

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: P231611

Luminaire Tested: **S122-DR-2-27-X-0048-1-U-DD-4-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231611
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-2-27-X-0048-1-U-DD-4-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH DROP LENS.
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

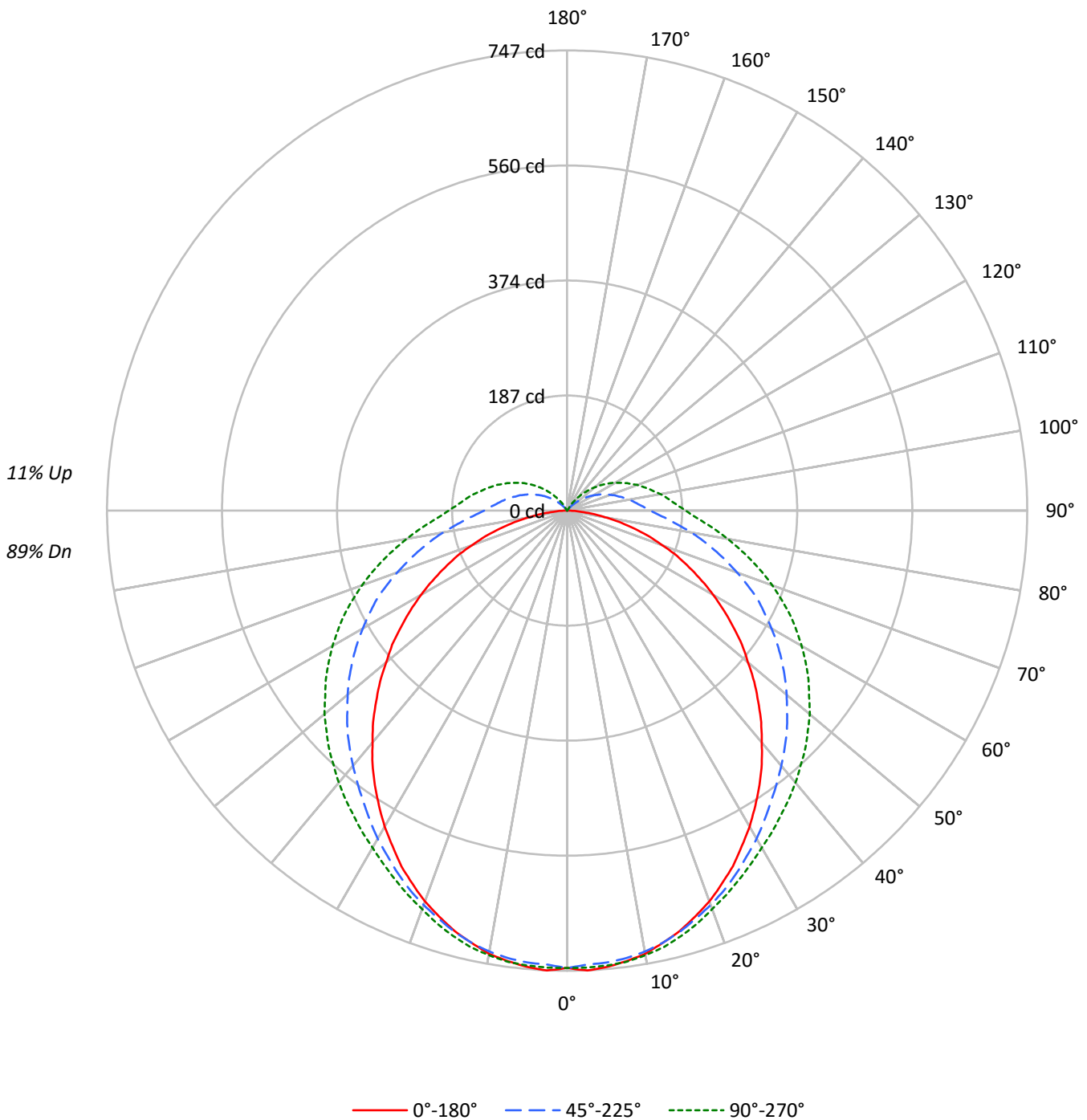
Lumens per Lamp: N/A
Luminaire Lumens: 2724.9 lumens
Efficiency: N/A
Efficacy: 64.0 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.14' x L: 3.92' x H: 0.08')
CIE Type: Semi-Direct

Input Watts (W): 42.6
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: P231611
CATALOG NUMBER: S122-DR-2-27-X-0048-1-U-DD-4-W

