



Illumination

A comprehensive portfolio of
application optimized LUXEON LEDs
and the infinitely configurable

Matrix Platform

ILLUMINATION LINE CARD

High Power LEDs - Industry leading flux, efficiency and design flexibility

Product	Description	Features and Benefits
LUXEON MX	 Unmatched performance in a proven package	<ul style="list-style-type: none"> 1,200 lumens at 150 lm/W enables high performance 120 lm/W fixtures Ability to meet DLC Premium V4.1 requirements in real world operating conditions Instant upgrade to LUXEON M (footprint and optically compatible)
LUXEON MZ	 Best combination of brightness, uniformity and luminance, enabling precision light control	<ul style="list-style-type: none"> Highest lumen density for ideal optical control in a 600–1,000+ lumen package Tighter beam angles enable higher quality retrofit lamps and higher pole heights for outdoor applications Increases fixture flexibility when used in combination with LUXEON MX
LUXEON N	 Industry best thermal performance, 2A drive current, compatible with standard optics, 3-stripe footprint	<ul style="list-style-type: none"> Thermally optimized package provides the lowest R_{th} at 2°C/W Highest drive current of 2A allows 660 lumens+ per LED Low V_f achieves high efficacy of 161 lm/W at 350mA and 110 lm/W at 2000mA
LUXEON TX	 Extreme efficacy and best performance	<ul style="list-style-type: none"> 155 lm/W at 700mA, 85°C (4000K 70CRI) 145 lm/W at 700mA, 85°C (3000K 70CRI) Design flexibility: low V_f of 2.8V and low R_{th} at 3K/W; 1.5A max drive current
LUXEON Z ES	 Extreme flux density in a micro footprint package for precise optical control	<ul style="list-style-type: none"> Micro footprint enables close packaging Undomed design allows precise optical control <i>Freedom from Binning</i> enables color consistency
LUXEON FlipChip White	 Chip Scale Package (CSP) for maximum design flexibility	<ul style="list-style-type: none"> Typical performance at 350mA, 85°C for LUXEON FlipChip White 10; 113 lm/W (3000K 80CRI) and 134 lm/W (4000K 70CRI) Direct Attach—no wire bonds Up to 300 lumens from a single compact source
LUXEON 5050	 High efficacy and lumens in a multi-die, high power package, enabling low system costs	<ul style="list-style-type: none"> 615 lumens, 156 lm/W typical for 4000K 70CRI at 160mA, 25°C Small Light Emitting Surface (LES) at 4.6mm enables good optic design for great punch Enables highest efficacy system design by driving at low current

Color LEDs - A complete color spectrum for a variety of architecture and entertainment applications

Product	Description	Features and Benefits
LUXEON 3535L Color Line	 Color LEDs that deliver the perfect amount of color you need. No more. No less.	<ul style="list-style-type: none"> Same focal length as other LUXEON Color Lines; optically compatible for simpler design cycles Color palette 3V white portfolio on the same footprint Unique phosphor converted Lime and PC Amber colors provide unrivaled maximum performance
LUXEON C Color Line	 Multiple colors, a single focal length	<ul style="list-style-type: none"> Consistent focal length for ease of color mixing in any system Lowest thermal resistance, enabling brighter, lower cost, more efficient systems Completely hot tested, eliminating unwanted surprises in color shift; all colors and whites at $T_j=85^\circ\text{C}$ Broadest color portfolio ensuring largest color gamut
LUXEON Rebel Color Line	 High flux and efficacy on industry's most widely used color platform	<ul style="list-style-type: none"> High flux and leading hot/cold performance; Royal Blue 1190mW with 56% WPE; PC Amber 105 lumens with 85% hot/cold factor Highest efficacy available; 195 lm/W Lime at 350mA, 85°C; faster time to market
LUXEON Z Color Line	 High power color LEDs in a micro footprint package for ultimate design flexibility	<ul style="list-style-type: none"> 1.7mm x 1.3mm footprint enables unique arrangements in space constrained applications Full spectrum of color from 380-670nm, including white and phosphor converted Amber and Lime The industry's smallest high power color LED

UV LEDs - Ultraviolet LEDs for leading power density performance and superior reliability

