

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: P231557

Luminaire Tested: **S123-DR-LO-35-X-0048-1-U-DD-3-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P231557
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29684)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123-DR-LO-35-X-0048-1-U-DD-3-W
Description: DEFINE 3 LED LINEAR DIRECT RECESSED LED LUMINAIRE WITH ASYMMETRIC LENS.
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1564.4 lumens
Efficiency: N/A
Efficacy: 115.0 lumens/watt
Spacing Criteria (0/90/45): 1.33 / 1.22 / 1.46
Luminous Opening: Rectangular (W 3.92' x L: 0.22' x H: 0')
CIE Type: Direct

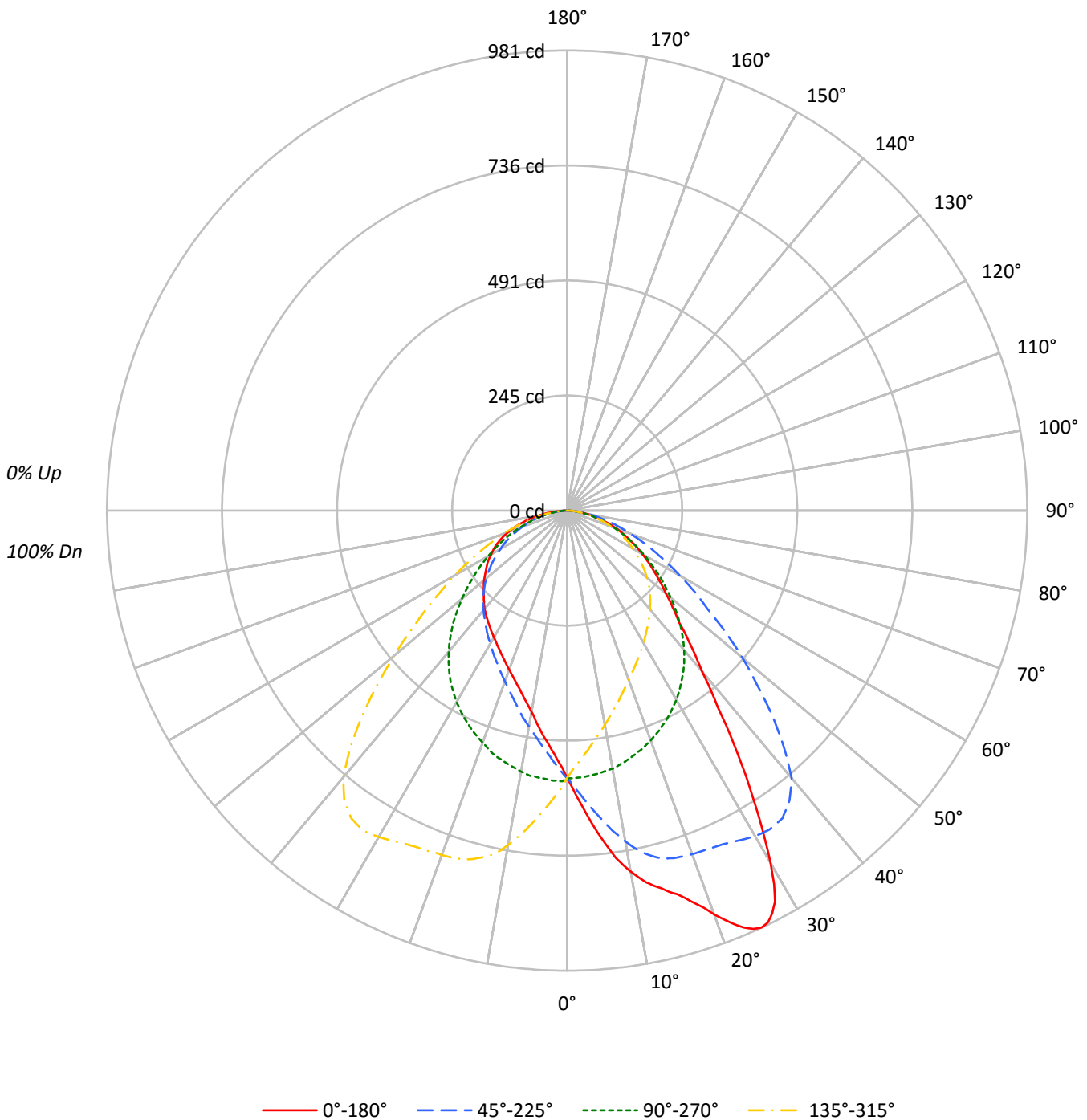
Input Watts (W): 13.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85
2	100	92	86	80	98	90	84	79	87	82	78	84	79	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	74	69	65	72	67	64	61
4	84	73	64	58	82	71	64	57	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	44	55	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	39	49	43	38	36
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33
9	58	45	37	32	57	45	37	32	43	36	31	42	36	31	41	35	31	29
10	55	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	7019	7019	7019	7019
5°	8402	7002	6108	7088
10°	9766	6980	5446	7060
15°	10723	6902	5007	6990
20°	12003	6830	4728	6894
25°	13322	6734	4541	6801
30°	12317	6614	4437	6698
35°	9553	6451	4395	6540
40°	7177	6235	4399	6306
45°	5888	5914	4372	6000
50°	5271	5516	4423	5600
55°	4860	5094	4491	5199
60°	4559	4679	4605	4775
65°	4260	4275	4761	4389
70°	4005	3811	4822	3915
75°	3628	3324	4708	3443
80°	3211	2722	4401	2863
85°	2570	2019	3968	2231



