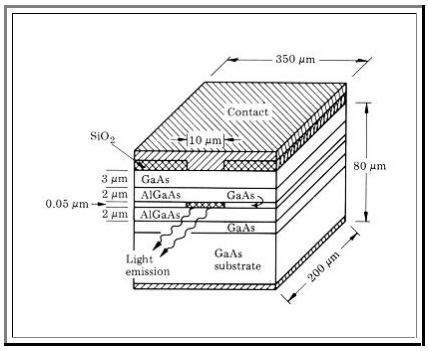
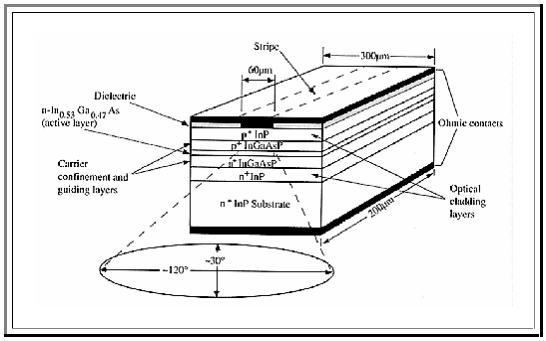
Standard LED Designs

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.