Product	Description	Features and Benefits
LUXEON UV FC1	Unique LED, enabling limitless design freedom	<ul style="list-style-type: none"> 400 to 700mW (380 to 420nm); V_f=3.0 to 3.2V typical performance at 25°C, 500mA Two large pads with 200μ separation for easy die attach and reflow process 120um thickness to reduce side wall light
LUXEON UV U1	Highest power density, superior efficiency, powered by leading Chip Scale Package (CSP) technology	<ul style="list-style-type: none"> Smallest footprint (2.2 mm²) SMD enables highest W/cm² system, design flexibility 1A max drive current allows more flux per LED AIN package as low as R_{th}=3.5 K/W for better thermal management
LUXEON Z UV	Superior flux density, efficiency and design freedom—the industry's only micro-package UV LED	<ul style="list-style-type: none"> Smallest footprint (2.2mm²) SMD enables highest W/cm² system, design flexibility 1A max drive current allows more flux per LED Up to 45% + WPE leading performance

Mid Power & Low Power LEDs - A broad selection of high performance, reliable LEDs

Product	Description	Features and Benefits
LUXEON 2835C	Perfected performance, built on a proven legacy for higher output ranges in a 3V package	<ul style="list-style-type: none"> 61 lumens at 120mA (4000K 80CRI), 25°C Maximum drive current of 240mA Efficacy up to 192 lm/W
	Perfected performance, built on a proven legacy for higher output ranges in a 6V package	<ul style="list-style-type: none"> 113 lumens at 120mA (4000K 80CRI) Maximum drive current of 240mA Hot-color targeted at 85°C and 1/9th ANSI micro-binning for tight color control
LUXEON 2835E	Perfected performance, built on a proven legacy for lower output ranges in a 3V package	<ul style="list-style-type: none"> 29 lumens at 60mA Maximum drive current at 150mA Efficacy up to 170 lm/W
	Perfected performance, built on a proven legacy for lower output ranges in a 6V package	<ul style="list-style-type: none"> 54 lumens at 60mA (4000K 80CRI) Maximum drive current of 120mA Hot-color targeted at 85°C and 1/9th ANSI micro-binning for tight color control
	Perfected performance, built on a proven legacy for lower output ranges in a 9V package	<ul style="list-style-type: none"> 75 lumens at 60mA (2700K 80CRI) Maximum drive current of 120mA Hot-color targeted at 85°C and 1/9th ANSI micro-binning for tight color control
LUXEON 3014	Hot-color targeted, industry standard package for uniform light	<ul style="list-style-type: none"> 156 lm/W at 60mA (4000K 80CRI) 33 lumens at 100mA max drive current for superior value 1/9th micro-color binning enables tight color control
LUXEON 3030 2D	High flux, hot-color targeted 6V package	<ul style="list-style-type: none"> 210 lumens at 240mA max drive (6500K 80CRI) 145 lm/W at 120mA (2700K 80CRI) 160 lm/W at 120mA (4000K 80CRI)
LUXEON 3535L	Medium flux and efficacy in a 3535 package with a wide range of CCTs and CRIs	<ul style="list-style-type: none"> 49 lumens at 100mA (4000K 80CRI) Maximum drive current of 200mA 1/7th ANSI micro-binning for tight color control
LUXEON 3535L HE	High flux and efficacy in a 3535 package with a full range of CCTs and CRIs	<ul style="list-style-type: none"> 51 lumens at 100mA (4000K 80CRI) Maximum drive current of 300mA 1/7th ANSI micro-binning for tight color control Efficacy up to 188 lm/W
LUXEON 3535L HE Plus	High flux and highest efficacy in a 3535 package with a full range of CCTs and CRIs	<ul style="list-style-type: none"> 52 lumens at 100mA (4000K 80CRI) Maximum drive current of 300mA 1/7th ANSI micro-binning for tight color control Efficacy up to 195 lm/W

Chip on Board LEDs - High performance solutions that optimize system designs

Product	Description	Features and Benefits
LUXEON CoB Core Range - High Density 	Double the flux in the same form factor	<ul style="list-style-type: none"> 1202HD: 6mm, 2,500 lumens at 95 lm/W, 3000K 80CRI at $T_j=85^\circ\text{C}$ 1204HD: 9mm, 5,000 lumens at 95 lm/W, 3000K 80CRI at $T_j=85^\circ\text{C}$ 1205HD: 11mm, 6,500 lumens at 95 lm/W, 3000K 80CRI at $T_j=85^\circ\text{C}$ 3-step MacAdam ellipse color definition
LUXEON CoB Core Range 	Uniform, high-efficacy and easy-to-design	<ul style="list-style-type: none"> High efficacy: >160 lm/W, 70CRI at $T_j=85^\circ\text{C}$ Reaching >15,000 lumens at >140 lm/W at 85°C Up to 4x lower thermal resistance than competition, enabling smaller heatsinks and higher lumens

