



**ken-a-vision®**  
KNOWLEDGE THROUGH VISION

## **Comparison Scope 2**

Instruction Manual  
T-19241C

T-19241C-230

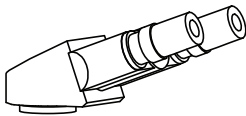
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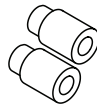
# Introduction

Thank you for purchasing the Comparison Scope 2. This is the perfect classroom microscope for forensics and comparative sciences with the ability to compare two sides, side-by-side. The microscope has upper (incident) and lower (transmitted) LED light to view microorganisms separately in a full-field or together in a split screen with high-quality optics that will magnify 20-400 times and independent coaxial focusing on each microscope base.

# Packing Contents



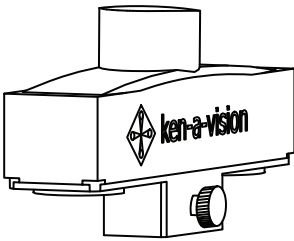
Binocular Head



2 Eyepieces



Allen Wrench



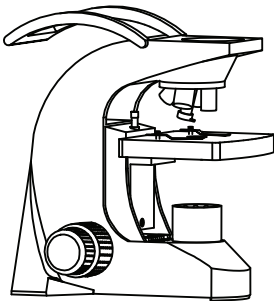
Bridge



Instruction Manual



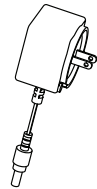
Warranty Sheet



2 Microscope Bases



Microscope Cover



Power Supply

## Microscope Set-up Guide

The Comparison Scope 2 compound microscope can be set up in a matter of minutes. To get the most out of this amazing teaching tool, follow these step-by-step instructions:

1. Remove each microscope base from the package.
2. Remove the plastic bag and plastic coverings from the objective lenses and eyepieces.
3. Place each microscope, with the arms of the microscopes toward the back, on a flat, firm surface with the “L” microscope on your left and the “R” microscope on your right.

**NOTE:** The serial numbers are located on the bottom base, designated with an L (left base) or R (right base).

4. Remove the bridge assembly and Seidentopf binocular head.
5. At the top of the head socket of each microscope base, find three screw holes.
6. Remove the “safety screws” in each hole using a small screwdriver.
7. Underneath the “safety screws” there are set screws.
8. Using the provided small Allen wrench, turn counterclockwise two or three full turns, until flush with the inside rim of the head socket.

**NOTE:** The points of these screws are initially visible, turn the screws until they disappear.

9. Place the bridge onto the two microscope bases with the Ken-A-Vision logo facing towards you.
10. Tighten the set screws so the bridge is locked tight, and return the safety screws over the set screws to prevent tampering.
11. Remove the dust cover from the bridge assembly head socket and turn the set screw on the right side counter clockwise until the screw tip is flush with the wall of the head socket.
12. Place the Seidentopf binocular head into the socket, sliding in from the right, until it is flush in the socket opening. Tighten the set screw.
13. Insert the eyepieces into the eyetube bodies.

14. Check the coarse focus knob on either side of the main body support of each microscope. The coarse focus knobs should turn easily.

**NOTE:** The stage should move freely up and down the main body support when focusing. When you release the knob, the stage should remain stationary, and not slide down the post on its own.

15. To operate the cordless feature of this microscope, immediately plug in each microscope base to charge for eight (8) hours.
  - a. Plug in the two (2) round pin adapters from the power supply to the back of each microscope.
  - b. Connect the opposite end to a Ken-A-Vision multicharger (Part # SCGN061) or an 110V (220V international) electrical outlet.

**NOTE:** With one eight (8) hour charge, you can use the microscope for up to forty (40) hours of continuous operation. The cordless microscope can also be operated with the cord plugged into a power source.

- c. When not in use, plug the microscope into a Ken-A-Vision multicharger that will automatically stop charging once the microscope is fully charged to keep it at the optimal full charge for longer battery life.
  - d. Should you need a replacement power supply/charger, or new specialized, rechargeable batteries (Part # VFBATBU5), contact your nearest Ken-A-Vision dealer.
16. To turn on the LED lights, locate the power switch on the right back side of each microscope base.

