

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: METALUX

Report Number: P178710

Luminaire Tested: **24ALNG-LD4-31-UNV-EL14W-L830-CD1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P178710  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P34286)  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 24ALNG-LD4-31-UNV-EL14W-L830-CD1-U  
Description: METALUX ARCLINE 2X4 TROFFER  
  
Light Source: EATON LED 3000K  
Ballast/Driver: OSRAM ELECTRONIC DRIVER

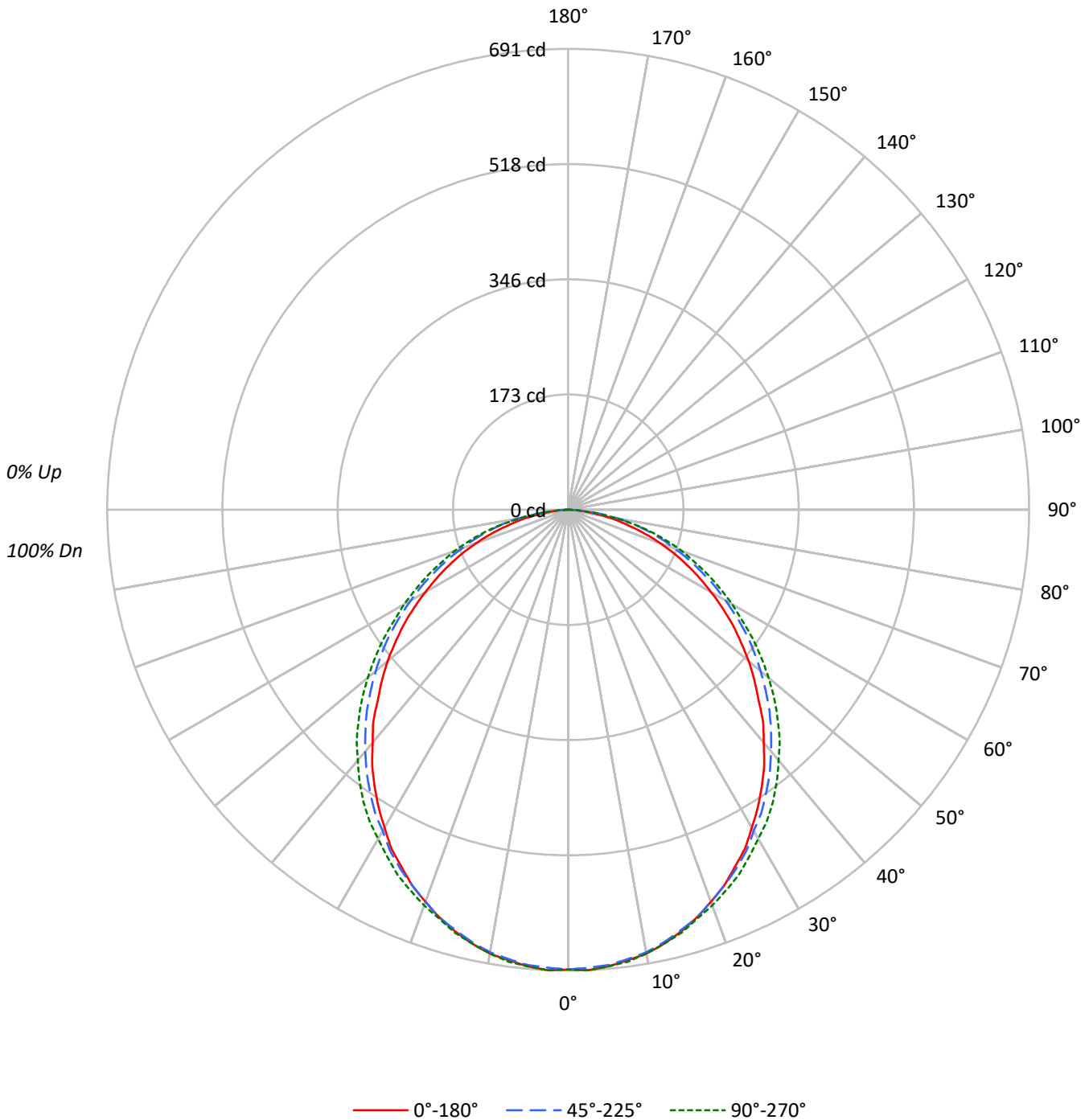
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1835.0 lumens  
Efficiency: N/A  
Efficacy: 143.4 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 4' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 12.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	927	927	927
5°	928	926	928
10°	923	921	923
15°	912	909	914
20°	896	896	904
25°	877	883	897
30°	855	864	885
35°	831	850	879
40°	800	831	862
45°	768	812	845
50°	740	788	821
55°	707	765	793
60°	665	733	764
65°	627	701	738
70°	578	668	714
75°	502	643	673
80°	419	583	553
85°	327	387	298