Stylist Series LEDs - LEDs to create lighting that sells

Product	Description	Features and Benefits
AtmoSphere Technology 	Creating the ideal ambience for restaurants and other hospitality venues	<ul style="list-style-type: none"> Warm color point Available in 80CRI and 90CRI for great color rendering Color point on BBL matching halogen
LUXEON CoB with CrispColor Technology™ 	Fashion retail lighting that makes an impact, highlighting rich colors and increasing contrast	<ul style="list-style-type: none"> Typical 93CRI with R9 ~95; 105 to 110 lm/W Color point below BBL matching proposed ANSI "Preference-based Specification" targets Gamut area index value of ~80 (normal 90CRI LEDs are around 50CRI)
LUXEON CoB with CrispWhite Technology 	Fashion retail lighting that makes an impact, revealing the whitest whites	<ul style="list-style-type: none"> Double blue peak enabling the CrispWhite effect All parts <90CRI, >100 lm/W Color point below BBL matching CDM Highest flux densities with the smallest LES
LUXEON CoB with FreshFocus Technology™ 	Accentuating freshness and overall visual appeal, making food irresistible	<ul style="list-style-type: none"> LED lighting saves energy, reduces stress on the environment, and without IR and UV, it keeps products fresh longer Spectrum engineered products with focused color points to enable the right lighting for specific merchandise and applications Several options available: Produce (fruit & vegetables), Fish, Marbled Meat, Red Meat and Bread & Pastries

Horticulture LEDs - LEDs engineered to deliver the precise wavelengths of light needed to improve crop yield

Product	Description	Features and Benefits
LUXEON SunPlus 20 Line 	Delivers the spectra flexibility needed to design a grow light solution to any specification	<ul style="list-style-type: none"> Tested and binned in PPF ($\mu\text{mol/s}$) Fast time to market by leveraging already existing ecosystem Lowest thermal resistance aiding in thermal management Range of wavelengths from 445nm to 750nm
LUXEON SunPlus 35 Line 	LEDs enabling uniform distribution and optimum output for lighting placed in close proximity to plants	<ul style="list-style-type: none"> Tested and binned in PPF ($\mu\text{mol/s}$) Purple is available in three different recipes (2.5% Blue, 12.5% Blue, and 25% Blue); select the option that provides the right amount of PPF in the blue wavelength (420-480nm) for the application, in addition to getting PPF in the red (620-670nm) wavelength Fast time to market by leveraging already existing ecosystem

Matrix Platform - Infinitely configurable, integrated LED light solutions tailored to the most demanding design requirements. Yours.

Matrix Platform features application-optimized LUXEON LEDS combined with our Matrix Platform Advanced Technologies, ready for installation into your final luminaire assembly.

Advanced Technologies

- **Oberon Intelligent Assembly:** The industry's only algorithmic LED mixing technology for differentiated solutions.
- **Integrated Light Guides:** Ultra-thin, non-pixelated lighting for visual comfort with controllable light distributions.
- **Integrated Drivers:** Application specific driver topologies tailored to your needs.
- **Connectivity and Controls:** A wide selection of supported wired and wireless protocols, intelligently integrated.
- **Dimming Electronics:** Patented circuitry for dim-to-warm products that pairs perfectly with simple single channel drivers.

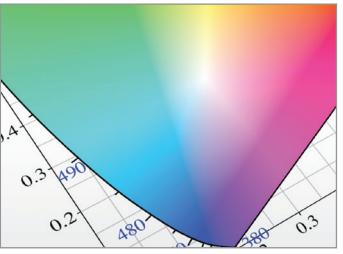
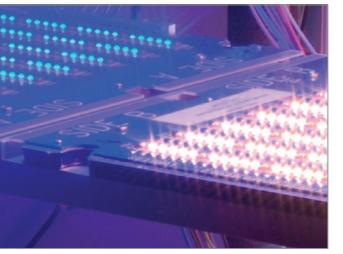
Readily Available Solutions