Luminous Intensity Polar Plot





TEST NUMBER: P231611

CATALOG NUMBER: S122-DR-2-27-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°	14575	14575	14575
5°	14627	13980	13885
10°	14507	13455	13222
15°	14277	12879	12531
20°	13997	12282	11822
25°	13657	11701	11204
30°	13263	11142	10663
35°	12852	10589	10222
40°	12371	10146	9857
45°	11920	9757	9515
50°	11416	9347	9188
55°	10934	8972	8848
60°	10371	8576	8501
65°	9715	8192	8141
70°	8926	7659	7720
75°	7933	7148	7272
80°	6305	6653	6830
85°	4131	6199	6453



TEST NUMBER: P231611

CATALOG NUMBER: S122-DR-2-27-X-0048-1-U-DD-4-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.4	2.6
10°-20°	200.4	7.4
20°-30°	300.1	11.0
30°-40°	361.7	13.3
40°-50°	385.9	14.2
50°-60°	372.6	13.7
60°-70°	323.6	11.9
70°-80°	246.3	9.0
80°-90°	163.5	6.0
90°-100°	113.1	4.2
100°-110°	82.7	3.0
110°-120°	55.6	2.0
120°-130°	32.2	1.2
130°-140°	14.1	0.5
140°-150°	2.7	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	570.9	21.0
0°-40°	932.7	34.2
0°-60°	1691.2	62.1
0°-90°	2424.6	89.0
90°-120°	251.4	9.2
90°-150°	300.3	11.0
90°-180°	300.0	11.0
0°-180°	2724.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	742	742	742	742	742	
5°	744	741	736	744	741	71
15°	706	709	708	716	715	199
25°	637	645	650	661	661	293
35°	544	560	577	599	604	340
45°	438	466	505	536	547	338
55°	329	370	425	466	478	295
65°	219	273	341	384	399	217
75°	113	177	248	294	309	120
85°	23	92	165	210	224	27
90°	0	65	135	178	192	1
95°	0	52	116	158	171	0
105°	0	32	88	125	137	0
115°	0	14	62	95	106	0
125°	0	2	37	65	74	0
135°	0	0	14	35	43	0
145°	1	0	0	10	16	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: P231611

