

# Surgical Microscope

## Introduction

Surgical microscope is a medical equipment used for assisting the doctor during eye related surgeries i.e. keratoplasty, keratoprothotics and cataract surgery. The equipment provides magnified image of the object field according to its focal length. It comprises telescopic magnifier



and four step magnifications is achieved through use of two telescopes of desired power in direct and reverse direction. The equipment has an excellent resolution with contrast facility, uniform illumination with large working area to the eye surgeons. In addition to this, the system also gives a true stereoscopic observation, modular construction, adjustable inter papillary distance and camera attachment facility for visual display.

## Features & Specifications

- Telescopic magnifier and four steps magnification through two telescopes of desired power in direct and reverse direction results in clear visualization of the operating field so as to enhance the surgeon's view of the microscopic structures.
- The fifth step magnification is achieved by direct viewing and large working distance at relatively low magnification is maintained.
- Suitable for eye surgical applications like keratoplasty, keratoprothotics and cataract operations.
- Portable with specialized opto-mechanics in the form of a motorized focusing control by foot paddle for eye surgeries with following salient features:
  - Sufficient large working distance between operation field and Microscope.
  - A true stereoscopic observation for reliable acquisition of three-dimensional structure of the object field.
  - Good resolution with excellent contrast.

- Excellent and uniform illumination of the field of operation and also in depth of cavity.
  - Position and diameter of the Exit Pupil to portrait an easy and reliable acquisition of entire field of operation at different angles also for spectacle wearers.
  - Wide magnification ranges for rapid change over from low power to high power for detail observations.
  - Different magnifications ranges achieved using indexing objectives.
  - High and safe illumination using a fibre optical system and cold light source.
- Equipment mounting on steady rolling wheels with locking mechanism.

## Applications

The surgical microscope is primarily used for ophthalmic eye surgeries especially for the cataract operation by the ophthalmologists.

## Status

- Clinical trials with 48 surgeries.
- Technology transferred to SAP Healthcare Equipment Private Limited, Kolkata.

