

enVision *AF*

Autofocus Infinity
Inspection Camera

MANUAL
for Stand-Alone
Operation



Contents

Introduction	3
Safety	4
General Safety Guidelines	4
Device Description	4
System Set Up	4
Location	4
Initial Set-up	4
Connection Ports	5
Main Menu	6
Focus	7
AF ROI	7
Auxiliary Tools	7
Measurement Tools	11
Custom Template	11
Scale	12
Zoom Window	12
Lines	12
Logo	13
Specifications and Environmental Conditions	14
Warranty Details	16
Warranty Information	16
Contact Information	16
Disposal	16
Labeling	17

Introduction



Read the entire User Manual before attempting to operate this device.

Safety

This section provides safety guidelines and safety-related statements to operate the enVision AF safely and effectively. Additional guidelines, statements, and protocols appear throughout this manual. Follow all printed guidelines, warnings, cautionary statements, and protocols when using the enVision AF.

General Safety Guidelines

- Each person using the enVision AF must review instructions for use prior to operating the system.

General Safety Notes:

1. Keep the instrument out of direct sunlight, high temperature or humidity, and dusty environments. Ensure the microscope is located on a smooth, level and firm surface.
2. If any specimen solutions or other liquids splash onto any components, disconnect the power cord immediately and wipe up the spillage. Otherwise, the instrument may be damaged.
3. All electrical connectors (power cord) should be inserted into an electrical surge suppressor to prevent damage due to voltage fluctuations.
4. Confirm that the input voltage indicated on your microscope corresponds to your line voltage. The use of a different input voltage other than indicated will cause severe damage to the microscope.

Device Description

The enVision AF all-in-one digital inspection system provides extreme versatility for viewing and documenting samples. The Autofocus capability and extreme depth of focus (4" - ∞) virtually eliminates the need to adjust focus or the camera height on the stand. Visualize all the details with the 1X-14X continuous optical zoom and, combined with autofocus, the sample is always in focus. No PC needed! Simply use the included mouse to control the camera through the built-in software. Vibrant, true color images are displayed on your supplied HD monitor for easy, ergonomic viewing.

System Set Up

Location

Prior to installation, a location must be identified that meets the below requirements. The minimum dimension requirements for the enVision AF are as follows: 15" Wide x 20" Depth x 22" Height. Your system configuration may require additional space for boom stands and/or taller mounting positions.

Initial Set-up

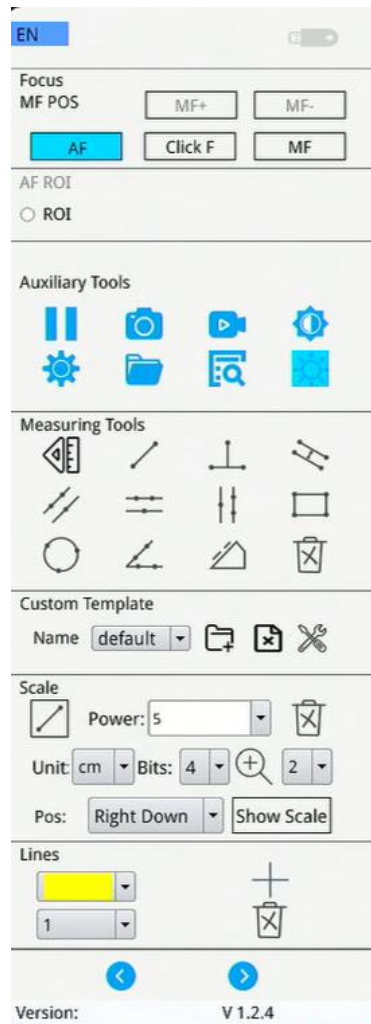
Your distributor is responsible for coordinating set-up for the enVision AF equipment in a designated area that has undergone the pre-approval process for installation. Included with the set-up of the system is basic equipment orientation, standard training for use of the equipment and enVision AF services. This manual will provide supplementary guidance.


