# SM621 Ophthalmic Surgical Microscope

See Everything in Details · Versatile System

# Looking forward to the light

The SM621 ophthalmic surgical microscope is designed to help surgeons perform precise operations and help patients regain clear vision.

## Origin

The mission of "making diagnosis and treatment smarter" brought us, a group of business partners craze for optical imaging technology together, and MediWorks positioned itself as "connecting the medical and technical communities" and officially became an active player in the field of ophthalmology.

## A Clear Visualization

At the purpose of “saving more”, the continuous innovation in the processes of manufacturing, optical technologies, algorithms, and AI prepares us for the challenges in precision diagnosis and surgical procedures, the need for smarter products, demanding delay requirements, cloud computing, and distributed storage. These drive a clear visualization of our vision: " Stay innovative, develop precise and intelligent medical optical products, and serve global customers."

## Future Goals

The brand promise of "Details make the difference" prompted us to build our corporate image. Serving clients from more than 100 countries and regions worldwide, we are committed to meeting our customer’s growing and diverse needs. We believe there is a far-reaching ultimate purpose of innovation ahead. Together, let us create a smarter future and improve the lives of billions.

# Versatile System

## The best partner for your surgical life

MediWorks SM621 Ophthalmic surgical microscope

# See Everything in Detail

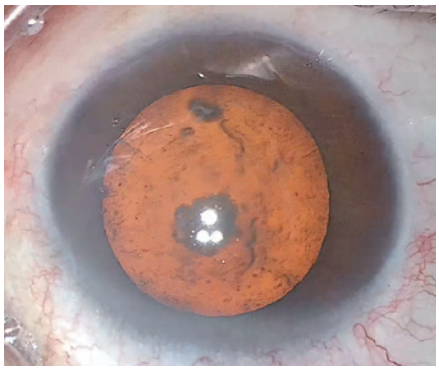
A brand-new visual experience

## Cutting-edge Optic Design

High quality optical lens with Apochromatic (APO) design and multi-layer optical coating brings high resolution and deep depth of field, enables high comfort during the surgery.

## Bright and Stable Red Reflex

Red reflex brightness adjustment is independent of the stereo illumination brightness adjustment. The red reflex produced by the uniquely designed multi-directional stereoscopic coaxial illumination allows for a more detailed view of the tissue structure, assisting the surgeon in precise surgery.

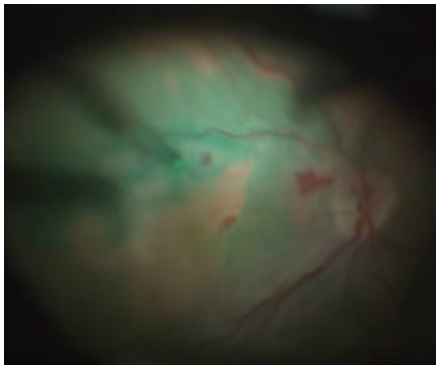


## Electromagnetic Locking System

The electromagnetic lock is flexible and precise in positioning, and its fast response speed gives doctors more control at will. The light control force makes movement and observation more convenient.

## Independent Assistant Microscope

With an independent optical path design, five magnification charger, adjustable magnification and focus independently of the primary view. Suitable for teaching or assisting in surgery.



## Motorized Zoom System

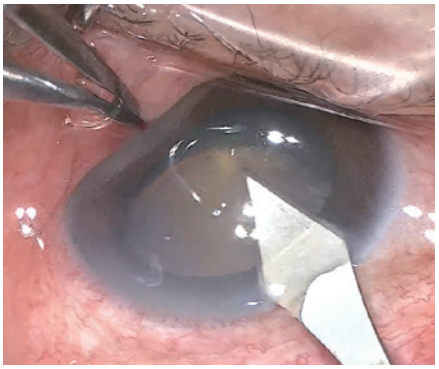
The SM621 adopts motorized ZOOM system to reduce discomfort when the field of view changes.

