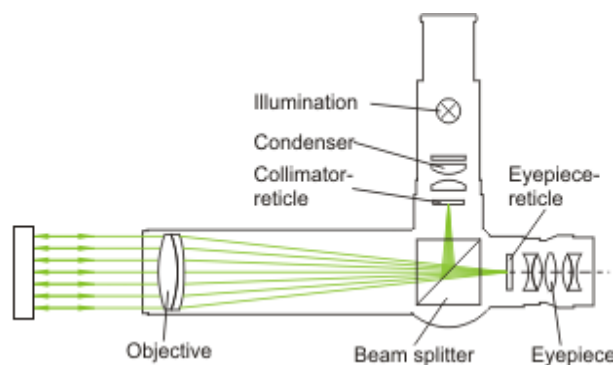


## Introduction

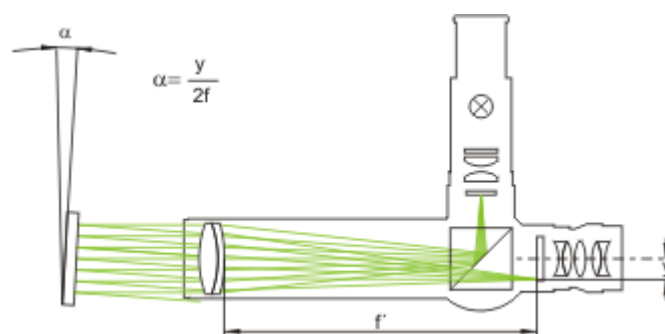
An autocollimator combines a collimator and a telescope in one instrument. The collimator reticle as well as the eyepiece (telescope) reticle are in the focal plane of the objective. The autocollimator projects the image of the collimator reticle in a parallel beam of light (collimated light) onto a mirror that retro-reflects the light bundle back into the autocollimator. An autocollimation image is formed. If the mirror is exactly perpendicular to the optical axis of the autocollimator the beam of light is reflected along the same path. When tilting the mirror the reflected beam enters into the objective at an angle.

Depending on the angle of the reflected light bundle the autocollimation image is displaced to a greater or less amount. The displacement of the autocollimation image in respect to the eyepiece reticle provides a measure of the angular displacement of the mirror.



## Autocollimators with infinity setting

Autocollimation is an optical procedure where a reticle image, which is imaged back onto itself, can be observed. Autocollimation is a sensitive procedure to detect small directional or tilt errors. It is generally used with an autocollimator set to infinity together with a plane mirror. The accuracy of this measurement method is independent on the distance between mirror/autocollimator.



## Autocollimators with tube extension (variable setting)

Autocollimators with tube extension permit the variable setting to finite and infinite distances or to wavelengths different from 546 nm. With the aid of the tube extension the position of the reticles with respect to the focal plane of the objective is changeable. As a result of that the former parallel beam converts into a convergent or divergent beam and yields a real or virtual image of the collimator reticle that can be observed in the eyepiece when placing a mirror at the image sided focal point of the objective.

Such autocollimators with tube extension can be used for measurement of long radii (convex or concave) and for testing the distance setting of optical instruments.