CATALOG NUMBER: S122-DR-2-27-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	742.5	742.5	742.5	742.5	742.5	742.5	742.5	742.5	742.5	742.5	742.5
2.5°	747.3	744.9	741.3	742.5	743.7	743.7	742.5	742.5	740.1	737.7	737.7
5°	743.7	741.3	737.7	740.1	741.3	741.3	741.3	740.1	738.9	736.5	737.7
7.5°	737.7	735.3	732.9	734.1	735.3	737.7	736.5	736.5	735.3	732.9	734.1
10°	730.5	726.9	724.5	726.9	728.1	730.5	730.5	730.5	729.3	726.9	728.1
12.5°	718.5	717.3	714.9	718.5	719.7	722.1	722.1	722.1	719.7	718.5	720.9
15°	706.5	704.1	701.7	705.3	707.7	710.1	710.1	710.1	708.9	707.7	710.1
17.5°	690.9	688.5	688.5	690.9	694.5	696.9	696.9	698.1	695.7	694.5	696.9
20°	675.2	672.8	671.6	676.4	678.8	681.2	681.2	682.4	681.2	681.2	683.6
22.5°	656.0	654.8	654.8	658.4	660.8	663.2	665.6	665.6	665.6	666.8	668.0
25°	636.8	635.6	636.8	640.4	642.8	646.4	648.8	648.8	648.8	650.0	653.6
27.5°	614.0	614.0	615.2	620.0	623.6	627.2	629.6	630.8	630.8	632.0	636.8
30°	592.3	591.1	592.3	598.3	601.9	606.8	609.2	610.4	611.6	615.2	618.8
32.5°	568.3	567.1	569.5	575.5	580.3	583.9	588.7	591.1	592.3	595.9	600.7
35°	544.3	543.1	545.5	551.5	557.5	562.3	565.9	568.3	573.1	576.7	582.7
37.5°	519.0	519.0	522.6	528.7	534.7	539.5	544.3	547.9	552.7	558.7	564.7
40°	491.4	492.6	496.2	504.6	510.6	517.8	522.6	526.3	533.5	540.7	547.9
42.5°	466.2	466.2	471.0	479.4	485.4	493.8	501.0	504.6	514.2	522.6	531.1
45°	438.5	438.5	445.8	454.2	461.4	471.0	478.2	484.2	493.8	504.6	511.8
47.5°	412.1	413.3	420.5	428.9	437.3	448.2	455.4	463.8	474.6	484.2	493.8
50°	383.3	385.7	394.1	403.7	413.3	425.3	433.7	443.3	454.2	465.0	474.6
52.5°	358.0	359.2	367.7	378.5	388.1	400.1	412.1	422.9	434.9	445.8	455.4
55°	329.2	332.8	341.2	352.0	364.1	376.1	389.3	401.3	414.5	425.3	437.3
57.5°	301.6	306.4	316.0	325.6	338.8	353.2	366.5	378.5	391.7	404.9	415.7
60°	273.9	278.7	289.6	300.4	314.8	329.2	343.6	358.0	370.1	383.3	394.1
62.5°	246.3	252.3	261.9	273.9	290.8	306.4	320.8	335.2	348.4	361.6	373.7
65°	218.7	225.9	235.5	249.9	265.5	281.1	296.8	312.4	325.6	341.2	350.8
67.5°	193.4	198.2	209.1	224.7	241.5	258.3	273.9	288.4	302.8	317.2	330.4
70°	164.6	173.0	182.6	199.4	216.3	233.1	249.9	265.5	279.9	293.2	306.4
72.5°	139.4	145.4	156.2	174.2	191.0	209.1	225.9	242.7	257.1	270.3	283.6
75°	112.9	120.1	132.2	149.0	168.2	186.2	203.1	218.7	234.3	247.5	260.7
77.5°	87.7	94.9	109.3	127.4	144.2	162.2	180.2	195.8	211.5	225.9	239.1
80°	62.5	72.1	85.3	103.3	122.6	139.4	157.4	173.0	189.8	204.3	216.3
82.5°	42.1	50.5	64.9	81.7	100.9	118.9	137.0	152.6	169.4	182.6	195.8
85°	22.8	32.4	48.1	64.9	82.9	100.9	118.9	134.6	150.2	164.6	176.6
87.5°	9.6	18.0	32.4	50.5	67.3	85.3	103.3	118.9	133.4	147.8	161.0
90°	0.0	8.4	21.6	38.4	56.5	73.3	90.1	106.9	121.4	134.6	146.6
92.5°	0.0	6.0	16.8	32.4	49.3	66.1	82.9	97.3	111.7	125.0	137.0
95°	0.0	3.6	14.4	27.6	44.5	60.1	75.7	90.1	104.5	116.5	128.6
97.5°	0.0	1.2	10.8	24.0	38.4	54.1	69.7	84.1	97.3	109.3	120.1
100°	0.0	0.0	7.2	19.2	33.6	49.3	63.7	76.9	90.1	102.1	112.9
102.5°	0.0	0.0	4.8	15.6	28.8	43.3	57.7	70.9	84.1	94.9	105.7
105°	0.0	0.0	2.4	12.0	25.2	38.4	51.7	64.9	76.9	87.7	98.5
107.5°	0.0	0.0	0.0	8.4	20.4	33.6	46.9	58.9	70.9	81.7	91.3
110°	0.0	0.0	0.0	6.0	16.8	28.8	40.9	52.9	63.7	74.5	85.3



TEST NUMBER: P231611

CATALOG NUMBER: S122-DR-2-27-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	2.4	13.2	24.0	36.0	46.9	57.7	68.5	78.1
115°	0.0	0.0	0.0	1.2	9.6	19.2	31.2	42.1	51.7	62.5	70.9
117.5°	0.0	0.0	0.0	0.0	6.0	15.6	25.2	36.0	45.7	55.3	64.9
120°	0.0	0.0	0.0	0.0	2.4	10.8	20.4	30.0	39.6	49.3	57.7
122.5°	0.0	0.0	0.0	0.0	0.0	7.2	16.8	25.2	34.8	43.3	51.7
125°	0.0	0.0	0.0	0.0	0.0	3.6	12.0	20.4	28.8	37.2	44.5
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	7.2	15.6	22.8	31.2	38.4
130°	0.0	0.0	0.0	0.0	0.0	0.0	3.6	10.8	18.0	25.2	32.4
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	13.2	19.2	26.4
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	8.4	14.4	19.2
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	8.4	14.4
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	8.4
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6
145°	1.2	1.2	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: P231611