## Cutting-edge Optic Design · Exquisitely crafted

" Exquisitely crafted "
creates a superior surgical visual experience

### Design

The achromatic design not only corrects the chromatic aberration of red, green and blue light, but also corrects the spherical aberration of red and blue light. Thanks to the perfect correction of various aberrations, the microscope has a high resolution and better image quality. [1]

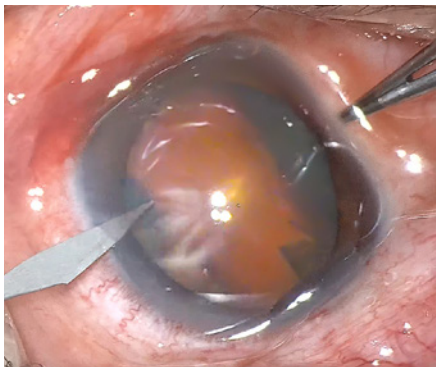


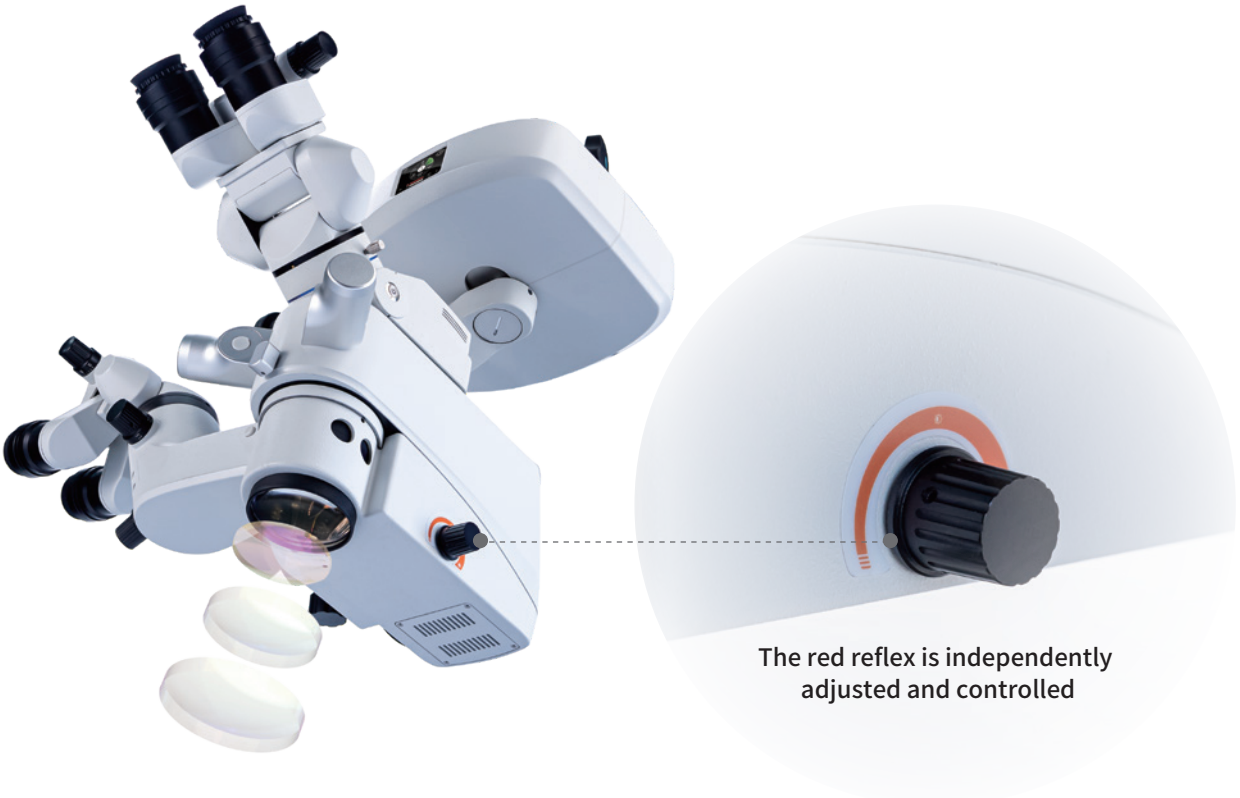
### Processing

Selected ultra-high precision optical lens groups, leading in basic processing accuracy of the lens groups in the industry. The high precision of the processing ensures the performance of the optical design.

