

Product Family Guide



Light Emitting Diodes (LEDs)

- SMD and Through-Hole
- Panel Mount Indicators
- LED Displays
- Arrays and Light Bars
- Infrared and Ultra Violet

Custom Capabilities

- High Temp LED Displays (+105°C)
- Custom TPX Molds
- Molded Arrays
- Chips on Board
- Lead Forming and Lensing
- Custom LED Housings
- Color and Brightness Matching



Light Pipes

- Right Angle
- Vertical Arrays
- Single or Multiple Positions

Custom Capabilities

- 3D Modeling
- Ray Tracing
- Rapid Prototypes
- Custom Shapes and sizes



High Power LEDs

- Surface Mount
- Single Color or RGB

Custom Capabilities

- Arrays
- Custom Lighting Solutions



Liquid Crystal Displays (LCDs)

- Extreme Temperature LCDs
- Graphic LCDs
- Character LCDs
- Numeric LCDs

Custom Capabilities

- Custom Icons and Characters
- High Contrast, Negative Image
- Chips on Glass
- Chip on Flex
- Full User Interface Integration
- Connectors and Switches



LED Backlights

- Chips On Board
- Edge Lit

Custom Capabilities

- HB Technology Backlights
- Light Panels
- Custom Shapes and sizes

ezDisplayOLED



SKU	Description
LOD-H12864GP-W-UR	128 x 64 Pixels, White OLED
LOD-H12864GP-Y-UR	128 x 64 Pixels, Yellow OLED
LOD-H12864GP-G-UR	128 x 64 Pixels, Green OLED
LOD-H12864GP-B-UR	128 x 64 Pixels, Blue OLED

ezDisplay Dot Matrix LED Display



Product Family	Descriptions
ezDisplay LED DotMatrix Indoor Family	64x32 RGB LED Dot Matrix, options for 3mm, 4mm or 5mm Pitch. Perfect for Indoor use. Available addons: UART Interface, USB power, 1.5A current clamp.
ezDisplay LED DotMatrix Outdoor Family	32x16 RGB LED Dot Matrix, options for 8mm or 10mm Pitch. Designed for Outdoor use. Come with UART Interface.
ezDisplay LED DotMatrix LDM-12864-P3-SPI and LDM-128128-P3-SPI	128x64 and 128x128 RGB LED Dot Matrix, 3mm pitch, Indoor, built in 16M bytes flash memory. Come with UART and SPI interface, compatible with TFT LCD's SPI driver.

TARGET MARKETS

Commercial Appliances



The Commercial Appliance market demands durability, reliability, customization, and new technology integration. ITW Lumex conquers these challenges by offering a diverse range of components and strong engineering support, giving customers the flexibility to find the ideal solution for their products.

Transportation



ITW Lumex provides advanced LED, LCD, switch, sensor, and lighting solutions for the Transportation market. We deliver custom, cutting-edge products that meet evolving market demands—driving the future of mobility with precision and reliability.

Security



ITW Lumex is a reliable source for Security market. We offer a full breadth of LED components, LCD displays, and pushbutton switches, as well as identifying opportunities in creating a unique product solution for new and next-generation using in security devices.

Communication



The Communication market is fast-paced and driven by changing consumer demands. As optoelectronics rapidly expand in this market, partnering with an agile supplier is key. ITW Lumex streamlines sourcing with a wide product range and expert engineering support, offering semi-custom and full-custom solutions—all from a single trusted partner.

Industrial Control



ITW Lumex specializes in Industrial Control market. We offer high-performance switches, LEDs, and LCDs, including displays for extreme temperature environments. With thousands of standard products and custom or semi-custom designs, our team collaborates closely with customers to deliver smart, tailored solutions for any application.

EV Charging Station



EV Charging Stations require reliable, high-visibility displays, indicators, and switches that perform consistently in any weather conditions. ITW Lumex offers sunlight-readable LED indicators, LCD and LED displays, and durable pushbutton switches engineered for a wide temperature range. These components integrate seamlessly into EV charging systems.

Medical



ITW Lumex specializes in optoelectronic and display solutions for the medical industry, with a focus on portable and disposable devices. We deliver high-performance LED and LCD -ranging from standard components to fully integrated solutions - tailored to each application. Through proven design collaboration, we consistently meet the evolving demands and complexities of medical product development.

Semiconductor Instruments



Semiconductor manufacturing is an intensive and highly precise industry that demands meticulous attention to detail at every stage, including the quality and innovation of the instrument and subsystems. ITW Lumex delivers innovative and reliable solutions that meet the high standards in this challenging industry.



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Lumex, an ITW Company, has been a global leader in the optoelectronics industry. With the broadest range of high efficiency, high performance LEDs and LCDs in the industry, Lumex provides thousands of standard products and specializes in semi-custom and custom designs.

