

**VISIONX**  
COMPARISON MICROSCOPE

**SEE THE DIFFERENCE**



# WHEN BALLISTICS **EXPERTISE** MEETS MICROSCOPE **SUPERIORITY**

We started from the user experience and worked backwards to develop a new generation analysis and confirmation tool that leveraged the benefits of IBIS® (Integrated Ballistic Identification System) and our years of experience in developing state-of-the-art comparison microscopes.

With exceptional craftsmanship and superior optics, and designed with the examiner's workflow in mind, VisionX is more than a comparison microscope.

VisionX is the first solution to combine a comparison microscope system with ballistic identification technology, all the while being mindful of the examiner. The VisionX comparison microscope is available in several distinct configurations including Collaboration Station and IBIS Confirmation Station:

## **COLLABORATION STATION**

An excellent tool on its own, VisionX is easy to operate, boasts an innovative design, and has an excellent range of accessories. The Collaboration Station configuration extends the functionality of VisionX stations by providing examiners the possibility of performing remote peer-to-peer reviews. In essence, an examiner at location A can assist an examiner at location B using VisionX functionality and without the need to travel or transporting evidence to ensure the integrity of the chain of custody. Full Internet connectivity between sites is necessary.

## **IBIS CONFIRMATION STATION**

Makes it easier and faster for firearm examiners to perform microscopic ballistic comparisons based on potential IBIS matches. Together with IBIS® Hit Viewer, access to the IBIS viewing tools is one click away, and only VisionX seamlessly integrates the ability to confirm hits in a single user experience – also available with collaboration functionality.



The VisionX comparison microscope provides a high quality, effective user experience and offers outstanding performance that adapts to evolving forensic investigation practices.

# INTRODUCING VISIONX **SMART TECHNOLOGY**

- S** Synchronized movement
- M** Motorized functionality
- A** Anthropometric (ergonomic design)
- R** Real-time response
- T** Tool mark analysis



The SMART suite leverages advancements in technology to optimize precision examination, timesaving operation, and comfort:

#### **DIGITAL LINEAR MOVEMENT**

Hybrid manual / motorized controls provide superior high-precision control with streamlined stage movement and multiple magnification settings for ease-of-use and accelerated operation.

