

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: P231543

Luminaire Tested: **S122-DR-LO-27-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231543
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1612-022-4)
Test Lab: INNOVATION CENTER(G2)
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-3-W
Description: DEFINE 2 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.
Light Source: 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1018.0 lumens
Efficiency: N/A
Efficacy: 74.9 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.03 / 1.18
Luminous Opening: Rectangular (W 3.92' x L: 0.14' x H: 0')
CIE Type: Direct

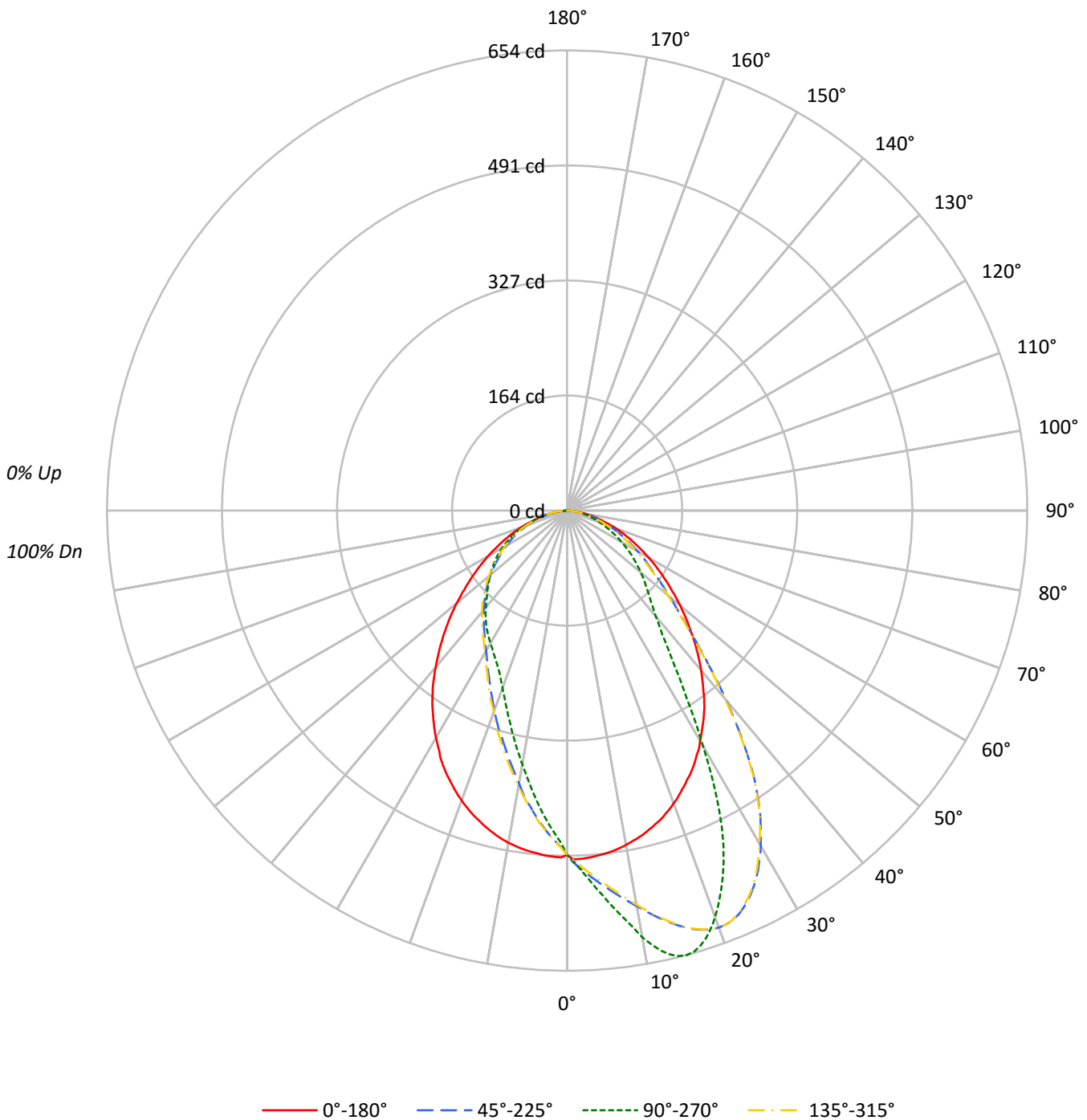
Input Watts (W): 13.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86
2	101	94	88	83	99	92	86	82	88	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	72	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	60	69	63	59	67	62	58	56
5	80	68	59	53	78	67	59	53	65	58	53	63	57	52	61	56	51	49
6	74	62	53	47	72	61	53	47	59	52	47	57	51	46	56	50	46	44
7	69	56	48	42	67	56	48	42	54	47	42	53	46	42	51	46	41	40
8	64	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	60	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	31	30

