



**ken-a-vision**<sup>®</sup>  
KNOWLEDGE THROUGH VISION

## Comprehensive Scope 2

Instruction Manual

T-19011C

T-19011C-230

T-19012C

T-19012C-230

T-19021C

T-19021C-230

T-19022C

T-19022C-230

T-19031C

T-19031C-230

T-19041C

T-19041C-230

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## Introduction

Thank you for purchasing the Comprehensive Scope 2. This compound microscope series is a high-quality, versatile design for entry level to advanced science courses. The Comprehensive Scope 2 line each comes with these key features: coaxial focusing, an adjustable light dimmer (rheostat), a built-in carrying handle, and a secure storage compartment for the battery charger/power cord. This series allows users to view microscopic specimens under our high-quality objective lenses that will magnify 40-1000 times with the option of having interchangeable viewing heads, a mechanical stage, and an Abbè condenser with an iris diaphragm. The Comprehensive Scope 2 is ideal for the classroom and field use.

## Packing Contents



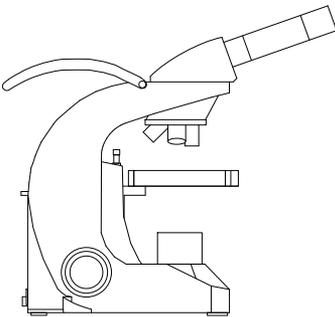
Instruction Manual



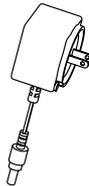
Warranty Sheet



Microscope Cover



Comprehensive Scope 2 Microscope



Power Supply



Allen Wrench

## Microscope Set-up Guide

The Comprehensive 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. After unpacking the box, remove the Comprehensive Scope 2 from the plastic bag and remove the protective coverings from the objective lenses and the eyepiece(s).
2. Place the microscope on a flat, firm surface.
3. Check the coarse focus knob on either side of the main body support. 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.

4. To operate the cordless feature of this microscope, immediately plug in the microscope to charge for eight (8) hours.
  - a. Plug in the round pin adapter from the power supply to the back of your 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. This prevents overcharging and the user can charge up to eight (8) microscopes at once.
- d. Should you need a replacement power supply/charger, or new specialized rechargeable batteries (Part # VFBATBU5), contact your nearest Ken-A-Vision dealer.

### **T-19011C/T-19011C-230**

The monocular Comprehensive Scope 2 compound microscope with COOL LIGHT™ illumination allows for viewing microscopic specimens through a 10x wide-field eyepiece with 4x, 10x, and 40x(S) DIN Plan Achromat objective lenses on a square, fixed-plain stage with a 5-hole disk diaphragm, spring-loaded stage clips, and an adjustable light dimmer (rheostat).

### **T-19012C/T-19012C-230**

The monocular Comprehensive Scope 2 compound microscope is the same as the T-19011C monocular above, except that there is a 4-hole nosepiece that includes a 100x(S) oil immersion objective lens, a mechanical stage with spring-loaded stage clips, and an Abbè condenser with iris diaphragm.

### **T-19021C/T-19021C-230**

The dual viewing head Comprehensive Scope 2 compound microscope with COOL LIGHT™ illumination allows two people to look at a microscopic specimen through two (2)-10x wide-field eyepieces at the same time or connect a camera to one eyepiece to display on an interactive white board/projector/computer. One eyepiece has a diopter, so the second user can adjust the ring to focus his/her eye, allowing for the differences in vision between two users. This microscope allows for viewing microscopic specimens through 4x, 10x, and 40x(S) DIN Plan Achromat objective lenses on a square, fixed-plain stage with a 5-hole disk diaphragm, spring-loaded stage clips, and an adjustable light dimmer (rheostat).

### **T-19022C/T-19022C-230**

The dual viewing head Comprehensive Scope 2 compound microscope is the same as the T-19021C dual view, except that there is a 4-hole nosepiece that includes a 100x(S) oil immersion objective lens, a mechanical stage with spring-loaded stage clips, and an Abbè condenser with iris diaphragm.

### **T-19031C/T-19031C-230**

The Seidentopf binocular Comprehensive Scope 2 compound microscope with COOL LIGHT™ illumination allows for viewing microscopic specimens with both eyes and to adjust for interpupillary distance with the two (2)-10x wide-field eyepieces at 4x, 10x, 40x (S), and 100x (S) DIN Plan Achromat objective lenses on a mechanical stage with spring-loaded stage clips, an Abbè condenser with iris diaphragm, and an adjustable light dimmer (rheostat). The eyepieces will move to exactly match the interpupillary distance between the user's eyes. The left eyepiece has a diopter to allow the user to focus the left eye once the right eyepiece is in focus. Adjusting the diopter allows for the difference in vision between the users two eyes.

### **T-19041C/T-19041C-230**

The Seidentopf trinocular Comprehensive Scope 2 compound microscope is the same as the T-19031C Seidentopf binocular above, except that behind the binocular head, an eyepiece tube is added to provide another user or camera to view the microscopic specimen.

