



# Epigap FAQs

Part 5

## 5. special applications - special LEDs

LEDs are generally suited to create light sources with special properties, regarding either spectrum, size and / or emission angle.

### 5.1. What is point source LED and what are the applications?

LED point sources have a homogeneous emissions area without side radiation. LEDs does not show speckle formation as laser diodes do. The emissions area of EPIGAP LED point sources can be fully customized. Since they consume little electrical power point sources are ideal for use in battery-powered devices.

Point sources in the range of 572...850 nm with a spot diameters of 25... 200  $\mu\text{m}$  are available from EPIGAP. Form factors are chip, TO-can, CoB and other.

#### Applications:

optical scanning / optical sensors  
optical switches  
linear & rotary encoders  
edge sensing  
machine vision / CCD  
medical devices, e.g. for blood analysis  
fluorescence microscopy  
optical instruments  
light barriers  
motion sensors  
visual aids

[link PS-EOLCs](#)

### 5.2. display LED chips

LED display chips enable to present numbers, letters and symbols in optical instruments. In a very small area various information can be displayed. Each segment is separately addressable

#### advantages:

emission color red (630 nm) with high luminance and contour sharpness  
small character size (line width 25  $\mu\text{m}$ ): 7-segment chip with overall height of 0.5 - 1.5 mm  
low drive current supporting battery driven portable devices

[link display chips](#)



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## 5.3. LEDs for growing plants

Absorption peaks are 430 nm and 662 nm for chlorophyll a, and 453 nm and 642 nm for chlorophyll b. Chlorophyll b is not as abundant as chlorophyll a.

LEDs of the above mentioned wavelength are increasingly used for growing plants in closed systems or for research purposes.