### Bright and Stable Red Reflex

Red reflex brightness adjustment is independent of stereo illumination adjustment. The red reflex produced by the uniquely designed multi-directional stereoscopic coaxial illumination allows the surgeon to clearly see the boundaries of the capsule and the fine structure of the lens even in the weak light, thus easily performing capsulorhexis, stable aspiration of the residual cortex and steady polishing of the posterior capsule. The multi-directional red reflex easily overcomes problems such as insufficient illumination due to misalignment of the eye during surgery.

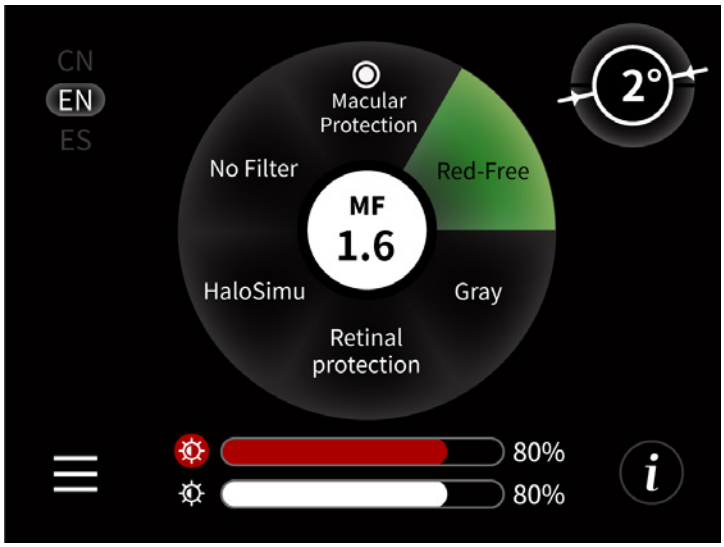


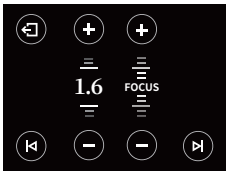


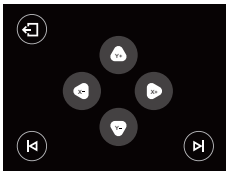
The red reflex is independently adjusted and controlled

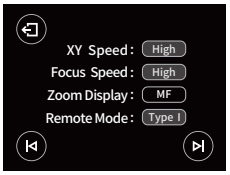

## Multifunctional display

- The parameter Settings are clear at a glance.
- Touch-screen adjustment of magnification and X-Y-Z axis.
- Supports X-Y-Z axis fine-tuning speed, ZOOM display, and foot-controller mode as you want.
- Multiple filters can be chosen.





## Rotatable coaxial independent assistant microscope

- Using the same optical path as the objective lens, the DOF is synchronized with the objective lens, and the focus can be fine-tuned separately to maintain clarity;
- Eyepiece magnification up to 26.3X provides a bright, wide and clear field of view.
- The focus of the assistant microscope is separated from that of the primary microscope and can be adjusted independently for the best view.
- In cases where frequent switching of surgical positions is required, such as temporal incision cataract surgery, simply rotate the assistant microscope to the desired side, making it easy to move and eliminating the risk of optical correction and hardware damage due to repeated installation/removal of the equipment, thus facilitating the surgery.

# Optimized design

More comprehensive, more details

## Auto Power-off Protection

The SM621 will automatically enter the powered-off state when the secondary arm is raised to a certain height. It will greatly facilitate surgeon's operation and extend the lifespan of LED.

