

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: P231609

Luminaire Tested: **S122-DR-1-35-X-0048-1-U-DD-4-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231609
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-1-35-X-0048-1-U-DD-4-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH DROP LENS.
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

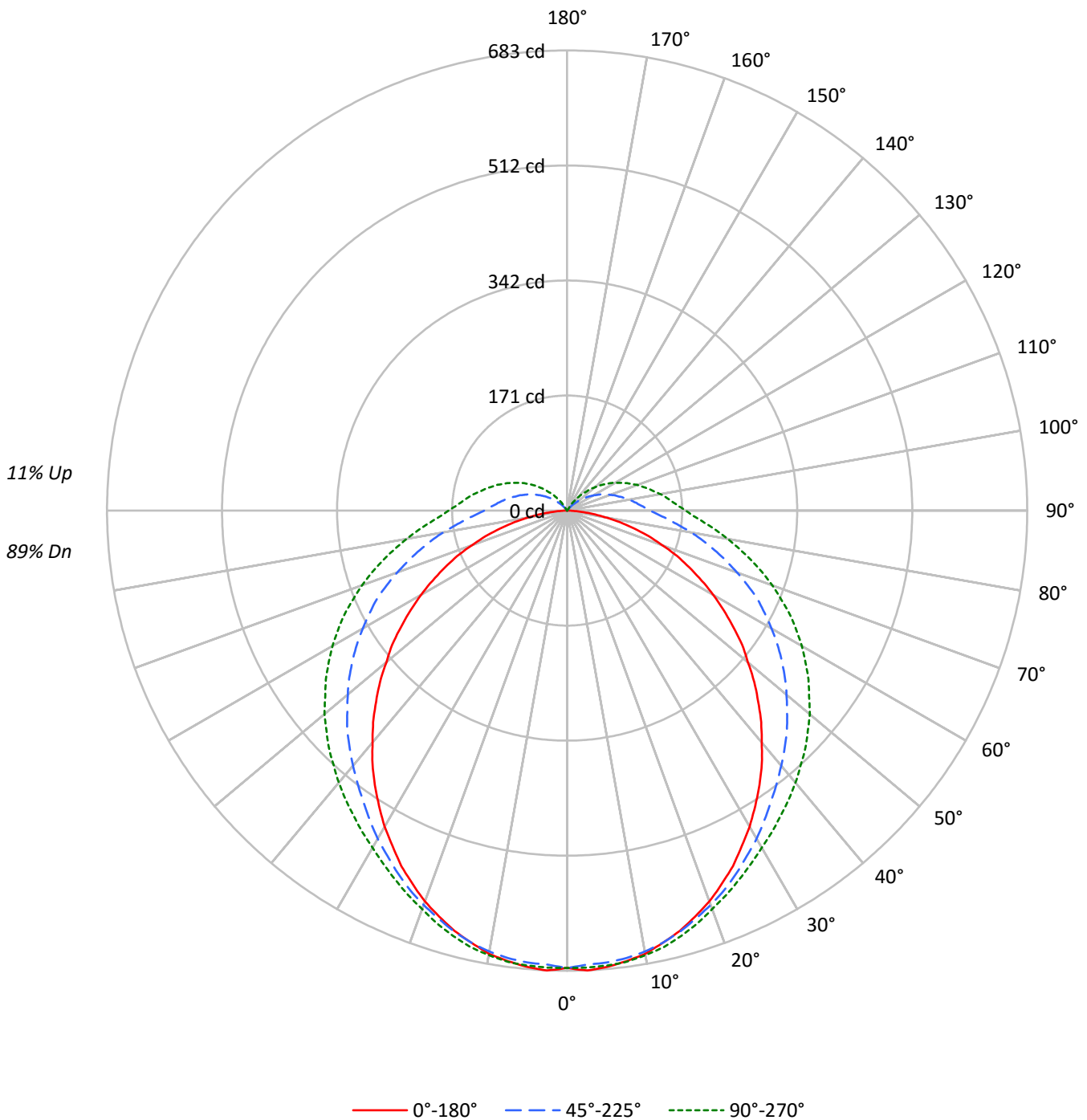
Lumens per Lamp: N/A
Luminaire Lumens: 2491.4 lumens
Efficiency: N/A
Efficacy: 89.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.14' x L: 3.92' x H: 0.08')
CIE Type: Semi-Direct