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	9607	9607	9607	9607
5°	9703	10757	9638	8414
10°	9618	12279	9558	7301
15°	9470	13299	9387	6363
20°	9248	12845	9156	5611
25°	8963	11384	8863	5151
30°	8570	8745	8452	4937
35°	8153	6271	8009	4798
40°	7593	5017	7452	4602
45°	6999	4489	6868	4445
50°	6392	4178	6248	4361
55°	5798	3864	5647	4275
60°	5249	3502	5088	4205
65°	4733	3163	4552	4032
70°	4207	2870	3989	3719
75°	3603	2564	3352	3352
80°	2984	2204	2634	2702
85°	2297	1914	1982	1847



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.4	4.6
10°-20°	133.4	13.1
20°-30°	189.1	18.6
30°-40°	194.4	19.1
40°-50°	170.4	16.7
50°-60°	135.5	13.3
60°-70°	91.4	9.0
70°-80°	46.3	4.5
80°-90°	11.1	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	368.9	36.2
0°-40°	563.4	55.3
0°-60°	869.3	85.4
0°-90°	1018.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1018.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	489	489	489	489	489	
5°	492	546	489	427	492	47
15°	466	654	462	313	466	131
25°	414	526	409	238	414	190
35°	340	262	334	200	340	212
45°	252	162	247	160	252	195
55°	169	113	165	125	169	152
65°	102	68	98	87	102	101
75°	48	34	44	44	48	51
85°	10	8	9	8	10	12
90°	0	0	0	0	0	



