

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: P231606

Luminaire Tested: **S122-DR-LO-40-X-0048-1-U-DD-4-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231606
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P33910)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122-DR-LO-40-X-0048-1-U-DD-4-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH DROP LENS.
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1250.5 lumens
Efficiency: N/A
Efficacy: 92.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.14' x L: 3.92' x H: 0.08')
CIE Type: Semi-Direct

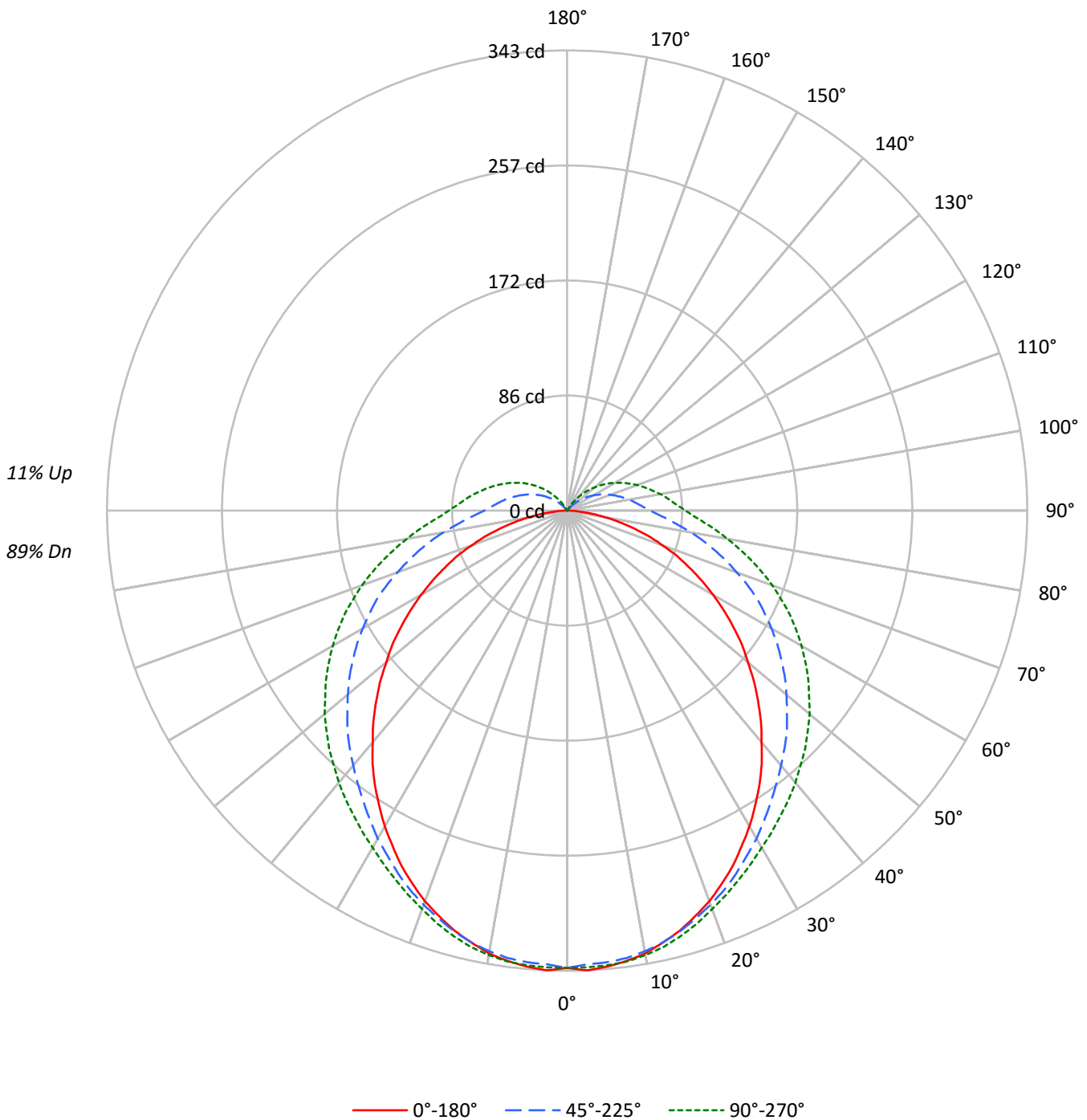
Input Watts (W): 13.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

