



Application Guide

# Healthcare Lighting

Appealing Spaces with Healthier Bottom Lines









A clinical room, likely a patient room or examination room, featuring a patient bed with a green coverlet, medical equipment, a window with blinds, and a ceiling with recessed lighting.

# Lighting That's Healthy For Your Patients — and Your Budget

Hospitals and other healthcare facilities are among the most energy-intensive buildings in the country and also have some of the most rigorous lighting requirements of any setting. Doctors and nurses must have clean, clear, bright light with superior color rendering to make accurate diagnoses, while warm, welcoming lighting promotes a tranquil atmosphere for patients and visitors.

Cree is committed to delivering industry-leading LED lighting solutions that will enhance your healthcare facility — from precision task lighting for clinical spaces to soft, ambient lighting in visitor areas and patient rooms, to bright parking and area lighting outside. With energy reductions of up to 85 percent and virtually no maintenance, your facility can promote better healing while improving your bottom line.

- Proven quality & performance
- Ultra-efficient lighting
- Lifetime energy savings
- Virtually maintenance-free
- Easy installation & retrofitting
- Long-term financial benefits





## Lighting that Creates a Pleasant, Positive Healing Environment

Healthcare consumers are increasingly setting higher standards for both the quality of their medical care and the healthcare facilities. As a result, improving patient satisfaction and well-being, while controlling costs, is critical for today's healthcare providers.

Quality of light plays an essential role in creating healthcare spaces that address both the clinical and emotional needs of patients, family and staff. Cree® LED lighting solutions help to create an inviting appearance, providing your visitors with a sense of comfort, safety and security that sets the tone for their experience.





### Essentia® Downlights

- NanoOptic® Technology for precise optical control
- Servicable and upgradable light engine and components
- Multiple color temperatures and distribution patterns



### SR Downlights

- Cree TrueWhite® Technology
- Deliver up to 1,800 lumens
- Multiple color temperatures and shield angle options
- Dimmable to 5%



### CR Troffers

- Cree TrueWhite® Technology
- Deliver up to 5,000 lumens
- Efficacy up to 130 lumens per watt
- Dimmable to 5%

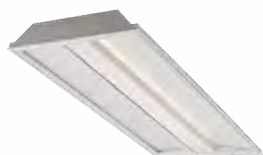
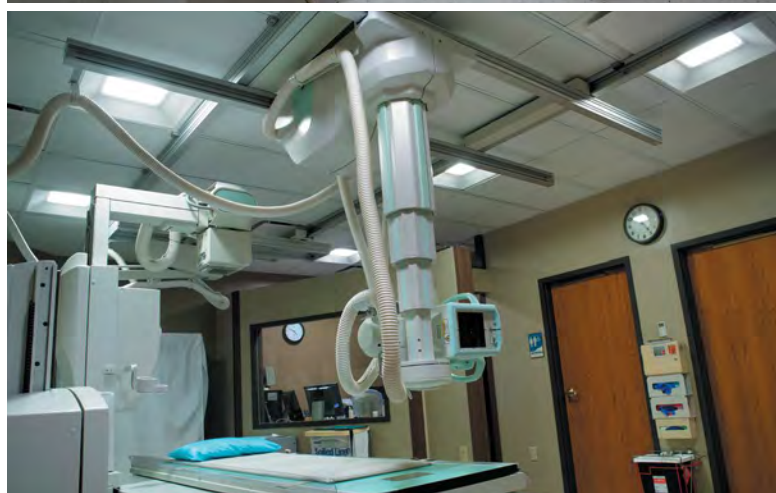


## Support Better Patient Outcomes With the Accuracy of Cree TrueWhite® Technology

Healthcare facilities are high-performance environments. Your staff needs high levels of light and color rendering to see the smallest details in their true hues. Better visibility with dimming functionality in diagnostic and clinical areas enables staff to make fewer errors, perform more accurate evaluations and provide more efficient treatment.

With industry-leading color rendering, Cree delivers superior light quality for more accurate skin and wound care assessment. Cree interior LED luminaires provide increased light levels with uniform light distribution and high color performance — essential for areas where high-detail, color-critical work requires greater visual acuity.