Connection Ports



Main Menu

- To access the main menu, right click the mouse.



- To collapse the menu, click the bottom  arrow key.
- These arrows can also move the menu to a preferred side of the screen.





U Disk 

When a USB disk is inserted in the camera, the icon will light up and photo/video functions will work properly. The icon turns gray when the U disk is not connected.

Language 

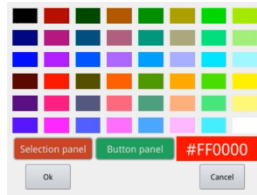
Click on the upper left corner of the menu to switch the language.

Focus

	Automatic Focus allows the camera to automatically focus on the sample that is within the focus range.
	Click Focus when pressed will bring the camera into a fixed focus when automatic focusing is not desired.
	Manual Focus +/- allows user to manually adjust the camera's focus instead of using the camera's autofocus (AF)
	AF ROI creates a Region of Interest box that the focus will use as its point of reference.

AF ROI


- When the ROI focus box is not checked, the camera defaults to global focus, which focuses the image on the entire screen. When the AF focus box is checked, the camera will always focus on the ROI. Click the focus box twice to set the color of the focus box for better contrast.



Auxiliary Tools

	Freeze
	Capture
	Video
	AWB
	Settings
	File Open
	Data
	AE

Freeze

- Click the "freeze" icon to freeze the current window. The image will become static and unchanged.  icon will return the camera to real-time display.

Capture

- Save an image directly to the inserted U-Disk USB. Pictures are saved in .jpg or .bmp format to the U-Disk.
- Naming templates for photos can be adjusted in settings. For manual naming, type the desired filename for

the picture using the on-screen keyboard. Automatic naming will apply filenames in sequential number order.

Video

- Video recording is only available when the U disk is inserted. Click the "Video" icon, enter the file name you want to save, click OK, and then start the recording. During the video recording, a red dot icon will flash in the lower right corner of the video.
- To save, click the "Video" icon again and select "video save".
- Note: Videos are automatically saved in the "Video" folder of the U disk, "mp4" format. The maximum size of a single video recording is about 4GB, with it automatically stopping if the video recording is beyond 4GB.

AWB (Automatic White Balance)

- After clicking the "AWB" icon, the camera will automatically white balance the picture, then return to manual white balance mode. This feature can also be set up in the Settings page.

File Open

- After inserting the U disk, you can open the video file and view the video in mp4 format. Pictures are saved in external U Disk-Image-Manual / AUTO folder. After opening the picture, click the left and right page turning tool to browse the upper and lower pictures; click the black back arrow to exit the browsing interface. Click the video file twice to open the video.
- Videos are saved in the external U Disk-Video-Manual / AUTO folder (Manual is the manually named file storage path, and AUTO is the automatically named file storage path).