#### **PARFOCAL OPERATION**

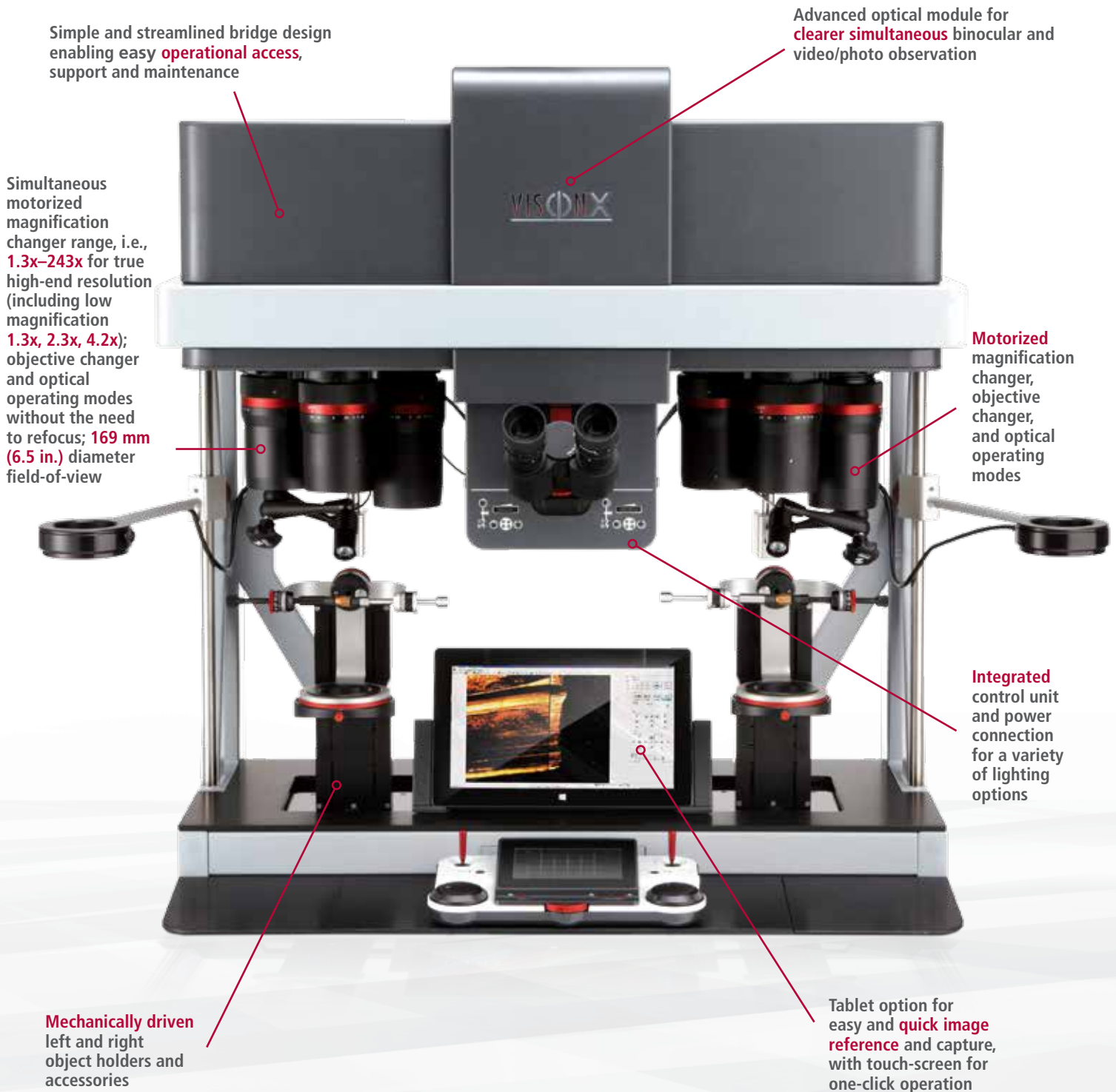
Innovative optical and bridge design ensures constant focus at different magnification levels.

#### **ERGONOMIC CENTRIC DESIGN**

Industry first binocular and optical design enables consistent 30 degree viewing angle for optimal comfort for all examiner heights.

# VISONX

## COMPARISON MICROSCOPE





# KEEPING IT **SIMPLE, STREAMLINED, FOCUSED** AND IN CLEAR **VIEW OF THE EVIDENCE**

Frame design focused on clean and uncluttered work area satisfying all comfort levels; **maximum clearance** for evidence placement and handling, accessories, and media devices.

**Optimum** light and accessory placement options for virtually any size and number of accessories

Easy, **interchangeable** stage interface that accepts a multitude of holders and platforms for almost any size of evidence

Simultaneous operation: X/Y/Z powered stage adjustment, X/Y adjustment of **50 mm (2 in.)**, height adjustment of up to **146 mm (5.8 in.)**

Joy-stick and rotary knob for **real-time** coarse/fine X/Y/Z adjustments, touch panel full image left and right, overlay and split-image with laterally adjustable dividing line width and position, and magnification and configuration setting set/preset

Innovative binocular design enabling a vertical adjustment with a constant **30-degree tube axis** and consistent ergonomic comfort for any height examiner

Unparalleled working distance of **95–233 mm (3.7–9.2 in.)** for improved evidence handling and operation



# AS WITH THE VISIONX THE **VISIONX SOFTWARE** HAS A

The VisionX software is extremely intuitive—it is easy to use and it has an excellent range of profile and control settings. Its user-friendly interface offers examiners a wide range of configurable preferences allowing for quick parameter adjustments.