## 360°

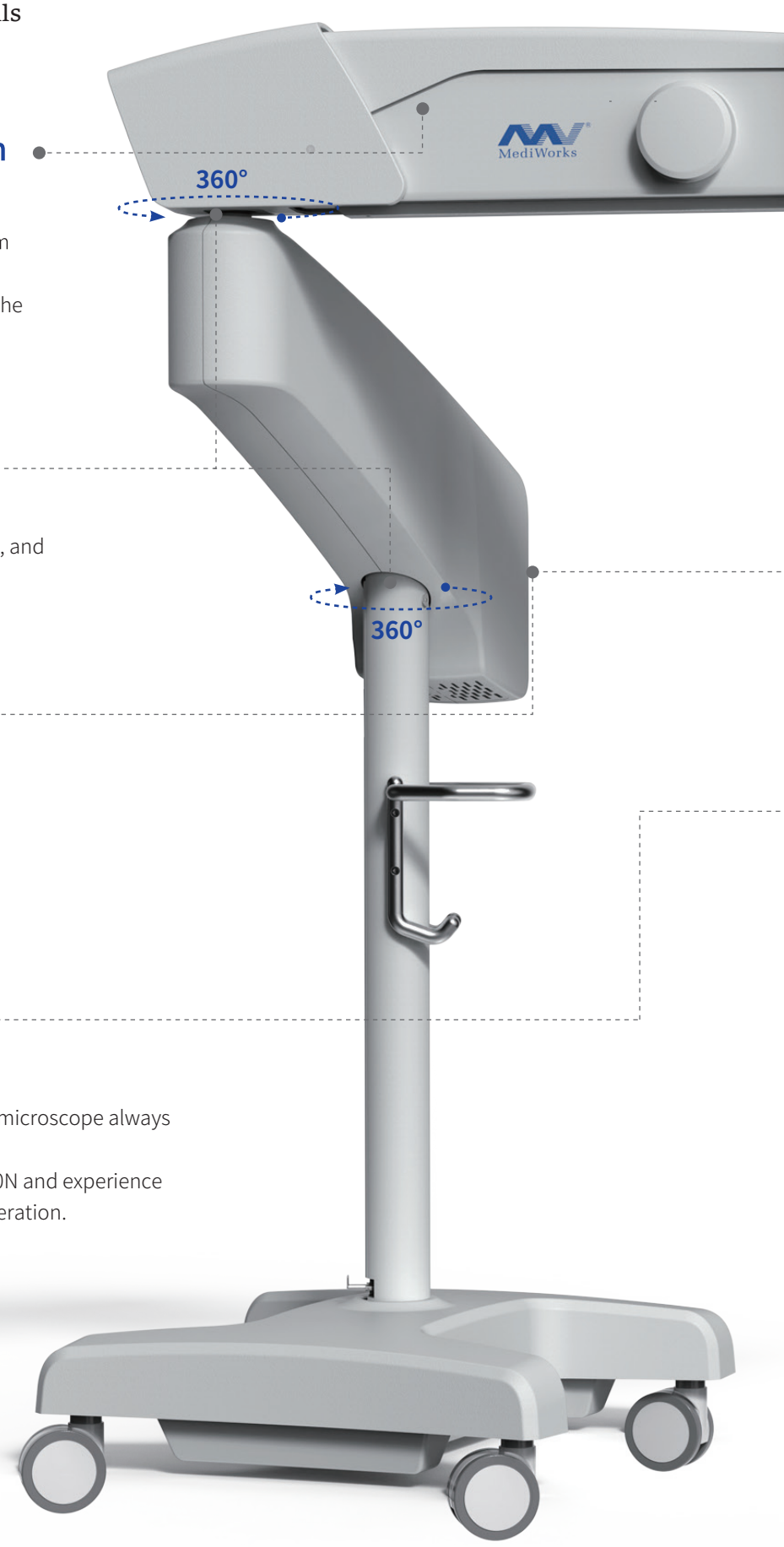
The large and small cross arms rotate 360°, and the electromagnetic lock is locked.

## Security Guarantee

Built-in backup power supply, easy bulb exchange and security lock on secondary arm ensure safe surgery.

## Electromagnetic Locking System

Hover at any position to keep the primary microscope always balanced.
Adjust the placement thrust to less than 10N and experience a brand-new, comfortable and smooth operation.
Ensure a stable surgical field of view.