Luminous Intensity Polar Plot





TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

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	116	116	116	116	112	112	112	112	105	105	105	98	98	98	92	92	92	89
1	104	98	93	89	100	95	90	86	89	85	81	83	80	77	77	75	73	70
2	94	85	77	71	90	82	75	69	76	70	66	71	67	62	67	63	59	56
3	85	74	65	58	81	71	63	57	67	60	54	62	57	52	58	54	49	47
4	78	65	56	48	74	63	54	47	59	51	46	55	49	44	52	46	42	39
5	71	58	48	41	68	56	47	41	52	45	39	49	43	38	46	41	36	34
6	66	52	42	36	63	50	42	35	47	40	34	45	38	33	42	36	32	29
7	61	47	38	31	58	45	37	31	43	35	30	40	34	29	38	32	28	26
8	56	43	34	28	54	41	33	28	39	32	27	37	31	26	35	29	25	23
9	53	39	31	25	51	38	30	25	36	29	24	34	28	23	32	27	23	21
10	49	36	28	23	48	35	27	22	33	26	22	32	25	21	30	25	20	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6690	6690	6690
5°	6713	6416	6372
10°	6657	6175	6069
15°	6551	5911	5751
20°	6424	5636	5426
25°	6267	5370	5142
30°	6086	5113	4893
35°	5898	4860	4693
40°	5677	4655	4524
45°	5472	4478	4367
50°	5239	4289	4217
55°	5019	4118	4061
60°	4760	3935	3902
65°	4460	3760	3737
70°	4094	3513	3544
75°	3640	3281	3337
80°	2895	3051	3135
85°	1902	2843	2962



TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.3	2.6
10°-20°	92.0	7.4
20°-30°	137.7	11.0
30°-40°	166.0	13.3
40°-50°	177.1	14.2
50°-60°	171.0	13.7
60°-70°	148.5	11.9
70°-80°	113.0	9.0
80°-90°	75.0	6.0
90°-100°	51.9	4.2
100°-110°	37.9	3.0
110°-120°	25.5	2.0
120°-130°	14.8	1.2
130°-140°	6.5	0.5
140°-150°	1.2	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	262.0	21.0
0°-40°	428.0	34.2
0°-60°	776.1	62.1
0°-90°	1112.7	89.0
90°-120°	115.4	9.2
90°-150°	137.8	11.0
90°-180°	138.0	11.0
0°-180°	1250.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	341	341	341	341	341	
5°	341	340	338	341	340	32
15°	324	325	325	329	328	91
25°	292	296	298	303	303	134
35°	250	257	265	275	277	156
45°	201	214	232	246	251	155
55°	151	170	195	214	220	135
65°	100	125	157	176	183	100
75°	52	81	114	135	142	55
85°	10	42	76	96	103	13
90°	0	30	62	82	88	1
95°	0	24	54	72	78	0
105°	0	15	40	57	63	0
115°	0	7	29	44	48	0
125°	0	1	17	30	34	0
135°	0	0	7	16	20	0
145°	1	0	0	4	7	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8
2.5°	343.0	341.9	340.2	340.8	341.3	341.3	340.8	340.8	339.7	338.6	338.6
5°	341.3	340.2	338.6	339.7	340.2	340.2	340.2	339.7	339.1	338.0	338.6
7.5°	338.6	337.5	336.4	336.9	337.5	338.6	338.0	338.0	337.5	336.4	336.9
10°	335.2	333.6	332.5	333.6	334.1	335.2	335.2	335.2	334.7	333.6	334.1
12.5°	329.7	329.2	328.1	329.7	330.3	331.4	331.4	331.4	330.3	329.7	330.8
15°	324.2	323.1	322.0	323.7	324.8	325.9	325.9	325.9	325.3	324.8	325.9
17.5°	317.1	316.0	316.0	317.1	318.7	319.8	319.8	320.4	319.3	318.7	319.8
20°	309.9	308.8	308.2	310.4	311.5	312.6	312.6	313.2	312.6	312.6	313.7
22.5°	301.1	300.5	300.5	302.2	303.3	304.4	305.5	305.5	305.5	306.0	306.6
25°	292.2	291.7	292.2	293.9	295.0	296.7	297.8	297.8	297.8	298.3	300.0
27.5°	281.8	281.8	282.3	284.5	286.2	287.8	288.9	289.5	289.5	290.0	292.2
30°	271.8	271.3	271.8	274.6	276.2	278.5	279.6	280.1	280.7	282.3	284.0
32.5°	260.8	260.3	261.4	264.1	266.3	268.0	270.2	271.3	271.8	273.5	275.7
35°	249.8	249.2	250.3	253.1	255.8	258.1	259.7	260.8	263.0	264.7	267.4
37.5°	238.2	238.2	239.9	242.6	245.4	247.6	249.8	251.4	253.6	256.4	259.2
40°	225.5	226.1	227.7	231.6	234.3	237.7	239.9	241.5	244.8	248.1	251.4
42.5°	213.9	213.9	216.1	220.0	222.8	226.6	229.9	231.6	236.0	239.9	243.7
45°	201.3	201.3	204.6	208.4	211.7	216.1	219.5	222.2	226.6	231.6	234.9
47.5°	189.1	189.7	193.0	196.8	200.7	205.7	209.0	212.8	217.8	222.2	226.6
50°	175.9	177.0	180.9	185.3	189.7	195.2	199.1	203.5	208.4	213.4	217.8
52.5°	164.3	164.9	168.7	173.7	178.1	183.6	189.1	194.1	199.6	204.6	209.0
55°	151.1	152.7	156.6	161.6	167.1	172.6	178.7	184.2	190.2	195.2	200.7
57.5°	138.4	140.6	145.0	149.4	155.5	162.1	168.2	173.7	179.8	185.8	190.8
60°	125.7	127.9	132.9	137.8	144.5	151.1	157.7	164.3	169.8	175.9	180.9
62.5°	113.0	115.8	120.2	125.7	133.4	140.6	147.2	153.8	159.9	166.0	171.5
65°	100.4	103.7	108.1	114.7	121.9	129.0	136.2	143.4	149.4	156.6	161.0
67.5°	88.8	91.0	95.9	103.1	110.8	118.6	125.7	132.3	139.0	145.6	151.6
70°	75.5	79.4	83.8	91.5	99.3	107.0	114.7	121.9	128.5	134.5	140.6
72.5°	64.0	66.7	71.7	80.0	87.7	95.9	103.7	111.4	118.0	124.1	130.1
75°	51.8	55.1	60.7	68.4	77.2	85.5	93.2	100.4	107.5	113.6	119.7
77.5°	40.3	43.6	50.2	58.4	66.2	74.4	82.7	89.9	97.0	103.7	109.7
80°	28.7	33.1	39.1	47.4	56.2	64.0	72.2	79.4	87.1	93.7	99.3
82.5°	19.3	23.2	29.8	37.5	46.3	54.6	62.9	70.0	77.7	83.8	89.9
85°	10.5	14.9	22.1	29.8	38.0	46.3	54.6	61.8	68.9	75.5	81.1
87.5°	4.4	8.3	14.9	23.2	30.9	39.1	47.4	54.6	61.2	67.8	73.9
90°	0.0	3.9	9.9	17.6	25.9	33.6	41.4	49.1	55.7	61.8	67.3
92.5°	0.0	2.8	7.7	14.9	22.6	30.3	38.0	44.7	51.3	57.3	62.9
95°	0.0	1.7	6.6	12.7	20.4	27.6	34.7	41.4	48.0	53.5	59.0
97.5°	0.0	0.6	5.0	11.0	17.6	24.8	32.0	38.6	44.7	50.2	55.1
100°	0.0	0.0	3.3	8.8	15.4	22.6	29.2	35.3	41.4	46.9	51.8
102.5°	0.0	0.0	2.2	7.2	13.2	19.9	26.5	32.5	38.6	43.6	48.5
105°	0.0	0.0	1.1	5.5	11.6	17.6	23.7	29.8	35.3	40.3	45.2
107.5°	0.0	0.0	0.0	3.9	9.4	15.4	21.5	27.0	32.5	37.5	41.9
110°	0.0	0.0	0.0	2.8	7.7	13.2	18.7	24.3	29.2	34.2	39.1



TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	0.0	0.0	1.1	6.1	11.0	16.5	21.5	26.5	31.4	35.8
115°	0.0	0.0	0.0	0.6	4.4	8.8	14.3	19.3	23.7	28.7	32.5
117.5°	0.0	0.0	0.0	0.0	2.8	7.2	11.6	16.5	21.0	25.4	29.8
120°	0.0	0.0	0.0	0.0	1.1	5.0	9.4	13.8	18.2	22.6	26.5
122.5°	0.0	0.0	0.0	0.0	0.0	3.3	7.7	11.6	16.0	19.9	23.7
125°	0.0	0.0	0.0	0.0	0.0	1.7	5.5	9.4	13.2	17.1	20.4
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	3.3	7.2	10.5	14.3	17.6
130°	0.0	0.0	0.0	0.0	0.0	0.0	1.7	5.0	8.3	11.6	14.9
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.8	6.1	8.8	12.1
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	3.9	6.6	8.8
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	3.9	6.6
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	3.9
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7
145°	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	340.8	340.8	340.8	340.8	340.8	340.8	340.8	340.8
2.5°	340.2	340.8	341.3	341.3	341.3	341.3	341.3	340.8
5°	339.7	340.8	341.3	341.3	341.3	341.3	340.8	340.2
7.5°	338.0	339.1	339.7	339.7	339.7	340.2	339.7	339.1
10°	335.8	336.4	336.9	337.5	337.5	337.5	336.9	336.4
12.5°	331.9	333.0	333.6	333.6	333.6	333.6	333.6	333.0
15°	327.0	327.5	328.6	328.6	328.6	329.2	328.1	328.1
17.5°	321.5	322.6	323.1	322.6	323.1	323.1	322.6	322.6
20°	315.4	316.0	316.5	316.5	317.1	317.1	316.5	316.0
22.5°	308.2	309.3	309.9	309.9	310.4	311.0	310.4	309.9
25°	301.1	302.2	303.3	303.3	303.8	304.4	303.8	303.3
27.5°	293.9	295.0	295.5	296.1	297.2	297.2	297.2	296.7
30°	285.6	287.3	287.8	288.9	290.0	290.6	290.6	290.0
32.5°	277.9	279.6	281.2	282.3	283.4	284.0	284.0	284.0
35°	269.6	271.8	274.0	275.7	276.8	277.4	277.9	277.4
37.5°	262.5	264.7	266.9	269.1	270.2	270.7	270.7	271.3
40°	254.7	257.5	259.7	261.4	263.0	264.1	264.1	264.7
42.5°	247.0	249.8	252.5	254.7	256.4	257.5	257.5	257.5
45°	238.8	242.6	244.8	247.0	249.2	250.3	250.9	250.9
47.5°	230.5	234.3	237.1	239.9	241.5	242.6	243.2	243.2
50°	222.2	226.1	229.4	232.1	233.8	234.9	236.0	236.0
52.5°	213.4	217.8	220.6	223.3	225.5	227.2	227.7	227.2
55°	205.1	209.0	212.3	215.0	217.3	218.9	219.5	219.5
57.5°	195.2	199.6	203.5	206.2	208.4	210.1	210.6	210.6
60°	186.4	190.2	194.1	196.8	199.6	201.3	201.8	201.8
62.5°	176.4	180.9	184.7	188.0	190.2	191.9	192.4	192.4
65°	166.5	170.9	174.8	178.1	179.8	181.4	182.5	183.1
67.5°	156.0	160.5	164.9	167.6	169.8	171.5	172.6	172.6
70°	146.1	150.5	154.4	157.1	159.4	161.6	162.1	162.7
72.5°	135.6	140.1	143.9	147.2	149.4	151.1	151.6	152.2
75°	124.6	129.6	133.4	136.2	139.0	141.2	141.7	141.7
77.5°	114.1	119.1	123.0	126.3	128.5	130.1	130.7	131.2
80°	104.8	109.2	113.0	115.8	118.0	119.7	121.3	121.3
82.5°	94.8	99.8	103.7	106.4	108.6	110.8	111.4	111.9
85°	86.6	91.0	94.8	97.6	99.8	102.0	102.6	102.6
87.5°	78.8	83.3	86.6	89.3	92.1	93.2	94.3	94.3
90°	72.2	76.6	80.0	83.3	85.5	87.1	87.7	88.2
92.5°	67.8	72.2	75.5	78.3	80.0	81.6	82.7	82.7
95°	63.4	67.8	71.1	73.9	76.1	77.7	78.3	78.3
97.5°	60.1	64.0	67.3	69.5	71.7	73.3	73.9	74.4
100°	56.2	60.1	63.4	65.6	67.8	68.9	70.0	70.6
102.5°	52.9	56.8	59.6	62.3	64.0	65.1	66.2	66.2
105°	49.6	52.9	56.2	58.4	60.7	61.8	62.3	62.9
107.5°	46.3	49.6	52.9	55.1	56.8	58.4	59.0	59.0
110°	43.0	46.3	49.1	51.8	53.5	54.6	55.1	55.7