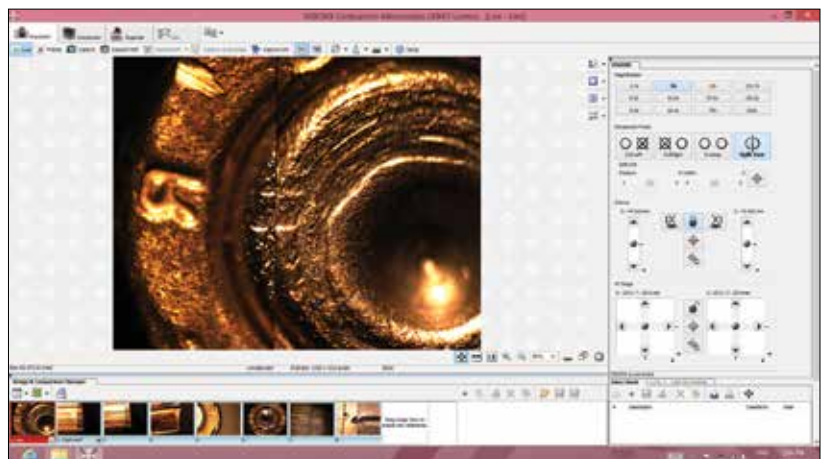
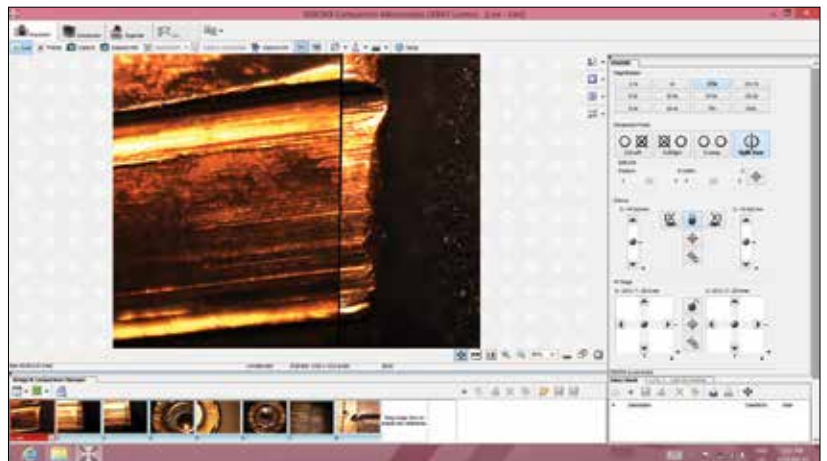
Traditionally, the comparison microscope is the core of the examination process, with software interaction typically as the final step. And because everything that the expert does is performed using the microscope, that software needs to become a natural extension of the expert. The VisionX software has been designed to complement the forensic examination process.

The VisionX software provides the ability to inspect and correct images on any media device, including laptops and tablets. Examiners are offered the flexibility to review and report their forensic work at the VisionX comparison microscope station, at their desks, in a shared peer review, or in the courtroom. This flexibility provides a great degree of freedom and results in effective resource sharing which, in turn, provides a better return on the VisionX investment.



