

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: P331482-940

Luminaire Tested: **S122DIW-S290D970U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331482-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D970U940-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4068.7 lumens
Efficiency: N/A
Efficacy: 107.1 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

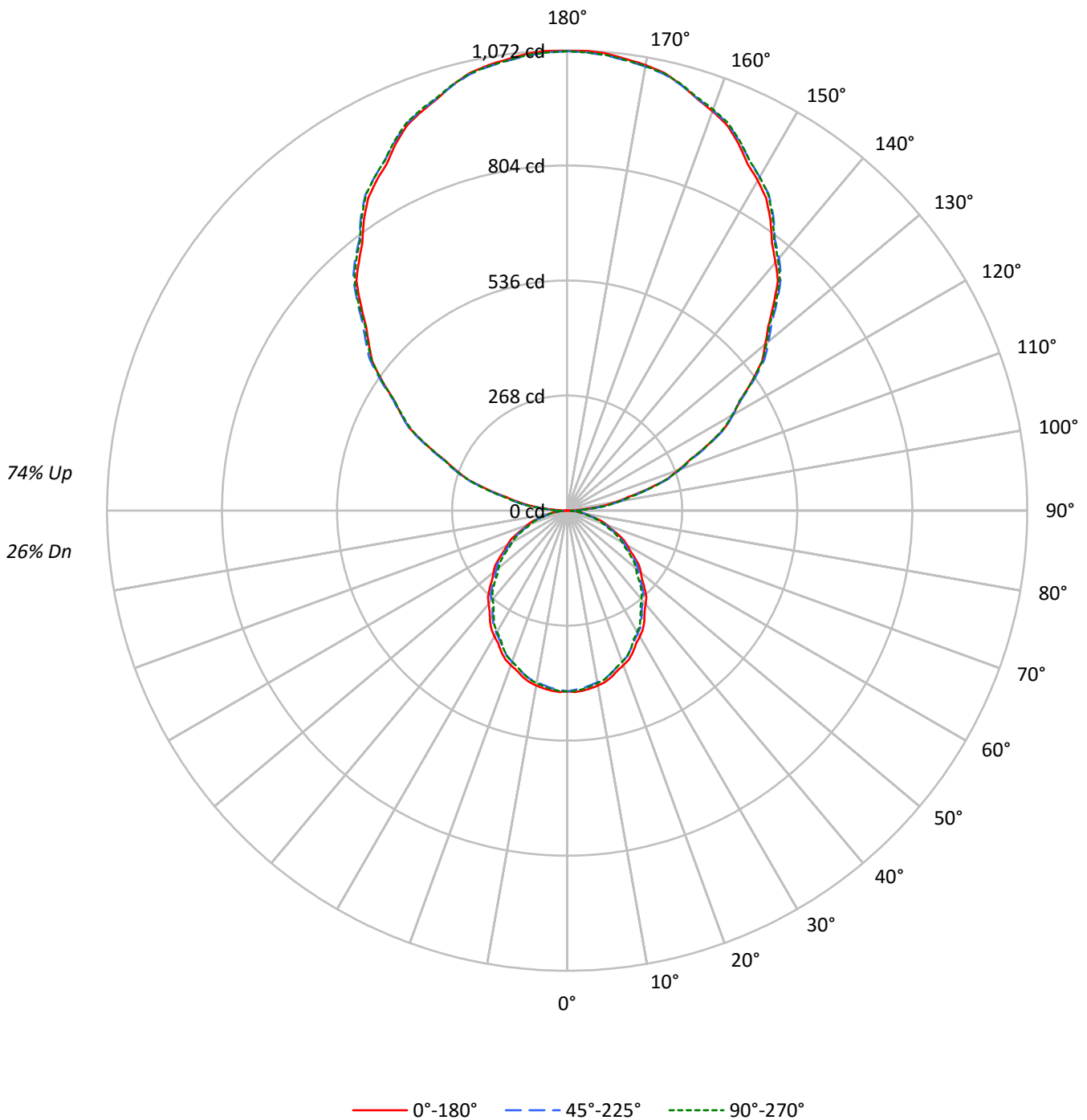
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

