

beta
LED®

ESSENTIA®
INTERIOR LED

UNMATCHED PERFORMANCE. *Beautiful Results.*



CREE®

UNMATCHED PERFORMANCE. *Beautiful Results.*

BetaLED® brings you the inside advantage

BetaLED brings its renowned product benefits inside with **Essentia®** LED interior lighting that combines a breakthrough in performance and control with new possibilities for optimized lighting performance and value. Commercial spaces can now be brilliantly illuminated with a sustainable lighting solution offering significant reductions in operating and maintenance costs.

Our complete interior LED line includes:



Recessed downlights

- 4-, 6-, and 8-inch square and round apertures
- Adjustable and wall-wash configurations
- Flangeless trim option



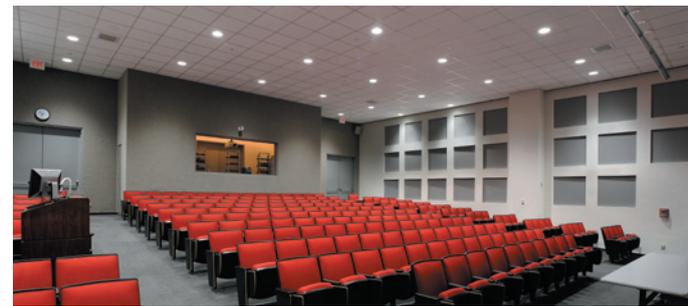
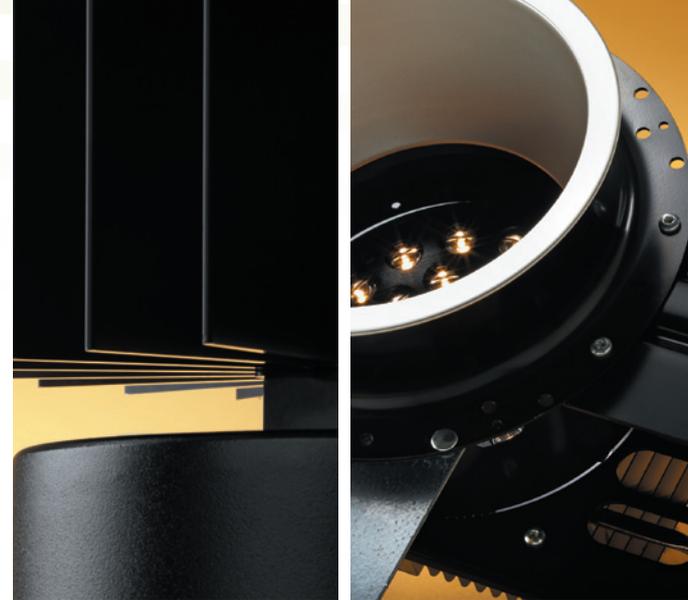
Surface cylinder designs

- Surface, pendant, cable or wall-mount options

A history of interior lighting success

BetaLED's expanding line of LED interior lighting products has roots in its parent company, Ruud Lighting – makers of the successful Kramer Lighting interior product line. BetaLED's **Essentia** innovation is the result of three decades of experience in providing high performance lighting solutions for the most demanding interior lighting applications.

We've balanced outstanding performance with elegance to provide an extensive palette of lighting options to architects and designers. The result is industry-leading application success.



Essentia recessed downlights provide a complete range of products to fill the design requirements of today's commercial and high-end residential designs. Unique advantages include:

- High lumen packages in excess of 5,000 initial delivered lumens
- Wide, medium, narrow, wall-wash and adjustable distributions
- Standard dimming (0 to 10 volt)
- Serviceable light engine with replaceable LED array
- Virtually maintenance-free performance
- Easy installation design

Impressive lumen packages

A wide variety of downlights, adjustables, and wall-wash luminaires, along with impressive lumen packages in excess of 5,000 initial delivered lumens, allows designers to meet strict interior lighting performance requirements with a complete LED solution. Expect beautiful illumination that meets your design objectives when you choose **Essentia** luminaires.