## TAKE THE PICTURE

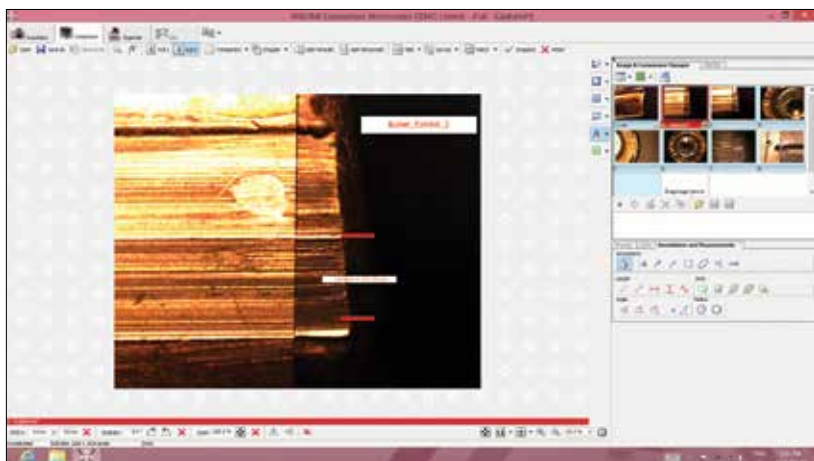
In the Acquisition tab, any image or series of images can be captured as per the evidence object positioning, magnification, focus, and illumination settings. A simple one-touch/click operation logs the images in a strip-like layout for further analysis, annotation, and eventual recordkeeping.



## THE BENEFITS OF THE VISIONX SOFTWARE INCLUDE:

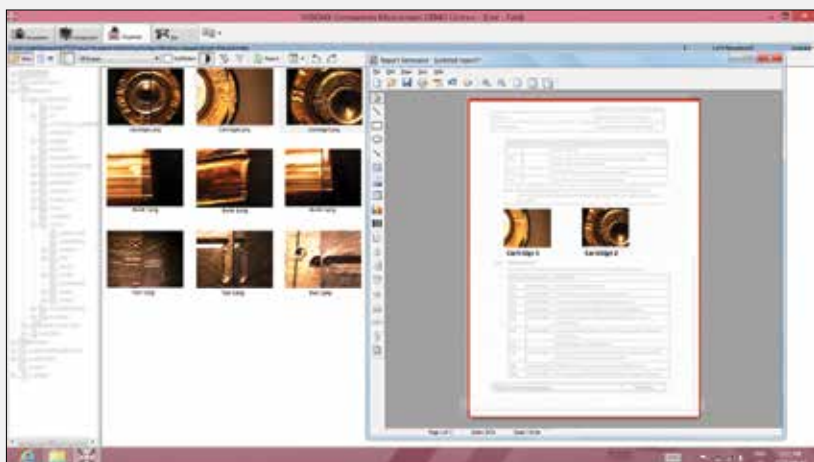
- Simple and direct access to IBIS®.
- Widespread user access extending the workstation desk with options for local or remote operation, collaborative analysis, reporting, and expertise peer support.
- The flexibility for users to work from any media device, whether directly installed on the workstation, laptop, or tablet.

# COMPARISON MICROSCOPE, **CLEAN & INTUITIVE DESIGN**



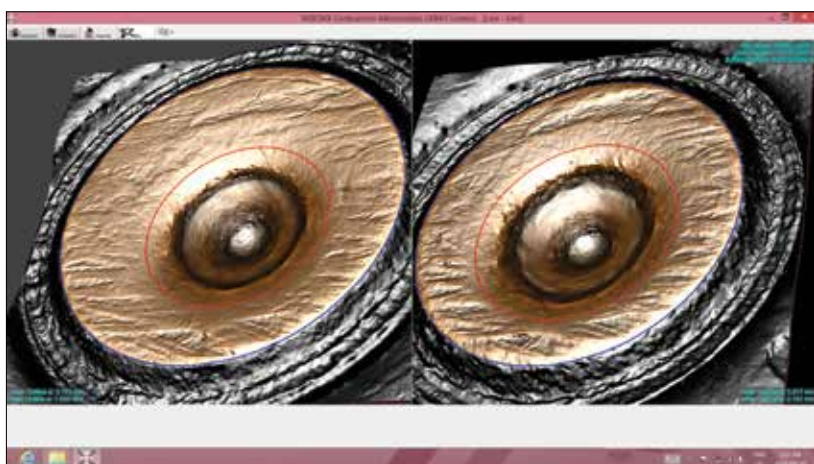
## **LABEL THE PICTURE**

The Comparison tab provides additional analysis and annotation features to better highlight regions of interest for peer review support and recordkeeping. A clean and uncluttered interface layout along with quick access to tools and viewing options help facilitate all analysis and review tasks.



