ken-a-vision®

KNOWLEDGE THROUGH VISION

kena®

Instruction Manual
T-1050

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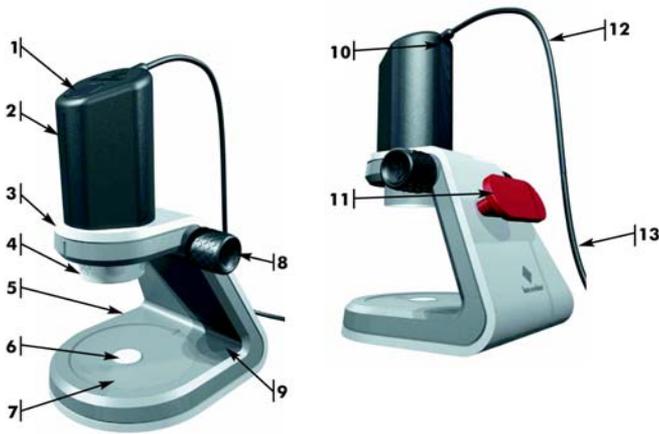
Introduction / Diagram

The kena® Digital Microscope is a durable product created by Ken-A-Vision, with over 65 years of experience incorporated into every product shipped. Thank you for purchasing the finest educational tool for your classroom viewing!

Please review the diagram and the list of items contained in this package.

Diagram

1. Capture Button

2. **Camera Head**

3. **Base Unit**

4. Turret (Objective Lenses: 2x, 4x, 10x and Upper LED Light - Incident Light)

5. Battery Door

6. Center Lower Light (Transmitted Light)

7. Silicone Stage Pad

8. Focus Knob

9. Lower LED Light Button

10. Upper LED Light Button

11. Red Handle & Cable Wrap

12. USB Cable

13. To USB Plug

Note: 4 AA batteries are needed for the bottom light. Batteries are not included in the package.

Package Contents
- Instruction Manual
- Warranty Card
- Storage Bag
- Hardware
  - o Base Unit
  - o Camera Head with Factory-installed USB Cable
  - o Touch Tube Device
- CD
  - o Applied Vision™ 4 (AV4) Software
  - o AV4 Software Instruction Manual

Applied Vision™ 4 (AV4) Software: A user-friendly, classroom software featuring Digital Zoom, Easy Document Orientation, Drawing & Annotation Tools, Image Comparison and Rotation, and Multiple Camera Support. AV4 is designed to work on Windows 7, Vista, Windows XP SP2 (or higher); Macintosh, and Linux operating systems.

Operational Requirements
- Computer with a USB 2.0 connection (or higher)
- Windows 7, Vista, XP SP2 (or higher); Mac OSX 10.5(or higher) or Linux Operating Systems
- 512MB RAM
- 4 AA batteries (not included)

Optional Accessories to Order
- USB Extender Cable (VVC16USB)
- Slide Micrometer (SCSMVE)
- Additional Touch Tube Device (SC20TUBE)

Interactive Whiteboard Interface Compatibility
kena can easily be interfaced to an Interactive Whiteboard (IWB) or Tablet. kena is compatible with IWB software in addition to the included Applied Vision 4 software.

Specifications

Features:

Resolution:	640(H) X 480(V) (adjustable in software)
Magnification:	Camera = 10x equivalent lens Objectives = 2x, 4x and 10x
Focusing:	Single combined coarse and fine adjustment knobs
Lighting:	Ken-A-Vision® Cool Lighting (LED), above and below stage
Stage:	Silicone surface (slides stay in place, no stage clips needed)
Size & Weight:	7.0" X 6.0" X 8.0" (min/max) 17.8cm X 15.2cm X 20.3cm / 29.2cm (min/max) 3.2 lbs; 1.5 kgs
Warranty:	1 Year

Quick Start Guide

It's as simple as 1, 2, 3 to begin using your new kena® digital microscope! Although this guide will get you up and running, it is recommended you read the complete manual.

1. Install the Software

Close all windows or other programs before running the installation program.

Insert the included CD labeled AV4 into the computer's CD/DVD drive to begin the auto installation program.

Click on "Install Applied Vision 4". The installation process progresses through a series of screens. Click "Next" as each of the different windows appear. Click "Finish".

The icon has been installed on the desktop:

NOTE: kena® does not require any drivers to operate and will work with other viewing programs.

NOTE: At any time, to download most current "up-to-date" release of AV4, visit our website at: www.ken-a-vision.com   Click "Support", click "Software Downloads", select the appropriate link and download to your computer in minutes.

2. Turn on kena

Turn kena on by inserting the USB plug into the computer USB drive. The computer may indicate it recognizes a new hardware device. kena will remain on until it is unplugged from the USB port.

3. Launch AV4 Software

Click on the Applied Vision icon. kena automatically turns on and the software displays on the computer screen.

To turn on the upper light located near the top of the camera head, press the silver upper LED light button just below the USB cable.