CATALOG NUMBER: S122-DR-2-27-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	742.5	742.5	742.5	742.5	742.5	742.5	742.5	742.5
2.5°	741.3	742.5	743.7	743.7	743.7	743.7	743.7	742.5
5°	740.1	742.5	743.7	743.7	743.7	743.7	742.5	741.3
7.5°	736.5	738.9	740.1	740.1	740.1	741.3	740.1	738.9
10°	731.7	732.9	734.1	735.3	735.3	735.3	734.1	732.9
12.5°	723.3	725.7	726.9	726.9	726.9	726.9	726.9	725.7
15°	712.5	713.7	716.1	716.1	716.1	717.3	714.9	714.9
17.5°	700.5	702.9	704.1	702.9	704.1	704.1	702.9	702.9
20°	687.3	688.5	689.7	689.7	690.9	690.9	689.7	688.5
22.5°	671.6	674.0	675.2	675.2	676.4	677.6	676.4	675.2
25°	656.0	658.4	660.8	660.8	662.0	663.2	662.0	660.8
27.5°	640.4	642.8	644.0	645.2	647.6	647.6	647.6	646.4
30°	622.4	626.0	627.2	629.6	632.0	633.2	633.2	632.0
32.5°	605.6	609.2	612.8	615.2	617.6	618.8	618.8	618.8
35°	587.5	592.3	597.1	600.7	603.1	604.3	605.6	604.3
37.5°	571.9	576.7	581.5	586.3	588.7	589.9	589.9	591.1
40°	555.1	561.1	565.9	569.5	573.1	575.5	575.5	576.7
42.5°	538.3	544.3	550.3	555.1	558.7	561.1	561.1	561.1
45°	520.2	528.7	533.5	538.3	543.1	545.5	546.7	546.7
47.5°	502.2	510.6	516.6	522.6	526.3	528.7	529.9	529.9
50°	484.2	492.6	499.8	505.8	509.4	511.8	514.2	514.2
52.5°	465.0	474.6	480.6	486.6	491.4	495.0	496.2	495.0
55°	447.0	455.4	462.6	468.6	473.4	477.0	478.2	478.2
57.5°	425.3	434.9	443.3	449.4	454.2	457.8	459.0	459.0
60°	406.1	414.5	422.9	428.9	434.9	438.5	439.7	439.7
62.5°	384.5	394.1	402.5	409.7	414.5	418.1	419.3	419.3
65°	362.8	372.5	380.9	388.1	391.7	395.3	397.7	398.9
67.5°	340.0	349.6	359.2	365.3	370.1	373.7	376.1	376.1
70°	318.4	328.0	336.4	342.4	347.2	352.0	353.2	354.4
72.5°	295.6	305.2	313.6	320.8	325.6	329.2	330.4	331.6
75°	271.5	282.3	290.8	296.8	302.8	307.6	308.8	308.8
77.5°	248.7	259.5	267.9	275.1	279.9	283.6	284.8	286.0
80°	228.3	237.9	246.3	252.3	257.1	260.7	264.3	264.3
82.5°	206.7	217.5	225.9	231.9	236.7	241.5	242.7	243.9
85°	188.6	198.2	206.7	212.7	217.5	222.3	223.5	223.5
87.5°	171.8	181.4	188.6	194.6	200.6	203.1	205.5	205.5
90°	157.4	167.0	174.2	181.4	186.2	189.8	191.0	192.2
92.5°	147.8	157.4	164.6	170.6	174.2	177.8	180.2	180.2
95°	138.2	147.8	155.0	161.0	165.8	169.4	170.6	170.6
97.5°	131.0	139.4	146.6	151.4	156.2	159.8	161.0	162.2
100°	122.6	131.0	138.2	143.0	147.8	150.2	152.6	153.8
102.5°	115.3	123.8	129.8	135.8	139.4	141.8	144.2	144.2
105°	108.1	115.3	122.6	127.4	132.2	134.6	135.8	137.0
107.5°	100.9	108.1	115.3	120.1	123.8	127.4	128.6	128.6
110°	93.7	100.9	106.9	112.9	116.5	118.9	120.1	121.4



TEST NUMBER: P231611

CATALOG NUMBER: S122-DR-2-27-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	86.5	93.7	99.7	104.5	108.1	111.7	112.9	112.9
115°	79.3	86.5	92.5	97.3	100.9	103.3	104.5	105.7
117.5°	72.1	79.3	85.3	90.1	93.7	96.1	97.3	97.3
120°	64.9	72.1	76.9	82.9	85.3	88.9	90.1	90.1
122.5°	58.9	64.9	69.7	74.5	78.1	80.5	81.7	82.9
125°	51.7	57.7	62.5	67.3	70.9	73.3	74.5	74.5
127.5°	44.5	50.5	55.3	60.1	62.5	64.9	66.1	67.3
130°	38.4	44.5	48.1	52.9	55.3	57.7	58.9	58.9
132.5°	31.2	37.2	40.9	45.7	48.1	50.5	51.7	51.7
135°	25.2	30.0	33.6	37.2	40.9	42.1	43.3	43.3
137.5°	19.2	24.0	27.6	30.0	33.6	34.8	36.0	36.0
140°	13.2	16.8	20.4	24.0	26.4	27.6	28.8	28.8
142.5°	7.2	10.8	14.4	16.8	19.2	20.4	21.6	21.6
145°	1.2	4.8	8.4	10.8	12.0	13.2	14.4	15.6
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)