



**DIRECT OPHTHALMOSCOPY**

- It is the most commonly practiced method for routine fundus examination.
- It is used to examine central 7 to 10 degree of retina.



**❖ Parts of Direct Ophthalmoscope**



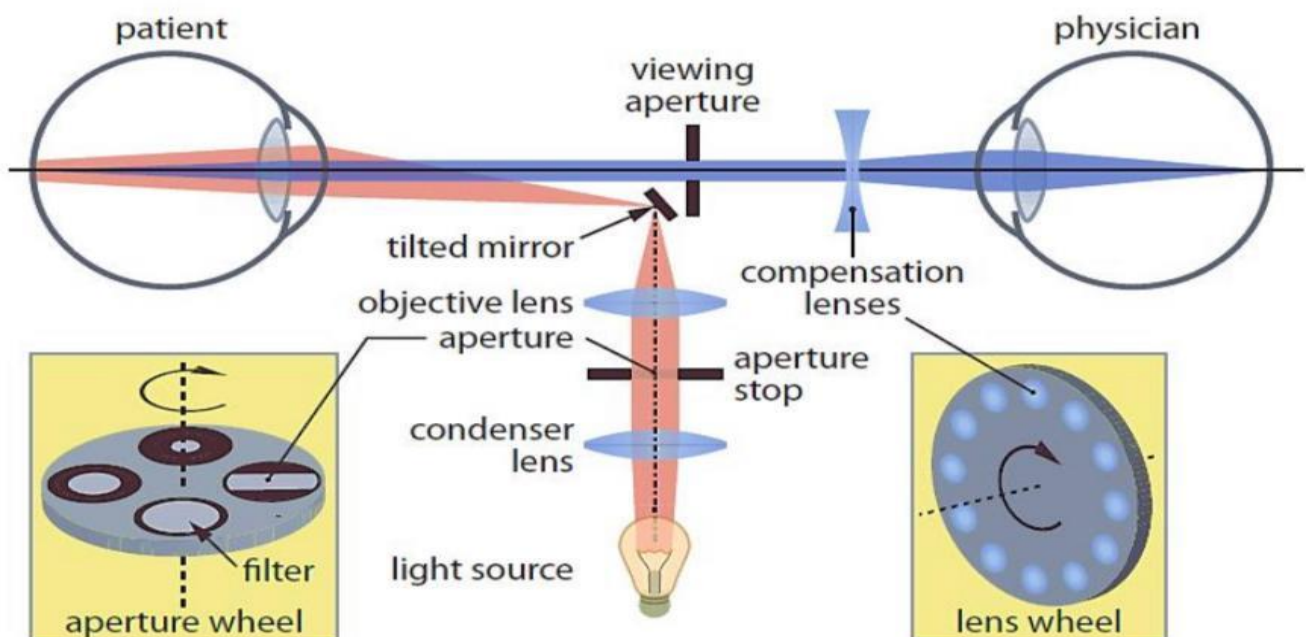
**Viewing window:** this is where you look through to observe the eye.  
**Filter switch:** allows you to select a light filter (e.g. blue cobalt light).  
**Aperture dial:** adjust the size of the light beam.  
**Diopter dial:** adjusts the lens used to view the eye.  
**Rheostat:** adjusts the intensity of the light beam.

**Diopter power display:** shows the current lens being used.  
**On/off switch:** turns the device on and off.

- **Handle** with a rechargeable battery and a repeatedly detachable head.
- **Aperture wheel:** the aperture wheel between condenser and objective lens allows selection of different shapes or colors of illumination which including-:
  - Large aperture is used for a dilated pupil after mydriatic drops.
  - Medium aperture is the standard for a non-dilated pupil in a dark room.
  - Small aperture is for a constricted pupil in a well-lit room.
  - Slit light used to look at contour abnormalities of the cornea, lens or retina.
  - Green (red free) filter used to look closely at the vasculature.
  - Blue filter used to look for corneal abrasions or ulcers with fluorescein dye.
- **Lens wheel:** it contains lenses of different power, which rotating changes the lens and the required lens can be placed to correct any refractive error from the patient. Lens are measured in diopters and typically available in + and
- **Condensing lens:** there are two condensing lens, one on either side of the aperture dial which focus the light onto the mirror/prism.

### ❖ OPTICAL PRINCIPLE

- Convergent beam of light is reflected on to patients retina
- The emergent rays from patients retina reach the observer through the viewing hole present in the ophthalmoscope
- If the observer is not emmetropic then the correcting lenses must be interposed which are present in the ophthalmoscope



**❖ ACCESSORIES**

- A slit diaphragm allows a slit-lamp type observation of elevated retinal lesions
- A pinhole or small circle allows quick entry into small or undiluted pupil
- A half-circle diaphragm is used to reduce reflection by limiting the illumination beam. It is also helpful in the observation of certain fine retinal details that are seen best in the transitional zone between illuminated and non-illuminated retina