## **SAVE THE PICTURE**

The Organization tab allows for structured image and metadata information recordkeeping, retrieval, and sharing. The report templates are customizable and are tailored to fit the specific processes and established best practices within virtually any law enforcement agency.



## **CONFIRM A HIT IN IBIS®**

The IBIS tab allows firearm examiners to reference hit lists and confirm hits via the same user interface. It consists of a complete IBIS hit analysis feature set and is an alternative to having two independent stations installed and used separately. Furthermore, the VisionX IBIS functionality will extend this analysis across multiple VisionX IBIS Confirmation and Collaboration Stations.



# **FLEXIBLE, PRECISE, AND SUPERIOR QUALITY ACCESSORIES** FOR BALLISTIC AND TOOLMARK EVIDENCE



Bullet holder



Cartridge case holder



Universal holder



Clamp holder



Ball-mounted platform



Small dish





# THE POWER OF **MOBILITY NETWORKING**

## **TABLET SUPPORT**

The VisionX microscope is supported on various devices, offering flexibility for users to work from any media platform, whether directly installed on the workstation, laptop or tablet.

## **PORTABILITY**

No matter where a forensic examination leads, you can take your work with you, from the VisionX comparison microscope, to your office desk, or to the courtroom. The tablet is an ideal medium for creating quick forensic examination presentations and performing peer reviews.

## **COMFORT**

Tablets are sized for easy placement, centered between the VisionX examination and staging areas.

Quick glances between the binocular and the screen ensure minimal movement and distraction.

## **NETWORKING**

Since tablets are Internet-ready, their network applications enable you to connect with peers and other experts, to collaborate on difficult cases, and to receive critical information related to the criminal case without ever having to leave your office. The Collaboration Station on computer workstations and laptops can also be setup for peer-to-peer reviews.



## **LIGHTING ATTACHMENTS**

The true test of any microscope goes beyond ergonomics and accessories. Lighting and the ability to clearly view and measure fine marks and minute traces are paramount. The VisionX comparison microscope includes a flexible, state-of-the-art illumination system that eliminates unwanted reflections and allows for the easy, consistent lighting of objects regardless of shape, size, surface, and structure.

Several lighting options are available: LED, spot, shadow-free, ring, transmitted, UV 365 nm, fibre optic



LED ring



Spot



Shadow-free LED

# THE **INNOVATIVE DESIGN** IMPROVES THE **USER'S EXPERIENCE** AND **COMFORT**

The VisionX's ergonomic design and user-friendly controls offer examiners a wide range of adjustable preferences allowing them to spend hours investigating evidence while remaining in a comfortable and natural position.

Presets and profile settings enhance customization levels tailored to individual users. In addition, a novel binocular tube adjustment design with a constant 30-degree tube axis ensures comfort and optimal control for any height examiner regardless of seating preference.

The VisionX modular design permits the easy adaptation of special object holders, illumination systems, and demonstration units, and offers motorized controls, panel display, and multimedia options to suit the needs of forensic examiners.

Foremost in its design is its simplicity and effective examination in every component in the examination process.



Touch-screen controls are intuitively placed near the stage and focus controls. From here, users can change the magnification, hairline options, and view modes.



Industry-first design enabling a tube adjustment with a constant 30 degree tube axis – consistent ergonomic comfort for any height examiner

A simple and streamlined design adhering to current industrial trends and minimizing operational, support, and maintenance costs



Design principles focused on keeping your work tasks simple and the work area free of clutter, while satisfying all comfort levels

# EASIER & FASTER BY SIMPLIFYING THE BALLISTIC IDENTIFICATION PROCESS

VisionX makes it easier and faster for firearm examiners to perform microscopic ballistic comparisons based on potential IBIS® matches. IBIS® is an automated ballistic identification system that streamlines the hit confirmation workflow and simplifies the ballistic identification process.

