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USHIO

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LED

Product Information

epitex

Product Map

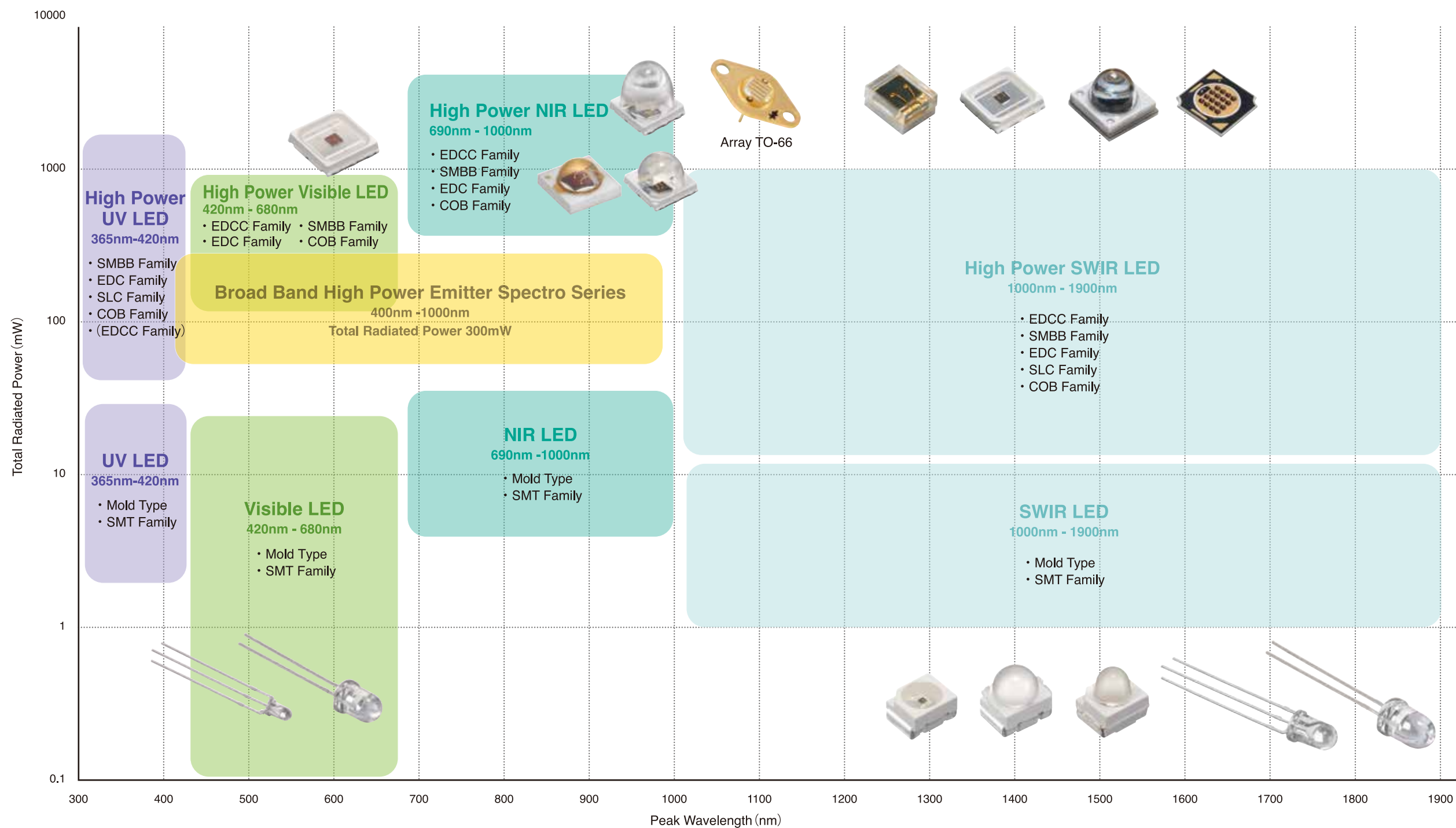
All wavelengths between 365nm and 1900nm can be offered.

Coverage of all wavelengths in the UV (ultraviolet), visible and IR (infrared) spectra from 365nm to 1900nm.

■ Multiple models to support all output power ranges from standard to high power.

■ Wide range of packages suitable for your ideal optical design.

We can also offer products that combine photosensors with LEDs.