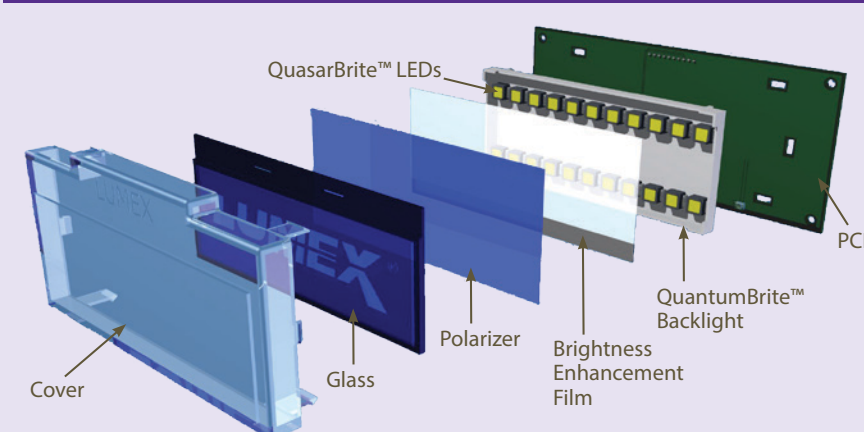
Lumex's optical range encompasses a wide spectrum including UV, visible and infrared wavelengths.

Lumex offers a broad offering of semi-custom, fully custom and plug-and-play solutions for LED/LCD displays, backlighting, light arrays, and LED indicators. Our engineering team has years of success in working with customers from initial design concepts through production-ready products, saving our customers time, design costs, and final assembly costs.

Engineering Solutions:

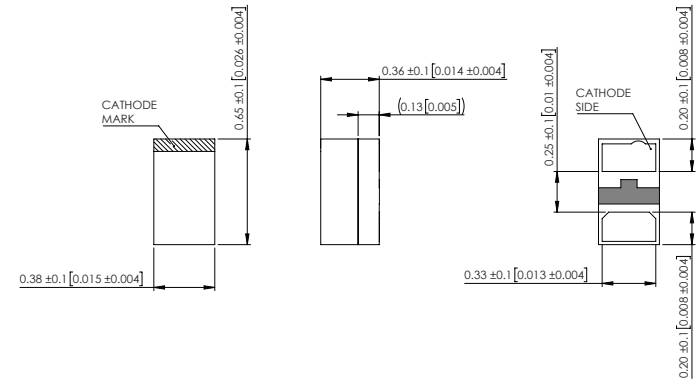
- Special graphics/colors on LCD displays
- Addition of backlighting or custom light pipes into one assembly
- Non-standard screen displays for LED and LCD displays and modules
- Varying characters lengths in LED arrays
- LED or LCD for high operating temperature up to 105°C

Multiple Components... One Product Solution



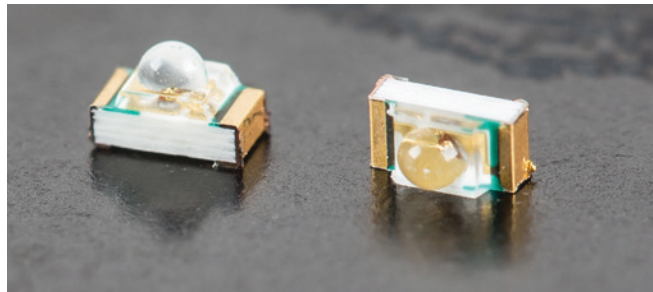
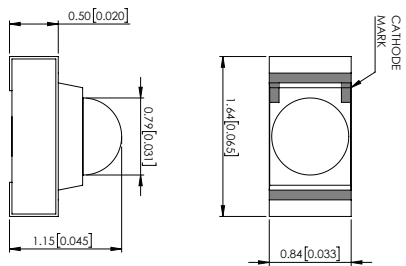
Smallest Single Color Surface Mount LED

PART NUMBER	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Typ. Vf (V)	Intensity Typ. (mcd)	View Angle 2xTheta	If (mA)
SML-LX0201NWD-TR	White	InGaN	N.A.	Clear	2.6	55	110	5
SML-LX0201USBC-TR	Blue	InGaN	465	Clear	2.6	15	110	5
SML-LX0201UPGC-TR	Green	InGaN	520	Clear	2.5	100	110	10



