

**Modal Number  
HL-10 LED**



*Western Surgical*®

# **Microscope Laboratory**

## **USER MANUAL**



[www.westernsurgical.in](http://www.westernsurgical.in)

Email : [westernsurgical@gmail.com](mailto:westernsurgical@gmail.com)

Email : [info@westernsurgical.in](mailto:info@westernsurgical.in)

Ph. : +91-281-2232871 / 2243159



**Biological Microscope**  
**Model Number**  
**HL-10 LED**

**Instruction Manual**

This manual is written for lab Biological Microscope HL-10 LED For safety, exerting best performance of the instrument and making you familiar with the instrument entirely, we strongly recommend that you carefully read this manual before using the microscope.

**Thanks for using *COSLAB* Microscopy**

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## 1. APPLICATIONS:

The biological microscope [REDACTED] can be widely used in medical and sanitary establishments, laboratories, institutes, network of agricultural research, colleges and universities for clinical microscope inspections and used as instructional equipment. They also can be used in research work such as biology, bacteriology, cytology, histology and pharmaceutical chemistry.

## 2. SPECIFICATIONS:

1. Seidentopf trinocular head, 30° inclined, 360° rotatable.

### 2. EYEPIECE

Designation	Magnification	Diameter of The Field of View	Focal Length
Wide Field	WF10X	18MM	24.94MM

### 3. OBJECTIVE:

Designation	Magnification	Numerical Aperture	Working Distance
Achromatic	4X	0.10	37.5MM
	10X	0.25	7.316MM
	40X(S)	0.65	0.632MM
	100X( Oil, S)	1.25	0.198MM

### 4. TOTAL MAGNIFICATION:

Total Magnification Eyepiece \ Objective	4X	10X	40X	100X
10X	40X	100X	400X	1000X

5. Conjugate Distance: 195MM

6. Abbe Type Condenser N.A.=1.20 With an Adjustable Iris Diaphragm

7. Coarse Focusing Range: 30MM With a Coarse Focusing Stopper

8. Fine Focusing Range: 30MM, Fine Focusing Division Interval: 0.002MM

9. Double Layers Mechanical Stage 140X140MM

Specimen Shifting Range: Transversal 75MM, Longitudinal 50MM

10. LED illumination, Brightness Adjustable

## 3. STRUCTURE:

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## 1. MOUNTING

Mounting is the base of the microscope. It supports the all weight of the microscope. This mounting has four rubber foets and that makes this instrument stable.

## 2. ILLUMINATION SYSTEM

In order to make the observed specimen have enough brightness and make the resolving power of the objectives be used fully, this instrument adopt LED built-in brightness variable lamp. Turning the iris of the condenser and making the aperture of condenser suitable for the aperture of objective. The condenser is composed of two parts. One is installed on trestle. This trestle can move up and down by rack and gear. The light axis of the condenser must coincide with the light axis of this instrument. When they diverge, adjust 3 screws in the trestle of the condenser. The other is installed on the mounting.

## 3. MECHANICAL STRAGE

The mechanical stage can make the specimen move transversely and longitudinally.

## 4. EYEPIECE, OBJECTIVE AND NOSEPIECE:

The microscope imaging system is composed of eyepiece and objective. According to their magnifications, rotate the objectives into the threaded holes of the nosepiece, so that when turning the nosepiece, you can change the objectives and get the needed magnification swiftly. The nosepiece adopts precise and advanced structure. When changing the objectives, the center area of the field view always locates within the range of observing and satisfies the focusing requirement. The eyepiece tube that the eyepieces are inserted into is inclined  $30^{\circ}$  and so observing is comfortable and convenient.

## 5. COARSE AND FINE FOCUSING EQUIPMENT:

This instrument adopts coaxial coarse and fine focusing equipment. The knobs are located below the stage and so it is easy to operate. Coarse focusing range is 30mm and fine focusing range is 30mm too. There is knob beside each coarse focusing knob. Right one is used as tightness adjustment for coarse focusing knob. The other is used as coarse focusing stopper. When you see the specimen clearly, you may lock up the stopper. When you lower the stage and raise it again, the stage is at the same level. When you do not need the location, you can loose the stopper.

## 4. USAGE:

1. Rotate the objectives in sequence, according to their magnification, into the thread holes of the nosepiece. Insert the eyepieces into the inclined eyepiece tube.
2. Put the specimen on the stage. Adjust it and make the specimen in the center of the hole of the stage.
3. First use objective 10X, turn the coarse focusing knob and make the objective near specimen

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and then observe the image through eyepiece and turn the coarse focusing knob down until you can see the specimen image. After that turn the fine focusing knob until you get a sharp image. Because this instrument adopts precise and reliable nosepiece, you can always observe a clear image with different objectives.

4. Take out the lower condenser and put a plan-concave reflecting mirror and you can also observe the specimen image.

## 5. THE COMPLETE SET OF THE MICROSCOPE:

ITEMS	CONTENS	QUANTITY
1	MAIN BODY	1SET
2	EYEPIECE WF10X	2PCS
3	OBJECTIVE 4X 10X 40X 100X	1PC APIECE
4	SPARE FUSE	1PC
5	CEDAR OIL	1BOTTLE
6	OPERATION INSTRUMENT	1COPY

## 6. MAINTENCE:

1. The microscope is the same as other optical instrument. Need to be kept in cool, dry, dustless and acidless place. The instrument should be covered with dust guard after using.

2. Never disassemble the lens because they are corrected stringently. If there is stain on the lens, it can wipe out by alcohol, but you should pay attention not seep it into the inside of objectives so as not dissolve glue. Dust on the lens can be wiped away by clean brush.

3.Coarse and fine focusing equipment and nosepiece are precisely constructed and should not be dismantled without authorization.

4.When not in use, keep the objectives in the objective box and cover the eyepiece tube with eyepiece tube cover.

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<b>Date of Installation</b>	<b>Installed By</b>
<b>Model No.</b>	<b>Serial No.</b>
<b>Warranty Period</b>	
<b>Name of Doctor &amp; Address :</b>	

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**Customer Sign. With Stamps**

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**Marketed By: Western Surgical  
Sign. With Stamps**

**No Claim Warranty :**

**1) Any Defect Throughtout Power Supply**

**2) Any Physical Damage**

3) Under Warranty Standby Unit Not Provide

4) Under Warranty When Company Send Parts or Machine we Imidiat send to Buyer.

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