



Improving Life with Photons™



Light + Building 2022

Luminus is an innovative technology light source company and industry leader that enables exceptional focusing of light, and delivers a superior quality of light with outstanding color rendering, efficacy, and precise spectra for health and comfort.

Welcome

As the LED industry enters its third decade in illumination markets, the opportunity to deliver on the promise of LEDs – better light, longer lifetimes, new applications – is being realized, especially as it applies to Human Centric Lighting. While not yet fully defined, the ability for LED companies to manage the spectral content of light is clearly driving new ideas and thinking about human physiological and psychological reactions to light.

Our SALUD family of LEDs occupies the front and center location of our stand this year and features an experience room in which you can feel the light from SALUD and learn about its spectral characteristics and specified melanopic / photopic ratios that are critical to people's alertness and drowsiness. Particular to SALUD LEDs is the ability to deliver high M/P ratios even at lower CCTs that are more comfortable and conducive to work.

Spectral optimization is a key element of our COB and midpower product lines, and Smooth White is our most recent flagship technology with a unique, UV and IR free, halogen-like spectrum delivering 98 CRI typical (95 minimum) and outstanding TM-30-20 ratings. You can compare this side by side with our popular 95 CRI minimum Hospitality COB leveraging a more traditional LED spectrum with precise 2-step chromaticity standard.

Comfort and health go hand-in-hand. Our dim to warm COBs and modules allow for spot and linear applications that match perfectly and create beautiful atmospheres in restaurants, hotels, bars and entertainment venues. With the choice of linear or halogen like dimming, these LED solutions can fit virtually any environment. The move to smaller solutions is common across markets that have transitioned from analog to digital and lighting is no different. Pico COBs have smaller light emitting surfaces, as low as 3.5mm without sacrificing light output or density. This means that luminaires can shrink without sacrificing light output and center beam candle power (candela).

Along with new LEDs for accent lighting, improvements in light density and efficacy, you'll find new LED drivers from Cuvée and an array of specialty LEDs for infrared, ultraviolet, entertainment and horticulture applications. Luminus is truly Improving Life with Photons.

Thank you for joining us in Frankfurt for the 2022 Light + Building.

www.luminus.com @luminusdevices



LUX COB Series

The LUX COB Series delivers 90 CRI minimum high quality of light with the lumen/watt efficacy of an 80 CRI source, thus enabling luminaire makers to reduce SKUs by eliminating the need for 80 CRI products.

APPLICATIONS

- Retail
- Hospitality
- Commercial
- Residential
- Architectural
- Museum
- Downlight / track / spot / bulb



FEATURES

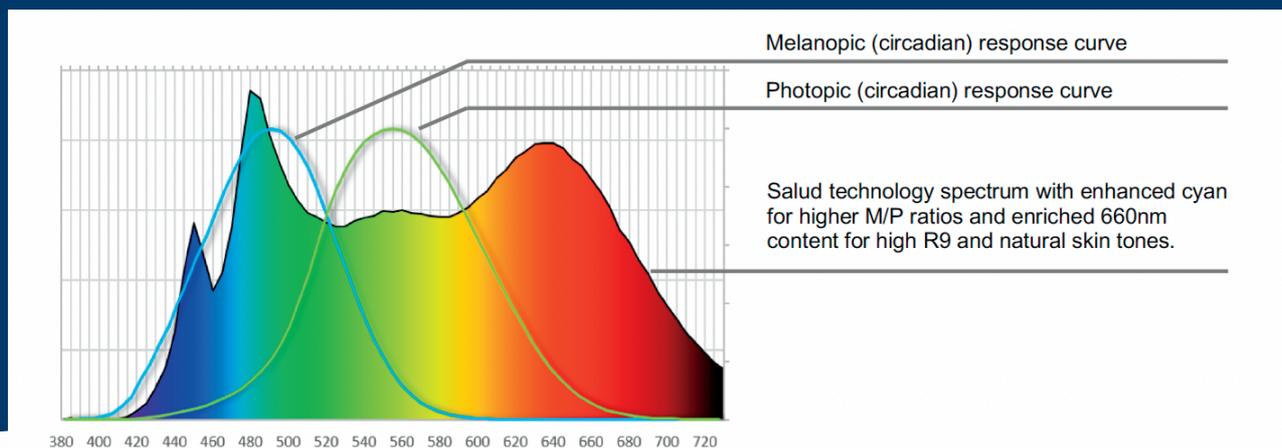
- 90 CRI Minimum
- R9 > 50
- 155 lm/W @ Tj = 85C
- Widest range of LES sizes

