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User Manual Applied Vision 4 Software

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Dukane Audio Visual

Thank you for your purchase of a Dukane Audio Visual Product.

This guide provides basic information about installing and using Applied Vision™ 4 Software. You can also find this guide on the Dukane web site www.dukane.com/av

Introduction to Applied Vision

Applied Vision 4 (AV4) is a software program designed to enhance the use of Dukane digital imaging products.

Applied Vision enables users to connect their USB-based camera products to their computer, allowing capturing, viewing, and manipulation of both video and still images. Applied Vision 4 is optimized for utilization in a classroom setting while remaining widely applicable for any environment in which digital imaging is required.

Here are a few of the features built into Applied Vision:

- Cross-platform support for Windows, Mac, and Linux
- Full screen viewing
- Video recording
- Still image capture
- Multiple camera support
- Advanced image editing and analysis
- Time lapse recording
- Video rotation
- Digital zoom
- Numerous science applications including calibrated measurement

This software is shared with Kan-A-Vision and the updates are available at both web sites.

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Installation

Minimum Requirements

- o Windows XP SP2 or higher, Windows Vista
- o 512MB RAM
- o USB 2.0

Installation Instructions

Insert the software disc into your disc drive, and the installer will launch via AutoPlay. If your camera requires drivers, it will choose to install these by default as well. Follow the prompts, and at the end if you are prompted to reboot, do so. When finished, plug in your camera; depending on the model, it may automatically install the driver in a matter of seconds, or a "Found New Hardware" wizard may appear. If the latter, click through the default selections to automatically install the device drivers for your camera.

Automatic Updates

Applied Vision 4 has an automatic update feature that will query Ken-A-Vision for newer versions of the software. You can adjust the settings or operate this update checker manually with options in the Help menu.

Applied Vision 3

Temporarily we are including, for your convenience, our previous software Applied Vision 3 (AV3) for those who prefer its simpler functions and interface. The installer file can be accessed by browsing the "AV3" folder on the CD and running AV3Install.exe stored in that directory.

Mac Software

If your camera is a model that is compatible with Mac OSX, we have included a "Mac Software" directory on your software disc from which you can install Ken-A-Vision Capture 1.3.2, our current imaging software for OSX. Check our website (http://www.ken-a-vision.com) frequently for the upcoming release of Applied Vision 4 for Mac OSX which will bring the advanced features of Applied Vision to the Mac platform.

Interface Description

Applied Vision 4 creates a unique window for each active video device and each captured image or movie.

There are three styles of windows:

Camera Window - Live streaming video from the USB camera device.
Image Window - A still image captured from the video stream or loaded from a saved file.
Video Window - A movie captured from the camera or loaded from a saved file.

When Applied Vision launches, the primary window opens, and then camera windows are opened for any available imaging devices.

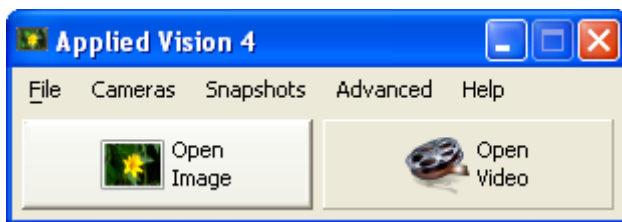Dukane Audio Visual

Main Applied Vision Window
The main Applied Vision window is the parent window for the application.
If you close this window, it will close all Applied Vision windows and the
application.

At the top of the window is a menu bar:

- File
    - o Properties – Set various program properties such as the
      localized language of choice
    - o Exit - Exit the Applied Vision application
- Cameras
    - o (A dynamically populated list of all available imaging devices
      on your system)
    - o Refresh Device List
- Snapshots
    - o (A list of all captured snapshot images, which can be clicked
      on to save to disk)
- Advanced
    - o Advanced Image Functions - Launch a separate window for
      the Advanced Image Functions
    - o Image Comparison - Open the Image Comparison window
      which allows the user to layer one image over another
- Help
    - o Help Topics – the help file for Applied Vision 4
    - o Update Options – set options related to Applied Vision 4's
      ability to check for new software updates
    - o Check for Updates – check the Internet for updates to
      Applied Vision 4 and, with the user's permission, installs
      updates
    - o About – Applied Vision 4 information

Below the title bar are two buttons:

- Open Image - Open a still image previously saved on the computer
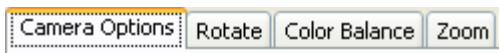- Open Video – Open a video file previously saved on the computer

Camera Window

The Camera Window displays the real-time live video stream being transmitted by the connected video device. It may be resized, moved, maximized, minimized, or closed.