**St. Catherine's High School Auditorium
Racine, Wisconsin**



*One-for-one replacement of 500-watt T4
Quartz luminaires with 15 Essentia downlights*

- *Reduced energy consumption by 84%*
- *Improved illumination performance & uniformity*
- *Dramatically reduced maintenance*

Essentia interior products offer a compelling alternative when compared to traditional sources. Whether you're considering metal halide, ceramic metal halide, fluorescent, quartz halogen or other incandescent sources, **Essentia** luminaires bring the advantages of LED technology to interior spaces.

Energy and Maintenance Savings

Essentia luminaires can deliver significant energy and maintenance savings compared to non-LED sources. You can eliminate relamping cycles while significantly cutting energy costs when you choose **Essentia** LED luminaires.

Lighting Design Integrity

The integrity of any lighting designer's creation can be compromised the first time a lamp needs to be replaced. **Essentia** luminaires eliminate incorrect beam spreads, varied color temperatures and other relamping related issues that cause the original design intent to suffer. **Essentia** interior luminaires maintain the credibility of your original design intent and performance for years to come.

Standard 0-10 volt Dimming

Unlike other light source technologies, LEDs become more efficacious (more lumens per watt) when dimmed. In addition, as LEDs are dimmed, lumen maintenance also improves. All **Essentia** luminaires are standard with 0-10 volt dimming capability.

Color Quality

The unique blending technique in **Essentia** luminaires ensures initial color consistency within a 2-step MacAdam Ellipse from the initial specified color point. Additionally, we are committed to providing luminaire color point stability over time, within a 2-step MacAdam Ellipse to the predicted L_{70} point (in hours) for the entire **Essentia** product family.



University of Houston — Houston, TX



Redesigned lighting system in lecture hall has a remarkable 67 average foot candles of illumination over the seating area and each row may be individually dimmed. Additionally, one narrow distribution luminaire over the podium adds to the general illumination and also provides 134 foot candles on the podium reading surface.

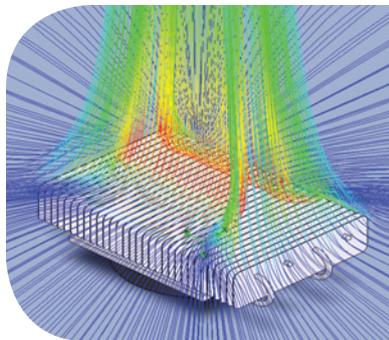
- 28 fixtures installed in 8'x8' centers over the seating area and one LED luminaire over the teaching podium
- Zoned lighting level control with 0-10 V dimming
- Separate dimming control over podium luminaire

Total Systems Approach

The BetaLED Total Systems Approach is our design commitment to achieve excellence. We incorporate “best-in-class” high power white LED source technology and multiple photometric distributions designed to provide unsurpassed target illumination performance. Then, we add industry-leading high efficiency drivers and state-of-the-art thermal management systems to maximize overall luminaire performance and longevity. The result is lower total cost of ownership compared to traditional lighting systems.

Optimized Longevity

Essentia recessed luminaires are designed with superior thermal management that maximizes luminous flux and lumen maintenance of the LED light engine. A unique light-weight, passive thermal management system combines metal core printed circuit board (MCPCB) technology with a heat sink, heat pipe and thin fin assembly to maximize heat transfer from the LED chip package.



Thermal Management: the key to Essentia performance and longevity

Managing heat is the core of a high-performing LED luminaire. BetaLED's approach maximizes heat transfer away from the LED chip package to keep it cool. Here's how it works:

- A metal core printed circuit board (MCPCB) rapidly transfers heat from the LED chip package to the heat sink
- The heat sink provides heat absorption and dissipation
- Heat pipes relocate the heat from the heat sink to the fins
- The large surface area of the thin fin, open-air design maximizes airflow and thermal dissipation

Exceptional Dimming and Performance

Essentia luminaires feature standard 0-10 volt dimming. Ideal for all general lighting and unique applications like high ceilings, **Essentia** LED recessed downlights are designed for lasting performance, ease of service, and upgradeability as LED technology advances.