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.2	3.6
10°-20°	184.5	10.1
20°-30°	274.6	15.0
30°-40°	324.4	17.7
40°-50°	328.4	17.9
50°-60°	288.2	15.7
60°-70°	215.3	11.7
70°-80°	125.0	6.8
80°-90°	29.5	1.6
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°	524.2	28.6
0°-40°	848.7	46.2
0°-60°	1465.2	79.8
0°-90°	1835.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1835.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	689	689	689	689	689	
5°	687	687	686	687	687	65
15°	655	655	653	655	656	184
25°	591	593	595	600	604	272
35°	506	508	518	531	535	316
45°	404	411	427	440	444	312
55°	301	309	326	336	338	269
65°	197	205	220	228	232	195
75°	96	110	124	129	129	104
85°	21	27	25	21	19	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3
2.5°	691.3	691.3	691.3	689.3	689.3	689.3	689.3	689.3	689.3	687.4	687.4
5°	687.4	687.4	687.4	687.4	687.4	687.4	687.4	685.5	685.5	685.5	685.5
7.5°	681.6	681.6	683.6	683.6	681.6	681.6	681.6	681.6	681.6	679.7	679.7
10°	675.8	675.8	675.8	675.8	675.8	675.8	675.8	673.9	673.9	673.9	673.9
12.5°	666.2	666.2	666.2	666.2	666.2	666.2	666.2	664.2	664.2	664.2	664.2
15°	654.6	654.6	654.6	654.6	654.6	654.6	654.6	652.7	652.7	652.7	652.7
17.5°	641.1	641.1	641.1	641.1	641.1	641.1	641.1	639.1	641.1	639.1	641.1
20°	625.6	625.6	625.6	625.6	625.6	625.6	625.6	625.6	625.6	625.6	625.6
22.5°	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2
25°	590.9	592.8	592.8	592.8	590.9	592.8	592.8	592.8	592.8	592.8	594.7
27.5°	573.5	571.6	571.6	571.6	571.6	573.5	573.5	573.5	575.4	575.4	577.4
30°	550.3	550.3	550.3	550.3	550.3	552.2	552.2	554.2	554.2	556.1	556.1
32.5°	529.1	529.1	529.1	531.0	531.0	531.0	531.0	532.9	534.9	536.8	538.7
35°	505.9	505.9	505.9	505.9	507.8	507.8	507.8	511.7	513.6	515.6	517.5
37.5°	482.7	480.8	482.7	482.7	482.7	484.7	486.6	488.5	490.5	492.4	496.3
40°	455.7	455.7	457.6	457.6	459.6	459.6	461.5	463.4	467.3	469.2	473.1
42.5°	432.5	430.6	432.5	434.5	436.4	436.4	438.3	440.3	442.2	446.0	449.9
45°	403.6	405.5	407.4	409.4	409.4	411.3	413.2	415.2	419.0	422.9	426.7
47.5°	378.5	380.4	382.3	382.3	386.2	386.2	388.1	392.0	393.9	397.8	401.6
50°	353.4	353.4	353.4	355.3	357.2	361.1	361.1	364.9	368.8	372.7	376.5
52.5°	326.3	328.3	328.3	330.2	332.1	334.1	336.0	339.8	343.7	347.6	351.4
55°	301.2	301.2	301.2	305.1	307.0	308.9	310.9	314.7	318.6	322.5	326.3
57.5°	274.2	274.2	276.1	278.1	280.0	281.9	283.8	287.7	291.6	295.4	299.3
60°	247.2	249.1	249.1	251.0	254.9	256.8	258.7	262.6	266.5	270.3	272.3
62.5°	222.1	222.1	224.0	225.9	229.8	231.7	233.6	237.5	241.4	243.3	247.2
65°	197.0	197.0	198.9	200.8	204.7	204.7	208.5	212.4	216.3	218.2	220.1
67.5°	171.9	171.9	173.8	173.8	179.6	181.5	183.4	185.4	189.2	191.2	195.0
70°	146.8	146.8	148.7	150.6	154.5	156.4	158.3	162.2	166.1	168.0	169.9
72.5°	121.6	121.6	123.6	125.5	131.3	133.2	135.2	137.1	141.0	142.9	146.8