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.5	3.5
10°-20°	166.1	10.6
20°-30°	264.9	16.9
30°-40°	305.1	19.5
40°-50°	277.9	17.8
50°-60°	225.3	14.4
60°-70°	160.0	10.2
70°-80°	86.8	5.5
80°-90°	22.9	1.5
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°	486.5	31.1
0°-40°	791.6	50.6
0°-60°	1294.8	82.8
0°-90°	1564.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1564.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	570	570	570	570	570	
5°	680	567	494	574	680	68
15°	842	542	393	549	842	241
25°	981	496	334	501	981	439
35°	636	429	292	435	636	398
45°	338	340	251	345	338	268
55°	226	237	209	242	226	204
65°	146	147	164	151	146	146
75°	76	70	99	72	76	81
85°	18	14	28	16	18	22
90°	0	0	0	0	0	



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CATALOG NUMBER: S123-DR-LO-35-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°	570.3	570.3	570.3	570.3	570.3	570.3	570.3	570.3	570.3	570.3	570.3
1°	589.0	585.1	582.6	572.2	570.8	559.9	555.5	551.6	550.1	552.5	559.9
2°	611.2	603.8	596.4	579.1	569.8	553.0	544.2	536.8	534.8	537.8	547.6
3°	632.8	623.0	611.2	586.0	569.8	546.6	532.9	522.5	520.0	523.5	536.8
4°	656.0	643.7	625.9	592.4	568.3	539.7	522.0	509.7	507.2	510.2	525.5
5°	680.1	664.8	641.2	599.3	566.8	531.4	511.7	496.9	494.4	497.4	514.6
6°	702.3	686.0	656.5	606.2	565.8	526.4	501.3	485.6	483.1	485.6	504.8
7°	725.4	707.7	672.2	612.6	563.9	519.1	491.5	474.2	471.3	474.7	494.9
8°	747.6	727.9	688.0	619.0	561.9	512.2	482.1	463.4	459.5	463.4	485.6
9°	765.3	745.6	701.8	624.9	559.9	505.3	472.8	453.1	446.2	453.1	476.2
10°	781.5	762.3	716.5	630.9	558.5	498.4	463.4	442.7	435.8	442.7	467.4
11°	796.3	776.6	729.8	636.3	556.0	492.0	454.5	433.4	426.5	432.9	459.5
12°	810.1	789.9	741.7	643.7	552.1	485.6	445.7	424.0	417.6	423.5	452.1
13°	820.5	800.3	751.5	647.6	549.1	477.7	437.3	415.6	409.2	415.2	442.2
14°	829.8	810.6	759.9	652.0	545.2	470.3	428.9	406.8	400.9	407.3	432.9
15°	841.6	819.0	767.3	656.0	541.7	463.4	421.6	398.9	393.0	399.4	424.5
16°	851.0	827.3	771.7	659.4	537.8	456.5	413.2	391.5	386.1	392.5	416.6
17°	864.3	835.7	774.7	661.9	534.3	449.6	405.3	384.6	379.2	385.1	409.2
18°	880.0	844.1	776.6	663.4	530.4	442.7	397.9	377.7	372.8	377.7	401.4
19°	895.8	854.4	778.6	664.8	525.5	435.3	391.0	371.3	366.9	370.8	394.5
20°	916.5	865.8	779.6	664.3	521.5	428.9	384.1	365.4	361.0	364.4	387.6
21°	934.2	878.6	780.6	662.4	516.1	421.6	377.7	359.5	355.6	358.5	381.2