Top quality LEDs at your disposal

1 How to choose LED models

Select Wavelength × Package × Viewing angle × (Customize)

Our "epitex" series LED covers a wide range of wavelengths in the ultraviolet (UV) , visible and infrared (IR) spectra, from 365 nm to 1900 nm, Ushio manufactures various types of LEDs to meet the requirements of the application.

Wavelength (nm)

UV

Visible

NIR

SWIR

365-420

420-680

680-1050

1050-1900

Package

Viewing angle

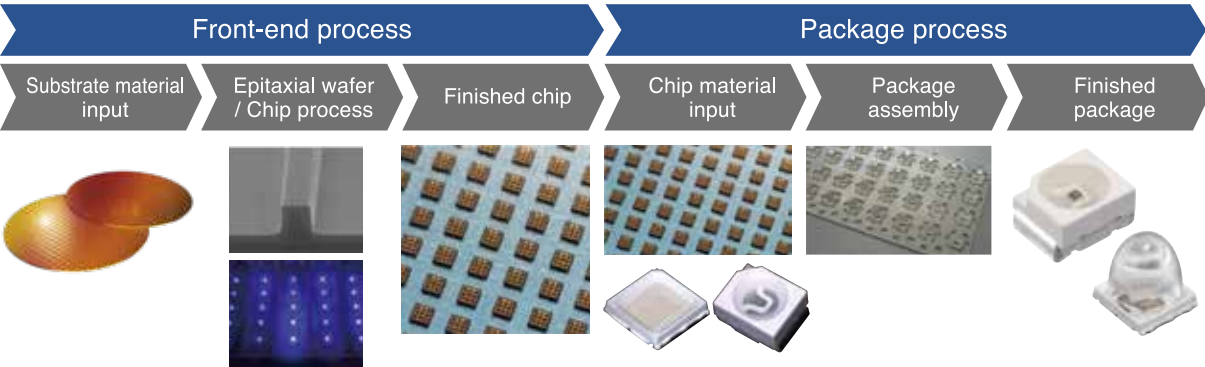
3°~75°

Customize

Multi chip
Built in PD etc.

Over 30 years know-how based on whole manufacturing process

Over 30 years of know-how based on complete manufacturing process. Ushio owns the entire process in-house, from epi formation to packaging process. Utilizing our expertise, we provide products that meet the requirements of the application, such as multiple wavelengths & photodiode in 1 package in the desired size from more than 1500 LED configurations, as well as customized designs.



2 Wide wavelength range covering

UV 365 nm to SWIR 1900 nm

You can select the suitable LED wavelength for your application, with shorter wavelength emitters available in 20 nm increments (below 1000 nm) , and longer wavelength emitters every 50 nm (over 1000 nm) .

UV	365nm	375nm	385nm	395nm	405nm	415nm	420nm												
Violet	430nm	435nm	450nm																
Blue	470nm	490nm																	
Green	505nm	520nm	525nm	545nm	550nm	565nm													
Yellow	570nm	590nm																	
Orange	600nm	610nm	620nm																
Red	630nm	640nm	660nm	670nm	680nm														
IR/GaAs	690nm	700nm	710nm	720nm	730nm	735nm	740nm	750nm	760nm	770nm	780nm	790nm							
	800nm	810nm	820nm	830nm	840nm	850nm	870nm	880nm	890nm	910nm	940nm	970nm							
	980nm	1050nm	1100nm																
IR/InP	1050nm	1070nm	1100nm	1150nm	1200nm	1300nm	1370nm	1450nm	1550nm	1650nm	1750nm	1900nm							

3 Multiple packages to fit your optics

Single Chip Package Lineup

You can select your favorite packages from molded to SMD depending on your application, size and viewing angle.

Output Power	Standard			High			
	ChipSize	270μm×170μm	300μm, 350μm, 400μm	1mm or More			
Package	EDP Family	Mold Type	SMT Family	EDCC Family	EDC Family	SMBB Family	SLC Family
	0.6mm×0.3mm	3φ / 5φ	3.5mm×2.8mm	1.5mm×1.85mm	3.45mm×3.45mm	5.2mm×5mm	3.9mm×3.9mm
	Under Development			New			Glass lens package