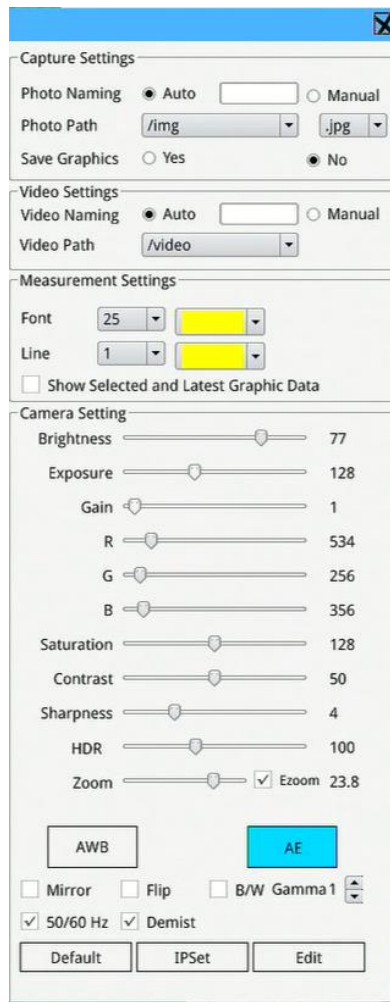
Data

- The data page can display ten data types: Name, Distance, Perimeter, Area, Angle, Radian, Width, Height, Radius and Diameter. Data types can be changed in the main menu settings under "edit".
- Note that the Name column cannot be customized. The default naming rule is: L for lines, R for circles, and A for angles.
- Click the Export data button in the lower left corner to export the measurement data in .csv format. Data units displayed in the bottom menu-Unit synchronization in the calibration menu area.
- A button option to close the page is located at the bottom of the page.
- The left and right arrow icon in the bottom right corner moves the page toward left / right. A long mouse press can also drag the data list to change the position.
- A data list can record up to 100 sets of data.

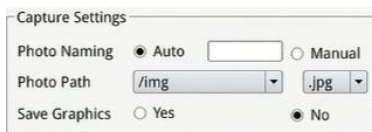
AE (Automatic Exposure)

- Clicking the "AE" icon will turn on automatic exposure. Click again to exit the automatic exposure and enter manual exposure mode. This feature can also be set up in the Settings page.

Settings



Capture Settings



Edit how photos are named, where they are stored, and select the file type.

Video Settings



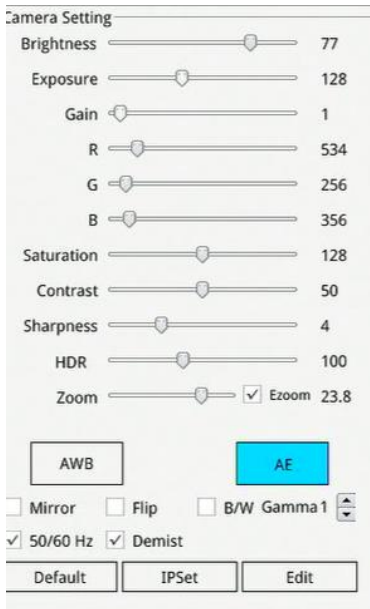
Edit how videos are named, where they are stored. File type is mp4.

Measurement Settings



Select size, thickness, and color of the text and line segments in the measurement tool.

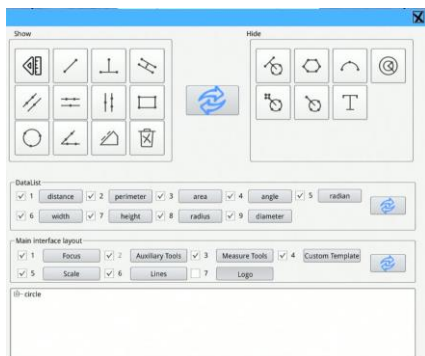
Camera Settings



Camera settings allow you to adjust the camera's output to better reflect the true image or achieve a desired effect. Some settings may only be adjustable in the automatic exposure mode.

The Zoom function provides continuous optical zoom of the camera lens. 14.0 is the maximum optical zoom of the enVision. Check the Ezoom box (electronic zooming) to add an additional 1x to 6x on top of the optical zoom maximum of 14x.








Settings Edit Menu














Allows user to customize how the interface is displayed. Add or remove tools/features to fit your workflow.