Begin using kena! Place an object to view on the silicone stage pad and turn the focus knob to bring it in focus.

NOTE: Viewing transparent specimens requires installing 4 AA batteries (not included) for lower light illumination (transmitted light). To install the batteries, open the door on the left side of the base unit and insert the batteries. Close the battery door. Once the batteries are installed, press the silver lower LED light button located on the right side of the base unit.

kena is now up and running. To turn kena off, simply exit the program and the camera will shut off. You do not need to unplug your camera when not in use.

Set-up kena® Digital Microscope

kena can be set up in a matter of minutes. To get the most out of this amazing teaching tool, follow these step-by-step directions:

1. After unpacking the box, unwrap kena from the protective plastic bag.

2. Before beginning, review the parts of the kena microscope:

   a. The **Camera Head** has 4 main features:

      i. The gray **Camera Head** has a **capture button** on the top of the unit next to the molded Ken-A-Vision logo. Use this button to capture still images.

      NOTE: Another way to capture still images is through the software.

      ii. The **turret** objectives of 2x, 4x and 10x result in standard magnifications of 20x, 40x and 100x (respectively) under normal screen use. The turret also houses the upper LED light.

      iii. The silver **upper LED light button** is located below the factory-installed USB cable. Press this button to turn on/off the upper LED light located in the turret.

      iv. The black 6 foot / 1.8 meter **USB cable** is factory-installed and plugs directly into a USB port. **This cable powers kena.**

   b. The **Base Unit** has 5 main features:

      i. Use the **2 focus knobs** on both sides of the base to move the camera head up and down or to load and eject it.

      ii. The **red handle** is for carrying the unit and also functions as a **cable wrap** for the USB cable when storing the product.

      iii. The base has a **battery door** for installation of four (4) standard "AA" batteries. These batteries power the center lower illumination for viewing slides and transparent specimens. Note the "+" and "-" pole symbols on the door for correct placement.

      iv. Use the silver **lower LED light button** located on the base next to the silicone pad to turn on/off the **center lower light** (transmitted light).

v. The stage is designed with a revolutionary, factory-installed **silicone pad**, which does not require standard stage clips and is easy to clean.

c. The **Touch Tube** is used to easily determine focusing distance when using the camera head off of the base.

3. Place kena$^®$ within 6 feet / 1.8 meters from the computer's USB port on an even surface, allowing the product to sit securely without rocking or tilting.

4. On the upper back of the camera is the factory-installed USB cable, containing a USB plug. The USB plug fits in only one way and should easily fit into the computer's USB port. If more distance than 6 feet/ 1.8 meters is needed, an optional USB extender cable (VV C16USB) can be purchased to allow more distance from the computer's USB port.
NOTE: For most computers, the USB image on the plug should be facing upward or toward you.

5. The software program is found on the CD:

   Applied Vision™ 4 (AV4) Software: A user-friendly, classroom software featuring Digital Zoom, Easy Document Orientation, Drawing & Annotation Tools, Image Comparison and Rotation, and Multiple Camera Support. AV4 is designed to work on Windows 7, Vista, XP SP2 (or higher); Macintosh, and Linux operating systems.

   Close all windows or other programs before running the installation program. Insert the included CD into your computer's CD/DVD drive.

   With normal configured operating systems, your software installation should begin without interruption.   If you still have questions, call the Ken-A-Vision$^®$ technical support hotline at 1-800-627-1953 (if calling in the U.S.) and +1-816-353-4787 (if calling outside of the U.S).

NOTE: For Macintosh, drag the ICON down to your Docking Tray for easier access and launch.

7. The software begins to launch and the "splash screen" appears. The upper LED light button on top of the camera head can now be turned on to illuminate the turret. The kena camera is turned on and ready for viewing.

NOTE: The camera is not on unless you have accessed it by launching the software program.

8. When launching AV4 software, immediately the software may prompt you to look for an update. Answer "yes" and if you are connected to the internet, the software will automatically go to the Ken-A-Vision Web site and download the latest AV4 release in a matter of minutes.

NOTE: Windows requires you have "Administrative Rights" to install or update any software. Please see your IT professional if you do not have these rights.

9. When the update is complete, you may be required to re-launch the software.

kena® **is now up and running. To turn kena off, simply exit the program and turn off the lights. You do not need to unplug your camera when not in use.**

Using the Camera

Changing Magnification

Turn the turret so that the 2x objective is aligned with the indented indicator on the camera head. You will hear a "click". Practice turning this turret to the predefined settings of 2x, 4x, and 10x.

Although kena® is manufactured as a par-focaled digital microscope, it does require fine focusing when moving the turret objective lenses from 2x to 4x to 10x.