The complete product line includes an unbeatable LED performance package and is designed with these advantages:

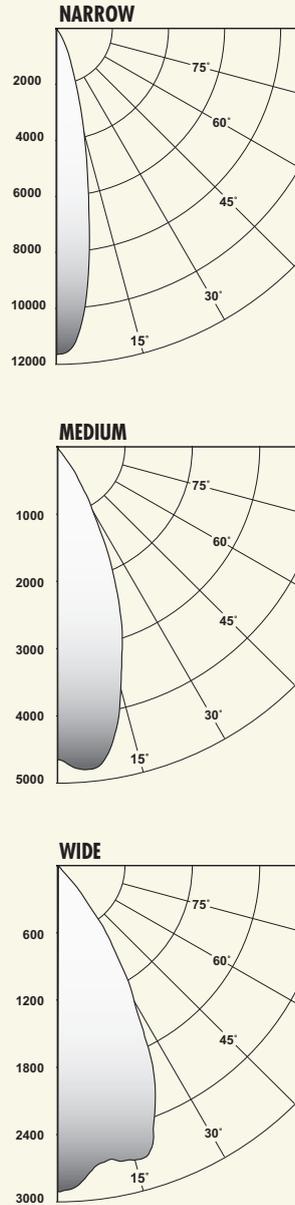
- Standard 0-10 volt dimming
- Optional Lutron Hi-lume® driver available
- 120 or 277V 50/60Hz operation
- Serviceable light engine with replaceable LED array
- Compatibility with a wide variety of lighting controls and systems

Virtually No Maintenance

Essentia luminaires are an ideal choice for hard-to-reach spaces that are challenging and expensive to maintain. The advantages LED technology offers are enhanced with BetaLED's advanced passive thermal management design and use of high quality components. The combination results in a highly reliable, near maintenance-free product, designed for maximum longevity.



Distributions



Superior Optical Control

Essentia luminaires deliver efficient light on target with BetaLED's patented NanoOptic® product technology that combines a blend of optics in a single optical array for optimized control. The results are superior illumination and energy performance.

- Precise optical control
- Designed for high lumens per watt on target (target efficacy)
- 45° visual cut-off for all recessed downlights

Individually Optimized Optics

Each **Essentia** LED chip package has its own NanoOptic to optimize light distributions that include:

- Downlights with wide, medium and narrow distributions
- Wall-wash configurations
- Adjustables with 10° narrow pin, 15° narrow spot and 25° narrow



By combining both axial and tilted axial optics, light exiting the aperture is not obstructed by the lower cone. The result is outstanding efficiency and 45° visual cut-off.

Essentia Flangeless Trim

For the ultimate in design flexibility, our flangeless products allow the most discerning lighting designers to bypass trim rings in favor of a smooth, flush finish to the ceiling. **Essentia** flangeless trim options make a beautiful, clean look easy to achieve, and are available in all **Essentia** downlight, wall-wash and adjustable sizes and configurations.

You'll achieve the same high-performing standards and benefits from the flangeless luminaires that you expect from our entire **Essentia** recessed product line.



Flangeless Trim



Standard Flange



Your Trusted Partner

BetaLED has earned a reputation as the premiere provider of quality LED luminaires, and a trustworthy provider of reliable product data. We don't compromise when it comes to designing, testing, manufacturing, or providing product data required to make informed decisions during a luminaire evaluation and selection process.

Essentia luminaires undergo multiple tests during all stages of engineering and manufacturing to comply with industry requirements and our own strict quality and performance standards. All published photometric data is derived from independent DOE-approved laboratories.

In addition, BetaLED's Lumen Maintenance Factors data (TD-14 document) explains our approach to deriving lumen maintenance values. This document includes an endorsement letter from the LED chip package manufacturer and provides you with the data you need to confidently design for sustainable illumination performance.

Performance Guaranty

We back our quality products with an industry-leading warranty. Our five-year warranty covers the **Essentia** product, including the driver and LEDs.