75°	96.5	98.5	100.4	104.3	108.1	110.1	110.1	113.9	117.8	121.6	123.6
77.5°	75.3	75.3	79.2	83.0	86.9	86.9	88.8	92.7	94.6	98.5	100.4
80°	54.1	54.1	57.9	61.8	63.7	65.7	67.6	71.4	73.4	75.3	75.3
82.5°	34.8	36.7	38.6	40.5	44.4	46.3	48.3	50.2	50.2	50.2	48.3
85°	21.2	21.2	23.2	25.1	27.0	27.0	27.0	27.0	27.0	25.1	25.1
87.5°	7.7	7.7	9.7	9.7	9.7	7.7	7.7	7.7	5.8	5.8	5.8
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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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3	689.3
2.5°	687.4	687.4	689.3	689.3	689.3	689.3	689.3	691.3	691.3	691.3
5°	683.6	685.5	685.5	685.5	687.4	687.4	687.4	687.4	687.4	687.4
7.5°	679.7	679.7	681.6	681.6	681.6	681.6	681.6	681.6	681.6	683.6
10°	673.9	673.9	675.8	675.8	675.8	675.8	675.8	675.8	675.8	675.8
12.5°	664.2	664.2	664.2	666.2	666.2	666.2	666.2	666.2	666.2	666.2
15°	652.7	652.7	654.6	654.6	654.6	656.5	656.5	656.5	654.6	656.5
17.5°	641.1	641.1	643.0	643.0	643.0	643.0	643.0	643.0	644.9	643.0
20°	625.6	627.6	627.6	629.5	629.5	629.5	629.5	629.5	631.4	631.4
22.5°	612.1	614.0	616.0	616.0	616.0	616.0	617.9	617.9	617.9	617.9
25°	596.7	596.7	598.6	600.5	600.5	602.5	602.5	602.5	602.5	604.4
27.5°	579.3	581.2	583.1	585.1	585.1	585.1	587.0	587.0	587.0	587.0
30°	560.0	561.9	563.8	565.8	567.7	567.7	569.6	569.6	569.6	569.6
32.5°	540.7	544.5	546.5	548.4	548.4	550.3	552.2	552.2	554.2	554.2
35°	521.4	523.3	527.1	529.1	531.0	531.0	532.9	532.9	532.9	534.9
37.5°	498.2	502.0	505.9	507.8	509.8	509.8	509.8	511.7	513.6	513.6
40°	476.9	480.8	482.7	486.6	486.6	488.5	490.5	490.5	490.5	490.5
42.5°	453.8	457.6	461.5	463.4	465.4	465.4	467.3	467.3	469.2	469.2
45°	430.6	434.5	438.3	440.3	440.3	442.2	442.2	444.1	444.1	444.1
47.5°	405.5	411.3	411.3	415.2	415.2	415.2	417.1	419.0	420.9	419.0
50°	380.4	384.3	386.2	390.0	390.0	390.0	392.0	392.0	393.9	392.0
52.5°	355.3	357.2	361.1	361.1	363.0	363.0	364.9	364.9	364.9	364.9
55°	330.2	332.1	334.1	336.0	336.0	336.0	337.9	336.0	337.9	337.9
57.5°	303.2	305.1	307.0	308.9	308.9	308.9	308.9	310.9	310.9	308.9
60°	276.1	278.1	280.0	280.0	281.9	281.9	281.9	281.9	283.8	283.8
62.5°	249.1	251.0	253.0	253.0	254.9	254.9	256.8	256.8	256.8	256.8
65°	222.1	224.0	227.9	227.9	227.9	229.8	229.8	229.8	231.7	231.7
67.5°	197.0	198.9	200.8	200.8	202.7	202.7	204.7	204.7	204.7	204.7
70°	173.8	173.8	175.7	177.6	177.6	177.6	179.6	179.6	179.6	181.5
72.5°	148.7	150.6	152.5	154.5	154.5	154.5	154.5	154.5	154.5	154.5
75°	125.5	127.4	127.4	129.4	129.4	129.4	129.4	129.4	129.4	129.4
77.5°	102.3	102.3	104.3	102.3	102.3	102.3	100.4	100.4	100.4	100.4
80°	75.3	73.4	73.4	73.4	71.4	71.4	71.4	71.4	69.5	71.4
82.5°	48.3	48.3	46.3	44.4	44.4	44.4	44.4	44.4	44.4	44.4
85°	23.2	23.2	21.2	21.2	21.2	19.3	19.3	19.3	19.3	19.3
87.5°	5.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)