Narrow Beam Surface Mount LEDs

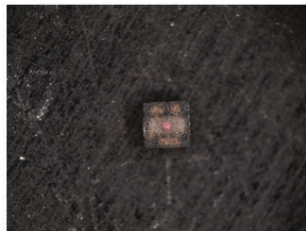
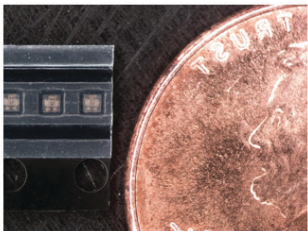
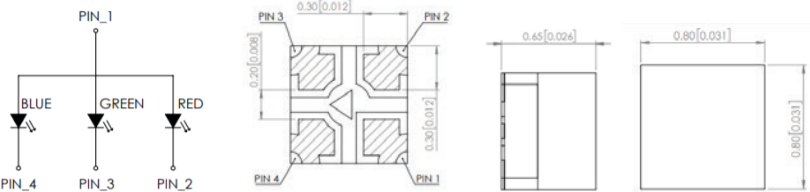
PART NUMBER	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Typ. Vf (V)	Intensity Typ. (mcd)	View Angle 2xTheta	If (mA)
SML-LX1L0603SIC-TR	Red	AlInGaP	630	Clear	2.1	1600	75	25
SML-LX1L0603SYC-TR	Yellow	AlInGaP	585	Clear	2.1	1350	75	25
SML-LX1L0603UPGCTR	Green	InGaN	520	Clear	3.0	2135	75	25
SML-LX1L0603USBCTR	Blue	InGaN	470	Clear	3.0	500	75	25



Smallest Full Color RGB Surface Mount LED

PART NUMBER	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Typ. Vf (V)	Intensity (mcd)		View Angle 2xTheta	If (mA)
						MIN	MAX		
SML-LX0303RGB/1TR	Red	AlInGaP	625	Clear	2.0	8.5	20	120	3
	Green	InGaN	525	Clear	2.9	50	104	120	5
	Blue	InGaN	465	Clear	2.9	8	18	120	5

POLARITY



Digital LED

SMD RGB LED with Built-In IC Driver

The **Digital Surface Mount LED** with **Built-In Driver ICs** is a **compact, low-profile RGB LED** that integrates a driver IC, enabling smooth color control and simplifying circuit design.

Key Features:

- Built-in Driver IC – Each LED supports 256-grade PWM control for R/G/B color chips, producing a wide range of colors.
- Space-Saving & Easy Integration – Eliminates the need for external driver ICs, making it easy to integrate into various PCB designs (e.g., hollow rings, rigid strips, flexible strips).
- Simplified Control – A single GPIO pin can control up to 1,024 LEDs, significantly reducing circuit complexity.
- Enhanced Integration – Works seamlessly with Lumex's Digital LED Controller, reducing the MCU processing load and lowering overall costs.
- Low Power Consumption – Operates at just 5mA per color, offering energy efficiency.

SMD-LX5050RGB-TR	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Supply Voltage V _{DD}	Intensity Typ. (mcd)	View Angle 2xTheta
	Red	AlInGaP	630	Clear	5	185	120
	Green	InGaN	520			590	
	Blue	InGaN	470			150	

SMD-LX0707RGB-TR	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Supply Voltage V _{DD}	Intensity Min. (mcd)	View Angle 2xTheta
	Red	AlInGaP	630	Clear	5	72	120
	Green	InGaN	520			180	
	Blue	InGaN	470			28.5	

SMD-LX1818RGBDWCTR	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Supply Voltage V _{DD}	Intensity Typ. (mcd)	View Angle 2xTheta
	Red	AlInGaP	630	Clear	5	425	120
	Green	InGaN	520			1350	
	Blue	InGaN	470			270	

SMD-LXR1204RGC-TR	Emitted Color	Chip Material	Peak Wavelength (nm)	Lens Type	Supply Voltage V _{DD}	Intensity Typ. (mcd)	View Angle 2xTheta
	Red	AlInGaP	630	Clear	5	47	130
	Green	InGaN	520			92	
	Blue	InGaN	470			38	

Easy TFT LCD

A TFT LCD cannot work with low-performance or low-memory controllers, such as 8-bit MCUs or 32-bit MCUs with limited memory. This problem is solved once and for all with Lumex's Easy TFT LCD Display solution.

The built-in flash memory and controller eliminate the need for user's MCU to allocate display memory. Modules work without drivers or initialization codes from user's MCUs. The UART interface and AT command structure make it universal for MCUs and IDE environments.

Features:

- Universal for any MCUs
- No initial codes or drivers are required
- Provides AT commands
- Built-in 256Mb flash memory that can be customized by the user
- Multiple interfaces such as UART, CANBus, and SPI are available
- Dimmable backlight
- Inputs for rotary switches
- Pre-load user define flash memory service is available.

Applications:

- Guage applications
- Upgrade from monochrome display
- Industrial Controls
- Appliances
- Elevator
- Transportation

Available P/Ns:

- LCT-H240320M24W-G2 2.4" (3:4, portrait, 240x320)
- LCT-H240320M28W-G2 2.8" (3:4, portrait, 240x320)
- LCT-H320240M35W-G2 3.5" (4:3, landscape, 240x320)
- LCT-H320480M35W-G2 3.5" (2:3, portrait, 320x480)



Apart from the UART interface, Easy TFT LCD offers CANBUS and SPI interfaces to meet the needs of various industrial applications, especially for Gauge applications.

For applications that require rotary switches, Lumex offers a custom firmware service that enables the TFT LCD display to be utilized as a controller.