

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: P231607

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231607
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-1-27-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

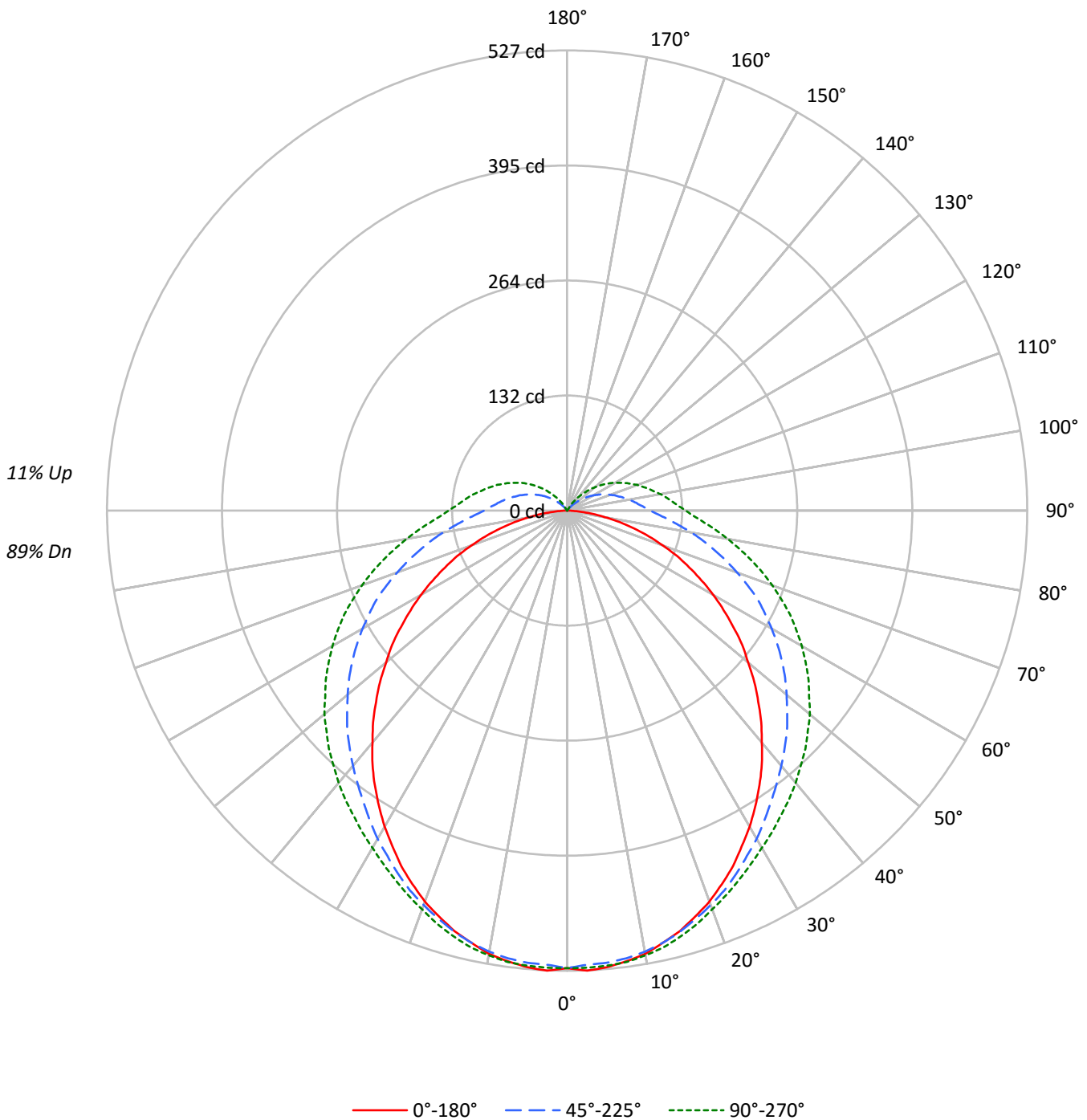
Lumens per Lamp: N/A
Luminaire Lumens: 1923.0 lumens
Efficiency: N/A
Efficacy: 68.9 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.14' x L: 3.92' x H: 0.08')
CIE Type: Semi-Direct

Input Watts (W): 27.9
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



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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°	10286	10286	10286
5°	10324	9867	9800
10°	10237	9496	9330
15°	10075	9088	8843
20°	9878	8669	8344
25°	9638	8257	7906
30°	9360	7862	7525
35°	9069	7473	7215
40°	8731	7160	6956
45°	8413	6885	6715
50°	8057	6595	6484
55°	7716	6333	6244
60°	7319	6052	6000
65°	6854	5782	5745
70°	6301	5404	5448
75°	5600	5045	5132
80°	4449	4693	4820
85°	2917	4376	4553