#### AR Troffers

- Cree TrueWhite® Technology
- Deliver up to 4,000 lumens
- Efficacy up to 100 lumens per watt
- Dimmable 0-10V



#### CR Troffers

- Cree TrueWhite® Technology
- Deliver up to 5,000 lumens
- Efficacy up to 130 lumens per watt
- Dimmable to 5%



#### LR Downlights

- Cree TrueWhite® Technology
- Deliver up to 1,800 lumens
- Efficacy up to 90 lumens per watt
- Dimmable to 5%



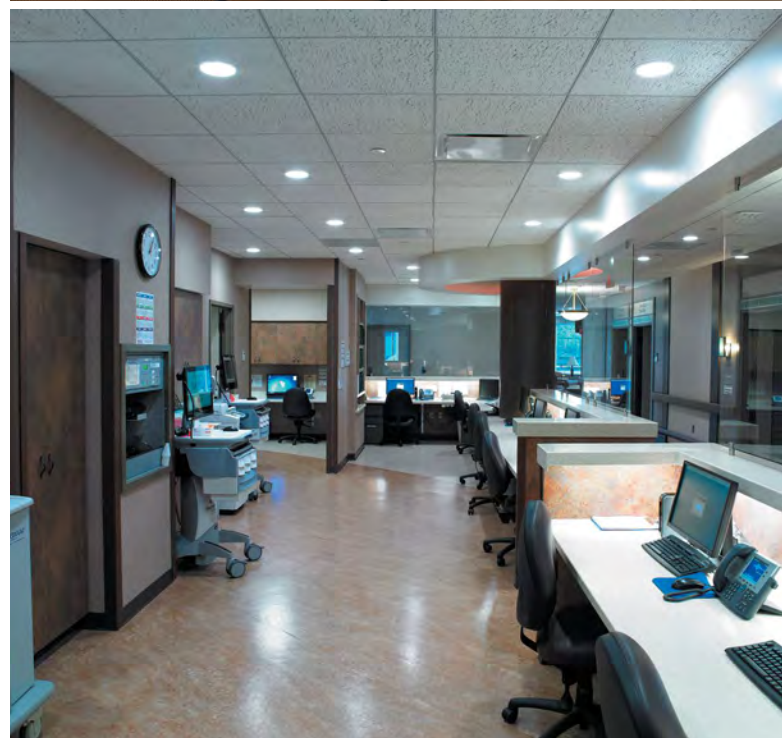


## Make Patients Feel at Home While Away from Home

Soft, low-glare lighting fosters a restful treatment and recovery environment with a calm, soothing atmosphere for patients and families. Less stressed, more comfortable patients have better outcomes, spend less time in the healthcare facility and leave with a greater feeling of satisfaction.

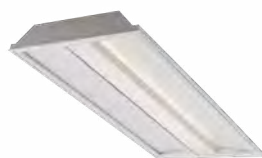
Efficient, dimmable and available in a variety of color temperatures, Cree LED lighting produces a tranquil environment with quiet ceilings that minimize eye strain and patient stress, encourages high alertness during overnight work hours, and provides the ability to synchronize circadian rhythms.





#### LR Downlights

- Cree TrueWhite® Technology
- Deliver up to 1,800 lumens
- Efficacy up to 90 lumens per watt
- Dimmable to 5%



#### AR Troffers

- Cree TrueWhite® Technology
- Deliver up to 4,000 lumens
- Efficacy up to 100 lumens per watt
- Dimmable 0-10V



#### KR Downlights

- Cree TrueWhite® Technology
- Deliver up to 2,650 lumens
- Efficacy up to 67 lumens per watt
- Dimmable to 5%





## Efficient Lighting for More Efficient Non-Clinical Areas

Bright, reliable, low-glare lighting for high-traffic areas such as reception, corridors, pharmacies, offices and restrooms shows patients and staff that you care about every aspect of their experience. Cree® LED troffers and downlights provide significantly higher efficacy and longer service life, with better light quality than you can expect from traditional fluorescent and incandescent lighting.

Cree LED luminaires offer energy-efficient and near maintenance-free lighting for spaces that require both high efficiency and high-quality general purpose lighting — providing rapid payback and real long-term savings for your healthcare facility.