At the bottom of the window is a tabbed toolbar. It has four tabs:

- Camera Options (default)
- Rotate
- Color Balance
- Zoom

Camera: Video Options Toolbar

This toolbar is the default toolbar setting of a Camera window. The following commonly used features are included:

- Fullscreen - Stretch the video stream to fill the entire screen. To exit this mode, click the "X" button in the upper right corner of the screen.
- Take Snapshot - Capture a still image frame from the video stream, and open the captured image up in a new Image window.
- Record - Select a location and filename to record to, and start capturing video to a saved movie file. Click the button again to stop the recording process.
- Time-Lapse Record – Enter a time value in seconds and then select a location to save the files. Applied Vision 4 will take a snapshot once every number of seconds specified by the user.
- Document Orientation – Flip and mirrors the current video. Useful when documents are placed under the camera and appear "upside down".
- Camera Resolution - Change the display resolution of the camera. High resolutions have superior image quality but lower frame rates. Lower resolutions have superior frame rates but lower image quality.

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Camera: Rotate Toolbar

This toolbar offers several options for rotating and manipulating the video stream:

- Rotate Counterclockwise - Left
- Rotate Clockwise - Right
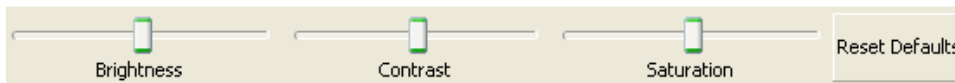- Flip Horizontal
- Flip Vertical

Camera: Color Balance Toolbar

This toolbar allows adjustment of the following settings affecting the video stream:

- Brightness
- Contrast
- Saturation

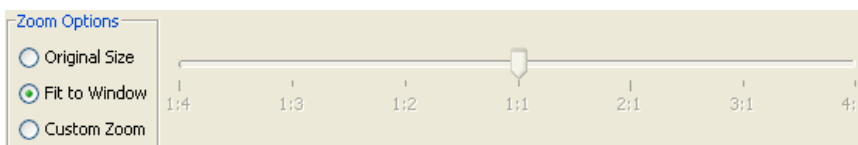To reset these to their original values, click Reset Defaults.

Camera: Zoom Toolbar

This toolbar allows digital zooming on the video stream. There are three modes:

- Original Size - Display video without scaling.
- Fit to Window - Scale the image to fit in the window size; this is the default.
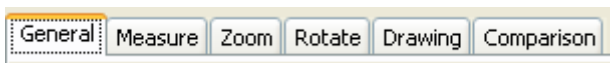- Custom Zoom - Allow for a manual configuration of digital zooming.

When "Custom Zoom" is enabled, the slider bar at right can be utilized to change the zoom factor. Note, that as digital zoom increases, the image will progressively pixelate. To return to normal settings, click "Fit to Window".

Image Window

The image window displays a still image captured from a video device or opened from a file. It may be resized, moved, maximized, minimized, or closed. At the bottom of the window is a tabbed toolbar. It has six tabs:

- General (default)
- Measure
- Zoom
- Rotate
- Drawing
- Comparison

General | Measure | Zoom | Rotate | Drawing | Comparison

Image: General Toolbar

This toolbar is the default toolbar setting of an Image window. The following commonly used features are included:

- Open Image - Open a saved image file in a new Image window.
- Save Image - Save the image to its current filename and location (if unsaved, Save Image As).
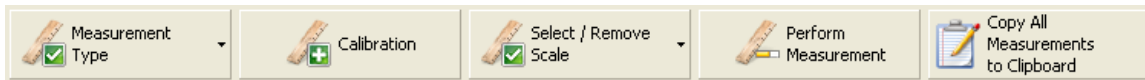- Save Image As - Save the image with a specified filename and location.