TEST NUMBER: P231606

CATALOG NUMBER: S122-DR-LO-40-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	39.7	43.0	45.8	48.0	49.6	51.3	51.8	51.8
115°	36.4	39.7	42.5	44.7	46.3	47.4	48.0	48.5
117.5°	33.1	36.4	39.1	41.4	43.0	44.1	44.7	44.7
120°	29.8	33.1	35.3	38.0	39.1	40.8	41.4	41.4
122.5°	27.0	29.8	32.0	34.2	35.8	36.9	37.5	38.0
125°	23.7	26.5	28.7	30.9	32.5	33.6	34.2	34.2
127.5°	20.4	23.2	25.4	27.6	28.7	29.8	30.3	30.9
130°	17.6	20.4	22.1	24.3	25.4	26.5	27.0	27.0
132.5°	14.3	17.1	18.7	21.0	22.1	23.2	23.7	23.7
135°	11.6	13.8	15.4	17.1	18.7	19.3	19.9	19.9
137.5°	8.8	11.0	12.7	13.8	15.4	16.0	16.5	16.5
140°	6.1	7.7	9.4	11.0	12.1	12.7	13.2	13.2
142.5°	3.3	5.0	6.6	7.7	8.8	9.4	9.9	9.9
145°	0.6	2.2	3.9	5.0	5.5	6.1	6.6	7.2
147.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)