

## Science and technology

The resolving power. The ability of the instrument to distinguish two close points or lines due to the wave nature of light. The numerical value of resolving power for example of a lens system depends on the ability of the designer to cope with the aberrations of the lens and carefully aligning the lenses on the same optical axis. The theoretical resolution limit of the imaging of two adjacent points is defined as the equality of the distance between their centers of radius of the first dark ring in their diffraction patterns. Increase. If an object of length  $H$  is perpendicular to the optical axis of the system and the length of its image  $H_i$  the increase in  $m$  is determined by the formula  $m = H_i / H$ . Magnification depends on focal length and relative position of lenses to Express this dependency, there are corresponding formulas. An important feature of devices for visual observation is the apparent increase in  $M$  It is determined from the ratio of size of image of an object formed on the retina of the eye by direct observation of the subject and examining it through the device. Usually visible magnification  $M$  is expressed by  $M = \tan a / \tan b$  where  $a$  is the angle under which the observer sees the object with the naked eye and  $b$  is the angle under which the observer's eye sees the subject through the device. If you wish to create a high-quality optical device should be optimized set its basic characteristics  $\square$  light resolution and magnification. It is impossible to make a good such as a telescope seeking a big visible increase and leaving a small aperture aperture. He will have a bad resolution since it is directly dependent on the aperture. Design of optical instruments are very diverse and their characteristics are dictated by the purpose specific devices. But in the incarnation any designed optical system in the finished opto-mechanical device necessary to position all the optical elements in strict accordance with the adopted scheme to securely fasten them to ensure a precise adjustment of position of moving parts to place the orifice for removing unwanted background of scattered radiation. Often required to withstand specified temperature and humidity inside the unit to minimize vibration to the normalized weight distribution to provide heat removal from lamps and other electrical accessories. The importance attached to the appearance of the device and ease of handling. Microscopes. If viewed through a positive collecting lens object located beyond the lens beyond its focal point you can see an enlarged virtual image of the subject. This lens is a simple microscope called a loupe or magnifying glass. From the diagram Fig. 1 to determine the size of the zoomed image.

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