Luminous Intensity Polar Plot





TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	34	34	34	26
1	92	88	85	81	82	79	76	73	61	59	57	45	44	43	30	30	29	22
2	84	77	71	66	75	69	64	60	54	50	47	40	38	36	27	25	24	19
3	77	68	61	55	68	61	55	50	47	43	40	35	32	30	24	22	21	16
4	70	60	52	46	62	54	47	42	42	37	34	31	28	26	21	19	18	14
5	64	53	45	40	57	48	41	36	37	33	29	28	25	22	19	17	16	12
6	59	47	40	34	52	43	36	31	34	29	25	25	22	19	17	15	14	10
7	54	43	35	30	48	38	32	27	30	26	22	23	19	17	16	14	12	9
8	50	39	31	26	45	35	28	24	28	23	19	21	17	15	14	12	11	8
9	47	35	28	23	42	32	25	21	25	21	17	19	16	13	13	11	10	7
10	44	32	25	20	39	29	23	19	23	19	15	18	14	12	12	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6801	6801	6801
5°	6827	6729	6770
10°	6787	6661	6694
15°	6703	6574	6569
20°	6584	6445	6438
25°	6465	6285	6285
30°	6315	6139	6087
35°	6173	5964	5876
40°	5994	5788	5678
45°	5818	5613	5476
50°	5627	5433	5242
55°	5427	5225	5027
60°	5205	4970	4789
65°	4967	4722	4504
70°	4664	4414	4206
75°	4242	4067	3968
80°	3766	3654	3468
85°	3075	2927	2631



TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.6	1.0
10°-20°	111.5	2.7
20°-30°	163.8	4.0
30°-40°	190.3	4.7
40°-50°	190.1	4.7
50°-60°	165.8	4.1
60°-70°	122.6	3.0
70°-80°	69.4	1.7
80°-90°	22.9	0.6
90°-100°	67.8	1.7
100°-110°	210.6	5.2
110°-120°	360.0	8.8
120°-130°	473.5	11.6
130°-140°	531.4	13.1
140°-150°	521.1	12.8
150°-160°	437.0	10.7
160°-170°	289.9	7.1
170°-180°	101.3	2.5
0°-30°	314.9	7.7
0°-40°	505.2	12.4
0°-60°	861.1	21.2
0°-90°	1076.0	26.4
90°-120°	638.5	15.7
90°-150°	2164.4	53.2
90°-180°	2993.0	73.6
0°-180°	4068.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	421	421	421	421	421	
5°	421	420	415	418	418	40
15°	401	398	393	395	393	113
25°	363	360	353	354	353	167
35°	313	309	303	300	298	195
45°	255	252	246	242	240	197
55°	193	190	186	181	179	172
65°	130	128	124	120	118	129
75°	68	67	65	63	64	73
85°	17	16	16	15	14	19
90°	1	12	32	30	31	3
95°	47	56	58	58	56	54
105°	194	197	199	200	200	205
115°	361	366	365	364	361	357
125°	526	533	531	528	527	470
135°	680	690	692	691	688	525
145°	826	832	837	838	835	515
155°	944	946	949	953	951	434
165°	1027	1026	1026	1032	1028	289
175°	1068	1066	1064	1070	1065	101
180°	1070	1070	1070	1070	1070	



TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	423.2	422.8	422.5	422.1	421.8	421.2	420.4	419.6	418.8	418.0	418.7
5°	421.2	420.9	420.5	420.2	419.8	419.2	418.2	417.2	416.2	415.2	415.9
7.5°	417.6	417.0	416.4	415.9	415.4	414.6	413.6	412.5	411.5	410.5	411.3
10°	414.0	413.4	412.8	412.1	411.4	410.6	409.6	408.5	407.4	406.3	407.0
12.5°	409.1	408.6	408.0	407.4	406.9	406.1	405.0	403.9	402.9	401.8	402.3
15°	401.0	400.5	399.9	399.4	398.9	398.1	396.8	395.7	394.5	393.3	393.7
17.5°	390.7	390.1	389.6	389.1	388.5	387.6	386.5	385.2	384.1	382.9	383.3
20°	383.2	382.6	382.1	381.6	381.0	380.1	378.9	377.6	376.4	375.1	375.4
22.5°	375.8	375.0	374.3	373.4	372.7	371.8	370.6	369.3	368.2	367.0	367.0
25°	362.9	362.2	361.5	360.8	360.1	358.9	357.4	355.9	354.4	352.8	353.0
27.5°	348.4	347.8	347.1	346.4	345.8	344.8	343.7	342.4	341.3	340.0	339.7
30°	338.7	338.0	337.2	336.5	335.7	334.7	333.4	332.1	330.6	329.3	329.0
32.5°	328.2	327.7	327.2	326.5	326.0	324.9	323.5	322.2	320.7	319.3	318.8
35°	313.2	312.2	311.3	310.4	309.5	308.4	306.9	305.5	304.1	302.6	302.0
37.5°	296.0	295.2	294.4	293.6	292.8	291.8	290.3	288.9	287.4	286.0	285.3
40°	284.4	283.7	282.9	282.2	281.5	280.4	278.9	277.5	276.1	274.6	273.8
42.5°	273.0	272.3	271.6	270.9	270.2	269.0	267.6	266.2	264.7	263.3	262.4
45°	254.8	254.1	253.5	252.9	252.3	251.3	249.9	248.6	247.3	245.8	244.9
47.5°	236.7	236.0	235.5	234.9	234.3	233.3	231.8	230.5	229.1	227.7	226.6
50°	224.0	223.6	223.1	222.7	222.2	221.3	220.1	218.8	217.6	216.3	215.1
52.5°	211.7	211.1	210.5	209.9	209.3	208.4	207.2	206.1	204.8	203.7	202.6
55°	192.8	192.3	191.7	191.2	190.6	189.8	188.8	187.7	186.6	185.6	184.4
57.5°	173.9	173.4	173.0	172.5	172.1	171.3	170.1	169.0	167.7	166.6	165.5
60°	161.2	160.9	160.5	160.2	159.8	159.0	157.7	156.5	155.2	153.9	152.9
62.5°	148.9	148.3	147.8	147.2	146.6	145.8	144.8	143.9	142.9	142.0	141.0
65°	130.0	129.5	128.9	128.4	127.9	127.2	126.3	125.4	124.5	123.6	122.7
67.5°	110.8	110.4	109.9	109.5	109.1	108.5	107.6	106.8	106.0	105.2	104.6
70°	98.8	98.4	98.1	97.7	97.4	96.8	96.0	95.2	94.3	93.5	92.9
72.5°	86.5	86.1	85.8	85.4	85.1	84.6	84.1	83.6	83.1	82.6	81.9
75°	68.0	67.9	67.7	67.5	67.3	67.1	66.6	66.1	65.6	65.2	64.6
77.5°	51.5	51.2	50.9	50.6	50.3	50.0	49.8	49.7	49.5	49.3	49.0
80°	40.5	40.4	40.3	40.2	40.1	40.0	39.9	39.7	39.5	39.3	39.1
82.5°	30.1	30.1	30.1	30.1	30.1	30.0	29.9	29.8	29.7	29.6	29.2
85°	16.6	16.5	16.4	16.3	16.2	16.1	16.1	16.0	15.9	15.8	15.5
87.5°	6.0	6.3	6.7	7.0	7.4	7.9	8.6	9.4	10.1	10.9	10.5
90°	0.9	3.3	5.7	8.1	10.5	13.9	18.4	22.7	27.2	31.6	31.2
92.5°	16.1	17.8	19.6	21.4	23.2	24.5	25.6	26.7	27.6	28.7	28.8
95°	47.0	49.0	51.0	53.0	55.0	56.2	56.6	57.0	57.4	57.8	57.8
97.5°	85.8	87.6	89.3	91.1	92.8	94.2	94.9	95.7	96.4	97.2	97.2
100°	114.7	116.3	117.9	119.5	121.1	122.3	122.8	123.4	124.0	124.7	124.7
102.5°	145.1	146.3	147.6	148.9	150.2	151.2	151.9	152.8	153.5	154.3	154.4
105°	194.2	194.7	195.4	196.0	196.6	197.1	197.5	197.9	198.3	198.7	199.1
107.5°	243.7	244.6	245.4	246.3	247.2	247.6	247.6	247.6	247.6	247.6	247.8
110°	275.4	276.7	277.9	279.1	280.3	280.9	280.9	280.9	280.9	280.9	280.9



TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	310.1	311.4	312.5	313.8	315.0	315.5	315.3	315.1	315.0	314.9	314.3
115°	361.2	362.5	363.6	364.9	366.0	366.5	366.0	365.7	365.2	364.9	364.7
117.5°	412.2	413.8	415.4	417.1	418.7	418.8	417.8	416.6	415.5	414.4	413.9
120°	446.2	447.8	449.4	451.0	452.6	452.6	451.0	449.4	447.8	446.2	446.2
122.5°	477.2	479.2	481.1	483.0	484.9	485.4	484.2	483.1	482.0	480.8	480.4
125°	525.7	527.4	529.2	531.1	532.9	533.5	532.9	532.3	531.6	531.1	530.5
127.5°	572.8	575.1	577.4	579.7	581.9	582.7	582.0	581.3	580.6	579.9	579.1
130°	602.4	605.0	607.6	610.3	612.9	613.9	613.6	613.1	612.8	612.3	612.0
132.5°	635.6	637.8	639.9	642.0	644.2	645.2	645.3	645.4	645.5	645.6	644.7
135°	680.1	682.3	684.5	686.7	688.9	690.2	690.6	691.0	691.4	691.8	691.6
137.5°	726.8	728.7	730.5	732.3	734.1	735.3	735.8	736.3	736.8	737.4	737.2
140°	755.0	756.9	758.7	760.5	762.2	763.7	764.7	765.7	766.7	767.7	767.7
142.5°	784.0	785.8	787.6	789.3	791.2	792.5	793.1	793.8	794.5	795.1	795.3
145°	825.5	826.9	828.3	829.7	831.2	832.4	833.7	834.8	836.1	837.2	837.4
147.5°	862.6	864.2	865.9	867.5	869.2	870.5	871.3	872.1	872.9	873.7	874.1
150°	887.8	889.0	890.2	891.4	892.6	893.7	894.5	895.3	896.1	896.9	897.4
152.5°	910.3	911.4	912.7	913.8	915.1	916.1	917.1	918.0	919.0	920.0	920.7
155°	943.8	944.4	945.0	945.7	946.2	946.8	947.4	948.1	948.6	949.2	950.2
157.5°	972.5	972.9	973.3	973.7	974.1	974.6	974.9	975.3	975.6	976.0	977.3
160°	989.9	990.2	990.7	991.0	991.5	991.8	992.0	992.2	992.4	992.6	993.8
162.5°	1005.8	1005.8	1005.9	1006.0	1006.1	1006.2	1006.5	1006.7	1006.8	1007.0	1008.4
165°	1026.9	1026.7	1026.5	1026.3	1026.1	1026.0	1026.0	1026.0	1026.0	1026.0	1027.4
167.5°	1044.6	1044.0	1043.4	1042.8	1042.2	1041.9	1041.9	1041.8	1041.8	1041.7	1043.1
170°	1054.0	1053.4	1052.8	1052.2	1051.6	1051.2	1051.0	1050.8	1050.6	1050.4	1051.8
172.5°	1060.5	1059.9	1059.3	1058.7	1058.1	1057.7	1057.5	1057.3	1057.1	1056.9	1058.3
175°	1068.4	1067.8	1067.3	1066.7	1066.0	1065.5	1065.1	1064.7	1064.3	1063.9	1065.3
177.5°	1071.7	1071.2	1070.8	1070.2	1069.8	1069.3	1069.1	1068.7	1068.4	1068.1	1069.1
180°	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2



TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	421.2	421.2	421.2	421.2	421.2	421.2	421.2	421.2
2.5°	419.5	420.2	420.9	421.2	421.1	420.9	420.8	420.6
5°	416.7	417.4	418.1	418.4	418.2	418.0	417.9	417.7
7.5°	412.0	412.7	413.4	413.7	413.5	413.2	413.0	412.9
10°	407.8	408.5	409.2	409.4	409.1	408.8	408.6	408.3
12.5°	402.8	403.2	403.8	403.9	403.8	403.5	403.3	403.1
15°	394.0	394.4	394.8	394.8	394.3	393.9	393.4	393.0
17.5°	383.7	384.1	384.5	384.5	384.1	383.7	383.3	382.8
20°	375.7	375.9	376.2	376.1	375.8	375.4	375.1	374.7
22.5°	367.1	367.2	367.2	367.1	366.9	366.7	366.5	366.3
25°	353.2	353.4	353.6	353.6	353.4	353.2	353.0	352.8
27.5°	339.5	339.2	338.9	338.6	338.1	337.7	337.3	336.9
30°	328.8	328.5	328.2	328.0	327.6	327.3	326.9	326.5
32.5°	318.3	317.8	317.4	316.9	316.6	316.2	315.8	315.5
35°	301.5	301.0	300.4	300.0	299.5	299.1	298.6	298.1
37.5°	284.6	284.0	283.3	282.8	282.3	281.9	281.5	281.1
40°	273.0	272.2	271.4	270.8	270.5	270.1	269.7	269.4
42.5°	261.5	260.6	259.8	259.0	258.6	258.1	257.6	257.1
45°	243.9	242.9	241.9	241.2	240.9	240.5	240.1	239.8
47.5°	225.6	224.5	223.5	222.7	222.2	221.7	221.1	220.6
50°	213.8	212.5	211.2	210.4	210.0	209.6	209.1	208.7
52.5°	201.6	200.5	199.5	198.7	198.0	197.5	196.9	196.3
55°	183.3	182.3	181.2	180.5	180.0	179.5	179.1	178.6
57.5°	164.4	163.4	162.3	161.6	161.3	161.0	160.6	160.2
60°	151.9	151.0	150.0	149.4	149.1	148.8	148.6	148.3
62.5°	140.1	139.2	138.3	137.7	137.3	137.0	136.6	136.3
65°	121.9	121.1	120.3	119.7	119.2	118.8	118.3	117.9
67.5°	104.0	103.3	102.7	102.2	101.8	101.5	101.1	100.8
70°	92.3	91.7	91.0	90.6	90.2	89.8	89.4	89.1
72.5°	81.3	80.7	80.1	79.5	79.3	79.0	78.7	78.4
75°	64.1	63.6	63.0	62.9	63.0	63.2	63.4	63.6
77.5°	48.8	48.5	48.2	48.0	47.7	47.5	47.3	47.0
80°	38.8	38.5	38.3	38.0	37.8	37.6	37.5	37.3
82.5°	28.9	28.5	28.2	28.0	28.0	27.9	27.9	27.9
85°	15.2	15.0	14.7	14.5	14.4	14.4	14.3	14.2
87.5°	10.3	10.0	9.6	9.5	9.5	9.5	9.5	9.4
90°	30.8	30.4	30.0	29.9	30.1	30.3	30.5	30.7
92.5°	28.9	29.0	29.1	29.1	29.2	29.2	29.2	29.2
95°	57.8	57.8	57.8	57.6	57.2	56.8	56.4	56.0
97.5°	97.2	97.2	97.2	97.2	97.1	97.1	97.0	97.0
100°	124.7	124.7	124.7	124.6	124.3	124.1	123.9	123.8
102.5°	154.6	154.7	154.9	154.9	154.7	154.4	154.3	154.1
105°	199.5	199.9	200.3	200.5	200.5	200.5	200.5	200.5
107.5°	248.0	248.2	248.3	247.9	247.0	246.0	245.1	244.2
110°	280.9	280.9	280.9	280.6	280.0	279.4	278.7	278.2