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



TEST NUMBER: P231609
CATALOG NUMBER: S122-DR-1-35-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°	13327	13327	13327
5°	13375	12782	12695
10°	13263	12302	12089
15°	13052	11774	11456
20°	12798	11231	10809
25°	12486	10698	10244
30°	12127	10185	9748
35°	11749	9682	9348
40°	11312	9275	9013
45°	10900	8921	8699
50°	10436	8545	8402
55°	9998	8204	8089
60°	9485	7840	7774
65°	8880	7491	7443
70°	8161	7000	7060
75°	7259	6535	6648
80°	5760	6083	6246
85°	3787	5668	5899



TEST NUMBER: P231609

CATALOG NUMBER: S122-DR-1-35-X-0048-1-U-DD-4-W

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.4	2.6
10°-20°	183.2	7.4
20°-30°	274.4	11.0
30°-40°	330.8	13.3
40°-50°	352.8	14.2
50°-60°	340.7	13.7
60°-70°	295.9	11.9
70°-80°	225.2	9.0
80°-90°	149.5	6.0
90°-100°	103.4	4.2
100°-110°	75.6	3.0
110°-120°	50.9	2.0
120°-130°	29.4	1.2
130°-140°	12.9	0.5
140°-150°	2.5	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	522.0	21.0
0°-40°	852.8	34.2
0°-60°	1546.3	62.1
0°-90°	2216.8	89.0
90°-120°	229.8	9.2
90°-150°	274.6	11.0
90°-180°	275.0	11.0
0°-180°	2491.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	679	679	679	679	679	
5°	680	678	673	680	678	64
15°	646	648	647	655	654	182
25°	582	589	594	604	604	268
35°	498	512	527	548	553	311
45°	401	426	461	490	500	309
55°	301	338	389	426	437	269
65°	200	250	312	352	365	199
75°	103	162	226	269	282	109
85°	21	84	150	192	204	25
90°	0	59	123	163	176	1
95°	0	48	107	144	156	0
105°	0	29	80	114	125	0
115°	0	13	57	87	97	0
125°	0	2	34	59	68	0
135°	0	0	13	32	40	0
145°	1	0	0	9	14	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: P231609

CATALOG NUMBER: S122-DR-1-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	678.9	678.9	678.9	678.9	678.9	678.9	678.9	678.9	678.9	678.9	678.9
2.5°	683.3	681.1	677.8	678.9	680.0	680.0	678.9	678.9	676.7	674.5	674.5
5°	680.0	677.8	674.5	676.7	677.8	677.8	677.8	676.7	675.6	673.4	674.5
7.5°	674.5	672.3	670.1	671.2	672.3	674.5	673.4	673.4	672.3	670.1	671.2
10°	667.9	664.6	662.4	664.6	665.7	667.9	667.9	667.9	666.8	664.6	665.7
12.5°	656.9	655.8	653.6	656.9	658.0	660.2	660.2	660.2	658.0	656.9	659.1
15°	645.9	643.7	641.5	644.8	647.0	649.2	649.2	649.2	648.1	647.0	649.2
17.5°	631.7	629.5	629.5	631.7	635.0	637.1	637.1	638.2	636.1	635.0	637.1
20°	617.4	615.2	614.1	618.5	620.7	622.9	622.9	624.0	622.9	622.9	625.1
22.5°	599.8	598.7	598.7	602.0	604.2	606.4	608.6	608.6	608.6	609.7	610.8