Camera Head "On" or "Off" the Base Options

- **On** the Base as a Compound Microscope (for viewing microscope slides)
- **On** the Base as a Stereo Microscope (for viewing surface features of objects)
- **Off** the Base as a Stereo Microscope /Touch Scope (for viewing surface features of objects)

Using kena "On" the Base as a Compound Microscope

With the camera head on the base, the touch tube device off the turret, the software engaged and the camera functioning:

1. Turn the turret so that the 2x objective is aligned with the indented indicator on the camera head.

2. When ready to use, simply rotate the focus knobs clockwise to create a distance between the stage and the turret. The camera is designed to have a working distance of 25mm from the stage.

3. Move the camera head and turret far enough away so you can place your slide under the turret.

4. Place the slide so the center of the specimen is over the center lower light (transmitted light) of the base.

5. With previously installed batteries, press the lower light button on the base unit so that the lower light under the clear portion of the stage illuminates.

6. Make sure the upper light (incident light) of the camera head is turned off at this time.

7.   If desired, rotate 4x and 10x lens in place.

NOTE: Depth of field decreases as magnification increases.

6. Begin by turning the focus knobs counter clockwise so the turret is nearly touching the slide. Slowly begin turning clockwise raising the turret away from the slide while watching the image on your computer screen. As the image comes into focus on the screen, fine adjusting may be required.

Using kena® "On" the Base as a Stereo Microscope

As an example, begin using kena with a familiar macro specimen, such as a coin.

Place the specimen on top of the silicone stage pad in the center of the clear disc. (This is the center of the camera's view.)

Press the upper LED light button on the camera to turn on the upper lights. Starting with the 2x objective, check to see if the image is in focus on the screen. If not, turn the focus knobs counter clockwise until the camera head almost touches the stage area of the base. Now use the 4x or 10x objectives as desired. Slowly move the focus knobs until the coin comes into focus.

Using kena "Off" the Base as a Stereo Microscope / Touch Scope

kena may be used as a hand-held microscope or a "Touch Scope". It can be used in the field with a laptop or while moving around a classroom to view items not on the stage.

To remove the camera head from the base unit:

1. Check that the USB cord is not wrapped around the red handle / cable wrap.

2. Using both hands, turn the focus knobs clockwise until the camera head is at the highest and farthest point away from the silicone stage.

3. The camera head should be grasped in one hand and pulled out of the base. Continue turning the focus knobs to facilitate the removal of the head.

4. Attach the Touch Tube adapter to the turret by gently screwing on the device.

5. With the camera in the hand, position the camera so that a finger is available to push the capture button on the top of the head.

6. Make sure the turret is adjusted to 2x to begin your exploration.

7. Approach the object with the camera head. Adjust the focus. Press the capture button to record the image.

8. Fine focus your kena with two different approaches:

   a. Using the threads found on the "Touch Tube", you can turn the tube clockwise and counter clockwise to get your sharpest image.

   b. Using the "Touch Tube" as a rocking point, move the camera from perpendicular to the subject to horizontal of the subject.

Storing kena®
The kena is self contained and does not require a special dust cover or box.

1. To turn off the kena, simply close the program and the camera will shut off. You do not need to unplug your camera when not in use.

2. Turn off all lights.

3. After use, wipe down the kena with a water dampened cloth.

4. Remove the touch tube from the turret.

5. Store the camera head in the base unit. Position the camera head in the top hole of the base, making sure it is aligned properly. The unit will slide into the base and stop. Lower the camera head until it rests against the silicone stage pad. (This is the ideal storage for the unit, as no debris can enter into the objectives found in the turret.)

6. Wrap the USB cable around the red handle and secure it with the cord clip.

Servicing kena

Your kena has few moving parts, with no lubricated or sealed areas.

The base unit has a moving rubber wheel with a rubber focus tread turned by the focus knobs. It is important that you DO NOTHING to the rubber wheel. Simply keep grit and dirt out of it by brushing it off prior to using it.

The turret housing the objective lenses (2x, 4x and 10x) is also a moving part, and requires that you DO NOTHING to it.

Troubleshooting

This section provides many useful tips on how to solve common problems while setting up or using the kena digital microscope:

The software is not packed or is lost.
- Download it at www.ken-a-vision.com

I can't see an image. The screen is black.
- Check if the upper or lower LED lights are turned on.
- Check if the USB plug of the kena camera is connected to a computer.
- Close Applied Vision Software and reboot.
- Check if the objective lens is aligned with the indented indicator on the camera head

The bottom light does not come on.
- Check if 4 AA batteries are installed in the base unit.
- Check if 4 AA batteries are installed correctly according to the designated polarity (+ and -).

The image is dark.
- Check if the upper or lower LED lights are turned on.

It is difficult to get the image in focus.
- Adjust the focus knobs slowly.
- Change the objective to 2x, 4x or 10x.
- Adjust the software focus functions.
- If the camera head is on the base, the touch tube adapter must be detached from the turret.

I want to change the magnification.
- Manually turn the turret to the desired objective 2x, 4x or 10x for the equivalent magnifications of 20x, 40x, or 100x.

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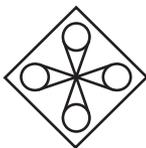
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