22°	951.4	892.4	781.1	660.9	511.7	414.7	371.3	354.1	349.7	353.1	374.8
23°	965.7	906.1	782.0	657.0	506.7	407.8	364.9	348.2	344.7	347.7	368.4
24°	976.1	920.9	783.5	652.5	500.8	400.9	359.0	343.3	339.3	342.3	362.0
25°	981.0	933.2	785.0	646.6	495.9	394.5	353.1	338.3	334.4	336.4	356.1
26°	976.6	941.1	787.9	640.2	490.0	387.6	347.2	333.9	329.5	331.4	350.1
27°	963.3	944.6	791.4	632.8	484.1	380.7	341.8	329.5	325.5	327.0	344.7
28°	944.1	941.6	794.8	624.9	477.7	374.3	336.4	324.5	320.6	322.1	338.8
29°	910.1	931.7	797.8	616.6	471.8	367.9	330.9	319.1	316.2	317.1	333.4
30°	866.7	914.0	801.7	608.2	465.4	361.0	325.5	314.7	312.2	312.7	328.0
32.5°	748.6	838.7	805.2	584.6	448.1	345.2	312.2	302.9	302.4	301.9	315.2
35°	635.8	734.8	800.3	559.4	429.4	329.5	299.4	292.0	292.5	291.5	301.9
37.5°	526.9	627.9	779.1	536.3	409.7	313.7	287.1	282.2	283.2	281.2	289.1
40°	446.7	532.4	744.6	508.7	388.1	298.4	274.8	271.8	273.8	271.3	277.3
42.5°	390.0	453.6	684.0	482.6	364.4	283.2	262.0	261.0	262.5	260.5	264.5
45°	338.3	391.5	619.0	455.5	339.8	267.4	249.2	248.2	251.2	248.2	252.1
47.5°	305.3	343.3	548.6	430.4	314.2	252.1	236.4	236.4	241.3	235.9	238.8
50°	275.3	301.9	487.5	401.9	288.1	236.4	221.6	223.6	231.0	223.6	225.1
52.5°	249.7	269.9	425.0	372.3	262.5	220.1	207.3	211.8	219.6	211.8	210.3
55°	226.5	241.3	365.4	341.3	237.4	203.9	192.1	198.5	209.3	199.9	195.5
57.5°	205.4	216.2	321.6	309.3	213.2	187.6	177.3	187.6	199.9	189.1	180.2
60°	185.2	193.0	277.3	277.3	190.1	170.4	162.0	174.3	187.1	175.3	165.0
62.5°	166.0	171.9	238.8	244.3	167.9	153.2	147.7	161.0	176.3	163.0	150.2
65°	146.3	150.7	204.4	212.7	146.8	134.4	132.0	147.2	163.5	149.2	134.9



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CATALOG NUMBER: S123-DR-LO-35-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°	129.0	131.0	172.9	181.7	126.1	116.7	115.2	132.5	149.2	134.4	117.2
70°	111.3	111.8	143.8	152.2	105.9	100.5	99.5	116.2	134.0	118.2	101.9
72.5°	93.6	93.6	116.7	123.6	87.7	83.7	84.2	101.0	116.7	102.4	86.7
75°	76.3	75.8	92.6	98.0	69.9	67.5	68.5	85.2	99.0	86.2	70.9
77.5°	60.1	60.6	70.9	74.4	53.7	52.2	55.2	68.9	80.8	69.9	56.1
80°	45.3	43.8	51.2	53.2	38.4	38.4	40.4	52.7	62.1	53.7	42.4
82.5°	30.5	31.0	34.0	35.0	25.1	25.6	27.6	37.4	44.8	38.4	29.5
85°	18.2	18.2	19.7	19.7	14.3	14.8	17.7	23.1	28.1	24.6	18.2
87.5°	7.9	7.9	8.4	8.4	6.4	6.9	8.4	11.3	13.8	12.3	9.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CATALOG NUMBER: S123-DR-LO-35-X-0048-1-U-DD-3-W

