

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: P231612

Luminaire Tested: **S122-DR-2-30-X-0048-1-U-DD-4-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231612
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-2-30-X-0048-1-U-DD-4-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH DROP LENS.
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

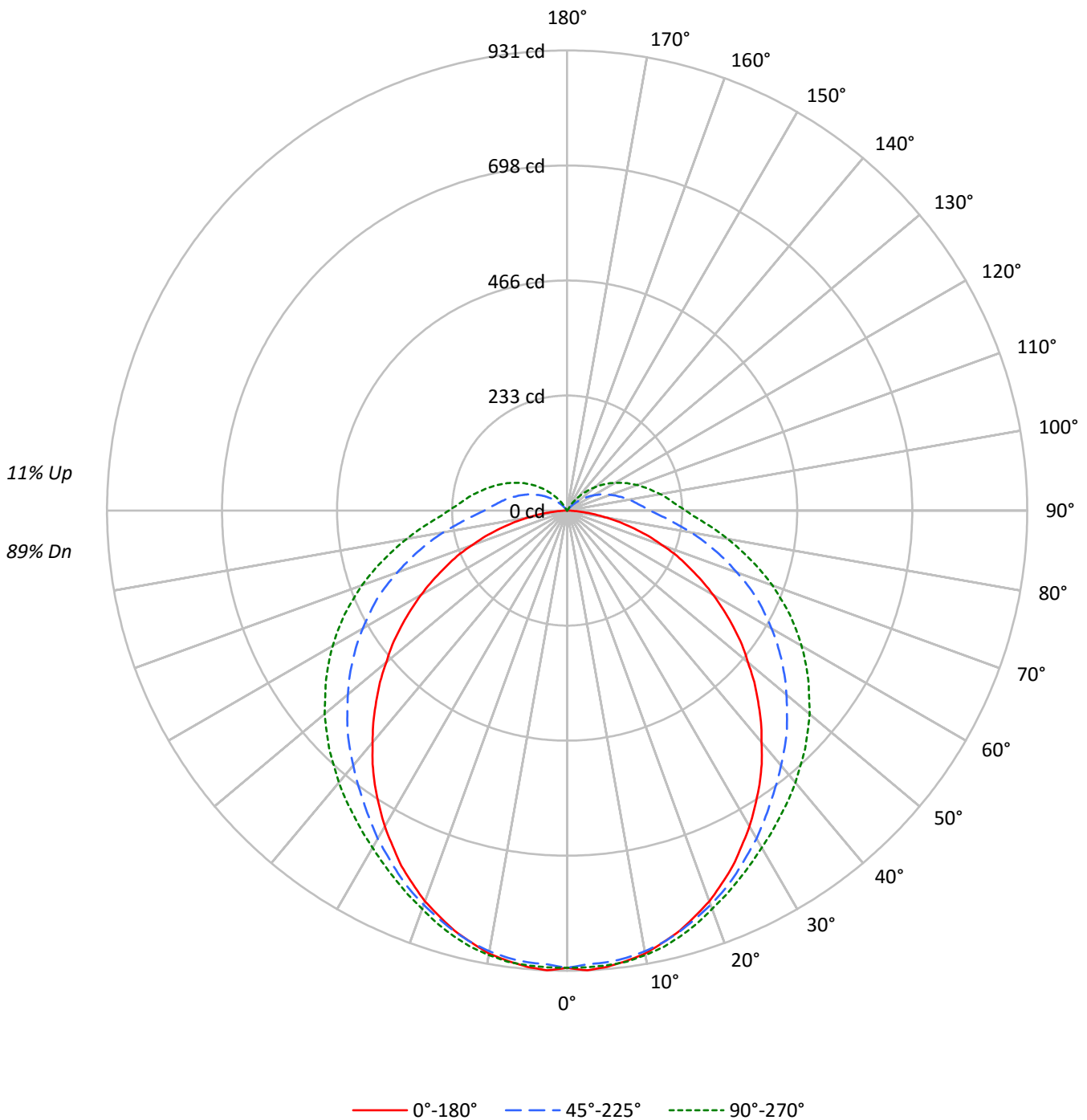
Lumens per Lamp: N/A
Luminaire Lumens: 3394.5 lumens
Efficiency: N/A
Efficacy: 79.7 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.27 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.14' x L: 3.92' x H: 0.08')
CIE Type: Semi-Direct