TEST NUMBER: P231543

CATALOG NUMBER: S122-DR-LO-27-X-0048-1-U-DD-3-W

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	489.4	489.4	489.4	489.4	489.4	489.4	489.4	489.4	489.4	489.4	489.4
1°	495.7	496.0	500.1	503.6	497.9	496.8	496.5	490.5	492.9	482.5	478.9
2°	495.4	500.1	508.3	514.4	508.9	506.9	504.2	494.0	492.4	477.6	470.7
3°	494.9	504.2	516.3	524.8	520.7	517.1	512.2	497.9	491.8	472.6	462.7
4°	493.8	507.5	523.7	535.2	533.0	527.5	519.8	501.4	490.7	467.1	453.9
5°	492.4	511.1	531.4	546.5	545.9	538.2	527.8	504.7	489.1	462.2	444.6
6°	491.0	514.1	539.1	557.7	559.4	549.5	535.5	507.8	487.7	456.1	435.0
7°	489.4	516.8	547.0	570.1	572.8	561.3	543.5	510.8	486.1	450.1	425.1
8°	487.4	519.8	555.0	582.2	586.0	573.4	551.7	513.3	484.1	443.8	415.2
9°	485.2	522.3	563.0	594.8	599.5	585.2	560.2	515.7	481.9	437.2	405.6
10°	482.5	524.8	571.2	606.9	616.0	599.5	568.7	517.9	479.5	430.3	393.5
11°	479.5	527.0	579.4	618.4	628.3	610.7	577.2	520.4	476.5	423.2	383.4
12°	476.7	529.2	587.7	629.4	639.0	621.2	586.0	522.0	473.4	415.8	373.7
13°	473.7	530.8	595.6	638.7	647.3	630.8	594.3	523.4	469.6	408.1	364.1
14°	469.6	532.7	603.3	646.2	652.5	639.0	602.2	525.1	466.0	400.4	354.5
15°	466.0	534.1	610.5	650.8	654.4	644.8	609.6	527.0	461.9	392.4	345.2
16°	461.9	535.8	616.8	652.8	652.5	647.0	616.0	528.1	457.5	384.2	335.9
17°	458.1	536.9	622.3	651.4	647.0	645.3	621.7	529.5	453.4	376.2	329.0
18°	452.8	538.0	626.4	646.7	639.0	642.0	626.1	530.0	448.7	368.0	319.9
19°	448.4	539.1	629.4	639.3	628.0	634.6	629.4	530.8	443.8	359.7	310.9
20°	442.7	539.6	630.8	629.1	614.9	624.2	630.8	531.1	438.3	349.3	302.1
21°	437.7	539.9	630.2	617.1	600.0	611.8	630.2	531.4	433.1	341.1	293.8
22°	431.1	540.2	627.8	603.1	583.6	597.8	627.5	531.7	427.3	332.8	285.3
23°	425.4	540.2	623.6	587.9	566.0	582.5	622.5	531.7	421.3	324.0	277.6
24°	419.1	539.9	617.3	572.0	546.8	566.8	616.0	531.4	415.2	317.7	269.9
25°	413.8	539.3	609.6	555.0	525.6	550.3	608.0	530.8	409.2	309.2	262.5
26°	407.3	538.2	600.6	536.6	501.7	532.2	598.4	530.0	402.6	301.0	255.7
27°	400.4	537.1	589.9	516.3	475.1	512.2	587.7	528.9	395.7	292.7	248.8
28°	392.7	535.5	578.1	493.2	446.0	489.1	575.3	527.0	387.2	284.8	242.5
29°	386.7	533.6	564.9	468.5	415.8	463.0	561.6	525.3	379.8	276.8	236.2
30°	378.1	531.4	550.6	441.6	385.8	435.5	547.0	523.1	372.9	269.1	230.1
32.5°	359.2	523.1	510.8	372.6	316.6	365.5	509.7	515.2	353.7	250.4	217.2
35°	340.2	511.9	463.3	304.0	261.7	302.6	461.6	504.5	334.2	232.9	205.7
37.5°	317.7	496.8	408.1	257.9	222.4	252.6	405.9	489.9	313.1	215.6	195.0
40°	296.3	478.4	351.0	220.0	195.8	216.4	348.5	471.8	290.8	199.9	184.3
42.5°	274.1	456.1	297.7	193.1	176.6	190.6	295.2	449.3	268.8	185.6	173.6
45°	252.1	429.8	252.6	171.9	161.7	171.4	250.4	423.2	247.4	171.9	163.1
47.5°	230.4	399.8	217.2	157.6	148.8	155.7	214.5	393.0	226.0	159.0	152.7
50°	209.3	366.1	189.2	143.9	136.8	142.2	186.2	356.7	204.6	146.6	141.7
52.5°	188.7	333.4	166.7	130.7	123.9	129.9	163.1	321.6	184.0	134.6	130.7
55°	169.4	296.0	146.4	118.4	112.9	117.3	144.2	285.6	165.0	123.0	120.3
57.5°	151.3	259.0	131.3	106.0	100.8	104.9	127.1	247.4	147.2	111.8	109.8
60°	133.7	223.3	115.6	93.6	89.2	92.8	112.0	211.5	129.6	100.2	100.0
62.5°	117.3	189.8	101.3	82.1	78.5	81.6	97.8	179.0	113.1	89.2	89.8
65°	101.9	159.3	87.1	71.9	68.1	70.9	84.6	150.2	98.0	78.5	79.9



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CATALOG NUMBER: S122-DR-LO-27-X-0048-1-U-DD-3-W

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	87.1	129.6	75.5	61.0	58.8	60.4	72.2	123.0	83.2	67.0	68.9
70°	73.3	106.0	62.6	51.6	50.0	51.1	59.0	99.4	69.5	56.8	59.0
72.5°	59.6	85.1	51.6	43.1	41.5	42.3	48.9	79.1	56.0	47.0	49.4
75°	47.5	65.9	41.5	34.9	33.8	34.1	39.3	59.9	44.2	37.6	39.8
77.5°	36.2	49.2	32.1	27.2	26.4	26.6	29.9	43.9	33.2	28.8	30.5
80°	26.4	34.6	23.6	20.0	19.5	19.5	21.7	30.5	23.3	20.6	22.0
82.5°	17.6	22.8	16.5	14.0	13.5	13.5	14.6	19.2	14.8	13.5	14.6
85°	10.2	13.5	10.2	8.5	8.5	8.2	8.8	10.4	8.8	7.4	8.0
87.5°	4.9	6.0	4.9	4.1	4.1	3.6	3.8	3.8	3.0	2.5	2.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P231543