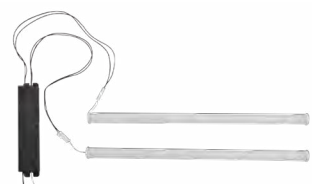
### CR Troffers

- Cree TrueWhite® Technology
- Deliver up to 5,000 lumens
- Efficacy up to 130 lumens per watt
- Dimmable to 5%



### CR Downlights

- Cree TrueWhite® Technology
- Deliver up to 800 lumens
- ENERGY STAR® qualified for commercial applications
- Dimmable to 5%



### UR LED Upgrade Kits

- Deliver up to 4,500 lumens
- Efficacy up to 120 lumens per watt
- UL-compliant installation
- Step dimming to 50%





## Create Appealing Spaces That Invite Substantial Savings

Patients aren't the only ones who need recovery time. With a variety of distribution, color quality and light output options, Cree indoor lighting creates an inviting and relaxing atmosphere for spaces used by visitors and staff, including cafeterias, waiting areas and chapels.

Cree LED lighting solutions blend both efficiency and visual appeal, creating interesting and inviting spaces that offer staff, visitors and families a respite from stress, noise and visual chaos — all while using up to 85 percent less energy than traditional lighting.





### LRP Lamps

- Cree TrueWhite® Technology
- Deliver up to 1,000 lumens
- Multiple beam angle options
- 92 to 94 CRI
- Dimmable to 20%



### KR Downlights

- Cree TrueWhite® Technology
- Deliver up to 2,650 lumens
- Efficacy up to 67 lumens per watt
- Dimmable to 5%



### CR Troffers

- Cree TrueWhite® Technology
- Deliver up to 5,000 lumens
- Efficacy up to 130 lumens per watt
- Dimmable to 5%





## Help Your Visitors Feel Safe Inside and Out

First impressions count — lighting is a critical element in shaping visitors' perceptions of your healthcare facility. With optimum illumination and unobtrusive architectural blending, Cree® exterior LED lighting enables effective wayfinding for ambulances, employees and visitors while promoting driver and pedestrian safety and security.

Cree exterior LED systems offer proven energy and maintenance savings while improving illumination performance. Put light exactly where you want it, not where you don't, while using a fraction of the energy of traditional lighting solutions.





### VG Series Parking Structure

- Minimum 70 CRI
- UL wet listed
- Multi-Level options
- Integrated occupancy sensor
- Optimized for balanced vertical and horizontal illumination



### Cree Edge™ Pathway

- Cree BetaLED® Technology
- UL wet listed
- High/Low control options
- Optional backlight cutoff shield
- International Dark Sky Association approved



### Cree Edge™ Area

- NanoOptic® Technology
- UL wet listed
- High/Low control options
- Optional backlight cutoff shield
- International Dark Sky Association approved



# PROVEN INNOVATION & SUPERIOR VALUE

The innovative technologies that make up Cree products have revolutionized the lighting industry by making high-quality, sustainable LED lighting affordable and available to all. With this advantage, we remain at the forefront today, dedicated to developing new LED lighting solutions that improve both our customers' spaces and their bottom lines, and all backed by an incredible warranty.

## Cree 10-Year Limited Warranty

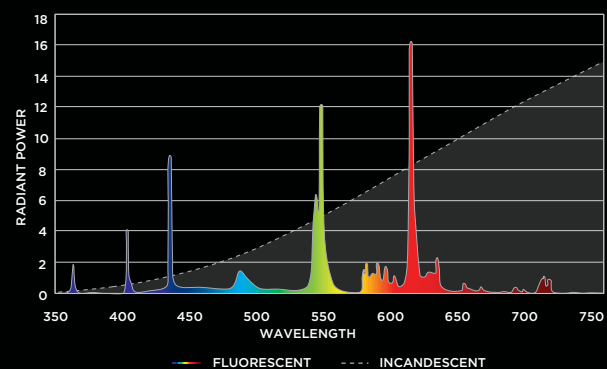
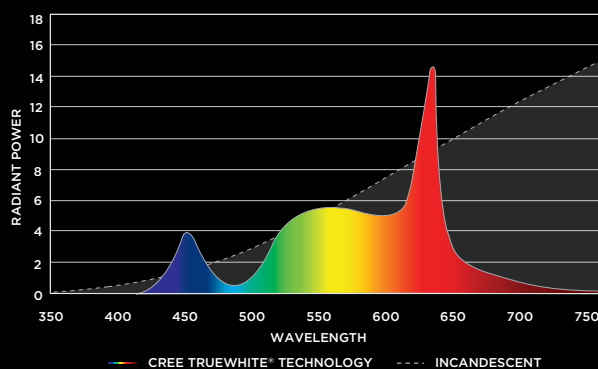
Light your healthcare facility with confidence. Cree offers a 10-year limited warranty that covers the broadest product range in the industry. As a leading innovator of LED chips, components and lighting, Cree has over 20 years of experience in commercial LED development, bringing an unprecedented level of expertise to all facets of the LED lighting design and development process. Cree's 10-year limited warranty covers nearly all globally-available, commercial-grade indoor and outdoor fixtures. To learn more, please visit [www.cree.com/lighting/products/warranty](http://www.cree.com/lighting/products/warranty).