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



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CATALOG NUMBER: S122-DR-2-30-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°	18158	18158	18158
5°	18223	17415	17297
10°	18071	16761	16471
15°	17785	16043	15610
20°	17438	15302	14726
25°	17014	14576	13957
30°	16523	13878	13283
35°	16009	13191	12736
40°	15413	12638	12279
45°	14850	12154	11853
50°	14222	11642	11447
55°	13622	11178	11022
60°	12923	10683	10591
65°	12101	10207	10141
70°	11122	9539	9617
75°	9887	8903	9060
80°	7848	8285	8510
85°	5146	7724	8038



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.7	2.6
10°-20°	249.7	7.4
20°-30°	373.9	11.0
30°-40°	450.6	13.3
40°-50°	480.7	14.2
50°-60°	464.2	13.7
60°-70°	403.2	11.9
70°-80°	306.8	9.0
80°-90°	203.7	6.0
90°-100°	140.9	4.2
100°-110°	103.0	3.0
110°-120°	69.3	2.0
120°-130°	40.1	1.2
130°-140°	17.5	0.5
140°-150°	3.3	0.1
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	711.2	21.0
0°-40°	1161.9	34.2
0°-60°	2106.8	62.1
0°-90°	3020.4	89.0
90°-120°	313.2	9.2
90°-150°	374.1	11.0
90°-180°	374.0	11.0
0°-180°	3394.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	925	925	925	925	925	
5°	926	924	918	926	924	88
15°	880	883	882	892	891	248
25°	793	803	810	823	823	365
35°	678	698	718	746	753	424
45°	546	581	629	668	681	422
55°	410	461	530	580	596	367
65°	272	340	425	479	497	270
75°	141	221	308	366	385	149
85°	28	114	205	261	278	34
90°	0	81	168	222	240	2
95°	0	65	145	197	212	0
105°	0	40	109	156	171	0
115°	0	18	78	118	132	0
125°	0	2	46	81	93	0
135°	0	0	18	44	54	0
145°	2	0	0	12	20	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: P231612

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	925.0	925.0	925.0	925.0	925.0	925.0	925.0	925.0	925.0	925.0	925.0
2.5°	931.0	928.0	923.5	925.0	926.5	926.5	925.0	925.0	922.0	919.0	919.0
5°	926.5	923.5	919.0	922.0	923.5	923.5	923.5	922.0	920.5	917.5	919.0
7.5°	919.0	916.0	913.0	914.5	916.0	919.0	917.5	917.5	916.0	913.0	914.5
10°	910.0	905.5	902.5	905.5	907.0	910.0	910.0	910.0	908.5	905.5	907.0
12.5°	895.1	893.6	890.6	895.1	896.6	899.5	899.5	899.5	896.6	895.1	898.1
15°	880.1	877.1	874.1	878.6	881.6	884.6	884.6	884.6	883.1	881.6	884.6
17.5°	860.6	857.6	857.6	860.6	865.1	868.1	868.1	869.6	866.6	865.1	868.1
20°	841.2	838.2	836.7	842.7	845.7	848.7	848.7	850.2	848.7	848.7	851.7
22.5°	817.2	815.7	815.7	820.2	823.2	826.2	829.2	829.2	829.2	830.7	832.2