# Specifications

Product Number		T-19011C	T-19021C	T-19031C
Stand/Frame				
SC12	Comp 2 Stand with 4 hole nose piece	X	X	X
SC12M	Comp 2 Mechanical Stage			X
SC12DP	Comp 2 4 hole NP w/ upper/lower light			
Standard Features				
	Charger Storage Compartment	X	X	X
	Stow and Go Handle™	X	X	X
	Green Battery™	X	X	X
	Cordless Rechargeable	X	X	X
	COOL LIGHT™ illumination	X	X	X
	Increased Range of Focus			
	UPPER LIGHT STALK			
Heads				
SC12MH	Comp 2 Monocular Head with eyepiece	X		
SC12DH	Comp 2 Dual View Head with 2 eyepieces		X	
SC12BH	Comp 2 Binocular Head with 2 eyepieces			X
SC12TH	Comp 2 Trinocular Head with 2 eyepieces			
SC12CMH	Comp 2 Monocular with 3.2MP Camera			
SC12CBH	Comp 2 Binocular Head with 3.2MP Camera			
Stage				
SC12FS	Comp 2 Floating Stage with built in Condensor			
SC12MS	Comp 2 Mechanical Stage with Built in Abbe			X
SC12SS	Comp 2 Standard Stage with 5 Hole Disc Diaphragm	X	X	
Eyepieces				
SC12EP5	5X			
SC100EP10-19	10X	X	X	X
SC12EP16	16X			
SC12EP20	20X			
Objectives				
<b>SC12OB2</b>	2X Plan DIN Achromat			
SC12OB4	4X Plan DIN Achromat	X	X	X
SC12OB10	10X Plan DIN Achromat	X	X	X
SC12OB40R	40X Plan DIN Achromat 0.65NA	X	X	X
SC12OB100R	100X DIN Achromat			X
Optional				
T-12UG	Comp 2 Mechanical Stage w/ Abbe and 100X DIN Achromat Objective			
SC12OB4P	4X Plan			
SC12OB10P	10X Plan			
SC12OB20P	20X Plan			
SC12OB40RP	40X Plan			
SC12OB60RP	60X Plan			
SC12OB100RP	100X Plan			
SC12CMH	Monocular Camera Head			
SC12CBH	Binocular Camera Head			

Product Number		T-19041C	T-19012C	T-19022C
Stand/Frame				
SC12	Comp 2 Stand with 4 hole nose piece	X		
SC12M	Comp 2 Mechanical Stage	X	X	X
SC12DP	Comp 2 4 hole NP w/ upper/lower light			
Standard Features				
	Charger Storage Compartment	X	X	X
	Stow and Go Handle™	X	X	X
	Green Battery™	X	X	X
	Cordless Rechargeable	X	X	X
	COOL LIGHT™ illumination	X	X	X
	Increased Range of Focus			
	UPPER LIGHT STALK			
Heads				
SC12MH	Comp 2 Monocular Head with eyepiece		X	
SC12DH	Comp 2 Dual View Head with 2 eyepieces			X
SC12BH	Comp 2 Binocular Head with 2 eyepieces			
SC12TH	Comp 2 Trinocular Head with 2 eyepieces	X		
SC12CMH	Comp 2 Monocular with 3.2MP Camera			
SC12CBH	Comp 2 Binocular Head with 3.2MP Camera			
Stage				
SC12FS	Comp 2 Floating Stage with built in Condensor			
SC12MS	Comp 2 Mechanical Stage with Built in Abbe	X	X	X
SC12SS	Comp 2 Standard Stage with 5 Hole Disc Diaphragm			
Eyepieces				
SC12EP5	5X			
SC100EP10-19	10X	X	X	X
SC12EP16	16X			
SC12EP20	20X			
Objectives				
<b>SC12OB2</b>	2X Plan DIN Achromat			
SC12OB4	4X Plan DIN Achromat	X	X	X
SC12OB10	10X Plan DIN Achromat	X	X	X
SC12OB40R	40X Plan DIN Achromat 0.65NA	X	X	X
SC12OB100R	100X DIN Achromat	X	X	X
Optional				
T-12UG	Comp 2 Mechanical Stage w/ Abbe and 100X DIN Achromat Objective			
SC12OB4P	4X Plan			
SC12OB10P	10X Plan			
SC12OB20P	20X Plan			
SC12OB40RP	40X Plan			
SC12OB60RP	60X Plan			
SC12OB100RP	100X Plan			
SC12CMH	Monocular Camera Head			
SC12CBH	Binocular Camera Head			

## Troubleshooting

This section provides many useful tips on how to solve common problems while setting up or using the Comprehensive 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 the microscope. 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 disc/iris diaphragm, located underneath the stage, to control the amount of light illuminating the prepared slide.
- Check to see if the dimmer switch (rheostat) is turned clockwise to allow the intensity of light to increase.

It is difficult to get an image to 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 and eyepiece(s). 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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