

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: P231603

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231603
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-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: 947.0 lumens
Efficiency: N/A
Efficacy: 69.6 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

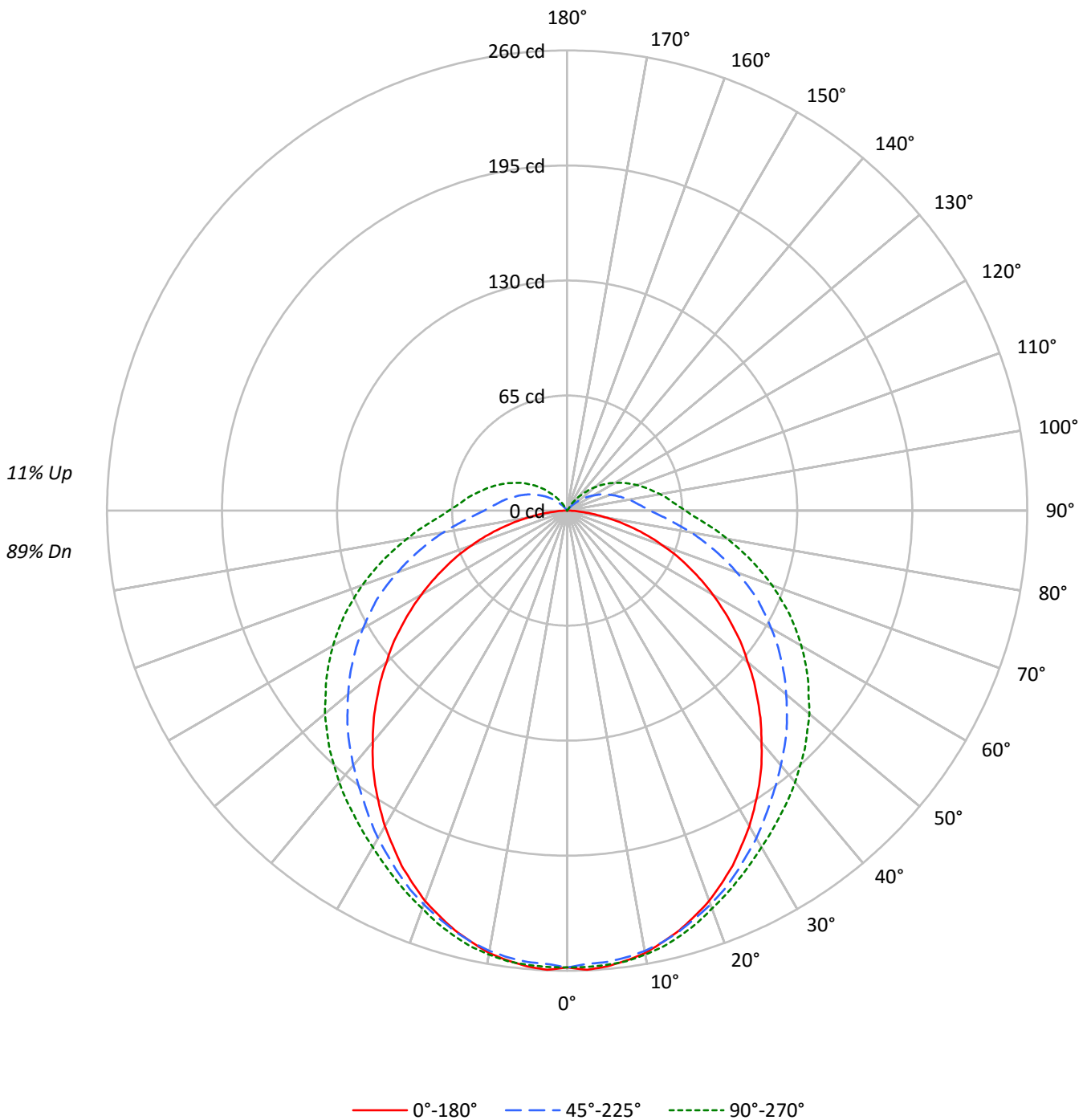
Input Watts (W): 13.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P231603

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

Luminous Intensity Polar Plot





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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°	5067	5067	5067
5°	5084	4859	4825
10°	5042	4676	4595
15°	4961	4475	4356
20°	4865	4270	4109
25°	4746	4067	3895
30°	4610	3872	3705
35°	4467	3680	3552
40°	4300	3526	3425
45°	4143	3391	3307
50°	3967	3248	3193
55°	3800	3118	3075
60°	3605	2980	2954
65°	3376	2848	2829
70°	3102	2662	2684
75°	2762	2484	2527
80°	2189	2312	2375
85°	1431	2154	2243



