

# AR24™

2'x4' Architectural LED Troffer

## Product Description

The AR24™ architectural LED troffer delivers up to 4000 lumens of exceptional 90+ CRI light while achieving 100 lumens per watt. This breakthrough performance is achieved by combining the high efficacy and high-quality light of Cree TrueWhite® Technology with a unique optical design. The AR24™ troffer is fully-luminous, is available in warm, neutral, cool or daylight color temperatures, and has step, 0-10V or Lutron EcoSystem® Enabled dimming options. Its sleek, lightweight design makes the AR24™ troffer perfect for use in commercial new construction or renovated spaces.

## Performance Summary

Utilizes Cree TrueWhite® Technology

Active Color Management

Assembled in the U.S.

**Efficacy:** 100 LPW

**Delivered Light Output:** 4000 lumens

**Input Power:** 40 watts

**CRI:** 90

**CCT:** 3500K, 4000K

**Input Voltage:** 120-277 VAC

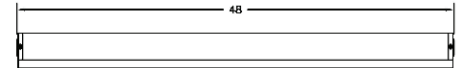
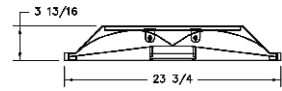
**Limited Warranty:** 10-years†

**Lifetime:** Designed to last 75,000 hours

**Controls:** Step level to 50%, 0-10V dimming or Lutron EcoSystem® Enabled to 5%

**Mounting:** Recessed

AR24™



## Ordering Information

Example: AR24-40L-35K-S

AR24™						
Product	Lumen Output		Color Temp	Voltage	Control	Options
AR24	<b>40L</b> 40W	4000 lumens - 100 LPW	<b>35K</b> 3500K <b>40K</b> 4000K	<b>Blank</b> 120-277 Volt (Standard)	<b>S</b> Step dimming to 50% <b>10V</b> 0-10V dimming to 5% <b>LES</b> Lutron EcoSystem® Enabled to 5%	<b>EB14</b> <sup>2</sup> Emergency Backup - 1400 lumens

1. Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimming control options. 2. Not available with LES option. Suggested MSRP for the adder over the standard AR Series fixture for the Lutron EcoSystem® Enabled feature is \$49. †See [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty) for warranty terms.

**Product Specifications**

**CREE TRUEWHITE™ TECHNOLOGY**

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology mixes the light from the highest performing red and unsaturated yellow LEDs. This patented approach delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy—a true no-compromise solution.

**LUMEN MAINTENANCE FACTORS**

- Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed lumen maintenance factors.

**CONSTRUCTION & MATERIALS**

- Durable cold rolled steel housing provides strength and uniformity. Heavy-duty ends attach to housing with interlocking tabs.
- Quick access plate for convenient power connection.
- Steel-hinged door frames in flush steel, gasketed to prevent light leakage.
- All metal parts pretreated with a phosphate bonding process and post-painted with high temperature baked white enamel for superior quality and versatility.

**OPTICAL SYSTEM**

- Utilizing highly diffused performance optics for soft, glare-free light.
- Channeled inner reflector and high-performance lens optics work together to optimize light distribution, balancing the delivery of high illuminance levels on horizontal surfaces with an ideal amount of light on walls and vertical surfaces. This fully-luminous effect helps to eliminate distractions in the ceiling.
- Room-side access lens.

**ELECTRICAL SYSTEM**

- Integral, high-efficiency driver and power supply.
- **Power Factor** = 0.9 nominal
- **Input Power:** Stays constant over life.
- **Input Voltage:** 120V-277V, 50/60Hz
- **Battery Backup:** Consult factory.
- **Temperature Rating:** Designed to operate in temperatures 0-35° C and below room side and plenum side.
- **Total Harmonic Distortion:** < 20%

**CONTROLS**

- Step dimming to 50% comes standard.\*
- Optional continuous dimming to 5% with 0-10V DC control protocol.\*
- Optional Lutron EcoSystem® Enabled option allows seamless integration with Lutron EcoSystem controls.\*

**REGULATORY & VOLUNTARY QUALIFICATIONS**

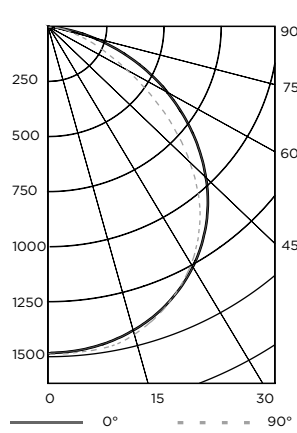
- UL924 (EB14 option).
- cULus Listed.
- DLC qualified.\*\*
- Suitable for damp locations.
- Designed for Indoor use.

\*Reference [www.cree.com/lighting](http://www.cree.com/lighting) for recommended dimming controls and wiring diagrams.  
 \*\*Target DLC Completion Date - Fall 2013. Does not apply to LES models.

**Photometry**

**AR24-4000L PHOTOMETRY BASED ON DTC REPORT TEST #: 12626-G-1**  
 (All test values have been prorated from 12626-G-1 to represent the intended lumen package)

Fixture photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a fixture efficiency of 100%.



**Coefficients Of Utilization**

RCC %:	80			
RW %:	70	50	30	0
RCR: 0	119	119	119	119
1	109	105	101	097
2	100	092	086	080
3	091	081	074	067
4	084	072	064	057
5	077	065	056	050
6	071	058	050	043
7	066	053	045	039
8	062	049	040	034
9	058	045	037	031
10	054	041	033	028

Effective Floor Cavity Reflectance: 20%

**Average Luminance Table (cd/m2)**

Vertical Angle	Horizontal Angle		
	0°	45°	90°
0°	1530	1530	1530
45°	981	974	948
55°	730	699	665
65°	470	430	404
75°	229	201	180
85°	44	32	29

**Zonal Lumen Summary**

Zone	Lumens	Luminaire
0-30	1,192	29.8%
0-40	1,943	48.5%
0-60	3,313	82.8%
0-90	4,004	100%
0-180	4,004	100%

Reference [www.cree.com/lighting](http://www.cree.com/lighting) for detailed photometric data.

**Application Reference**

Open Space					
Spacing	Lumens	Wattage	LPW	w/ft²	Average fc
8 x 8	4000L	40W	100	0.69	54
8 x 10	4000L	40W	100	0.55	45
10 x 10	4000L	40W	100	0.44	38
10 x 12	4000L	40W	100	0.37	30

9' ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial.  
 Open space: 50' x 40' x 10'.