25°	793.3	791.8	793.3	797.8	800.8	805.3	808.2	808.2	808.2	809.7	814.2
27.5°	764.8	764.8	766.3	772.3	776.8	781.3	784.3	785.8	785.8	787.3	793.3
30°	737.9	736.4	737.9	745.4	749.9	755.9	758.9	760.4	761.8	766.3	770.8
32.5°	708.0	706.5	709.5	716.9	722.9	727.4	733.4	736.4	737.9	742.4	748.4
35°	678.0	676.5	679.5	687.0	694.5	700.5	705.0	708.0	714.0	718.4	725.9
37.5°	646.6	646.6	651.1	658.6	666.1	672.0	678.0	682.5	688.5	696.0	703.5
40°	612.2	613.7	618.2	628.6	636.1	645.1	651.1	655.6	664.6	673.5	682.5
42.5°	580.7	580.7	586.7	597.2	604.7	615.2	624.1	628.6	640.6	651.1	661.6
45°	546.3	546.3	555.3	565.8	574.8	586.7	595.7	603.2	615.2	628.6	637.6
47.5°	513.4	514.9	523.9	534.3	544.8	558.3	567.3	577.7	591.2	603.2	615.2
50°	477.5	480.5	490.9	502.9	514.9	529.9	540.3	552.3	565.8	579.2	591.2
52.5°	446.0	447.5	458.0	471.5	483.5	498.4	513.4	526.9	541.8	555.3	567.3
55°	410.1	414.6	425.1	438.5	453.5	468.5	484.9	499.9	516.4	529.9	544.8
57.5°	375.7	381.7	393.6	405.6	422.1	440.0	456.5	471.5	487.9	504.4	517.9
60°	341.3	347.2	360.7	374.2	392.1	410.1	428.1	446.0	461.0	477.5	490.9
62.5°	306.8	314.3	326.3	341.3	362.2	381.7	399.6	417.6	434.1	450.5	465.5
65°	272.4	281.4	293.4	311.3	330.8	350.2	369.7	389.2	405.6	425.1	437.1
67.5°	241.0	247.0	260.4	279.9	300.8	321.8	341.3	359.2	377.2	395.1	411.6
70°	205.1	215.5	227.5	248.5	269.4	290.4	311.3	330.8	348.7	365.2	381.7
72.5°	173.6	181.1	194.6	217.0	238.0	260.4	281.4	302.3	320.3	336.8	353.2
75°	140.7	149.7	164.6	185.6	209.5	232.0	253.0	272.4	291.9	308.3	324.8
77.5°	109.3	118.2	136.2	158.7	179.6	202.1	224.5	244.0	263.4	281.4	297.9
80°	77.8	89.8	106.3	128.7	152.7	173.6	196.1	215.5	236.5	254.4	269.4
82.5°	52.4	62.9	80.8	101.8	125.7	148.2	170.6	190.1	211.0	227.5	244.0
85°	28.4	40.4	59.9	80.8	103.3	125.7	148.2	167.6	187.1	205.1	220.0
87.5°	12.0	22.5	40.4	62.9	83.8	106.3	128.7	148.2	166.1	184.1	200.6
90°	0.0	10.5	26.9	47.9	70.3	91.3	112.3	133.2	151.2	167.6	182.6
92.5°	0.0	7.5	21.0	40.4	61.4	82.3	103.3	121.2	139.2	155.7	170.6
95°	0.0	4.5	18.0	34.4	55.4	74.8	94.3	112.3	130.2	145.2	160.2
97.5°	0.0	1.5	13.5	29.9	47.9	67.4	86.8	104.8	121.2	136.2	149.7
100°	0.0	0.0	9.0	23.9	41.9	61.4	79.3	95.8	112.3	127.2	140.7
102.5°	0.0	0.0	6.0	19.5	35.9	53.9	71.8	88.3	104.8	118.2	131.7
105°	0.0	0.0	3.0	15.0	31.4	47.9	64.4	80.8	95.8	109.3	122.7
107.5°	0.0	0.0	0.0	10.5	25.4	41.9	58.4	73.3	88.3	101.8	113.8
110°	0.0	0.0	0.0	7.5	21.0	35.9	50.9	65.9	79.3	92.8	106.3