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.5	2.6
10°-20°	69.7	7.4
20°-30°	104.3	11.0
30°-40°	125.7	13.3
40°-50°	134.1	14.2
50°-60°	129.5	13.7
60°-70°	112.5	11.9
70°-80°	85.6	9.0
80°-90°	56.8	6.0
90°-100°	39.3	4.2
100°-110°	28.7	3.0
110°-120°	19.3	2.0
120°-130°	11.2	1.2
130°-140°	4.9	0.5
140°-150°	0.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	198.4	21.0
0°-40°	324.2	34.2
0°-60°	587.8	62.1
0°-90°	842.6	89.0
90°-120°	87.4	9.2
90°-150°	104.4	11.0
90°-180°	104.0	11.0
0°-180°	947.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	258	258	258	258	258	
5°	258	258	256	258	258	25
15°	246	246	246	249	248	69
25°	221	224	226	230	230	102
35°	189	195	200	208	210	118
45°	152	162	175	186	190	118
55°	114	129	148	162	166	102
65°	76	95	119	134	139	75
75°	39	62	86	102	107	42
85°	8	32	57	73	78	10
90°	0	23	47	62	67	0
95°	0	18	40	55	59	0
105°	0	11	30	43	48	0
115°	0	5	22	33	37	0
125°	0	1	13	23	26	0
135°	0	0	5	12	15	0
145°	0	0	0	3	5	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: P231603

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	258.1	258.1	258.1	258.1	258.1	258.1	258.1	258.1	258.1	258.1	258.1
2.5°	259.7	258.9	257.6	258.1	258.5	258.5	258.1	258.1	257.2	256.4	256.4
5°	258.5	257.6	256.4	257.2	257.6	257.6	257.6	257.2	256.8	256.0	256.4
7.5°	256.4	255.6	254.7	255.1	255.6	256.4	256.0	256.0	255.6	254.7	255.1
10°	253.9	252.6	251.8	252.6	253.0	253.9	253.9	253.9	253.5	252.6	253.0
12.5°	249.7	249.3	248.5	249.7	250.1	251.0	251.0	251.0	250.1	249.7	250.5
15°	245.5	244.7	243.9	245.1	245.9	246.8	246.8	246.8	246.4	245.9	246.8
17.5°	240.1	239.3	239.3	240.1	241.4	242.2	242.2	242.6	241.8	241.4	242.2
20°	234.7	233.8	233.4	235.1	235.9	236.8	236.8	237.2	236.8	236.8	237.6
22.5°	228.0	227.6	227.6	228.8	229.7	230.5	231.3	231.3	231.3	231.8	232.2
25°	221.3	220.9	221.3	222.6	223.4	224.7	225.5	225.5	225.5	225.9	227.2
27.5°	213.4	213.4	213.8	215.5	216.7	218.0	218.8	219.2	219.2	219.6	221.3
30°	205.9	205.4	205.9	207.9	209.2	210.9	211.7	212.1	212.5	213.8	215.0