Sustainability and Safety

Reduce lighting power density with improved illumination performance compared to traditional sources. **Essentia** luminaires offer numerous environmental benefits for today's eco-conscious architecture including potential credits toward USGBC Leadership in Energy and Environmental Design (LEED) certification.

- Restriction of Hazardous Substances (RoHS) compliant – No mercury or other contaminants are used compared to traditional light sources that present potentially hazardous disposal and environmental issues.
- Serviceable light engine with replaceable LED array – Unlike other LED luminaires, the **Essentia** LED array can be replaced from below the ceiling, eliminating the need to dispose of an entire fixture at the end of its life.
- Reduced waste – While traditional lamp sources end up in landfills, there is no periodic lamp disposal for **Essentia**.

In addition, Essentia products meet safety certifications as regulated by Underwriters Laboratories.



Color Quality Commitment

The needs and concerns regarding color quality, consistency and stability as they relate to interior spaces are paramount to a successful interior lighting design. BetaLED is committed to delivering the color-quality performance that meets or exceeds the expectations of best-in-class traditional light source technologies.

BetaLED's unique LED blending technique enables each **Essentia** luminaire's initial color consistency to be within a 2-step MacAdam Ellipse from the initial specified color point.

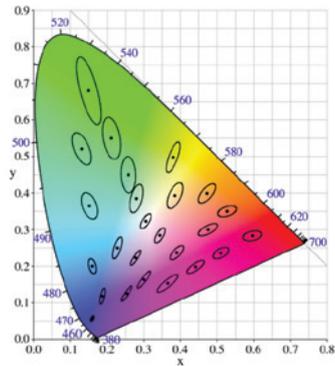
Additionally, we are committed to providing luminaire color point stability over time, within a 2-step MacAdam Ellipse to the predicted L_{70} point (in hours) for all products. BetaLED's patented NanoOptic technology enables us to provide color spatial uniformity that meets the requirements demanded by the most discerning lighting designers.

Correlated Color Temperatures (CCT)	Color Rendering Index (CRI)	R9 Value
2700K +/- 42K	90 min.	50
3000K +/- 50K	90 min.	50
3500K +/- 63K	80 min.	40
4000K +/- 95K	80 min.	40

NOTE: Consult specification sheets on website for most current technical information.



The results of Essentia's impressive luminaire-to-luminaire color consistency and color spatial uniformity is demonstrated at left, fully meeting the application design intent.



To fully understand the concept of the MacAdam Ellipse, start with its creator, Kodak scientist David MacAdam. His research in the late 1940's determined a series of boundaries around several color targets to illustrate how much one can "stray" from the target color before the human eye perceives a difference. Delivering luminaires with the initial specified color point and color point stability within a 2-step MacAdam Ellipse to the luminaire's L_{70} point (in hours) demonstrates excellent color consistency and stability compared to most traditional light source technologies.

MEETING COLOR Demands.

Product Specifications



Product	NOTE: Consult specification sheets on website for most current technical information.		
	LED Count	Distributions	Catalog Number
4-inch Downlight			
 	14 LEDs	Narrow Medium Wide	ESA-ADR-414* ESA-ADS-414*
Slideways™ technology provides power/splice access			
6-inch Downlight			
 	14 LEDs 28 LEDs	Narrow Medium Wide	ESA-ADR-628* ESA-ADS-628*
8-inch Downlight			
 	28 LEDs 42 LEDs 56 LEDs	Narrow Medium Wide	ESA-ADR-856* ESA-ADS-856*
6-inch Adjustable			
 	14 LEDs	Narrow (25°) Narrow Spot (15°) Narrow Pin (10°)	ESA-ADR-614-__ADJ* ESA-ADS-614-__ADJ*
358° rotation and 35° vertical adjustment			
8-inch Adjustable			
 	28 LEDs	Narrow (25°) Narrow Spot (15°) Narrow Pin (10°)	ESA-ADR-828-__ADJ* ESA-ADS-828-__ADJ*
358° rotation and 35° vertical adjustment			
6-inch Wall-wash			
 	14 LEDs	Wall-wash	ESA-ADR-614-__LWV* ESA-ADS-614-__LWV*
Standard with lens Slideways™ technology provides power/splice access			
8-inch Wall-wash			
 	28 LEDs	Wall-wash	ESA-ADR-828-__LWV* ESA-ADS-828-__LWV*
Standard with lens Slideways™ technology provides power/splice access			