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.7	2.6
10°-20°	141.4	7.4
20°-30°	211.8	11.0
30°-40°	255.3	13.3
40°-50°	272.3	14.2
50°-60°	263.0	13.7
60°-70°	228.4	11.9
70°-80°	173.8	9.0
80°-90°	115.4	6.0
90°-100°	79.8	4.2
100°-110°	58.3	3.0
110°-120°	39.3	2.0
120°-130°	22.7	1.2
130°-140°	9.9	0.5
140°-150°	1.9	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	402.9	21.0
0°-40°	658.2	34.2
0°-60°	1193.5	62.1
0°-90°	1711.1	89.0
90°-120°	177.4	9.2
90°-150°	211.9	11.0
90°-180°	212.0	11.0
0°-180°	1923.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	524	524	524	524	524	
5°	525	523	520	525	523	50
15°	499	500	499	505	504	140
25°	449	455	459	466	466	207
35°	384	395	407	423	426	240
45°	310	329	356	378	386	239
55°	232	261	300	329	338	208
65°	154	193	241	271	282	153
75°	80	125	175	207	218	84
85°	16	65	116	148	158	19
90°	0	46	95	125	136	1
95°	0	37	82	112	120	0
105°	0	22	62	88	97	0
115°	0	10	44	67	75	0
125°	0	1	26	46	53	0
135°	0	0	10	25	30	0
145°	1	0	0	7	11	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