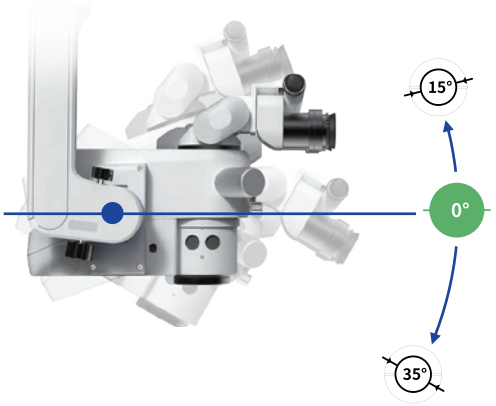


## X-Y-Z Axis Fine Adjustment

Accurate lateral and longitudinal X-Y-Z axis movements for precise positioning during surgeries.

## Adjustable Balance System

The inclination of microscope head can be easily adjusted upwards and downwards while keeping balance. The inclination degree ranged from 15° upwards to 35° downwards will be shown on the “Status Display”.




## 180°

The binocular tubes of surgeon's microscope and assistant's microscope can be smoothly adjusted from 0°to 180°.


## Foot Control Panel

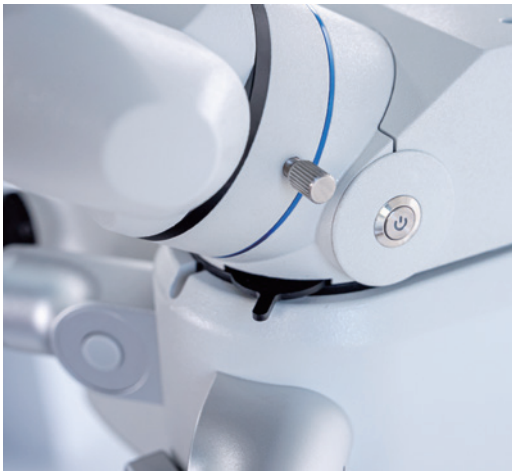
The foot control panel can totally control 14 functions of SM621, surgeons can easily adjust the light and zoom magnification,switch the filters and backup LED etc.

1. Light on/off
2. Filter switch
3. Light +
4. Light -
5. Reset XY
6. Backup LED
7. Zoom adjustment
8. Focus adjustment
9. X-Y axis movement adjustment
10. Wireless alignment indication

# 4K High Resolution Video

Optional 4K digital module with high-resolution digital output, high signal-to-noise ratio, high sensitivity;

The digital display can be independently focused. When zooming to 2.4, the both eyes can observe the image and the digital module image simultaneously clearly, making it easier to observe the posterior pole.



## Enhanced Depth of Field

Adjustable aperture, precise control of surgical positioning and details to meet the doctor's different requirements for brightness and depth of field.

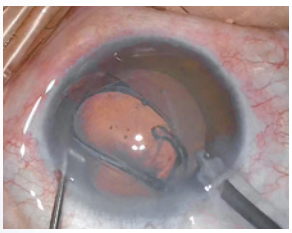
# Clinical applications

## Anterior segment surgery

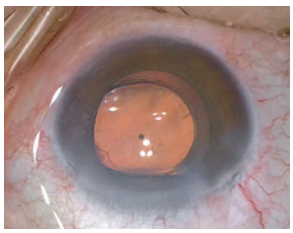
Phacoemulsification combined with intraocular lens implantation for cataract surgery, glaucoma surgery, ICL surgery, pterygium surgery, ocular trauma surgery.

## Posterior segment surgery and anterior-posterior combined surgery

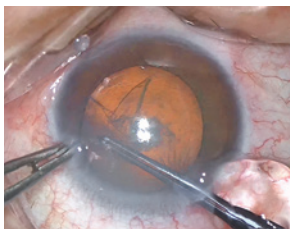
(600A/600B non-contact wide-angle fundus viewing system is required)
Retinal detachment surgery, vitreous hemorrhage surgery, proliferative diabetic retinopathy surgery, macular hole and anterior membrane surgery, ocular trauma surgery, endophthalmitis surgery, etc.