SALUD

Mid-power LEDs for Human Centric Lighting

Salud LEDs are specified for melanopic / photopic ratios (MRs) in addition to CRI, R9, CCT, and Flux. By enhancing the spectrum with cyan for melatonin suppression and enriching the 660nm emission for natural skin tones and excellent red-rendering, Luminus Salud LEDs can deliver warmer, more comfortable light that keeps people healthy, alert, and productive.

- The Melanopic/Photopic Ratio (a.k.a. MR, M/P ratio, or MP ratio) is a metric to quantify the circadian effect of a light source.
- The higher the MR, the stronger the circadian effect.



- Higher CCT light sources generally have higher MRs, but most people, especially lighting designers, do NOT want their lights to be "blue tinted."
- Salud uniquely provides high MR values in comfortable, warm CCTs.
- Unlike sunlight, Salud has no dangerous UV or near UV.
- Salud also provides high CRI and especially excellent 660nm red rendering for beautiful skin tones and accurate medical diagnosis.

Salud mid-power LEDs for Human Centric Lighting				
Nominal CCT	Typical MR	Minimum CRI	Typical R9	Typical Flux
3000K	0.68	90	95	33
3500K	0.72	90	75	36
4000K	0.80	90	65	38
5000K	0.96	90	85	38

Smooth Spectrum COBs

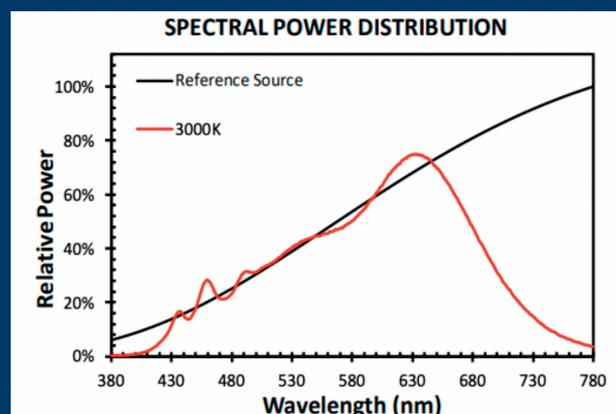
Natural, Wide, Smooth Spectrum Light Output



Luminus continues to lead the COB industry with a stunning new quality-of-light solution for low blue, broad-spectrum, directional light sources. Building on our innovative Perfect White technology, Luminus engineers created an even more natural spectral response curve to mirror conventional halogen light sources while optimizing lumen output, vivid color rendering and human-centric characteristics that comes without the UV found in competitors' solutions.

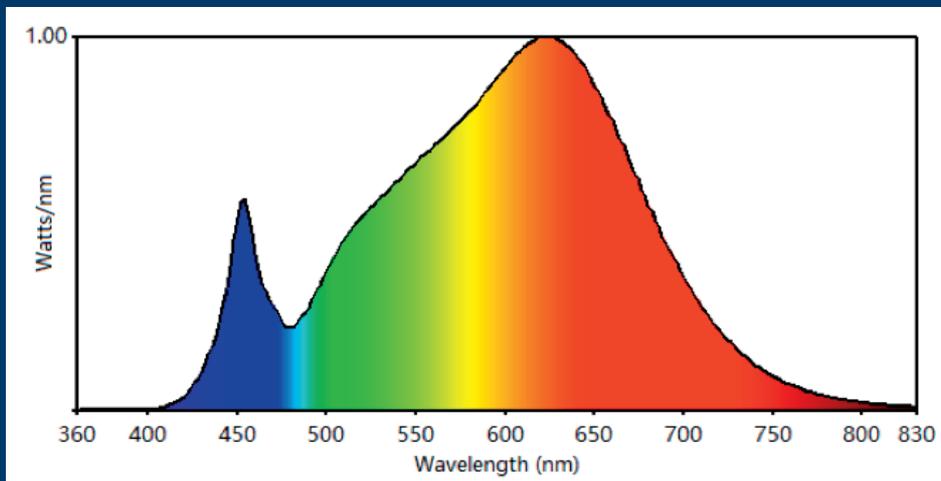
Features:

- Halogen matched spectrum, low blue light content
- High Color Rendering > 95CRI
- All R values > 90
- R9-97 typical for vivid reds and natural skin tones
- CCT 2700K, 3000K, 3500K, 4000K, 5000K
- 5 LES options from 6mm to 22mm
- No near UV emission and low blue
- Excellent optical emission uniformity and color over angle consistency
- Exceptional long-term color stability
- Superior thermal conductivity for uniform heat spreading
- UL recognized, file # E465703



Pico COBs

Luminus' Pico COBs that produce high-output with very small light emitting surfaces (LES) enable spotlights with compact form factors, narrow beam angles, and high center beam candle power. Small, 6mm LES, COBs are typically limited to approximately 9 degree viewing angles. Luminus' new Pico-COBs enable fixtures with viewing angles as narrow as 5 degrees and produce high flux density, or punch, that is crucial for high quality-of-light directional lighting applications including museum, residential, hospitality, and other similar environments. The CXM-3 has an LES of 3.5 mm and produces up to 675 lumens of 90 CRI minimum warm 3000K light, which makes it an ideal replacement for a 50W halogen spot. The CXM-4 has an LES of 4.5 mm and generates up to 1255 lumens. As with all Luminus COBs, these devices are specified and 100% factory tested at a junction temperature of 85°C, to ensure performance and consistency that meets the users' expectations in real-world application conditions.



Pico COBs					
	Product	LES	Substrate Size	Power Range (W)	Flux Range @ 3000K 90CRI
	CXM-3	3.5 mm	13.5 mm x 13.5 mm	2.75 – 7.7	290 - 600
	CXM-4	4.5 mm	13.5 x 13.5	4.0 – 15.7	440 - 1150

Mid-power

Superior quality of light and high performance

Luminus midpower LEDs are lighting class solutions designed for high performance general lighting applications. Luminus products boast industry-leading 95 CRI minimum AccuWhite™ technology in addition to 70, 80, and 90 CRI options, as well as the widest CCT range from 1800K to 6500K. These LEDs allow illumination engineers and designers to develop lighting solutions with maximum efficacy, brightness and overall quality of light.

Mid Power & XNOVA Cube™ LED Products					
Package Platform	Voltage (V)	Current (mA)	Input Power (W)	Typical Flux (lm), 3000K, 80CRI	Typical lm/W 3000K, 80CRI
 MP-2016-1100	3.0	60	~0.2	27	150
 MP-3014-1100	2.85	60	~0.2	29	170
 MP-3030-120H	2.7	65	~0.2	37	210
 MP-3030-11F2	2.7	65	0.2	39.5	225
 MP-3030-110F	2.7	65	0.2	36.5	208
 MP-3030-210H	6.0	150	~1	140	156
 MP-2835-12D2	2.7	65	~0.2	38	200
 MP-5050-250R	5.75	640	3.68	640	174
 MP-5050-240H	6	640	4.0	630	158
 MP-5050-810H	24	200	4.8	785	158
 MP-7070-4600	12	700	8.4	1380	164
 MP-7070-T200	36	240	8.6	1395	161
 MP-1616-1103	3.0	150	~0.5	59	124
 MP-1616-2103	6.0	150	~1	118	131