The VisionX software provides all the high quality viewing capabilities experts have come to expect from IBIS® on the VisionX platform. It extends the power of IBIS® viewing tools to the VisionX platform thus making bullet and cartridge case hit confirmations more intuitive, quicker, and easier. Access to the IBIS® viewing tools is one click away, and only VisionX seamlessly integrates the components of the key critical tasks of the hit confirmation cycle into a single user experience.

## **With the VisionX comparison microscope and software solution, in conjunction with IBIS, the examiner can:**

- > View two cartridge case or bullet exhibits from IBIS in the side-by-side view.
- > Assist in the physical comparison of a potential match based on IBIS hit images as the starting point.
- > Guide difficult comparisons based on revealing IBIS images, including a cartridge case's firing pin impression or a bullet's full, in-focus, circumference.



## THE 13 CRITICAL TASKS AN INSIDE-OUT APPROACH TO SOLVING MORE GUN CRIME

Forensic Technology has a long history with the many law enforcement and forensic agencies and practitioners that lead the way in designing and implementing best practices.

**The following three critical tasks provide the foundation for VisionX's contribution to the 13 Critical Tasks value chain and complement the overall hit confirmation process:**

- > Reviewing correlation results: Identify potential hits via automated ballistic identification systems as a reference or starting point.
- > Confirming hits: Confirm hits via physical evidence analysis according to agency protocols.
- > Communicating hit information: Report and review results, and provide investigative action.

## WHAT IS IBIS?

IBIS links firearm-related crimes by matching bullets or cartridge cases fired from the same firearm.

1. IBIS digitally captures the unique microscopic markings found on fired bullets and cartridge cases.
2. A numerical signature is extracted from each significant region of interest.
3. The signatures are automatically compared in order to find matching candidates on the IBIS network.
4. The most likely matches are ranked for visual comparison by firearm examiners.
5. The experts focus their efforts on the confirmation of matches.
6. IBIS data can also contribute to actionable information that can assist investigations.





# TECHNICAL SPECIFICATIONS

## GREATER MAGNIFICATION WITH TWICE THE FIELD OF VIEW

- › High-quality true optical viewing (not digital) with magnification range up to 243x and 169 mm diameter field-of-view
- › One-to-one magnification (1.3x) ratio highlighting original replication of objects
- › Synchronized motorized magnification changer, ranging from 1.3x - 243x for true optical (not digital) high-end resolution
- › Three-step motorized magnification changer with factors 1x, 1.8x, 3.24x

## LARGE WORKING DISTANCE FOR TOOL MARK ANALYSIS AND EASE OF ACCESS

- › Versatile with a free working distance of a minimum of 95-233 mm to facilitate mounting of large evidence and the positioning of multiple, simultaneous light sources
- › X/Y movement for left and right stages with range of movement in X and Y = 50 mm (2 in.)
- › Powered stage height adjustment of 146 mm (5.8 in.)

## SUPERIOR OPTICS AND AUTO FOCUS

- › Optical comparison bridge with a distance of 450 mm between the two optical axis
- › Integrated binocular with 2x eyepiece 10x/22 with individual diopter adjustments
- › Objective changer and optical operating modes without the need to refocus; 169 mm (6.5 in.) diameter field-of-view
- › Live digital camera with a range of high resolution options, i.e., 5.0 - 12.5 megapixels

OBJECTIVE	MAGNIFICATION WITH 10x/22 EYEPIECE	FOV (mm)	WORKING DISTANCE (mm)
0.13x	1.3	169	233
	2.3	94	
	4.2	52	
0.6x	6	36	116
	10.8	20	
	19.4	11	
3.2x	32	6.9	120
	57.6	3.8	
	104	2.1	
7.5x	75	2.9	95
	135	1.6	
	243	0.9	



[www.Ultra-ForensicTechnology.com/VisionX](http://www.Ultra-ForensicTechnology.com/VisionX)



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