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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	3.0	16.5	29.9	44.9	58.4	71.8	85.3	97.3
115°	0.0	0.0	0.0	1.5	12.0	23.9	38.9	52.4	64.4	77.8	88.3
117.5°	0.0	0.0	0.0	0.0	7.5	19.5	31.4	44.9	56.9	68.9	80.8
120°	0.0	0.0	0.0	0.0	3.0	13.5	25.4	37.4	49.4	61.4	71.8
122.5°	0.0	0.0	0.0	0.0	0.0	9.0	21.0	31.4	43.4	53.9	64.4
125°	0.0	0.0	0.0	0.0	0.0	4.5	15.0	25.4	35.9	46.4	55.4
127.5°	0.0	0.0	0.0	0.0	0.0	0.0	9.0	19.5	28.4	38.9	47.9
130°	0.0	0.0	0.0	0.0	0.0	0.0	4.5	13.5	22.5	31.4	40.4
132.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.5	16.5	23.9	32.9
135°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	10.5	18.0	23.9
137.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	10.5	18.0
140°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	10.5
142.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
145°	1.5	1.5	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: P231612

CATALOG NUMBER: S122-DR-2-30-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	925.0	925.0	925.0	925.0	925.0	925.0	925.0	925.0
2.5°	923.5	925.0	926.5	926.5	926.5	926.5	926.5	925.0
5°	922.0	925.0	926.5	926.5	926.5	926.5	925.0	923.5
7.5°	917.5	920.5	922.0	922.0	922.0	923.5	922.0	920.5
10°	911.5	913.0	914.5	916.0	916.0	916.0	914.5	913.0
12.5°	901.0	904.0	905.5	905.5	905.5	905.5	905.5	904.0
15°	887.6	889.1	892.1	892.1	892.1	893.6	890.6	890.6
17.5°	872.6	875.6	877.1	875.6	877.1	877.1	875.6	875.6
20°	856.1	857.6	859.1	859.1	860.6	860.6	859.1	857.6
22.5°	836.7	839.7	841.2	841.2	842.7	844.2	842.7	841.2
25°	817.2	820.2	823.2	823.2	824.7	826.2	824.7	823.2
27.5°	797.8	800.8	802.3	803.8	806.8	806.8	806.8	805.3
30°	775.3	779.8	781.3	784.3	787.3	788.8	788.8	787.3
32.5°	754.4	758.9	763.3	766.3	769.3	770.8	770.8	770.8
35°	731.9	737.9	743.9	748.4	751.4	752.9	754.4	752.9
37.5°	712.5	718.4	724.4	730.4	733.4	734.9	734.9	736.4
40°	691.5	699.0	705.0	709.5	714.0	716.9	716.9	718.4
42.5°	670.5	678.0	685.5	691.5	696.0	699.0	699.0	699.0
45°	648.1	658.6	664.6	670.5	676.5	679.5	681.0	681.0
47.5°	625.6	636.1	643.6	651.1	655.6	658.6	660.1	660.1
50°	603.2	613.7	622.6	630.1	634.6	637.6	640.6	640.6
52.5°	579.2	591.2	598.7	606.2	612.2	616.7	618.2	616.7
55°	556.8	567.3	576.3	583.7	589.7	594.2	595.7	595.7
57.5°	529.9	541.8	552.3	559.8	565.8	570.3	571.8	571.8
60°	505.9	516.4	526.9	534.3	541.8	546.3	547.8	547.8
62.5°	479.0	490.9	501.4	510.4	516.4	520.9	522.4	522.4
65°	452.0	464.0	474.5	483.5	487.9	492.4	495.4	496.9
67.5°	423.6	435.6	447.5	455.0	461.0	465.5	468.5	468.5
70°	396.6	408.6	419.1	426.6	432.6	438.5	440.0	441.5
72.5°	368.2	380.2	390.7	399.6	405.6	410.1	411.6	413.1
75°	338.3	351.7	362.2	369.7	377.2	383.2	384.7	384.7
77.5°	309.8	323.3	333.8	342.8	348.7	353.2	354.7	356.2
80°	284.4	296.4	306.8	314.3	320.3	324.8	329.3	329.3
82.5°	257.4	270.9	281.4	288.9	294.9	300.8	302.3	303.8
85°	235.0	247.0	257.4	264.9	270.9	276.9	278.4	278.4
87.5°	214.0	226.0	235.0	242.5	250.0	253.0	255.9	255.9
90°	196.1	208.0	217.0	226.0	232.0	236.5	238.0	239.5
92.5°	184.1	196.1	205.1	212.5	217.0	221.5	224.5	224.5
95°	172.1	184.1	193.1	200.6	206.6	211.0	212.5	212.5
97.5°	163.1	173.6	182.6	188.6	194.6	199.1	200.6	202.1
100°	152.7	163.1	172.1	178.1	184.1	187.1	190.1	191.6
102.5°	143.7	154.2	161.6	169.1	173.6	176.6	179.6	179.6
105°	134.7	143.7	152.7	158.7	164.6	167.6	169.1	170.6
107.5°	125.7	134.7	143.7	149.7	154.2	158.7	160.2	160.2
110°	116.7	125.7	133.2	140.7	145.2	148.2	149.7	151.2



TEST NUMBER: P231612

CATALOG NUMBER: S122-DR-2-30-X-0048-1-U-DD-4-W

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	107.8	116.7	124.2	130.2	134.7	139.2	140.7	140.7
115°	98.8	107.8	115.3	121.2	125.7	128.7	130.2	131.7
117.5°	89.8	98.8	106.3	112.3	116.7	119.7	121.2	121.2
120°	80.8	89.8	95.8	103.3	106.3	110.8	112.3	112.3
122.5°	73.3	80.8	86.8	92.8	97.3	100.3	101.8	103.3
125°	64.4	71.8	77.8	83.8	88.3	91.3	92.8	92.8
127.5°	55.4	62.9	68.9	74.8	77.8	80.8	82.3	83.8
130°	47.9	55.4	59.9	65.9	68.9	71.8	73.3	73.3
132.5°	38.9	46.4	50.9	56.9	59.9	62.9	64.4	64.4
135°	31.4	37.4	41.9	46.4	50.9	52.4	53.9	53.9
137.5°	23.9	29.9	34.4	37.4	41.9	43.4	44.9	44.9
140°	16.5	21.0	25.4	29.9	32.9	34.4	35.9	35.9
142.5°	9.0	13.5	18.0	21.0	23.9	25.4	26.9	26.9
145°	1.5	6.0	10.5	13.5	15.0	16.5	18.0	19.5
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)