25°	582.2	581.1	582.2	585.5	587.7	591.0	593.2	593.2	593.2	594.3	597.6
27.5°	561.3	561.3	562.4	566.8	570.1	573.4	575.6	576.7	576.7	577.8	582.2
30°	541.6	540.5	541.6	547.1	550.4	554.8	557.0	558.1	559.2	562.4	565.7
32.5°	519.6	518.5	520.7	526.2	530.6	533.9	538.3	540.5	541.6	544.9	549.3
35°	497.6	496.5	498.7	504.2	509.7	514.1	517.4	519.6	524.0	527.3	532.8
37.5°	474.6	474.6	477.9	483.4	488.8	493.2	497.6	500.9	505.3	510.8	516.3
40°	449.3	450.4	453.7	461.4	466.9	473.5	477.9	481.2	487.7	494.3	500.9
42.5°	426.2	426.2	430.6	438.3	443.8	451.5	458.1	461.4	470.2	477.9	485.6
45°	401.0	401.0	407.6	415.2	421.8	430.6	437.2	442.7	451.5	461.4	468.0
47.5°	376.8	377.9	384.5	392.2	399.9	409.8	416.3	424.0	433.9	442.7	451.5
50°	350.4	352.6	360.3	369.1	377.9	388.9	396.6	405.4	415.2	425.1	433.9
52.5°	327.4	328.5	336.2	346.0	354.8	365.8	376.8	386.7	397.7	407.6	416.3
55°	301.0	304.3	312.0	321.9	332.9	343.8	355.9	366.9	379.0	388.9	399.9
57.5°	275.7	280.1	288.9	297.7	309.8	323.0	335.1	346.0	358.1	370.2	380.1
60°	250.5	254.9	264.7	274.6	287.8	301.0	314.2	327.4	338.3	350.4	360.3
62.5°	225.2	230.7	239.5	250.5	265.8	280.1	293.3	306.5	318.6	330.7	341.6
65°	199.9	206.5	215.3	228.5	242.8	257.1	271.3	285.6	297.7	312.0	320.8
67.5°	176.9	181.3	191.1	205.4	220.8	236.2	250.5	263.6	276.8	290.0	302.1
70°	150.5	158.2	167.0	182.4	197.7	213.1	228.5	242.8	256.0	268.0	280.1
72.5°	127.4	132.9	142.8	159.3	174.7	191.1	206.5	221.9	235.1	247.2	259.3
75°	103.3	109.9	120.8	136.2	153.8	170.3	185.7	199.9	214.2	226.3	238.4
77.5°	80.2	86.8	100.0	116.4	131.8	148.3	164.8	179.1	193.3	206.5	218.6
80°	57.1	65.9	78.0	94.5	112.1	127.4	143.9	158.2	173.6	186.8	197.7
82.5°	38.4	46.1	59.3	74.7	92.3	108.8	125.2	139.5	154.9	167.0	179.1
85°	20.9	29.7	43.9	59.3	75.8	92.3	108.8	123.0	137.3	150.5	161.5
87.5°	8.8	16.5	29.7	46.1	61.5	78.0	94.5	108.8	121.9	135.1	147.2
90°	0.0	7.7	19.8	35.2	51.6	67.0	82.4	97.8	111.0	123.0	134.0
92.5°	0.0	5.5	15.4	29.7	45.0	60.4	75.8	89.0	102.2	114.2	125.2
95°	0.0	3.3	13.2	25.3	40.6	54.9	69.2	82.4	95.6	106.6	117.5
97.5°	0.0	1.1	9.9	22.0	35.2	49.4	63.7	76.9	89.0	100.0	109.9
100°	0.0	0.0	6.6	17.6	30.8	45.0	58.2	70.3	82.4	93.4	103.3
102.5°	0.0	0.0	4.4	14.3	26.4	39.5	52.7	64.8	76.9	86.8	96.7
105°	0.0	0.0	2.2	11.0	23.1	35.2	47.2	59.3	70.3	80.2	90.1
107.5°	0.0	0.0	0.0	7.7	18.7	30.8	42.8	53.8	64.8	74.7	83.5
110°	0.0	0.0	0.0	5.5	15.4	26.4	37.4	48.3	58.2	68.1	78.0