CATALOG NUMBER: S122-DR-LO-27-X-0048-1-U-DD-3-W

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	489.4	489.4	489.4	489.4	489.4	489.4
1°	478.7	472.9	475.4	479.5	483.3	495.7
2°	467.9	461.3	464.9	471.2	478.9	495.4
3°	457.2	450.4	454.8	463.5	474.0	494.9
4°	445.4	438.8	443.2	455.0	469.0	493.8
5°	433.3	427.0	431.4	446.0	463.8	492.4
6°	421.5	414.7	419.6	436.6	458.3	491.0
7°	409.4	402.0	407.8	427.0	452.8	489.4
8°	397.9	389.7	396.5	417.1	446.5	487.4
9°	386.4	377.9	385.0	407.5	438.6	485.2
10°	375.1	366.3	373.5	397.9	431.4	482.5
11°	364.1	355.3	362.5	388.3	424.3	479.5
12°	353.4	344.4	351.8	378.7	417.4	476.7
13°	342.7	333.9	341.9	369.4	409.7	473.7
14°	332.6	323.5	332.3	360.0	402.3	469.6
15°	322.4	313.1	322.7	350.7	394.1	466.0
16°	312.5	303.4	313.1	341.6	386.1	461.9
17°	303.2	293.8	303.7	332.8	377.9	458.1
18°	294.1	284.8	294.1	324.0	371.3	452.8
19°	284.8	276.5	285.0	315.5	362.8	448.4
20°	276.5	268.6	276.3	304.8	354.0	442.7
21°	268.8	260.9	268.3	296.6	345.5	437.7
22°	261.4	254.0	260.6	290.3	337.0	431.1
23°	254.3	247.7	253.5	281.8	328.7	425.4
24°	247.7	242.5	247.2	273.8	320.5	419.1
25°	241.9	237.8	241.4	266.1	312.2	413.8
26°	237.0	233.4	236.4	259.0	303.7	407.3
27°	232.3	229.3	232.3	252.1	295.5	400.4
28°	228.2	225.2	227.9	245.8	287.5	392.7
29°	224.1	221.3	223.0	239.5	279.6	386.7
30°	220.0	217.8	219.1	233.7	271.9	378.1
32.5°	210.1	209.0	209.8	220.2	253.2	359.2
35°	200.5	200.2	201.0	209.0	235.6	340.2
37.5°	190.9	190.3	191.7	198.5	218.9	317.7
40°	180.7	179.6	181.5	188.4	203.8	296.3
42.5°	169.7	169.4	171.1	177.9	189.5	274.1
45°	159.3	160.1	160.9	167.2	175.8	252.1
47.5°	149.4	151.3	151.0	156.3	163.4	230.4
50°	140.1	142.8	141.7	145.0	151.3	209.3
52.5°	131.0	134.6	132.6	133.7	139.5	188.7
55°	122.2	124.9	124.1	122.8	128.2	169.4
57.5°	112.9	116.7	115.1	112.6	117.0	151.3
60°	103.3	107.1	105.5	102.2	105.5	133.7
62.5°	93.6	97.5	95.8	92.0	94.2	117.3
65°	84.0	86.8	86.2	82.4	83.2	101.9



TEST NUMBER: P231543

CATALOG NUMBER: S122-DR-LO-27-X-0048-1-U-DD-3-W

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	74.1	76.9	75.8	72.2	72.2	87.1
70°	63.4	64.8	64.8	61.8	61.0	73.3
72.5°	52.2	54.4	53.8	51.9	50.8	59.6
75°	42.6	44.2	44.8	42.3	40.9	47.5
77.5°	33.0	34.1	35.2	33.0	31.9	36.2
80°	23.3	23.9	25.5	24.2	23.6	26.4
82.5°	15.1	15.7	16.8	16.5	16.2	17.6
85°	8.0	8.2	9.3	9.6	9.6	10.2
87.5°	2.2	2.7	3.3	3.8	4.4	4.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)