TEST NUMBER: P331482-940

CATALOG NUMBER: S122DIW-S290D970U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	313.9	313.4	312.9	312.5	312.0	311.6	311.1	310.7
115°	364.4	364.3	364.1	363.6	363.1	362.5	361.9	361.2
117.5°	413.4	413.0	412.4	411.9	411.3	410.7	410.1	409.5
120°	446.2	446.2	446.2	445.9	445.2	444.7	444.1	443.4
122.5°	479.9	479.4	478.9	478.5	478.0	477.6	477.2	476.7
125°	529.9	529.2	528.7	528.2	528.1	527.9	527.6	527.4
127.5°	578.4	577.7	576.9	576.2	575.6	575.0	574.4	573.7
130°	611.5	611.2	610.7	610.1	609.3	608.5	607.7	606.9
132.5°	643.8	642.9	642.0	641.3	640.7	640.0	639.4	638.7
135°	691.4	691.3	691.0	690.6	690.0	689.4	688.8	688.2
137.5°	737.0	736.9	736.7	736.2	735.4	734.6	733.8	733.0
140°	767.7	767.7	767.7	767.3	766.5	765.7	764.9	764.1
142.5°	795.5	795.7	795.8	795.5	794.7	793.9	793.1	792.3
145°	837.7	837.9	838.0	837.8	837.0	836.2	835.4	834.6
147.5°	874.6	875.0	875.5	875.3	874.6	873.8	873.1	872.3
150°	898.0	898.7	899.3	899.3	898.7	898.0	897.4	896.9
152.5°	921.5	922.3	923.0	923.0	922.3	921.5	920.7	920.0
155°	951.3	952.3	953.2	953.4	952.9	952.3	951.6	951.0
157.5°	978.7	980.1	981.4	981.6	980.7	979.7	978.7	977.8
160°	995.0	996.2	997.4	997.6	996.8	996.0	995.2	994.4
162.5°	1009.8	1011.1	1012.5	1012.7	1011.7	1010.8	1009.8	1008.9
165°	1028.9	1030.2	1031.6	1031.8	1030.8	1029.8	1028.9	1027.8
167.5°	1044.6	1046.0	1047.3	1047.5	1046.5	1045.4	1044.4	1043.4
170°	1053.2	1054.6	1056.1	1056.1	1054.9	1053.7	1052.5	1051.3
172.5°	1059.7	1061.1	1062.5	1062.7	1061.4	1060.2	1059.0	1057.8
175°	1066.8	1068.2	1069.5	1069.7	1068.4	1067.3	1066.0	1064.9
177.5°	1070.1	1070.9	1071.9	1071.9	1070.9	1070.1	1069.1	1068.1
180°	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2	1070.2

(END OF REPORT)