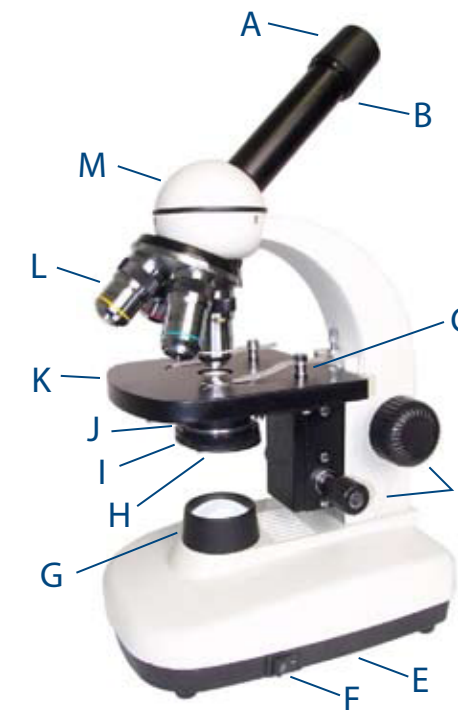


Standard Observer Specifications

Observer Model	II	III	IV
Construction			
Heavy cast alloy	x	x	x
Acid and Reagent resistant finish	x	x	x
Head			
Monocular	Monocular	Monocular	Monocular
Rotates 360°	x	x	x
10x/18 wide field eyepiece	1	1	1
Inclined tube	45°	45°	45°
Eye pointer installed	x	x	x
Objectives			
No. pieces	3	3	4
No. pieces	Triple	Quadruple	Quadruple
Achromatic 4X, 10X, 40X and 100X (oil)	No 100x	No 100x	x
Parfocal and parcentric	x	x	x
Color coded	x	x	x
Illumination			
Condenser	Fixed	Movable	Movable
Diaphragm	NA 0.65	Abbe, NA 1.25	Abbe NA 1.25
Swing-out filter holder	Disk	Iris	Iris
Light bulb (standard)	N/A	x	x
110 volt (220 available)	7W Fluor.	7W Fluor.	7W Fluor.
Mirror illuminator included	x	x	x
Stage			
Stage size 122mm x 120mm	x	x	x
Spring-loaded retractable mounts	x	x	x
Pre-drilled and tapped for mechanical stage	x	x	x
Mechanical stage available	x	x	x
Adjustment Controls			
Focus	Separate	Separate	Separate
Adjustable stage stop	Coarse & Fine	Coarse & Fine	Coarse & Fine
	x	x	x
Dimensions & Weight			
Height 14"	x	x	x
Length 7.7"	x	x	x
Width 5.5"	x	x	x
Weight	6.9 lbs.	6.9 lbs.	7.0 lbs.



Model pictured:
Observer IV (OBM-M04A-DAF1)
Not all features available on all models - see back page for model specifications.



- A Eyepiece
- B Eyepiece Retention Screw
- C Stage Clips
- D Coarse & Fine Focus
- E Fuse-located in base
- F On/Off Switch
- G Illumination
- H Filter Holder
- I Iris/Disk Diaphragm
- J Abbe Condenser
- K Stage
- L Objectives
- M Head

Introduction

Loaded with the most popular features, the Observer Microscope is the ideal choice for students, serious hobbyists, and even medical professionals. We offer a number of different variations of the Observer in order to meet the needs of all of our customers.



Soft Carry Case



Mechanical Stage



Teaching Heads

Recommended Upgrades:



Unpacking and Setup

Your microscope is packaged with utmost care. The unit is first packed in a form-fitting molded Styrofoam container. This container is then repackaged in a sturdy cardboard box for shipping.

Note: Examine the outer and inner containers for any visual damage. Retain all of the packing material. If there is damage, please contact the shipping company, as our warranty does not cover shipping damage. If you are uncertain who the shipping company was, contact the distributor where you purchased this microscope. Carefully unpack your microscope, using the following checklist for all the parts and accessories:

1-Microscope Body	1-Mirror Attachment
1-10x eyepiece (2 for the binocular version)	2-Fuses
3-Objectives (Observer IID, III): 4x, 10x, 40x	1-Dust cover
4-Objectives (Observer IV): 4x, 10x, 40x, 100x oil objective	1-Warranty card
2-Filters: green and blue (not Observer IID)	

****Note - Some parts may be packed in the outer recesses of the styrofoam blocks**

Assembly

Note: If your microscope has been exposed to cold weather, please allow time for all the parts to come to room temperature before operation or assembly. Excess cold can fog the lenses and cause the lamp to fail. Remember to save all packing materials.