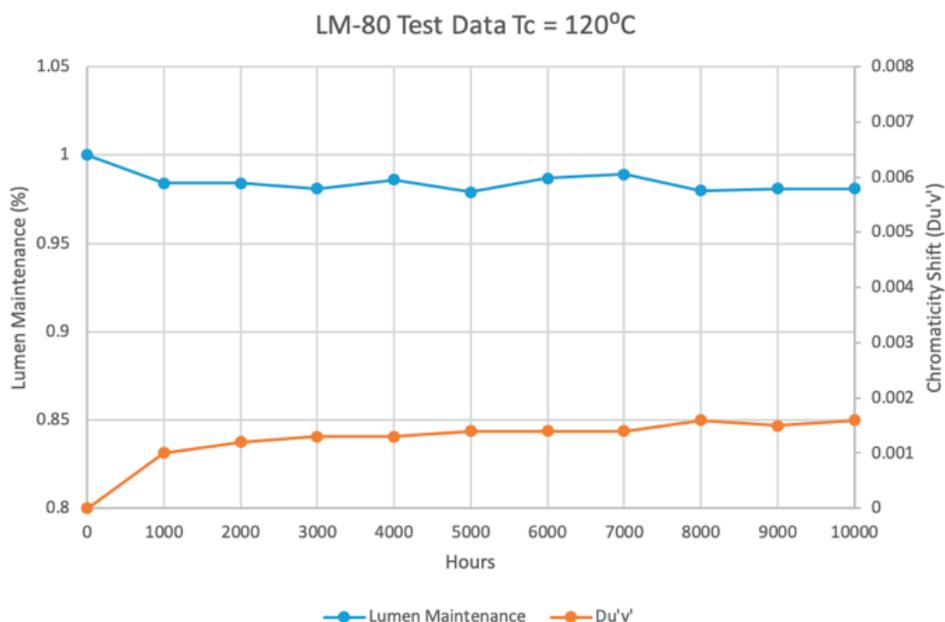


Gen 4 High Density with Robusto Technology

Best Lumen Maintenance & Color Stability at High Temperatures

Meet the next Generation of high lumen density, white COB arrays featuring the latest enhancement to improve maximum operating temperature, **Robusto™ technology**. High lumen density parts are used in narrow beam applications where Center Beam Candle Power (CBCP) is the key metric. While this depends on the specific beam angle and power level, the high lumen density parts typically deliver two times or greater lumen density than standard parts. Higher temperature operation means more luminaire design flexibility and lower potential cost with, for example, smaller, lighter heat sinks. These Generation 4 high lumen density parts provide stable lumen output and color points with temperatures as high as $T_c = 120^{\circ}\text{C}$. Robusto technology has the ability to enable higher drive currents while still delivering exceptional lumen maintenance (L90>55k hrs) and remarkably stable color points.

This line of COBs has outstanding color quality, high lumen intensity, and the industry's best flux and color stability over their operating life, all which make them the preferred solution for narrow beam, high CBCP applications in retail and shop lighting, hospitality lighting, architectural and specialty lighting.



Dim to Warm Linear & Spot Lighting

Luminus' Warm Dimming Modules replicate the behavior of traditional bulb technology by dynamically changing CCT from 3000K to 1800K or from 4000K to 2700K as they are being dimmed. This “dim-to-warm” effect provides a relaxing, human-centric environment which is ideal in restaurants, bars, hotels, retail, and residential environments. Luminus is the only LED supplier offering a choice of dimming curves, with either halogen-like (-DW01) or linear-style (-DW02) effects available across all four LES options and both CCT ranges. With the Luminus Cube MP-1616 as the building block in these UL listed modules, customers have the lumen maintenance confidence of 9,000 hour LM-80 data at 250mA per LED with L90>36k hours to enable DLC premium.