## Cree TrueWhite® Technology

Your healthcare spaces need to be properly illuminated to provide better, safer clinical environments. Don't let insufficient color rendering from poor lighting get in the way of quality patient care. A well-lit, aesthetically pleasing environment promotes more efficient healing, resulting in shorter stays, faster recovery and improved staff performance. Powered by Cree TrueWhite® Technology, only Cree® indoor LED fixtures can deliver our exclusive combination of industry-leading efficacy, 90+ CRI, and consistent warm or cool color temperatures.

## Better Color, Warmer Options

The Spectral Power Distribution (SPD) curves shown here provide a great way to compare the color characteristics of Cree TrueWhite® Technology with fluorescent light. At each point across the visible color spectrum, the height of the SPD curve correlates with how accurately that color is rendered by the light. The fuller, more continuous curve of Cree TrueWhite® Technology renders a much larger color set than fluorescents. Its similarities to incandescent SPD curves also enable Cree LED fixtures to provide better light quality at warmer color temperatures.



**CREE**   
**TRUE WHITE**  
TECHNOLOGY



## BetaLED® Technology

## NanoOptic® Technology

Available in more than 20 distributions, Cree LED fixtures featuring NanoOptic® Technology provide new possibilities for highly optimized and application-specific target illumination performance. The patented refractor system offers superior light control with more lumens delivered in the target area, improved uniformity ratios and controlled high-angle brightness.

## DeltaGuard® Finish

Exclusive to Cree LED outdoor fixtures and poles, the DeltaGuard® Finish is the finest industrial-grade finish available that provides UV-light resistance, corrosion resistance, fade protection and more. Every outdoor fixture follows an exclusive 18-stage full immersion process that includes cleaning, pretreatment, epoxy E-coating and an ultra-durable powder topcoat.

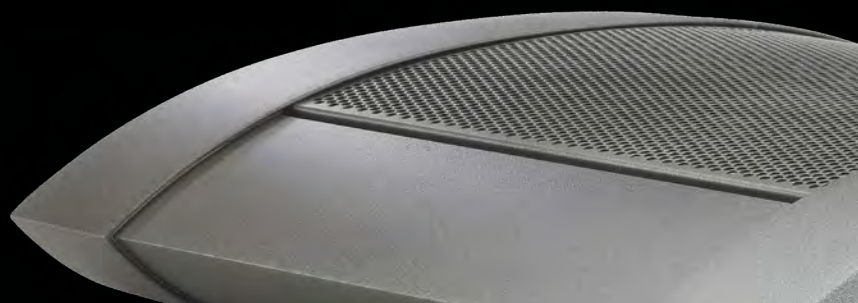
## Traditional High Intensity Discharge solution versus Cree Edge™ LED lighting solution Kaiser Permanente - Fresno, CA