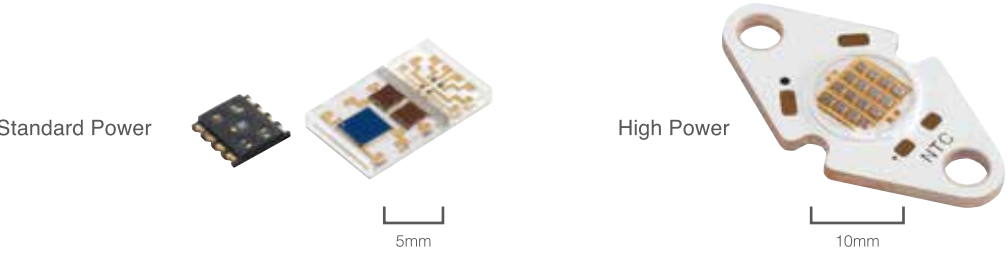
Multi-Chip Package Lineup

You can choose from a wide range to ensure both fine wavelength selection and multiple wavelength combinations. Photosensors can also be provided according to the light source.

Package image	Sterm	8 in 1	SMT Family	SMBB Family
		New		
Package Size	TO-5, TO-18, TO-46	2.9mm×2.2mm	3.5mm×2.8mm	5.2mm×5mm
Number of Chips	Standard Power 300μm-400μm□	7pcs Max. Please Ask	8pcs Max.	3pcs Max.
	High Power 1mm□-	—	—	—

Offer custom packages for your ideal optical design

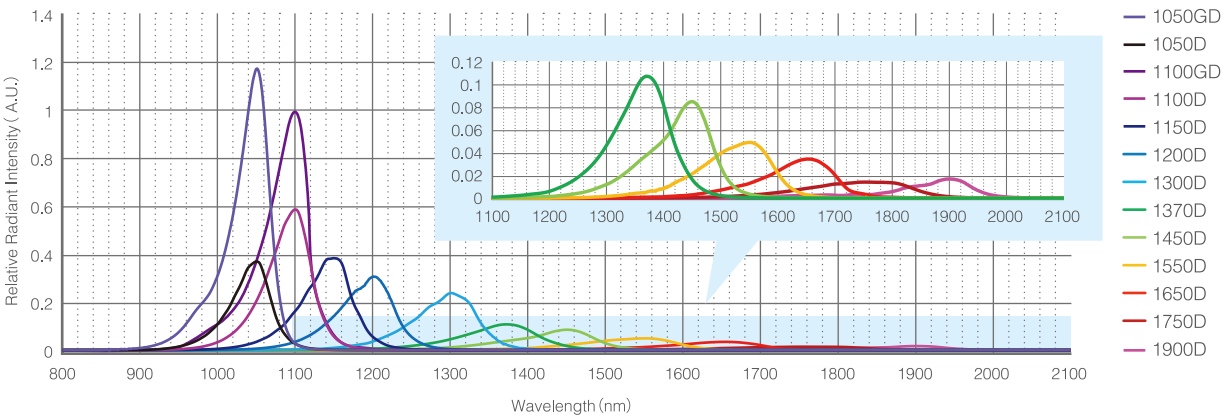
Please contact us even if you don't find the package design you need. We will consider the optimal design according to your request.



Short Wavelength Infrared LED

Features

- Epitex series offers the world's highest class SWIR LED output power.
- Standard center wavelength is 1050,1070,1100,1150,1200,1300,1370,1450,1550,1650,1750,1900nm.
- We can also propose a more unique wavelength selection according to the customer's requirement.

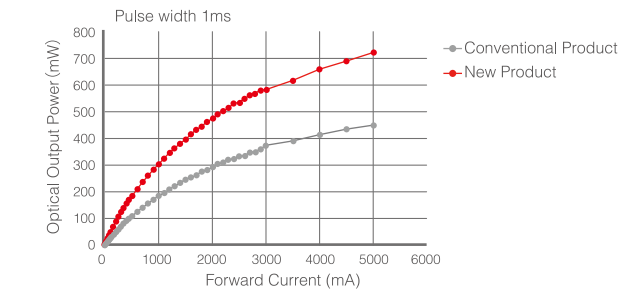


New

High Power Pulse Drive SWIR LED

Sample Available

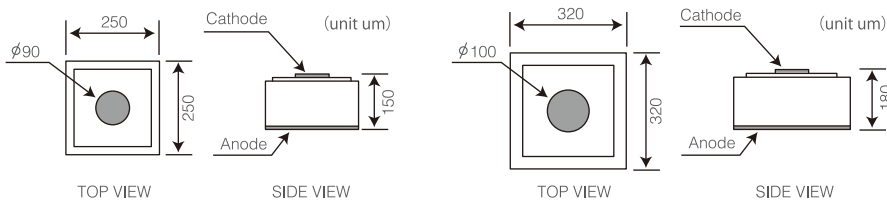
- Reduced watt cost with higher output per LED (limited to pulsed drive) .
- Wavelength available from 1050nm to 1900nm.