Warm Dimming									
Product	Typ.~Max. Current (mA)	Voltage (V)	Typ.~Max. Power (W)	LES	Size (mm)	Part Number	CCT (K)	Typical lumens @Tj=85 C	CRI (Ra)
CDM-6	300~440	18	5.5~8.5	6.8	12*15	CDM-6-3018-90-18-DW01	3000K-1800K	460	97
						CDM-6-4027-90-18-DW01	4000K-2700K	530	92
CDM-9	300~440	36	12~14.5	9.5	12*15	CDM-9-3018-90-36-DW01	3000K-1800K	880	97
						CDM-9-4027-90-36-DW01	4000K-2700K	1,000	92
CDM-14	600~800	36	24~32.5	15.5	20*24	CDM-14-3018-90-36-DW01	3000K-1800K	1,780	97
						CDM-14-4027-90-36-DW01	4000K-2700K	2,080	92
CDM-18	900~1080	36	32.5~50	16.8	20*24	CDM-18-3018-90-36-DW01	3000K-1800K	2,690	97
						CDM-18-4027-90-36-DW01	4000K-2700K	3,140	92



CCT Tunable Modules

Luminus CCT Tunable Modules offer a choice of 9, 14, 18, and 22mm LES options, all with two independent channels (warm and cool) to deliver CCTs ranging from 6500K to 2700K or from 4000K to 1800K. This wide range of options provides luminaire makers with flexibility in designing human centric lighting applications with independent CCT and dimming control. With the Luminus Cube MP-1616 as the building block in these UL listed modules, customers have the lumen maintenance confidence of 9000 hour LM-80 data at 250mA per LED with L90>36k hours to enable DLC premium.

APPLICATIONS

- Human centric lighting
- Hospitality / hotel / restaurant lighting
- Residential lighting
- Museum and high-end retail lighting
- Circadian lighting in hospitals, offices, or schools
- Public, commercial buildings
- Ceiling and wall mounted lights
- Multi-function space lighting



FEATURES

- Two channel cool and warm 90+ CRI MP-1616 XNOVA Cube LEDs on metal PC board
- 95 CRI typical with both channels powered on
- High lumen density for directional lighting
- Enables system beam angles from 10 to 40 degrees
- 4000 K to 1800 K CCT range for residential and hospitality lighting
- 6500 K to 2700 K CCT range for commercial lighting
- Robust design with LM-80 tested MP-1616 series LEDs
- Consistent white light <3 SDCM
- Specified “hot” performance and 100% factory tested at $T_j = 85^{\circ}\text{C}$



Generation 2 now available featuring 2x the flux density and power density of Generation 1 with 25% higher efficacy.

CCT Tunable Modules

CCT Tunable											
Product	Typ.~Max. Current (mA)	Voltage (V)	Typ.~Max. Power (W)	LES	Size (mm)	Part Number	CCT of Cool White	Typical lumens @Tj=85 °C	CCT of Warm White	Typical lumens @Tj=85 °C	CRI (Ra)
CTM-9	200~220	36	7~9	9.5	12*15	CTM-9-4018-90-36-TW01	4000K	700	1800K	480	90
						CTM-9-6527-90-36-TW01	6500K	700	2700K	640	90
CTM-14	400~440	36	15~18	14.5	20*24	CTM-14-4018-90-36-TW01	4000K	1400	1800K	960	90
						CTM-14-6527-90-36-TW01	6500K	1400	2700K	1,280	90
CTM-18	550~660	36	20~27	17.5	20*24	CTM-18-4018-90-36-TW01	4000K	2000	1800K	1,370	90
						CTM-18-6527-90-36-TW01	6500K	2000	2700K	1,800	90
CTM-22	875~1100	36	32~45	22	28*28	CTM-22-4018-90-36-TW01	4000K	3200	1800K	2,180	90
						CTM-22-6527-90-36-TW01	6500K	3200	2700K	2,870	90
Gen 2	250~450	33	8.25~17	9.3	12*15	CTM-9-6527-90-36-TWD2	6500K	1100	2700K	940	90
	700~900	33	23~34	13.7	20*24	CTM-14-6527-90-36-TWD2	6500K	3500	2700K	3,040	90