**Traditional High Intensity Discharge solution**  
Typical high intensity discharge color quality



**Cree Edge™ LED lighting solution**  
Excellent color quality — full color spectrum source with high CRI





# High-Quality Illumination with No Compromise

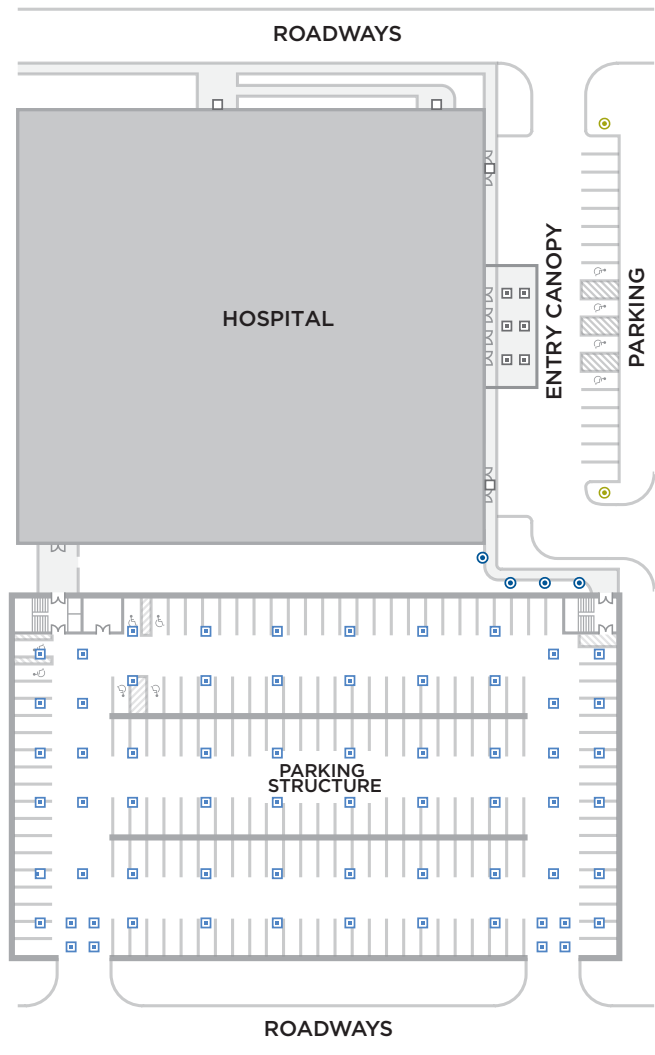
Cree has revolutionized the lighting industry by making high-quality, sustainable LED lighting for healthcare. Our Cree TrueWhite® Technology provides the highest light output and superior color rendering for your healthcare staff and patient needs, while retaining the versatility necessary to transform a hospital room into a home away from home.

The benefits don't end there. Exceptional thermal management helps limit the amount of light lost over time. Cree® LED lighting requires virtually no maintenance, operates more efficiently than fluorescent lights and is dimmable — significantly reducing disruptions to operations, driving down not only your healthcare facility's maintenance costs, but your energy usage as well.

No sacrifice or compromise. Just high-quality illumination performance that uses less energy, greatly reduces maintenance costs and puts your healthcare facility in a whole new light.

Only from Cree.

## Outdoor Areas



## Outdoor Savings Analysis\*

### Cree LED Lighting

Symbol	Luminaire	Qty	Watts	Total Watts
	Cree Edge™ Area	2	232	464
	Cree Edge™ Pathway	4	34	136
	Cree Edge™ Security	4	137	548
	304 Series™ Parking	264	50	13,200
	304 Series™ Soffit	6	47	282
Total Power (W)			14,630	

### Equivalent Lighting

Luminaire	Watts	Total Watts
400W Metal Halide	455	910
100W Metal Halide	127	508
250W Metal Halide	289	1,156
100W Metal Halide	127	33,528
70W Metal Halide	92	552
Total Power (W)		36,654