Product	Description	Features and Benefits
LUXEON XF-3014 CV	 Flexible light source distributing uniform light across user selectable lengths	<ul style="list-style-type: none">• 112 lumens per 96mm segment with 105 lm/W efficacy at 24V, $T_j=50^\circ\text{C}$• Operates at 10m in length with only 2% light output variation• Complete integrated solution guarantees simplified chain and faster time to market
LUXEON XF-3535L	 Illumination grade, flexible LED strips, enabling high lumen and high efficacy design	<ul style="list-style-type: none">• 1,000 to 5,000 lumen offerings (36-108 LUXEON 3535L LEDs per strip)• Available with solder terminals or push-in wire connectors for easy electrical connection• Backside adhesive for attachment to heatsink allows for ease of mounting and efficient heat dissipation
LUXEON XR-3020	 Linear LED module on an ultra-slim and rigid substrate, enabling high efficacy designs	<ul style="list-style-type: none">• 1,100 or 2,200 lumen packages at 100mA/LED and 45°C board temperature• 1ft. (24-up) or 2ft. (48-up) length and Zhaga defined screw hole locations• 160 lm/W for maximum light output and low power consumption• >50k hours LED lifetime (L70)
LUXEON XR-3535L	 Turnkey solution on a rigid substrate, enabling high efficacy designs	<ul style="list-style-type: none">• 1,400 to 1,500 lumen offerings, enabling efficacies of 152 lm/W• Super CEM3 PCB rigid substrate for mechanical robustness and efficient heat dissipation• Two electrical connector options with snap-together or pushbutton terminal blocks
LUXEON XR-M	 Bright, uniform light source in practical, convenient and easy to configure modules	<ul style="list-style-type: none">• Typical 3,200-5,300 lumen building blocks with 140 lm/W efficacy at 700mA, $T_c=85^\circ\text{C}$• 3, 4, and 5 LED linear board options and 4 LED square board option for design flexibility and luminaire adaptability• MCPBC for efficient heat dissipation and mechanical robustness
LUXEON XR-TX	 High performance LED modules with extreme efficacy for robust lighting designs	<ul style="list-style-type: none">• Typical 3,300 lumens at 700mA and 85°C board temperature• 140 lm/W for maximum light output and low power consumption• 150mm x 45mm footprint is designed for use with standard third party optics

Illumination Product Portfolio

Product	Architectural	Downlights	High Bay & Low Bay	Horticulture	Indoor Area Lighting	Lamps	Outdoor	Specialty Lighting	Spotlights
LUXEON 2835C									
LUXEON 2835E									
LUXEON 3014									
LUXEON 3030 2D									
LUXEON 3535L									
LUXEON 3535L Color Line									
LUXEON 3535L HE									
LUXEON 3535L HE Plus									
LUXEON 5050									
LUXEON C Color Line									
LUXEON CoB Core Range									
LUXEON CoB Core Range – High Density									
LUXEON CoB with CrispColor Technology™									
LUXEON CoB with CrispWhite Technology									
LUXEON CoB with FreshFocus Technology™									
LUXEON FlipChip White									
LUXEON MX*									
LUXEON MZ*									
LUXEON Rebel Color Line									
LUXEON SunPlus 20 Line									
LUXEON SunPlus 35 Line									
LUXEON TX*									
LUXEON UV FC1									
LUXEON UV U1									
LUXEON XF-3014 CV									
LUXEON XF-3535L									
LUXEON XR-3020									
LUXEON XR-3535L									
LUXEON XR-M									
LUXEON XR-TX									
LUXEON Z Color Line									
LUXEON Z ES*									
LUXEON Z UV									

*Product also offered in Royal Blue.

Ecosystem	LED Spectrum Mixer	System Calculator	LM-80 Reports
 <p>Select pre-qualified, off-the-shelf components to aid in complete system design.</p>	 <p>Calculate the color (white or color) that will be achieved by combining different LEDs into one application</p>	 <p>Calculate the overall system performance based on design inputs.</p>	 <p>Generate LM-80 reports for specific Lumileds LEDs.</p>

Please check out our ecosystem support at lumileds.com/designtools.

About Lumileds

Lumileds is the global leader in light engine technology. The company develops, manufactures and distributes groundbreaking LEDs and automotive lighting products that shatter the status quo and help customers gain and maintain a competitive edge. With a rich history of industry "firsts," Lumileds is uniquely positioned to deliver lighting advancements well into the future by maintaining an unwavering focus on quality, innovation and reliability.

To learn more about our portfolio of light engines, visit lumileds.com.



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