Salud CCT Tunable with MR 0.97 and 0.33											
Product	Typ.~Max. Current (mA)	Voltage (V)	Typ.~Max. Power (W)	LES	Size (mm)	Part Number	CCT of Cool White	Typical lumens @Tj=85 °C	CCT of Warm White	Typical lumens @Tj=85 °C	CRI (Ra)
CTM-9	200~220	37	7~9	9.5	12*15	CTM-9-5022-90-36-TW01	5000K	675	2200K	590	90
CTM-14	400~440	37	15~18	14.5	20*24	CTM-14-5022-90-36-TW01	5000K	1350	2200K	1,180	90
CTM-18	550~660	37	20~27	17.5	20*24	CTM-18-5022-90-36-TW01	5000K	1930	2200K	1,685	90
CTM-22	850~1100	37	32~45	22	28*28	CTM-22-5022-90-36-TW01	5000K	3060	2200K	2,675	90

Luminus Dynamic COB Four Channel RGBW Tunable

Technical Data

Electrical data @ Tj=85°C

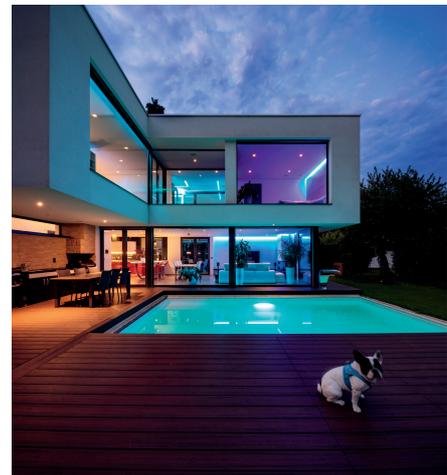
Part number	Nominal forward current per channel	Nominal input power per channel	Nominal voltage per channel	Maximum voltage per channel	Maximum forward current per channel*	Maximum input power per channel*
CTM-9-RGBW-12-TW01	200mA	2W	12V	13V	250mA	3.25W
CTM-14-RGBW-24-TW01	200mA	4W	24V	26V	250mA	6.5W

* Luminaire thermal system capability and power derating curves must be considered. In order to drive all channels simultaneously at nominal current, the luminaire's thermal system must be appropriately engineered to dissipate the thermal load and avoid absolute maximum case temperatures and junction temperatures.

Photometric Data @ Tj=85°C and Nominal Forward Current (200mA):

Part number	Dominant wavelength of blue (min, max)	Minimum flux (lumens)	Nominal flux (lumens)	CCT of warm white	CRI	Minimum flux (lumens)	Nominal flux (lumens)
CTM-9-RGBW-12-TW01	455, 460nm	52	58	2700K	90	197	219
CTM-14-RGBW-24-TW01	455, 460nm	104	115	2700K	90	394	438

Part number	Dominant wavelength of red (min, max)	Minimum flux (lumens)	Nominal flux (lumens)	Dominant wavelength of green (min, max)	Minimum flux (lumens)	Nominal flux (lumens)
CTM-9-RGBW-12-TW01	620, 630nm	42	47	525, 535nm	300	325
CTM-14-RGBW-24-TW01	620, 630nm	84	94	525, 535nm	600	650



Hospitality COBs

Warm Glow with Pure Whitening

The Luminus Hospitality COB series is the smart choice for beautiful, warm light with excellent color rendering and precise 2 step color control standard. As LEDs have been adopted into indoor illumination applications over the past decade, the industry has reached impressive cost and energy efficiency goals, but for Luminus, the focus has always been on taking the quality of light to new heights. Luminus now further establishes their leadership position with the Hospitality COB Series, with high color rendering (CRI) as high as 97 typical, precise 2 SDCM chromaticity control, and warm CCTs specifically designed to deliver comfortable lighting scenes in hotels, restaurants, and other applications where warm, comfortable quality of light is essential.