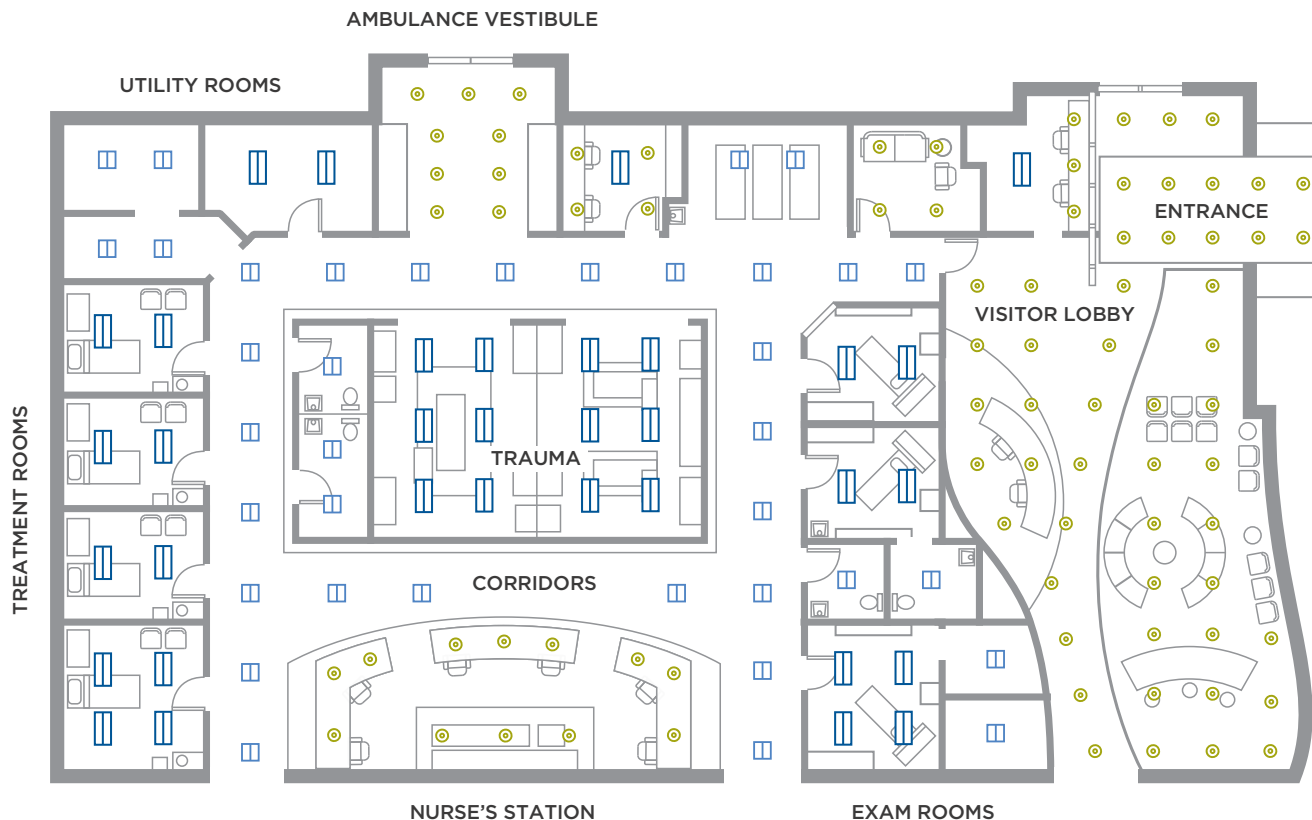
### Total Savings

	ENERGY SAVINGS	60%
	TIME SAVINGS	2,459 Hrs
	PAYBACK	1.5 Yrs

\*Savings and payback are representative of what customers could expect operating in a typical new construction healthcare environment using comparable products. To see how savings like this can be achieved, calculate your own payback at [www.cree.com/payback](http://www.cree.com/payback). Average consumption of a four-story parking deck when using occupancy sensors and assuming 80% vacancy rate.



## Clinical Spaces



### Indoor Savings Analysis\*

Cree LED Lighting					Equivalent Lighting				Total Savings	
Symbol	Luminaire	Qty	Watts	Total Watts	Luminaire	Qty	Watts†	Total Watts		
	KR6-20L	67	30	2,010	Twin 26W CFL	67	56	3,752		54%
	CR24-40L	31	40	1,240	3-Lamp T8	31	90	2,790		117 Hrs
	CR22-20L	40	22	880	2-Lamp T8	40	60	2,400		2 Yrs
<b>Total Power (W)</b>			<b>4,130</b>		<b>Total Power (W)</b>			<b>8,942</b>		

\*Savings and payback are representative of what customers could expect operating in a typical new construction healthcare environment using comparable products. To see how these savings were achieved and to calculate your own, visit [www.cree.com/payback](http://www.cree.com/payback).  
Burn time of 24 hours a day, 365 days a year.





**Facilities featured in this brochure include:**

Kaiser Permanente - Fresno, CA  
 Raleigh Orthopaedic Clinic - Raleigh, NC  
 Riverview Hospital - Noblesville, IN  
 Watson Clinic - Lakeland, FL

## Better Lighting for Better Healthcare

Learn more at: [www.cree.com/lighting](http://www.cree.com/lighting) | [healthcare@cree.com](mailto:healthcare@cree.com) | 800.236.6800

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