**NOTE:** The switch on each base is a double switch, with the middle position being OFF.

17. Pushing the right side of the power switch controls the bottom (transmitted) light for viewing microscopic specimens.
18. Pushing the left side switch controls the upper (incident) light for viewing opaque microorganisms.
19. The X-axis knob located below the Seidentopf binocular head is set for split screen viewing.

**NOTE:** If you roll the X-axis knob, you can view the left side microscope separately and roll the opposite way to view the right side microscope separately.

# Specifications

Head	Eyepieces	2 – WF10x 19mm eyepiece with built-in coating for humidity and poor climate; 1 with pointer; all fixed to avoid loss and damage
	Eyepiece Tubes	1 – Variable adjustment $\pm 0.20x$ for varied eye strengths.
	Binocular Seidentöpf Head	30° Angle 360° rotation head with 2 eyepieces
Frame	Aluminum Single Cast body	“Y” shape base for ideal research application
	<b>Integrated Stow and Go Handle™</b>	Retractable Handle for transport are integrated into the body of the unit.
	<b>Integrated storage compartment</b>	Storage compartment with built-in receptacle for the external power supply
	<b>“Table Guard” protection base</b>	Base outlined with resilient polymer to avoid daily damage to the Microscope or the surrounding surfaces
	<b>Illumination</b>	Ken-A-Vision LED cool lighting source with very long life (12,000+ hours), on/off switch, and dimmer rheostat. On/off switch and dimmer are separate, dimmer rheostat is low position light control
	<b>Upper Illuminator</b>	Upper light for Opaque and multi-dimensional specimens
	<b>Power</b>	Low voltage external power supply 120 ~ 240V $\pm 00mA$ (stored in frame) detachable
Optics	Nose Piece	Reversed 4 hole nose piece with 4 position ball bearing action stop, 360 full rotation
	Objectives	4 – lead free, humidity and climate protected by special coating; manufactured according to DIN: Achromat 2x N.A. 0.05, Achromat 4x N.A. 0.10, Achromat 10x N.A. 0.25, Achromat 40x N.A. 0.65 (with built-in spring action tip to avoid crushing of specimen).
Stage	Floating Stage w/Side Clips	12cm x 12 cm x .7cm modular attachment to frame 2 spring loaded clips for slides
	Focus	Low position coaxial focus with left or right hand low drive control; with rotating mechanism and torque adjustment 1 coarse rotation from minimum to maximum stage height. Fine 0.002mm per unit scale mechanism, rubber grips on both fine and coarse focus knobs; Fine focusing scale value 0.002mm
Optional upgrades	Eyepiece	WF 16x, WF 20x
	Achromatic Objective	20x, 60x(S), 100x(S) Oil
	Plan Objective	4x, 10x, 20x, 40x(S), 60x(S), 100x(S) Oil
	Semi-Plan Objective	4x, 10x, 20x, 40x(S), 60x(S), 100x(S) Oil
	Illumination	Halogen bulb 6v/20W, Adjustable Brightness
Packing	Boxing	Four inner cartons in one outer carton
	Protective Cover	Durable Clear Dust cover with Ken-A-Vision logo
Certificates	Patents	Multiple Patents Pending
	Quality Certificates	ISO:9001--2000
	Local Certificates	CE, CSA, RoHS
	Warranty Guarantee	10 Years against manufacturing faults

## Troubleshooting

This section provides many useful tips on how to solve common problems while setting up or using the Comparison Scope 2:

I can't see an image. I only see a partial image.

- Check to see if the power supply is plugged into an electrical outlet or the battery is charged if using cordless.
- Check to see if the LED lights are turned on by switching the power button on the back of each microscope, right or left. A red indicator light should glow if the LED lights are on.
- Check to see if the objective lens is clicked into place.
- Adjust the amount of light controlled by the dimmer switch (rheostat). Turn clockwise to increase the intensity of light and counterclockwise to decrease.

It is difficult to get an image in focus.

- Adjust the coarse focus knobs slowly.
- Check to see if the objective lens is clicked into place.
- Check to see if there has been damage to the objective lenses or eyepieces. If the lens/eyepiece is dirty, use lens paper and distilled water to rub gently clean.

**NOTE:** Never rub the lens/eyepiece when it's dry. This can cause static charge that will attract dirt.



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