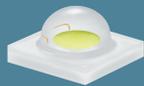
Features:

- CCT 2700K, 3000K, 3500K, 4000K
- High color rendering options with 90 or 95 CRI minimum
- 2 SDCM color binning standard
- Excellent optical emission uniformity and color over angle consistency
- Exceptional long term color stability
- Superior thermal conductivity for uniform heat spreading
- RoHS and REACH compliant
- UL recognized, file # E465703

Specialty LEDs

Luminus engineers and delivers Specialty LEDs for a broad range of sectors in the lighting industry. As the use of LEDs enables smaller, sleeker, and new solutions, the need for applications specific solutions increases. From automotive applications to 3D Printing, Luminus is the preferred partner for Specialty LEDs. Detailed information about all our Specialty LEDs is available at <http://luminus.com> or directly from our distributors and partners.

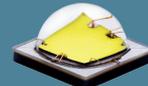
SST-12



Round Light Emitter

- Round shaped vertical chip light emitter
- High on-axis light intensity
- High lumen density
- Small light emitting surface

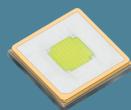
SST-70X



High Power White LEDs

- Portable Lights
- Automotive Auxiliary Lights
- Battery or Solar Powered Lights
- LED Work Lights

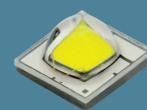
SFT-40



High Power White LEDs

The flat window of an SFT White LED results in a much smaller light emitting surface than a dome-shaped cover, enabling much smaller optics and higher optical coupling efficiency. Along with the high lumen density of a monolithic emitter, SFT white series is a powerful light source for beam pattern critical lighting applications, in delivery of extremely high intensity, long beam distance and tight beam angles.

SST-20

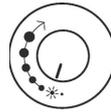


High brightness cool white LEDs

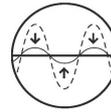
High lumen density of monolithic emitter, up to 518 lm/mm²(6500K), ideal for maximizing the optical efficiency in high-output, beam pattern critical lighting applications. Applications include portable, bicycle, automotive auxiliary, LED work lights, outdoor and roadway lighting and high bay industrial lighting.

Cuvée Drivers

Unique + Compelling



GloStart™



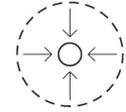
FLICKER FREE



DEEP DIMMING



5 YEAR WARRANTY



COMPACT SIZE

Cuvée Systems deliver smart power solutions to the optoelectronics industry (lighting, medical, and others). These solutions are unique, compelling and provide the best quality of light and user experience with reliable, compact and sleek new designs. Luminus is the exclusive provider of Cuvée Systems drivers to Europe and provides a combined 5-year warranty on Cuvée drivers when paired with our Gen 4 COBs.

Cuvée Systems Smart Drivers

- Offering small form factors without sacrificing best in class performance
- Luminaire manufacturers can create smaller sleek new designs
- Flicker Free
 - Typically <3% percent flicker and maintains this performance over the dimming range
- Deep and smooth dimming
- Cuvée's GloStart™ ensures lights that come on at the same time and start at extremely low dim levels

Solution Portfolio

Universal Quad Mode Driver (120 – 277V) - the industry's first universal driver that can dim by all 4 commonly used dimming methods: phase cut leading edge or trailing edge, 0-10V or PWM

EZI-Set Compact Drivers (220 – 240V) - series of compact LED drivers (non-dimmable) offers superior performance in ultra compact size with 6 form factors. Configurable output current by on-device dip-switches, provides maximum application flexibility and ease-of-use

Compact Phase-Cut Drivers (120v) - superior performance for small to medium sized lighting fixtures, such as down lights, track lights, spot lights and wall sconces. Designed for installations where small form factor, precise lighting control, quality of light and high reliability are critical factors.

Compact Phase-Cut Drivers (220 – 240V) - superior performance for small to medium size lighting fixtures, such as downlights, tracklights/spotlights and wall sconces where form factor, precise light control, quality of light and high reliability are critical factors.

Compact Waterproof Driver (220 – 240V) - superior performance for small to medium size lighting fixtures, such as pool,spa and backyard landscape lighting where form factor, precise light control, quality of light, and high reliability are critical factors.

CCT Tunable Dimmer and Driver (100 – 277V) - Coming Soon!

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