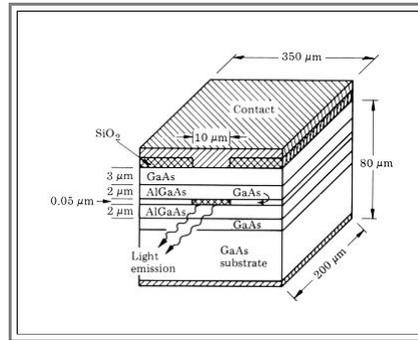


Standard LED Designs

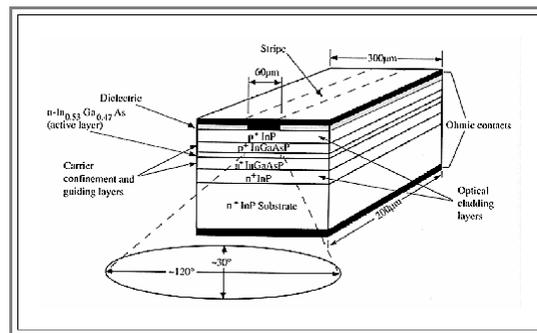
Advanced

First we discuss the **edge-emitting LED** a bit more closely. While for general light source purposes (i.e. for the red rear lights on your bicycle) LEDs that emit light in all directions are useful, you want the emission to be focussed in one direction if you use the LED for optical communication purposes.

- In most cases, the emitted light will be fed into a fibre optics cable, and the losses should be minimized. This requires a good coupling of LED and cable and of course the light should only be emitted into the direction of the cable.
- This is automatically the case with edge emitting LEDs. Below an example based on **GaAs/GaAlAs** heterojunctions.



Next, a similar structure based on **InP/InGaAsP** heterojunctions. The angle into which light is emitted is indicated



- Both structures are suitable for coupling to an optical fibre.

The simpler **area emitting diodes** can be made fit for communicating purposes, too.

- Shown below is an example of the "**Burrus type**" (after its inventor, C.A. **Burrus**)
- The principle is relatively clear, the technology, however, needs some thoughts.

