.2
87.5°	111.2	117.4	123.7	127.8	129.7	131.7	133.7	135.6
90°	118.7	125.6	132.4	137.0	139.1	141.2	143.4	145.5
92.5°	115.5	121.7	128.0	132.2	134.2	136.2	138.2	140.2
95°	123.0	129.6	136.1	140.2	141.8	143.4	144.9	146.5
97.5°	127.8	134.0	140.3	144.4	146.3	148.3	150.3	152.3
100°	129.1	136.2	143.1	147.7	149.6	151.7	153.6	155.7
102.5°	127.4	134.7	142.1	146.9	149.0	151.1	153.3	155.5
105°	123.8	131.0	138.3	143.1	145.5	147.9	150.3	152.7
107.5°	130.3	133.1	136.0	138.6	141.0	143.4	145.8	148.1
110°	169.3	155.2	140.9	135.0	137.4	139.8	142.1	144.5





TEST NUMBER: P331509-940

CATALOG NUMBER: S122DIW-S485D970U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	292.3	228.0	163.6	132.6	134.8	137.1	139.3	141.5
115°	399.2	316.0	232.7	185.1	173.2	161.1	149.1	137.1
117.5°	583.2	566.3	549.5	519.4	476.2	432.8	389.6	346.3
120°	668.7	675.1	681.5	672.8	648.8	624.9	600.9	577.0
122.5°	703.6	709.1	714.4	715.3	711.8	708.2	704.6	701.1
125°	753.3	758.6	763.9	767.5	769.5	771.3	773.2	775.2
127.5°	798.8	804.4	810.0	813.5	814.9	816.4	817.8	819.2
130°	827.7	833.3	839.0	842.3	843.3	844.3	845.3	846.2
132.5°	855.7	860.9	866.1	869.2	870.2	871.2	872.2	873.3
135°	895.8	900.8	905.8	908.7	909.5	910.3	911.2	912.0
137.5°	932.8	937.5	942.0	944.5	944.9	945.2	945.6	945.9
140°	957.0	961.0	965.1	967.1	967.1	967.0	967.0	966.9
142.5°	979.9	983.3	986.8	988.4	988.2	988.0	987.8	987.7
145°	1012.4	1014.6	1016.8	1017.8	1017.6	1017.4	1017.3	1017.0
147.5°	1041.2	1042.3	1043.4	1043.7	1043.3	1042.9	1042.4	1042.0
150°	1059.7	1060.8	1061.9	1062.0	1061.1	1060.2	1059.2	1058.3
152.5°	1076.7	1077.8	1079.0	1079.0	1077.7	1076.5	1075.2	1074.0
155°	1099.7	1100.8	1102.0	1101.8	1100.3	1098.8	1097.3	1095.7
157.5°	1119.1	1120.4	1121.7	1121.6	1120.1	1118.7	1117.1	1115.7
160°	1130.4	1131.5	1132.7	1132.6	1131.2	1129.9	1128.6	1127.3
162.5°	1140.9	1142.2	1143.5	1143.4	1141.7	1140.1	1138.4	1136.8
165°	1153.8	1155.1	1156.5	1156.5	1155.1	1153.8	1152.4	1151.1
167.5°	1164.5	1165.8	1167.2	1167.0	1165.3	1163.6	1161.9	1160.2
170°	1170.0	1171.3	1172.6	1172.4	1170.7	1169.0	1167.3	1165.6
172.5°	1174.0	1175.4	1176.7	1176.5	1174.8	1173.1	1171.4	1169.7
175°	1178.5	1179.8	1181.2	1180.9	1178.9	1177.1	1175.2	1173.3
177.5°	1179.0	1180.0	1181.1	1181.0	1179.6	1178.2	1176.9	1175.5
180°	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5	1177.5

(END OF REPORT)