Essentia Recessed Luminaires

Essentia recessed round and square apertures, available in 4, 6 and 8 inches, offer individually optimized optics with LED selections that include 14, 28, 42, and 56 counts in wide, medium, narrow, wall wash and adjustable distributions. Exclusive Slideways™ design for easy power supply/splice access is available on all wall-wash and 4-inch downlight models.

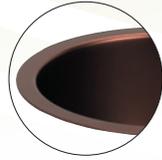
Round



Soft Satin Glow Clear



Soft Satin Glow Graphite



Soft Satin Glow Bronze



Soft Satin Glow Champagne Gold



Soft Satin Glow Pewter



Soft Satin Glow Wheat



Soft Satin Glow Black

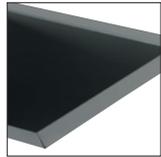


White Paint

Squares & Rectangles



Soft Satin Glow Clear



Soft Satin Glow Graphite



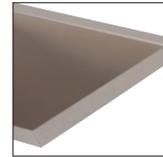
Soft Satin Glow Bronze



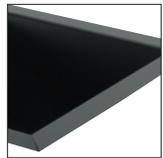
Soft Satin Glow Champagne Gold



Soft Satin Glow Pewter



Soft Satin Glow Wheat



Soft Satin Glow Black



White Paint

Colors shown are approximate. Samples are available upon request.

Las Vegas

iCandy Retail candy store – MacCarran International Airport, Las Vegas, NV

David Ayala, corporate manager, iCandy, knew that installing Essentia LED lighting would enhance the shopping experience, illuminate the store using far fewer luminaires than with traditional technologies, virtually eliminate maintenance, and reduce energy costs and consumption.

- 28 six-inch Essentia round downlights
- Luminaires with 28 LEDs and medium distribution
- 3500K color temperature



Essentia Surface Cylinder

Lighting designers and specifiers expand design options with **Essentia** surface cylinder luminaires that feature the same high-performing characteristics as BetaLED's downlight series.

The stylish cylinder luminaires feature 45° visual cut-off to the source. A state-of-the-art flow-through design includes an integrated heat sink to offer advanced passive thermal management to increase the life and performance of the luminaire.

Other unique features include:

- Multiple mounting options: surface; pendant; cable; or wall
- Wide selection of LED counts: 28, 42 and 56
- A variety of optic distributions: Wide, Medium, Narrow, Narrow Spot
- Standard color temperatures: 2700K, 3000K, 3500K, 4000K
- Multiple housing colors: white; black; bronze; silver
- Other options include Lutron Hi-lume® driver; fusing; and lens media
- Five-year limited warranty on product, driver, and LEDs

Product Specifications

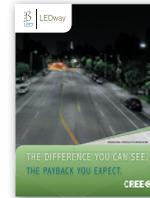
Product			
	LED Count	Distributions	Catalog Number
10-inch Surface Cylinder			
	28 42 56	Wide Medium Narrow Narrow Spot (15°)	ESA-C10-*

NOTE: Consult specification sheets on website for most current technical information.



For additional interior LED luminaire information, visit www.BetaLED.com/Essentia

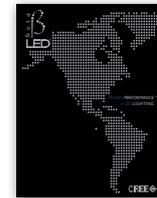
The complete BetaLED product line includes a broad range of luminaires for interior and exterior applications. Get more information about additional BetaLED product lines in these brochures:



LEDway

Streetlights

FG# CAT/BRCH-BLWY3



BetaLED

Architectural & Commercial/
Industrial Luminaires

FG# CAT/BRCH-BEDG6

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