Open Image   Save Image   Save Image As

Image: Measure Toolbar

This toolbar provides the following tools for measurement and analysis:

- Measurement Type
    - Linear Measurement - Measure a straight line.
    - Angular Measurement - Measure an angle.
- Calibration - Create a new scale measurement standard.
- Select/Remove Scale
    - Select Saved Scales - Choose a saved scale with which to measure.
    - Remove Saved Scales - Remove a previously saved scale.
- Perform Measurement - Show the results of the current measurement relative to the selected scale.
- Copy All Measurements to Clipboard - Add contents of the Measurement window to the clipboard for pasting into other programs.

Calibration

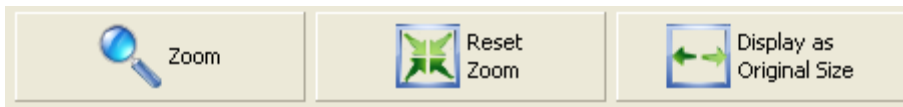To calibrate a new scale, follow these instructions:

1. First ensure Measurement Type is set to Linear Measurement.
2. Click Calibration
    1. If an existing line is on the image, Applied Vision 4 will prompt you to either use the existing line or draw a new one for the purpose of identifying a known distance that can be used to calibrate a measurement scale. Multiple measurement scales are useful when measuring objects viewed through a microscope under different objectives.
3. Type a full name for the scale under "Name".
4. The Distance in Pixels should be preset according to the line drawn in step 2.
5. Type the amount of actual units measured by the line in Known Distance.
6. Enter an abbreviated unit name under "Unit of Length".
7. Click OK.

Now the new scale will be selected by default and new measurements will be computed using that scale.

Image: Zoom Toolbar

This toolbar allows manipulation of the image with the following tools:

- Zoom - Zoom in and out on the image. Left click on a point on the image to zoom in, right click to zoom out.
- Reset Zoom - Reset the zoom function to the default, fitting the image to the window.
- Display as Original Size – Resizes the window and displays the image in its original size, without scaling (e.g. at a 1:1 pixel ratio).

Image: Rotate Toolbar

This toolbar allows manipulation of the image with the following tools:
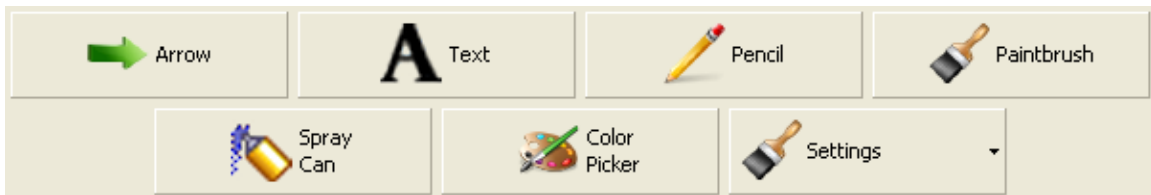
- Rotate Counterclockwise - Rotate the image 90 degrees counterclockwise.
- Rotate Clockwise - Rotate the image 90 degrees clockwise.
- Custom Rotation
    - Flip Vertically - Flip the image vertically.
    - Flip Horizontally - Flip the image horizontally.
    - Custom Rotation - Rotate the image at a specified number of degrees.

Image: Drawing Toolbar

This toolbar offers markup, annotation, and drawing tools for editing images.

- Arrow - Click and drag on the image to draw a directional linear arrow.
- Text – Click anywhere within the image to create a text field. Click and drag to move the location of the field. Text can be entered and a new line can be inserted by typing Ctrl + Enter. Hitting the Enter key will draw the entered text onto the image.
- Pencil - A single pixel (by default) drawing tool.
- Paintbrush - A 10 pixel (by default) drawing tool.
- Spray Can - A spraypaint-style drawing tool.
- Color Picker - Click to set color for the above tools.
- Settings
    - ○ Set Line Width
    - ○ Set Text Options
    - ○ Set Pencil Tool Options
    - ○ Set Paintbrush Tool Options
    - ○ Set Spray Can Tool Options
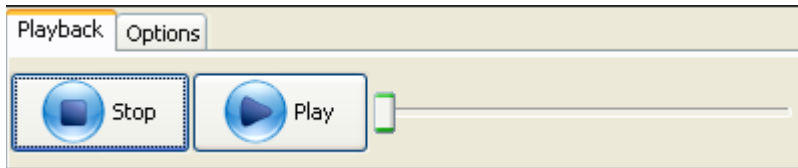