- 1 Remove the plastic plug from the eyepiece tube. Next, slide the 10x eyepiece into the eyepiece tube. It should slide in easily. Using a very small flathead screwdriver, gently tighten the small screw beneath the eye tube. This screw merely keeps the eyepiece from falling out and should not be tightened to where the eyepiece cannot rotate. Simply tighten so that the eyepiece can no longer be pulled out of the tube.
- 2 Plug the power cord into the appropriate AC outlet and turn your microscope on using the on/off rocker switch on the side of the microscope. All units equipped with a fluorescent bulb will take a few seconds to come on.
- 3 To acquaint yourself with the controls, choose a specimen slide with which you are familiar, such as a prepared commercial slide. Place the slide under the stage clips or onto the mechanical stage, depending upon which model you ordered. If you have a mechanical stage, allow the slide holder "finger" to gently hold the slide in place. Note: Do not allow the slide holder to "snap-back" against the slide. This could cause the slide to chip or shatter.
- 4 Move the slide to the center of the stage and adjust the iris/disk diaphragm (under the stage) to the brightest setting. Iris Diaphragm: The brightest setting is obtained by moving the iris control to the left, or counter-clockwise, until the iris is fully opened. Disk Diaphragm: The brightest setting will be the one with the largest diameter hole.
- 5 Once you are comfortably seated, turn the nosepiece to the 4x objective and look into the ocular (eyepiece).
- 6 Using the coarse and fine adjustment knobs, bring the specimen into focus. Now, move the 10x objective into place. You will feel a "clicking" action when the objective is seated properly. Again, focus for the best image. You will now be in the middle of the focus range. You may have to adjust the diaphragm for the best contrast.

Lamp Replacement

- 1 If you ordered the MOBI, LED light source, it should be delivered with a relatively full charge. When the light becomes noticeably dimmer, it is time to recharge.
- 2 Plug the charger into an appropriate wall outlet and plug into the plug on the back of the unit. A red LED will illuminate on the front of the unit signifying a low charge. When the unit is partially charged a red and green LED will be illuminated. When the unit has a full charge (within 8 hours), only the green LED will be lit.
- 3 The battery pack should last approximately 8 hours with all 4 LEDs illuminated and about 40 hours with only one.

****Note** the "Blast" button on the base allows you to change between one LED and four.

Using the 100x Oil Objective (Observer IV)

The highest magnification can be attained using the 100x oil-immersion objective. Use only oil specifically made for an oil immersion lens. (Poor images will result if the 100x objective is used dry.)

First focus on the target spot using a lower magnification dry objective. Lower the stage, and on the coverslip place a drop of immersion oil over the target. Rotate the 100x oil objective into place. Now slowly bring up the stage, watching the objective from the side. Stop the stage after the objective has made contact with the oil. Look into the microscope only after the objective has made contact with the oil. Focus carefully using the fine focus adjustment and small, precise movements until you get a sharp image.

Cleaning up: Being careful not to apply pressure to the lens, thoroughly wipe off the objective using lens paper or a clean linen cloth. Dampen the paper or an unused portion of the cloth with a small amount of lens cleaning solution and use this to remove the rest of the oil from the objective. (Lens cleaning solution and lens paper can be obtained inexpensively at camera or eyeglass stores.) Lastly, wipe off everything using lens paper or a clean, dry linen cloth. Check to see that the objective lens is completely clean. The coverslip may also be cleaned using lens cleaning solution.

Lamp Replacement

Caution: Unplug the microscope before attempting to replace the lamp.
Note: You will need a flathead and a Phillips screwdriver. The halogen light source has a hinged bulb door on the base for easy access.

- 1 Turn the microscope on its side. Remove the four screws inside the four rubber feet. Your unit may have a fifth screw (ground) which will also need to be removed. Then, gently remove the base.
- 2 Fluorescent Units (110v/7w G23 fluorescent bulb): Being careful not to come in contact with the surrounding electrical components, grasp the base of the fluorescent lamp and gently slide/wiggle it out. Insert the new lamp. Tungsten Units (110v/20w Bayonet mount tungsten bulb): Being careful not to come in contact with the surrounding electrical components, grasp the tungsten bulb and remove by pushing in and twisting counter-clockwise. Install the new bulb by firmly pressing in and twisting clockwise. This will lock the new bulb in place. Halogen Units (6v/15w G-4 JC halogen bulb): When handling a new quartz lamp, be careful not to touch the new lamp with your fingers. Oil and sweat on the bulb may cause it to explode or shatter as it heats up. Gently pull out and discard the old bulb. Using a lint-free tissue or piece of cloth, install the new lamp, pushing with a gentle left/right rocking motion. Close the lamp compartment door and fasten the latch. MOBI/LED Units: If an LED bulb burns out, contact LW Scientific for assistance.
- 3 Replace the base and return the microscope to the upright position. To purchase a replacement bulb, you may contact your local home improvement or lighting store, your microscope dealer, or LW Scientific.

Maintenance

- 1 Use lens paper or a cotton swab dipped in lens cleaning solution to clean the lenses.
Excess fluids should be cleaned off at once. An alcohol pad is best for removing oil from the stage and the other metal parts, but is not recommended for use on the lenses. Dust in the nosepiece, or in the ocular tube, should be blown out using only filtered air (canned air dusters work well).
- 2 Whenever you remove an objective to clean it, we recommend you replace it as soon as you are finished cleaning. This will minimize the exposure of the interior of the microscope to foreign debris.
- 3 To keep your microscope in top condition for years, it is recommended that you have it professionally serviced once a year.
- 4 Warning for Observer IV owners: The 40x objective is not sealed for oil immersion. Damage to the 40x objective due to oil immersion is not covered under warranty.
- 6 Always cover your microscope with the dust cover when it is not being used.