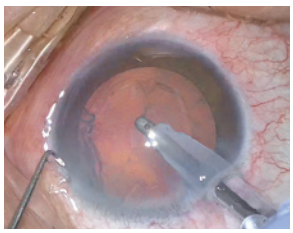
Implantation of intraocular lens



Adjustment of intraocular lens position



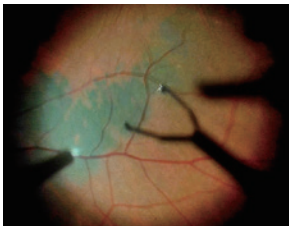
Performing capsulorhexis



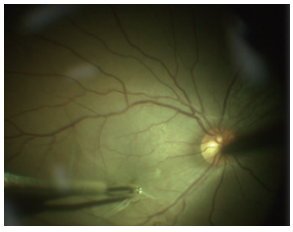
The nucleus and the residual cortex aspiration

## Observe the retina in more detail

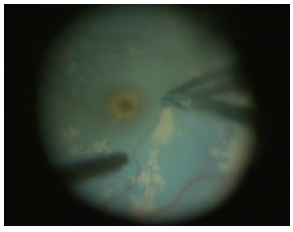
The 600B-600A non-contact wide-angle fundus viewing system provides a clear and detailed view of the retina.
The convenient and secure zoom system allows the surgeon to focus more on the area of interest. Equipped with three aspheric fundus lenses, users have more options for areas and magnification.



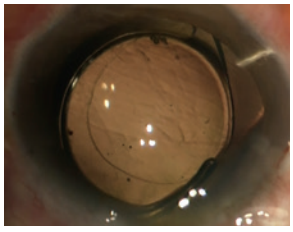
Inner limiting membrane staining



Posterior vitreous detachment



Inner limiting membrane peeling



Implantation of IOL in combined surgery

# Specifications

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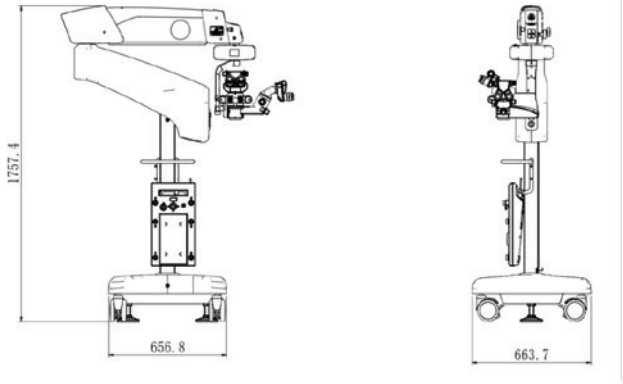
|---|---|
| **Surgical Microscope** | Motorized zoom system with apochromatic lens, zoom ratio 1 : 6 |
| | Magnification factor γ = 0.4 to 2.4 |
| | Focusing: electric, focus range: 50 mm |
| | Objective lens: f = 200 mm |
| | Binocular tube: 0 - 180°, tiltable tube f = 170 mm |
| | Wide-angle eyepiece 12.5 x |
| | Assistant microscope manual magnification change: 5 steps |
| **Illumination** | Coaxial Illumination: Red reflex and full-field illumination |
| | LED illumination |
| | One-touch automatic bulb exchange |
| | Black dot filter (macular protection) |
| | 25% gray filter |
| | Red-free filter |
| | Blue blocking filter(retinal protection) |
| | Simulated halogen filter |
| | Aperture diameter: 50 mm |
| **X-Y Coupling** | Movement range: max. 50 mm x 50 mm |
| | Automatic centering by pressing the reset button |
| **Suspension System** | Floor stand |
| | Maximum load capacity |
| | 15 kg（complete equipment, including accessories） |
| | Electromagnetic locking |
| | Maximum extension radius of spring arm 1270 mm, 360° rotation |
| | Universal casters |
| **Foot Control Panel** | 14 functions |
| **Weights and Measurements** | Microscope Weight: 200 kg |
| | Package Weight: 320 kg |
| | Microscope Dimension: 1300 mm x 664 mm x 1760 mm ( L/W/H ) |
| | Package Dimension: 1035 mm x 835 mm x 2005 mm ( L/W/H ) |




References
[1].Data on file