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	524.0	524.0	524.0	524.0	524.0	524.0	524.0	524.0	524.0	524.0	524.0
2.5°	527.4	525.7	523.2	524.0	524.9	524.9	524.0	524.0	522.3	520.6	520.6
5°	524.9	523.2	520.6	522.3	523.2	523.2	523.2	522.3	521.5	519.8	520.6
7.5°	520.6	518.9	517.2	518.1	518.9	520.6	519.8	519.8	518.9	517.2	518.1
10°	515.5	513.0	511.3	513.0	513.8	515.5	515.5	515.5	514.7	513.0	513.8
12.5°	507.0	506.2	504.5	507.0	507.9	509.6	509.6	509.6	507.9	507.0	508.7
15°	498.6	496.9	495.2	497.7	499.4	501.1	501.1	501.1	500.3	499.4	501.1
17.5°	487.5	485.9	485.9	487.5	490.1	491.8	491.8	492.6	490.9	490.1	491.8
20°	476.5	474.8	474.0	477.4	479.1	480.8	480.8	481.6	480.8	480.8	482.5
22.5°	463.0	462.1	462.1	464.7	466.3	468.0	469.7	469.7	469.7	470.6	471.4
25°	449.4	448.5	449.4	451.9	453.6	456.2	457.9	457.9	457.9	458.7	461.3
27.5°	433.3	433.3	434.1	437.5	440.1	442.6	444.3	445.2	445.2	446.0	449.4
30°	418.0	417.2	418.0	422.3	424.8	428.2	429.9	430.7	431.6	434.1	436.7
32.5°	401.1	400.2	401.9	406.1	409.5	412.1	415.5	417.2	418.0	420.6	424.0
35°	384.1	383.3	385.0	389.2	393.4	396.8	399.4	401.1	404.5	407.0	411.2
37.5°	366.3	366.3	368.8	373.1	377.3	380.7	384.1	386.6	390.0	394.3	398.5
40°	346.8	347.6	350.2	356.1	360.4	365.4	368.8	371.4	376.5	381.6	386.6
42.5°	329.0	329.0	332.4	338.3	342.6	348.5	353.6	356.1	362.9	368.8	374.8
45°	309.5	309.5	314.6	320.5	325.6	332.4	337.5	341.7	348.5	356.1	361.2
47.5°	290.8	291.7	296.8	302.7	308.6	316.3	321.4	327.3	334.9	341.7	348.5
50°	270.5	272.2	278.1	284.9	291.7	300.2	306.1	312.9	320.5	328.1	334.9
52.5°	252.7	253.5	259.5	267.1	273.9	282.4	290.8	298.5	306.9	314.6	321.4
55°	232.3	234.9	240.8	248.4	256.9	265.4	274.7	283.2	292.5	300.2	308.6
57.5°	212.8	216.2	223.0	229.8	239.1	249.3	258.6	267.1	276.4	285.7	293.4
60°	193.3	196.7	204.3	212.0	222.2	232.3	242.5	252.7	261.2	270.5	278.1
62.5°	173.8	178.1	184.8	193.3	205.2	216.2	226.4	236.6	245.9	255.2	263.7
65°	154.3	159.4	166.2	176.4	187.4	198.4	209.4	220.5	229.8	240.8	247.6
67.5°	136.5	139.9	147.5	158.6	170.4	182.3	193.3	203.5	213.7	223.8	233.2
70°	116.2	122.1	128.9	140.8	152.6	164.5	176.4	187.4	197.6	206.9	216.2
72.5°	98.4	102.6	110.2	122.9	134.8	147.5	159.4	171.3	181.5	190.8	200.1
75°	79.7	84.8	93.3	105.1	118.7	131.4	143.3	154.3	165.3	174.7	184.0
77.5°	61.9	67.0	77.2	89.9	101.7	114.5	127.2	138.2	149.2	159.4	168.7
80°	44.1	50.9	60.2	72.9	86.5	98.4	111.1	122.1	134.0	144.1	152.6
82.5°	29.7	35.6	45.8	57.7	71.2	83.9	96.7	107.7	119.6	128.9	138.2
85°	16.1	22.9	33.9	45.8	58.5	71.2	83.9	95.0	106.0	116.2	124.6
87.5°	6.8	12.7	22.9	35.6	47.5	60.2	72.9	83.9	94.1	104.3	113.6
90°	0.0	5.9	15.3	27.1	39.9	51.7	63.6	75.5	85.6	95.0	103.4
92.5°	0.0	4.2	11.9	22.9	34.8	46.6	58.5	68.7	78.9	88.2	96.7
95°	0.0	2.5	10.2	19.5	31.4	42.4	53.4	63.6	73.8	82.2	90.7
97.5°	0.0	0.8	7.6	17.0	27.1	38.2	49.2	59.4	68.7	77.2	84.8
100°	0.0	0.0	5.1	13.6	23.7	34.8	44.9	54.3	63.6	72.1	79.7
102.5°	0.0	0.0	3.4	11.0	20.3	30.5	40.7	50.0	59.4	67.0	74.6
105°	0.0	0.0	1.7	8.5	17.8	27.1	36.5	45.8	54.3	61.9	69.5
107.5°	0.0	0.0	0.0	5.9	14.4	23.7	33.1	41.5	50.0	57.7	64.4
110°	0.0	0.0	0.0	4.2	11.9	20.3	28.8	37.3	44.9	52.6	60.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	0.0	0.0	0.0	1.7	9.3	17.0	25.4	33.1	40.7	48.3	55.1
115°	0.0	0.0	0.0	0.8	6.8	13.6	22.0	29.7	36.5	44.1	50.0
117.5°	0.0	0.0	0.0	0.0	4.2	11.0	17.8	25.4	32.2	39.0	45.8
120°	0.0	0.0	0.0	0.0	1.7	7.6	14.4	21.2	28.0	34.8	40.7
122.5°	0.0	0.0	0.0	0.0	0.0	5.1	11.9	17.8	24.6	30.5	36.5
125°	0.0	0.0	0.0	0.0	0.0	2.5	8.5	14.4	20.3	26.3	31.4
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	5.1	11.0	16.1	22.0	27.1
130°	0.0	0.0	0.0	0.0	0.0	0.0	2.5	7.6	12.7	17.8	22.9
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	9.3	13.6	18.7
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	5.9	10.2	13.6
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.9	10.2
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.9
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
145°	0.8	0.8	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: P231607

