

## **Inverted Research Biological Microscope Type: ACUBL-I4**

### **DESCRIPTION**

ACUCAL Inverted Biological microscope is Phase Contrast Microscope for highly translucent, low-contrast and challenging specimens (e.g. living mammal cells, biological sections, biological cells bacteria, tissues culture, living tissue, fluid precipitation etc.). The phase contrast process makes low-contrast structures in specimens visible to the human eye.



ACUBL-I4 is equipped with excellent Universal Infinity System (UIS) optical system, wide field eyepieces, long working distance plan achromatic objectives and very long working distance condenser. Compact & steady main frame body is embodiment for shock resistance. The ideal ergonomics design is adopted in this unit and have easier operation & wide space. It can observe transparent and unfinished living specimen in culture bottle or culture utensil. It can be used in scientific research institutes, universities, medical treatment, agriculture and epidemic prevention, etc.

## TECHNICAL SPECIFICATION

### Main Body

- Compact & sturdy Inverted main frame Ergonomic Design, Highly rigid, Non Hinged type, vibration free Aluminium alloy casting, Robust mechanics combined with improved optical performance.
- Design supports all kinds of dishes, Flasks, Petri plates & Multi wells.

### Optical System

- LWD Universal Plan Infinity corrected Phase Contrast Optical System having Anti Fungus coated optics, anti-bacterial coated (multi-layered hard coated).
- Infinity corrected Optical system provides maximum S/N ratio and best optical performance from UV to near infrared.
- Bright Field & Phase Contrast Observation Techniques.
- Microscope Upgradable to Fluorescence.

### Observation Head: Trinocular

- Sidentopf Observation tube 30° OR 45° inclined with built in Camera Port & C-Mount Adapter.
- Light distribution: 100: 0 (100% for eyepiece) & 80 :20 (100% for trinocular head & 20% for eyepiece).
- Light distribution: 100: 0 (100% for eyepiece) & 0 :100 (100% for trinocular head) or 50:50. **Optional**
- Inter-pupillary distance from 48mm to 76mm.

### Eyepiece

- Compensating High eye point DIN Wide field 10X (paired) F.O.V. 22mm. Bright Field Br, Focusable Foc., Field of view number F.N. 22mm with rubber eyeguards, Eyepiece outer mounting barrel diameter or Inner diameter of ocular sleeve 30mm.
- Anti-fungal & Anti-reflection hard coated conforming to IS: 8275/1976 ( latest)
- Diopter adjustment facility (+5) on both eyepiece.
- High Quality & Anti mould eyepieces to get the Image of object well defined over the entire field with good contrast rendition and practically free from spurious color effects.

### Nose Piece

- Quintuple, Ball Bearing loaded, interchangeable, Precise, Positive click stops for centred alignment.
- Nosepiece provided with rubber grip for easy rotation mounted on a precision ball bearing mechanism for smooth and accurate alignment.

### Objectives: Long Working Distance Infinity Plan Achromatic or Infinity Plan Semi Apochromatic, Anti-fungus, Interchangeable & Par focal (Both for Bright Field & Phase Contrast)

- ∞ L PLAN PHASE 10X (N.A. 0.25), W.D. 10.3mm
- ∞ L PLAN PHASE 20X (N.A. 0.45), W.D. 5.8mm
- ∞ L PLAN PHASE 40X (N.A. 0.65), W.D. 5.1mm
- **Annular Phase Contrast Slider** : 10×,20×/ 40×

### Condenser

- Long Working Distance 72mm (with condenser),195mm (without condenser).
- Quickly detachable , Numerical Aperture 0.3
- Suitable for Bright field & Phase Contrast.
- Pre –centered Phase contrast slider for phase observation. for the objectives from 10-40X for faster cell culture operations.



## Mechanical Stage

- Hard coated surface, support multiple stage inserts, detachable travelling stage with right/left hand control, low position coaxial movement
- Mechanical Stage 210\*240mm, Glass Round Stage Dia. 110mm, Moving Range 128\*80mm, Moving Stage Detachable.
- Culture Dish Holder Dia.54mm
- Circular Culture Dish Dia. 65mm & 35mm(Optional)
- The lifting type micro plate Universal holder allow flexibility in using different containers, all types of plates, multiwall plates, dishes, 6/12/24/38/96mm well plates, 65mm/90mm petri plate holder, T25, T75 flasks, multi-well plate holders, Terasaki plate holder glass slide holder, 35-65 petri dish haemocytometer, specimen holders. (Optional)

## Focusing Control

- Coaxial Coarse & Fine knob for focusing system by the vertical movement of revolving nosepiece and fixed stage.
- Tension Adjustable and Limit Stopper, Coarse focus :25 mm/rev or 38 mm/rev. Fine focus: 0.2 mm/rev, Minimum Division /Precision 0.002 mm. Ergonomically designed for easy grip.

## Diascopic Illumination

- Koehler Transmitted Illumination, 6V30W Halogen Lamp or 5W/8W LED for bright field, phase contrast studies, Brightness Adjustable with lifetime < 50,000 hours. With aperture diaphragm.
- **Filter** : Frosted & Green

**Electronics** : Universal Input 100V-240 V AC, 50/60 Hz, , Fuse holder 3.15 A/250 V .

**Standard Accessories** : Operating Manual, Dust Cover, Guarantee Card and Styrofoam MoldedPack.

**Optional Accessories** : High Resolution Microscopy Camera

- ∞L PLAN PHASE 4X (N.A. 0.10), W.D. 9.2mm (**Both for Bright Field & Phase Contrast**) & **Annular Phase Contrast Slider** : 4×

**PLAN ACHROMAT / SEMI APOCHROMATIC Infinity Bright Field Objectives: (Optional)**

- ∞ PLAN 2X(N.A. 0.06), W.D. 7.2mm
- ∞L PLAN 4X(N.A. 0.11), W.D. 18.1mm,                      ∞L PLAN 10X (N.A. 0.25), W.D. 10.3mm,
- ∞L PLAN 20X(N.A. 0.45), W.D. 5.8mm,                      ∞L PLAN 40X (N.A. 0.65), W.D. 5.1mm
- ∞L PLAN 60X/0.55, WD 2.2mm

## Epi Fluorescence Illumination :

Epi fluorescence media unit ,  
field diaphragm,

100W mercury lamp or 5WLED

B, G, V, UV fluorescence filters

## Infinity Fluorescence objective :

L Plan Fluor 10X/0.3 W.D.=14.0mm,

L Plan Fluor 20X/0.45 W.D.=6.6mm,

L Plan Fluor 40X/0.65 W.D.=3.9mm



### FEATURES

Same Objective for Both Bright Field & Phase Contrast Observation

Not Necessary to Change Different Objective

- Offers high resolution images of the cells, tissue & other biological specimens.
- It is widely used in observation and cultivation for tissue culture & other life science industry for research & quality purpose.

### Condenser



### Culture Dish Holder

			
Ø65mm im	Ø54mm	Ø35mm	blood cell counter
			
Universal Holder		Glass Holder	

**ACUCAL SERVICES**  
901A/6 , Ashok Vihar  
Ambala City-134003  
Web: [www.acucalservices.com](http://www.acucalservices.com)