Measurement Tools

(Additional measurement tools in Edit tab of Settings)

	P2P
	P2L
	L2L
	Parallel
	H parallel
	V parallel
	Rect







	Circle
	Angle
	Auto Edge
	Del All

	R2R
	C2C
	P2C
	Text
	Arc
	Polygon
	L2C

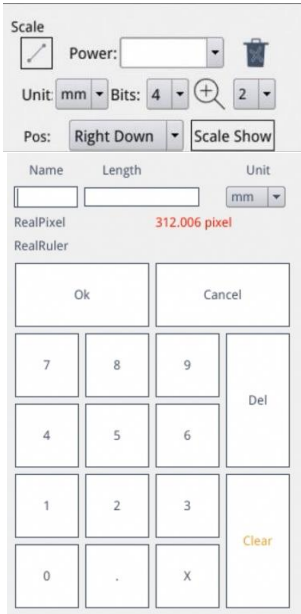
- Click on any measurement tool to enter the measurement mode.
- In the measurement mode, the current focus will be locked. By default, manual focus and other focus modes cannot be switched. Click the Measure Mode icon in the upper left corner of the display interface to exit the measurement mode.
- After the measurement is drawn, right click once to stop drawing. Right click and hold after the drawing is complete to drag the measurement around the image. Right click twice to delete specific measurements.

Custom Template




- After drawing measurements in the image area, click the "New"  icon. In the window "whether to convert the element to a template", click "OK" to establish a new template. Name and save your new custom template.
- Click the Delete  icon to delete the template; click the Modify  icon to modify the template.
- Click the Save  or Save As  icon to save the modified template. Click the "Return"  icon, to discard the modified template.

Scale

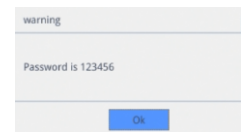
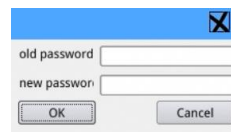
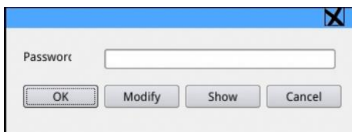


A calibration slide is necessary to accurately add or modify your scale.



Click "Scale" , and select calibration: "H Calibrate" (horizontal line) or "Circle Calibrate"

- Drag the line to the fixed scale marking alignment and input the lens value under "Power".
- Using the digital magnifier to assist, draw the length between the marking lines, select the unit, and complete the calibration.
- Additional calibration sets are displayed in the "Power"

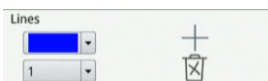
- To delete a calibration, click the drop-down calibration list, select the calibration group, and click the Delete icon to delete. If necessary, enter the password which is 123456 by default.
- To modify the current password, click display to view the prompts below.



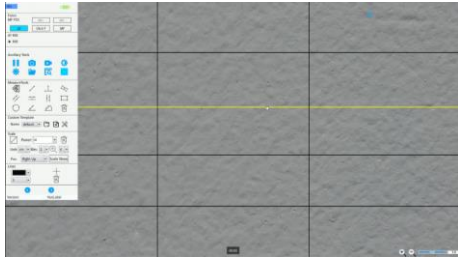
Zoom Window

- Click  to open the magnification window, a small separately enlarged window appears in the lower right corner of the screen to show the placement of the mouse with more precision.
- The magnification of the picture is 2/4/6. 
- You may need to toggle the icon when changing magnification size.

Lines

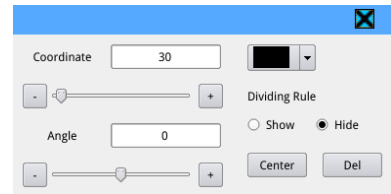


Click "+" to set the number of horizontal and vertical cross lines. Line color and thickness can be changed.



Hold down the right mouse button to drag individual cross

- To add dividing rule for Crosshair:
 - Create 1 horizontal and 1 vertical line at screen center
 - Right click one of the lines twice to open detailed line menu
 - Show Dividing Rule for selected line
 - Repeat for the other axis
- You can save the crosshair as a template for easy future access.



Logo

The Logo tab is closed by default. This tab can be turned on through the Edit menu in Settings

- You can set your logo to appear in the Main Menu.
- Import requirements: the file name must be set to "logo"; the size should be less than 1MB; and the format is PNG.
- Import method: insert the U disk with the logo picture (.png format) into the camera USB interface, then double-click the left mouse button on the identification bar to complete the import.