TEST NUMBER: P231609

CATALOG NUMBER: S122-DR-1-35-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	2.2	12.1	22.0	33.0	42.8	52.7	62.6	71.4
115°	0.0	0.0	0.0	1.1	8.8	17.6	28.6	38.4	47.2	57.1	64.8
117.5°	0.0	0.0	0.0	0.0	5.5	14.3	23.1	33.0	41.7	50.5	59.3
120°	0.0	0.0	0.0	0.0	2.2	9.9	18.7	27.5	36.3	45.0	52.7
122.5°	0.0	0.0	0.0	0.0	0.0	6.6	15.4	23.1	31.9	39.5	47.2
125°	0.0	0.0	0.0	0.0	0.0	3.3	11.0	18.7	26.4	34.1	40.6
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	6.6	14.3	20.9	28.6	35.2
130°	0.0	0.0	0.0	0.0	0.0	0.0	3.3	9.9	16.5	23.1	29.7
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.5	12.1	17.6	24.2
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	7.7	13.2	17.6
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	7.7	13.2
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	7.7
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3
145°	1.1	1.1	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: P231609

CATALOG NUMBER: S122-DR-1-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	678.9	678.9	678.9	678.9	678.9	678.9	678.9	678.9
2.5°	677.8	678.9	680.0	680.0	680.0	680.0	680.0	678.9
5°	676.7	678.9	680.0	680.0	680.0	680.0	678.9	677.8
7.5°	673.4	675.6	676.7	676.7	676.7	677.8	676.7	675.6
10°	669.0	670.1	671.2	672.3	672.3	672.3	671.2	670.1
12.5°	661.3	663.5	664.6	664.6	664.6	664.6	664.6	663.5
15°	651.4	652.5	654.7	654.7	654.7	655.8	653.6	653.6
17.5°	640.4	642.6	643.7	642.6	643.7	643.7	642.6	642.6
20°	628.4	629.5	630.6	630.6	631.7	631.7	630.6	629.5
22.5°	614.1	616.3	617.4	617.4	618.5	619.6	618.5	617.4
25°	599.8	602.0	604.2	604.2	605.3	606.4	605.3	604.2
27.5°	585.5	587.7	588.8	589.9	592.1	592.1	592.1	591.0
30°	569.0	572.3	573.4	575.6	577.8	578.9	578.9	577.8
32.5°	553.7	557.0	560.3	562.4	564.6	565.7	565.7	565.7
35°	537.2	541.6	546.0	549.3	551.5	552.6	553.7	552.6
37.5°	522.9	527.3	531.7	536.1	538.3	539.4	539.4	540.5
40°	507.5	513.0	517.4	520.7	524.0	526.2	526.2	527.3
42.5°	492.1	497.6	503.1	507.5	510.8	513.0	513.0	513.0
45°	475.7	483.4	487.7	492.1	496.5	498.7	499.8	499.8
47.5°	459.2	466.9	472.4	477.9	481.2	483.4	484.5	484.5
50°	442.7	450.4	457.0	462.5	465.8	468.0	470.2	470.2
52.5°	425.1	433.9	439.4	444.9	449.3	452.6	453.7	452.6
55°	408.7	416.3	422.9	428.4	432.8	436.1	437.2	437.2
57.5°	388.9	397.7	405.4	410.9	415.2	418.5	419.6	419.6
60°	371.3	379.0	386.7	392.2	397.7	401.0	402.1	402.1
62.5°	351.5	360.3	368.0	374.6	379.0	382.3	383.4	383.4
65°	331.8	340.5	348.2	354.8	358.1	361.4	363.6	364.7
67.5°	310.9	319.7	328.5	334.0	338.3	341.6	343.8	343.8
70°	291.1	299.9	307.6	313.1	317.5	321.9	323.0	324.1
72.5°	270.2	279.0	286.7	293.3	297.7	301.0	302.1	303.2
75°	248.3	258.2	265.8	271.3	276.8	281.2	282.3	282.3
77.5°	227.4	237.3	245.0	251.6	256.0	259.3	260.4	261.5
80°	208.7	217.5	225.2	230.7	235.1	238.4	241.7	241.7
82.5°	188.9	198.8	206.5	212.0	216.4	220.8	221.9	223.0
85°	172.5	181.3	188.9	194.4	198.8	203.2	204.3	204.3
87.5°	157.1	165.9	172.5	178.0	183.5	185.7	187.8	187.8
90°	143.9	152.7	159.3	165.9	170.3	173.6	174.7	175.8
92.5°	135.1	143.9	150.5	156.0	159.3	162.6	164.8	164.8
95°	126.3	135.1	141.7	147.2	151.6	154.9	156.0	156.0
97.5°	119.7	127.4	134.0	138.4	142.8	146.1	147.2	148.3
100°	112.1	119.7	126.3	130.7	135.1	137.3	139.5	140.6
102.5°	105.5	113.1	118.6	124.1	127.4	129.6	131.8	131.8
105°	98.9	105.5	112.1	116.4	120.8	123.0	124.1	125.2
107.5°	92.3	98.9	105.5	109.9	113.1	116.4	117.5	117.5
110°	85.7	92.3	97.8	103.3	106.6	108.8	109.9	111.0



TEST NUMBER: P231609

CATALOG NUMBER: S122-DR-1-35-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	79.1	85.7	91.2	95.6	98.9	102.2	103.3	103.3
115°	72.5	79.1	84.6	89.0	92.3	94.5	95.6	96.7
117.5°	65.9	72.5	78.0	82.4	85.7	87.9	89.0	89.0
120°	59.3	65.9	70.3	75.8	78.0	81.3	82.4	82.4
122.5°	53.8	59.3	63.7	68.1	71.4	73.6	74.7	75.8
125°	47.2	52.7	57.1	61.5	64.8	67.0	68.1	68.1
127.5°	40.6	46.1	50.5	54.9	57.1	59.3	60.4	61.5
130°	35.2	40.6	43.9	48.3	50.5	52.7	53.8	53.8
132.5°	28.6	34.1	37.4	41.7	43.9	46.1	47.2	47.2
135°	23.1	27.5	30.8	34.1	37.4	38.4	39.5	39.5
137.5°	17.6	22.0	25.3	27.5	30.8	31.9	33.0	33.0
140°	12.1	15.4	18.7	22.0	24.2	25.3	26.4	26.4
142.5°	6.6	9.9	13.2	15.4	17.6	18.7	19.8	19.8
145°	1.1	4.4	7.7	9.9	11.0	12.1	13.2	14.3
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)