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	524.0	524.0	524.0	524.0	524.0	524.0	524.0	524.0
2.5°	523.2	524.0	524.9	524.9	524.9	524.9	524.9	524.0
5°	522.3	524.0	524.9	524.9	524.9	524.9	524.0	523.2
7.5°	519.8	521.5	522.3	522.3	522.3	523.2	522.3	521.5
10°	516.4	517.2	518.1	518.9	518.9	518.9	518.1	517.2
12.5°	510.4	512.1	513.0	513.0	513.0	513.0	513.0	512.1
15°	502.8	503.7	505.4	505.4	505.4	506.2	504.5	504.5
17.5°	494.3	496.0	496.9	496.0	496.9	496.9	496.0	496.0
20°	485.0	485.9	486.7	486.7	487.5	487.5	486.7	485.9
22.5°	474.0	475.7	476.5	476.5	477.4	478.2	477.4	476.5
25°	463.0	464.7	466.3	466.3	467.2	468.0	467.2	466.3
27.5°	451.9	453.6	454.5	455.3	457.0	457.0	457.0	456.2
30°	439.2	441.8	442.6	444.3	446.0	446.8	446.8	446.0
32.5°	427.3	429.9	432.4	434.1	435.8	436.7	436.7	436.7
35°	414.6	418.0	421.4	424.0	425.6	426.5	427.3	426.5
37.5°	403.6	407.0	410.4	413.8	415.5	416.3	416.3	417.2
40°	391.7	396.0	399.4	401.9	404.5	406.1	406.1	407.0
42.5°	379.9	384.1	388.3	391.7	394.3	396.0	396.0	396.0
45°	367.1	373.1	376.5	379.9	383.3	385.0	385.8	385.8
47.5°	354.4	360.4	364.6	368.8	371.4	373.1	373.9	373.9
50°	341.7	347.6	352.7	357.0	359.5	361.2	362.9	362.9
52.5°	328.1	334.9	339.2	343.4	346.8	349.3	350.2	349.3
55°	315.4	321.4	326.4	330.7	334.1	336.6	337.5	337.5
57.5°	300.2	306.9	312.9	317.1	320.5	323.1	323.9	323.9
60°	286.6	292.5	298.5	302.7	306.9	309.5	310.3	310.3
62.5°	271.3	278.1	284.0	289.1	292.5	295.1	295.9	295.9
65°	256.1	262.9	268.8	273.9	276.4	279.0	280.7	281.5
67.5°	240.0	246.7	253.5	257.8	261.2	263.7	265.4	265.4
70°	224.7	231.5	237.4	241.7	245.0	248.4	249.3	250.1
72.5°	208.6	215.4	221.3	226.4	229.8	232.3	233.2	234.0
75°	191.6	199.3	205.2	209.4	213.7	217.1	217.9	217.9
77.5°	175.5	183.1	189.1	194.2	197.6	200.1	201.0	201.8
80°	161.1	167.9	173.8	178.1	181.5	184.0	186.5	186.5
82.5°	145.8	153.5	159.4	163.6	167.0	170.4	171.3	172.1
85°	133.1	139.9	145.8	150.1	153.5	156.9	157.7	157.7
87.5°	121.3	128.0	133.1	137.4	141.6	143.3	145.0	145.0
90°	111.1	117.9	122.9	128.0	131.4	134.0	134.8	135.7
92.5°	104.3	111.1	116.2	120.4	122.9	125.5	127.2	127.2
95°	97.5	104.3	109.4	113.6	117.0	119.6	120.4	120.4
97.5°	92.4	98.4	103.4	106.8	110.2	112.8	113.6	114.5
100°	86.5	92.4	97.5	100.9	104.3	106.0	107.7	108.5
102.5°	81.4	87.3	91.6	95.8	98.4	100.1	101.7	101.7
105°	76.3	81.4	86.5	89.9	93.3	95.0	95.8	96.7
107.5°	71.2	76.3	81.4	84.8	87.3	89.9	90.7	90.7
110°	66.1	71.2	75.5	79.7	82.2	83.9	84.8	85.6



TEST NUMBER: P231607

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	61.0	66.1	70.4	73.8	76.3	78.9	79.7	79.7
115°	56.0	61.0	65.3	68.7	71.2	72.9	73.8	74.6
117.5°	50.9	56.0	60.2	63.6	66.1	67.8	68.7	68.7
120°	45.8	50.9	54.3	58.5	60.2	62.7	63.6	63.6
122.5°	41.5	45.8	49.2	52.6	55.1	56.8	57.7	58.5
125°	36.5	40.7	44.1	47.5	50.0	51.7	52.6	52.6
127.5°	31.4	35.6	39.0	42.4	44.1	45.8	46.6	47.5
130°	27.1	31.4	33.9	37.3	39.0	40.7	41.5	41.5
132.5°	22.0	26.3	28.8	32.2	33.9	35.6	36.5	36.5
135°	17.8	21.2	23.7	26.3	28.8	29.7	30.5	30.5
137.5°	13.6	17.0	19.5	21.2	23.7	24.6	25.4	25.4
140°	9.3	11.9	14.4	17.0	18.7	19.5	20.3	20.3
142.5°	5.1	7.6	10.2	11.9	13.6	14.4	15.3	15.3
145°	0.8	3.4	5.9	7.6	8.5	9.3	10.2	11.0
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)