Specifications and Environmental Conditions

Device Specifications

Model Name	enVision AF	
Model Number	22000	
Camera Specifications		
Sensor	Sony EXMOR color CMOS, back-illuminated, 1/2.8" format, 2.9µm pixels	
Live Resolution	1920px X 1080px, HD 1080p, 2MP	
Capture Resolution	1920px X 1080px, 2MP	
Frame Rate	1080p @ 60fps	
Image Capture	USB 2.0 device (stand-alone operation); PC (via USB 2.0 or LAN connection)	
Data Connections	HDMI, LAN/Ethernet RJ46, USB 2.0	
Video Capture	USB device (stand-alone operation); PC (via USB or LAN connection); up to 4GB .mp4 file size	
White Balance	Automatic/Manual	
Exposure	Automatic/Manual	
Working Distance	10cm ~ ∞	
Optical Magnification, Zoom	1 ~ 14, electronic	
Digital Magnification	1 ~ 6	
Magnification	FOV (@ 10cm)	FOV (@ 30cm)
1X	171mm*92mm	420mm*230mm
2X	89mm*50mm	196mm*110mm
3X	71mm*40mm	150mm*84mm
4X	60mm*33mm	116mm*65mm
5X	52mm*29mm	101mm*57mm
14X	24.3mm*13.5mm	45.5mm*25mm
Mechanical Specifications		
Dimensions (camera only)	72mm (L) X 88mm (W) X 129mm (H)	
Weight	0.57kg	

Environmental Specifications	
Operation Temperature	Temperature range is 0-50° C and the maximum humidity is 85%
Electrical Specifications	
Power Supply	Input: 100~240V, 50-60Hz, 0.3A maximum Output: DC12V1A

Warranty Details

Warranty Information

Limited Warranty

This digital camera is warranted to be free from defects in material and workmanship for a period of one (1) year from the date of invoice to the original (end user) purchaser. This warranty does not cover damage caused in-transit, damage caused by misuse, neglect, abuse or damage resulting from either improper servicing or modification by other than UNITRON-approved service personnel. This warranty does not cover any routine maintenance work or any other work that is reasonably expected to be performed by the purchaser. No responsibility is assumed for unsatisfactory operating performance due to environmental conditions such as humidity, dust, corrosive chemicals, deposition of oil or other foreign matter, spillage or other conditions beyond the control of UNITRON Ltd. This warranty expressly excludes any liability by UNITRON Ltd. for consequential loss or damage on only grounds, such as (but not limited to) the non-availability to the End User of the product(s) under warranty or the need to repair work processes.

All items returned for warranty repair must be sent freight prepaid and insured to UNITRON Ltd., 73 Mall Drive, Commack, NY 11725 – USA. All warranty repairs will be returned freight prepaid to any destination within the Continental United States of America. Charges for repairs shipped back outside this region are the responsibility of the individual/company returning the merchandise for repair.

Contact Information

UNITRON Ltd.
73 Mall Drive
Commack, NY 11725

Phone: 631-543-2000

Fax: 631-589-6975

Email: info@unitronusa.com

Website: <https://microscopes.unitronusa.com/>




Disposal



If you plan to discontinue the use of the enVision system and intend to dispose of it or any of its parts or accessories, you must observe the applicable regional legal provisions for its disposal. You may also contact your local distributor, authorized service center, UNITRON Customer Care for more information regarding the disposal of this system.

Labeling

Explanation of Symbols

Symbol	Title	Description
	Warning	Indicates the need for the user to consult the instructions for use for important cautionary information such as warnings and precautions that cannot, for a variety of reasons, be presented on the medical device itself.
	Do not dispose in unsorted municipal waste (WEEE)	Equipment must not be disposed of as unsorted municipal waste.
	Follow Instructions	Indicates the need for the user to consult the instructions for use prior to operating the device.