Image: Comparison Toolbar

This toolbar opens the Image Comparison window and loads the selected image into either the top or bottom slot for variable opacity image blending and comparison.
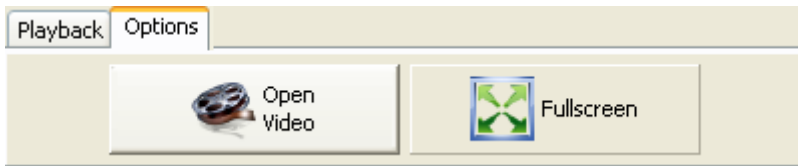
Video Window

The Video Window allows the user to playback recorded video and audio files created using Applied Vision 4. This window has two tabs that contain control buttons: Playback and Options.

The Playback tab has Stop and Play / Pause buttons. These buttons control the basic playback of the recorded video file. There is also a slider control that allows the user to move to a specific section of the video by clicking or dragging the slider bar to a given location.
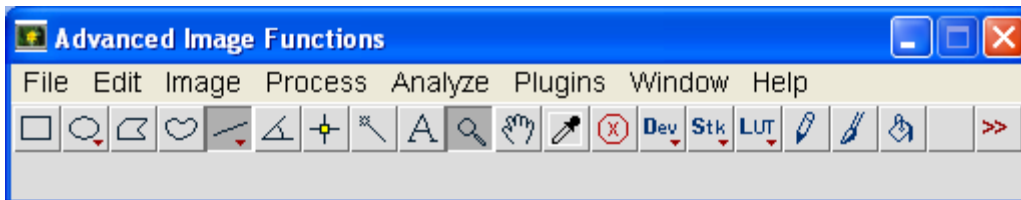

The Options tab has buttons that allow you to open another Video file, take the current video being played to fullscreen mode or Take A Snapshot from the movie that is currently being played back.

Advanced Image Functions

The Advanced Image Functions contain a large assortment of tools for annotation and analysis. It can be launched from either the main Applied Vision window. For detailed help on these functions, see the Help menu under the Advanced Image Functions menu bar.

Image Comparison

Images can be loaded for comparison in two ways:
1. In the main Applied Vision 4 window, click on the "Advanced" menu and select "Image Comparison". Click on either the "Open Top Image" or "Open Bottom Image" buttons to open existing images for comparison.
2. Select an open Camera Window. Click the "Take Snapshot" button. Click on the "Comparison" tab. Click on either "Set Top Image for Comparison" to add this image to the Comparison window in the top layer or "Set Bottom Image for Comparison" to add this image to the Comparison window in the bottom layer.
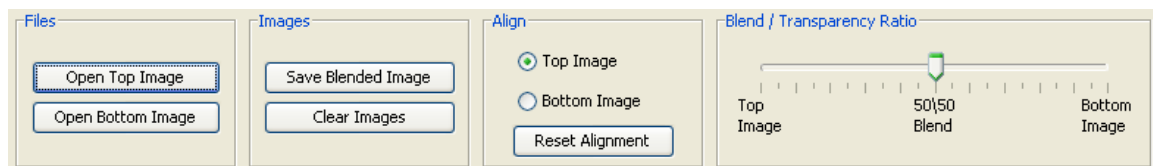
Aligning the Image:
Once images have been opened in the Image Comparison window, they may be aligned using the mouse. In the Align section of the Image Comparison window, select either the "Top Image" or "Bottom Image" and then click and drag with the mouse to move the image and thus changes its alignment relative to the other image in the window. Click the "Reset Alignment" button to align both images to the upper left hand corner of the window.

Setting the Opacity**:**
Move the slider bar under the "Blend / Transparency Ratio" section to determine the opacity or transparency of the top and bottom images.

Saving Output:
Click "Save Blended Image" if you want to save the current comparison to an image file.

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Troubleshooting

For technical support please visit our website for troubleshooting guides, downloads, and technical support request forms:

205 Westwood Ave, Long Branch, NJ 07740
Phone: 866-94 BOARDS (26273) / (732)-222-1511 | Fax: (732)-222-7088
E-mail: sales@touchboards.com | Site: www.touchboards.com