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	570.3	570.3	570.3	570.3	570.3	570.3
1°	562.4	577.2	577.7	589.0	591.9	589.0
2°	556.0	576.7	585.5	603.3	611.2	611.2
3°	549.1	576.2	591.9	618.5	631.3	632.8
4°	541.7	574.7	599.3	633.8	651.5	656.0
5°	534.8	573.7	605.2	648.6	672.2	680.1
6°	527.9	572.7	612.6	664.3	693.9	702.3
7°	521.5	570.8	619.5	680.1	714.6	725.4
8°	514.6	570.8	625.9	695.4	734.8	747.6
9°	509.7	567.8	634.8	709.6	753.5	765.3
10°	500.8	564.9	638.7	723.4	769.7	781.5
11°	493.5	561.4	643.7	737.2	784.0	796.3
12°	486.1	558.5	649.6	748.6	796.3	810.1
13°	479.7	555.5	653.5	755.9	806.7	820.5
14°	472.8	552.1	658.9	762.8	815.5	829.8
15°	465.4	548.6	662.9	768.7	823.4	841.6
16°	459.0	546.1	666.3	773.7	830.8	851.0
17°	452.6	541.7	669.8	776.6	839.7	864.3
18°	445.7	536.8	670.7	779.1	848.5	880.0
19°	437.3	531.4	671.2	780.1	859.8	895.8
20°	430.4	526.4	670.7	781.5	874.1	916.5
21°	424.0	521.5	668.8	781.5	889.4	934.2
22°	416.6	517.1	666.3	784.0	904.7	951.4
23°	409.7	512.2	663.8	785.0	918.5	965.7
24°	402.8	506.7	658.9	786.0	931.3	976.1
25°	396.4	500.8	654.5	787.9	942.1	981.0
26°	389.5	495.4	648.1	789.9	950.0	976.6
27°	382.6	489.5	640.7	793.4	951.9	963.3
28°	375.8	483.6	630.9	796.8	947.5	944.1
29°	369.4	477.2	622.5	800.3	935.7	910.1
30°	362.9	471.3	613.6	803.7	916.0	866.7
32.5°	347.7	454.1	592.4	809.1	836.7	748.6
35°	331.4	435.3	566.8	801.7	729.8	635.8
37.5°	316.2	414.7	541.7	780.6	622.5	526.9
40°	301.4	392.5	516.6	742.1	526.0	446.7
42.5°	286.1	369.4	491.0	683.5	448.1	390.0
45°	271.3	344.7	463.9	617.1	386.1	338.3
47.5°	256.1	318.6	436.3	547.6	337.3	305.3
50°	239.3	292.5	407.8	481.1	299.4	275.3
52.5°	223.1	267.4	377.7	420.1	267.4	249.7
55°	208.8	242.3	346.2	365.9	239.3	226.5
57.5°	192.1	218.2	314.2	318.1	214.7	205.4
60°	173.8	194.0	281.2	275.8	192.1	185.2
62.5°	156.6	171.9	248.2	237.4	170.4	166.0
65°	140.4	150.7	216.2	203.4	150.7	146.3



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CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	121.6	129.5	185.2	171.9	131.5	129.0
70°	102.9	108.8	155.6	143.8	110.8	111.3
72.5°	87.7	89.6	127.5	116.2	94.6	93.6
75°	70.9	72.4	100.5	92.6	76.8	76.3
77.5°	55.2	55.6	76.8	71.4	60.6	60.1
80°	40.9	40.4	55.2	51.7	43.8	45.3
82.5°	27.6	27.1	36.4	35.0	31.5	30.5
85°	16.7	15.8	21.2	20.7	18.7	18.2
87.5°	8.4	7.9	9.8	9.8	8.9	7.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)