SMBB Package 1300nm		
	PO (mW) Pulse IF=4A	VF (V) Pulse IF=4A
Conventional Product	400	2.4
New Product	660	4.9

SWIR LED Bare Chip

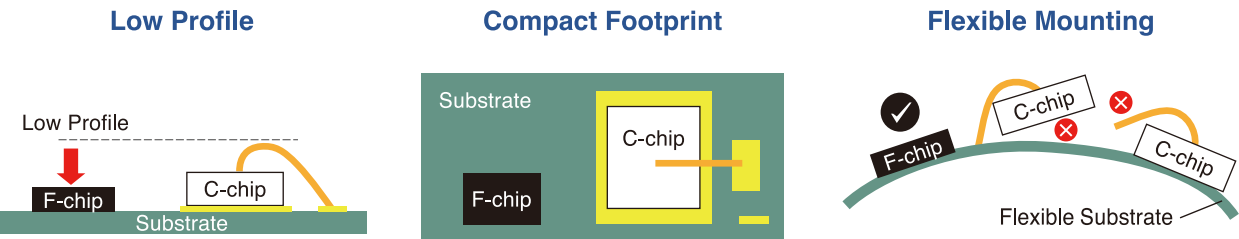
- The epitex series also offers bare chips in the SWIR wavelength range in 250μm x 250μm and 320μm x 320μm sizes.
- Standard wavelengths include 1050, 1070, 1100, 1150, 1200, 1300, 1370, 1450, 1550, 1650, 1750, and 1900 nm.
- Wavelengths and chip sizes can be customized upon request.



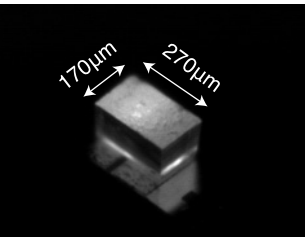
New

SWIR Flip-Chip LED

- Samples of the world's first flip-chip LED using InP materials have been released.
- It is 45% smaller than existing products while maintaining the same light output with high efficiency.
- Bonding without wire results in low-profile and adaptable installation.
- Available as a bare chip (170μm x 270μm) or in a 0603 EDP package (600μm x 300μm) ※1

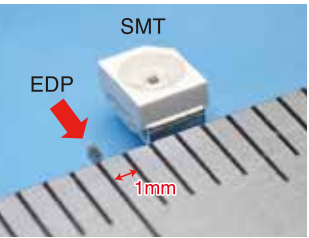


Bare Chip



Microphotograph

Package -EDP Family-



Comparison with SMT Package

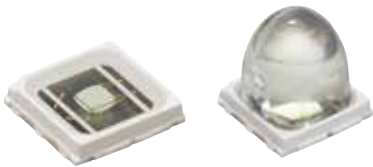
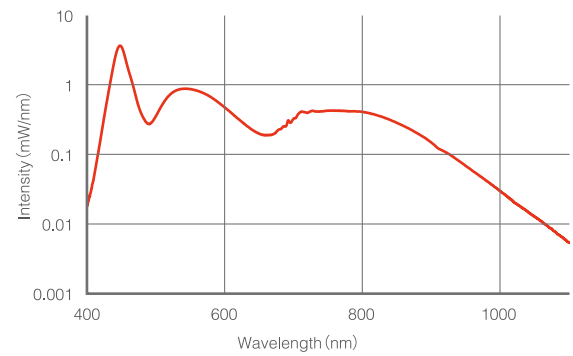
※1 Please contact us for any custom specifications, including size, output, and chip combination, etc.

Spectro Series



Features

- The Spectro series are high-power, broadband LEDs capable of emitting visible to near-infrared light.
- It is hoped that Spectro will enable an individual to measure with spectroscopy at hand.



Total Radiated Power (typ) (λ =400-500nm)	140mW (IF 500mA)
Total Radiated Power (typ) (λ =500-1000nm)	160mW (IF 500mA)

Surface Mount Type LED

SMT Family

Features

- All wavelengths from 365nm to 1900nm can be offered.
- Package dimension: 3.5mm × 2.8mm.