32.5°	197.5	197.1	197.9	200.0	201.7	202.9	204.6	205.4	205.9	207.1	208.8
35°	189.2	188.7	189.6	191.7	193.8	195.4	196.7	197.5	199.2	200.4	202.5
37.5°	180.4	180.4	181.6	183.7	185.8	187.5	189.2	190.4	192.1	194.2	196.3
40°	170.8	171.2	172.5	175.4	177.5	180.0	181.6	182.9	185.4	187.9	190.4
42.5°	162.0	162.0	163.7	166.6	168.7	171.6	174.1	175.4	178.7	181.6	184.6
45°	152.4	152.4	154.9	157.8	160.3	163.7	166.2	168.3	171.6	175.4	177.9
47.5°	143.2	143.6	146.1	149.1	152.0	155.8	158.3	161.2	164.9	168.3	171.6
50°	133.2	134.0	137.0	140.3	143.6	147.8	150.7	154.1	157.8	161.6	164.9
52.5°	124.4	124.9	127.8	131.5	134.9	139.1	143.2	147.0	151.2	154.9	158.3
55°	114.4	115.7	118.6	122.3	126.5	130.7	135.3	139.5	144.1	147.8	152.0
57.5°	104.8	106.5	109.8	113.2	117.8	122.8	127.4	131.5	136.1	140.7	144.5
60°	95.2	96.9	100.6	104.4	109.4	114.4	119.4	124.4	128.6	133.2	137.0
62.5°	85.6	87.7	91.0	95.2	101.1	106.5	111.5	116.5	121.1	125.7	129.9
65°	76.0	78.5	81.8	86.9	92.3	97.7	103.1	108.6	113.2	118.6	121.9
67.5°	67.2	68.9	72.7	78.1	83.9	89.8	95.2	100.2	105.2	110.2	114.8
70°	57.2	60.1	63.5	69.3	75.2	81.0	86.9	92.3	97.3	101.9	106.5
72.5°	48.4	50.5	54.3	60.5	66.4	72.7	78.5	84.3	89.4	94.0	98.5
75°	39.3	41.8	45.9	51.8	58.5	64.7	70.6	76.0	81.4	86.0	90.6
77.5°	30.5	33.0	38.0	44.3	50.1	56.4	62.6	68.1	73.5	78.5	83.1
80°	21.7	25.1	29.6	35.9	42.6	48.4	54.7	60.1	66.0	71.0	75.2
82.5°	14.6	17.5	22.5	28.4	35.1	41.3	47.6	53.0	58.9	63.5	68.1
85°	7.9	11.3	16.7	22.5	28.8	35.1	41.3	46.8	52.2	57.2	61.4
87.5°	3.3	6.3	11.3	17.5	23.4	29.6	35.9	41.3	46.4	51.4	56.0
90°	0.0	2.9	7.5	13.4	19.6	25.5	31.3	37.2	42.2	46.8	50.9
92.5°	0.0	2.1	5.8	11.3	17.1	23.0	28.8	33.8	38.8	43.4	47.6
95°	0.0	1.3	5.0	9.6	15.5	20.9	26.3	31.3	36.3	40.5	44.7
97.5°	0.0	0.4	3.8	8.4	13.4	18.8	24.2	29.2	33.8	38.0	41.8
100°	0.0	0.0	2.5	6.7	11.7	17.1	22.1	26.7	31.3	35.5	39.3
102.5°	0.0	0.0	1.7	5.4	10.0	15.0	20.0	24.6	29.2	33.0	36.7
105°	0.0	0.0	0.8	4.2	8.8	13.4	18.0	22.5	26.7	30.5	34.2
107.5°	0.0	0.0	0.0	2.9	7.1	11.7	16.3	20.5	24.6	28.4	31.7
110°	0.0	0.0	0.0	2.1	5.8	10.0	14.2	18.4	22.1	25.9	29.6



TEST NUMBER: P231603

CATALOG NUMBER: S122-DR-LO-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	0.8	4.6	8.4	12.5	16.3	20.0	23.8	27.1
115°	0.0	0.0	0.0	0.4	3.3	6.7	10.9	14.6	18.0	21.7	24.6
117.5°	0.0	0.0	0.0	0.0	2.1	5.4	8.8	12.5	15.9	19.2	22.5
120°	0.0	0.0	0.0	0.0	0.8	3.8	7.1	10.4	13.8	17.1	20.0
122.5°	0.0	0.0	0.0	0.0	0.0	2.5	5.8	8.8	12.1	15.0	18.0
125°	0.0	0.0	0.0	0.0	0.0	1.3	4.2	7.1	10.0	12.9	15.5
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.4	7.9	10.9	13.4
130°	0.0	0.0	0.0	0.0	0.0	0.0	1.3	3.8	6.3	8.8	11.3
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	4.6	6.7	9.2
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.9	5.0	6.7
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.9	5.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	2.9
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
145°	0.4	0.4	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: P231603

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	258.1	258.1	258.1	258.1	258.1	258.1	258.1	258.1
2.5°	257.6	258.1	258.5	258.5	258.5	258.5	258.5	258.1
5°	257.2	258.1	258.5	258.5	258.5	258.5	258.1	257.6
7.5°	256.0	256.8	257.2	257.2	257.2	257.6	257.2	256.8
10°	254.3	254.7	255.1	255.6	255.6	255.6	255.1	254.7
12.5°	251.4	252.2	252.6	252.6	252.6	252.6	252.6	252.2
15°	247.6	248.0	248.9	248.9	248.9	249.3	248.5	248.5
17.5°	243.4	244.3	244.7	244.3	244.7	244.7	244.3	244.3
20°	238.8	239.3	239.7	239.7	240.1	240.1	239.7	239.3
22.5°	233.4	234.3	234.7	234.7	235.1	235.5	235.1	234.7
25°	228.0	228.8	229.7	229.7	230.1	230.5	230.1	229.7
27.5°	222.6	223.4	223.8	224.2	225.1	225.1	225.1	224.7
30°	216.3	217.6	218.0	218.8	219.6	220.1	220.1	219.6
32.5°	210.5	211.7	213.0	213.8	214.6	215.0	215.0	215.0
35°	204.2	205.9	207.5	208.8	209.6	210.0	210.5	210.0
37.5°	198.8	200.4	202.1	203.8	204.6	205.0	205.0	205.4
40°	192.9	195.0	196.7	197.9	199.2	200.0	200.0	200.4
42.5°	187.1	189.2	191.2	192.9	194.2	195.0	195.0	195.0
45°	180.8	183.7	185.4	187.1	188.7	189.6	190.0	190.0
47.5°	174.5	177.5	179.6	181.6	182.9	183.7	184.1	184.1
50°	168.3	171.2	173.7	175.8	177.0	177.9	178.7	178.7
52.5°	161.6	164.9	167.0	169.1	170.8	172.0	172.5	172.0
55°	155.3	158.3	160.8	162.9	164.5	165.8	166.2	166.2
57.5°	147.8	151.2	154.1	156.2	157.8	159.1	159.5	159.5
60°	141.1	144.1	147.0	149.1	151.2	152.4	152.8	152.8
62.5°	133.6	137.0	139.9	142.4	144.1	145.3	145.7	145.7
65°	126.1	129.4	132.4	134.9	136.1	137.4	138.2	138.6
67.5°	118.2	121.5	124.9	126.9	128.6	129.9	130.7	130.7
70°	110.7	114.0	116.9	119.0	120.7	122.3	122.8	123.2
72.5°	102.7	106.1	109.0	111.5	113.2	114.4	114.8	115.2
75°	94.4	98.1	101.1	103.1	105.2	106.9	107.3	107.3
77.5°	86.4	90.2	93.1	95.6	97.3	98.5	99.0	99.4
80°	79.3	82.7	85.6	87.7	89.4	90.6	91.9	91.9
82.5°	71.8	75.6	78.5	80.6	82.3	83.9	84.3	84.8
85°	65.6	68.9	71.8	73.9	75.6	77.3	77.7	77.7
87.5°	59.7	63.1	65.6	67.6	69.7	70.6	71.4	71.4
90°	54.7	58.0	60.5	63.1	64.7	66.0	66.4	66.8
92.5°	51.4	54.7	57.2	59.3	60.5	61.8	62.6	62.6
95°	48.0	51.4	53.9	56.0	57.6	58.9	59.3	59.3
97.5°	45.5	48.4	50.9	52.6	54.3	55.5	56.0	56.4
100°	42.6	45.5	48.0	49.7	51.4	52.2	53.0	53.4
102.5°	40.1	43.0	45.1	47.2	48.4	49.3	50.1	50.1
105°	37.6	40.1	42.6	44.3	45.9	46.8	47.2	47.6
107.5°	35.1	37.6	40.1	41.8	43.0	44.3	44.7	44.7
110°	32.6	35.1	37.2	39.3	40.5	41.3	41.8	42.2



TEST NUMBER: P231603

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	30.1	32.6	34.7	36.3	37.6	38.8	39.3	39.3
115°	27.6	30.1	32.2	33.8	35.1	35.9	36.3	36.7
117.5°	25.1	27.6	29.6	31.3	32.6	33.4	33.8	33.8
120°	22.5	25.1	26.7	28.8	29.6	30.9	31.3	31.3
122.5°	20.5	22.5	24.2	25.9	27.1	28.0	28.4	28.8
125°	18.0	20.0	21.7	23.4	24.6	25.5	25.9	25.9
127.5°	15.5	17.5	19.2	20.9	21.7	22.5	23.0	23.4
130°	13.4	15.5	16.7	18.4	19.2	20.0	20.5	20.5
132.5°	10.9	12.9	14.2	15.9	16.7	17.5	18.0	18.0
135°	8.8	10.4	11.7	12.9	14.2	14.6	15.0	15.0
137.5°	6.7	8.4	9.6	10.4	11.7	12.1	12.5	12.5
140°	4.6	5.8	7.1	8.4	9.2	9.6	10.0	10.0
142.5°	2.5	3.8	5.0	5.8	6.7	7.1	7.5	7.5
145°	0.4	1.7	2.9	3.8	4.2	4.6	5.0	5.4
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)