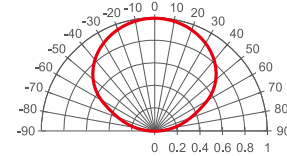
Specifications [e.g. SMT780 Series except 22 lens]



SMT with Silicone Lens

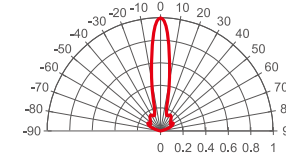
Flat Type

- Viewing Half Angle: ± 62 deg.



S1 Lens Type

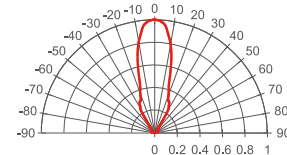
- SMT with Silicone Lens
- Viewing Half Angle: ± 10 deg.



SMT with Epoxy Lens (Allowable Wavelengths: between 470nm and 1,650nm)

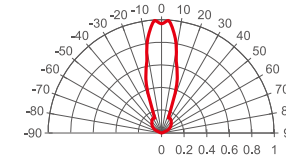
22 Lens Type

- SMT with Epoxy Lens
- Viewing Half Angle: ± 15 deg.
- ★ Applicable for specific wavelength · SWIR D type · NIR D and DS type [e.g. SMT1550D-22]



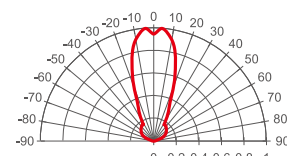
23 Lens Type

- SMT with Epoxy Lens
- Viewing Half Angle: ± 16 deg.



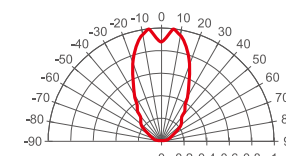
25 Lens Type

- SMT with Epoxy Lens
- Viewing Half Angle: ± 20 deg.



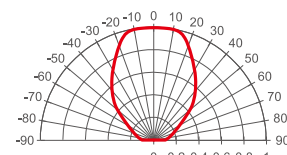
27 Lens Type

- SMT with Epoxy Lens
- Viewing Half Angle: ± 39 deg.



29 Lens Type

- SMT with Epoxy Lens
- Viewing Half Angle: ± 45 deg.



Molded Type

Features

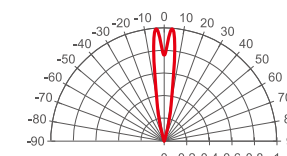
- Plastic Molded Type LED.
- All wavelengths from 365nm to 1900nm can be offered.

Specifications [e.g. L750-AU Series]



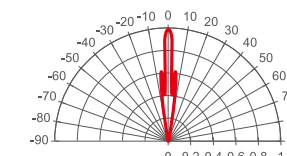
01 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle: ± 10 deg.



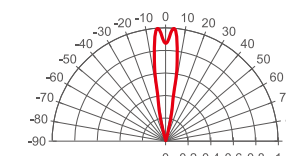
02 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle: ± 8 deg.



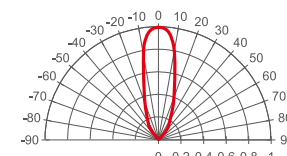
03 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle: ± 10 deg.



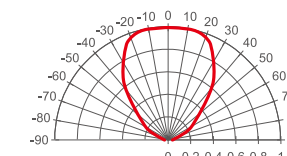
04 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle: ± 17 deg.



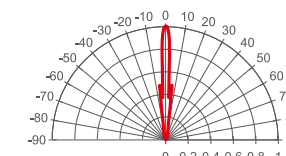
05 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle: ± 44 deg.



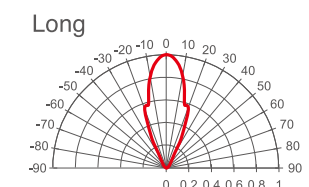
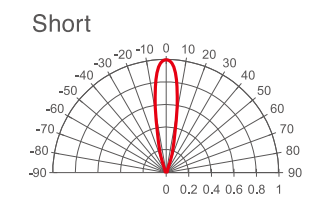
06 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle: ± 4 deg.



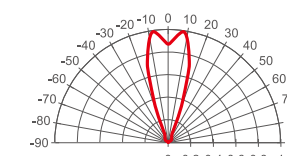
09 Lens Type

- $\phi 5$ Plastic Molded LED
- Viewing Half Angle:
Short: ± 10 deg. Long: ± 21 deg.



33 Lens Type

- $\phi 3$ Plastic Molded LED
- Viewing Half Angle: ± 17 deg.



36 Lens Type

- $\phi 3$ Plastic Molded LED
- Viewing Half Angle: ± 32 deg.

