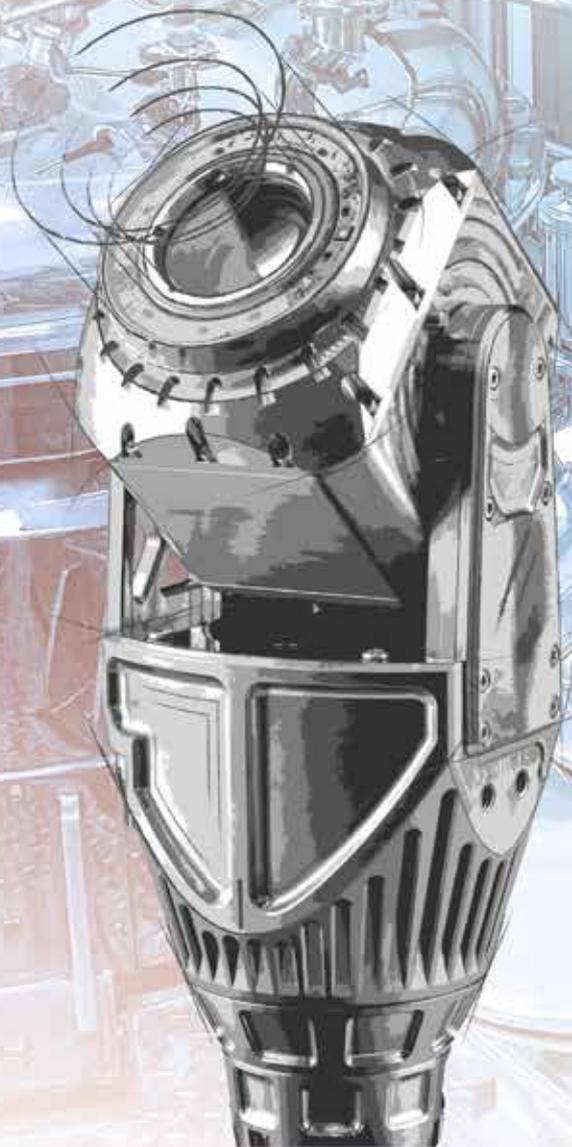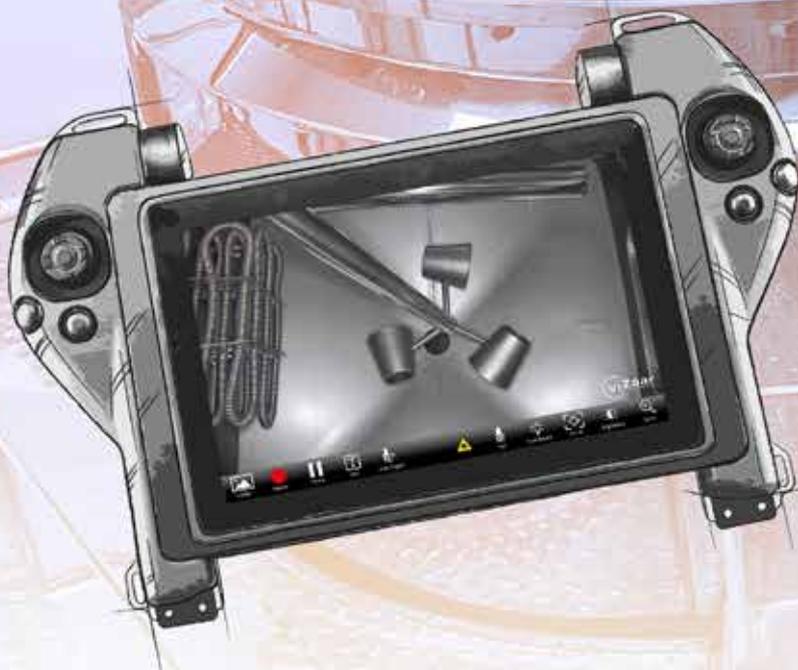# inVizX 98

XPANDING YOUR VU

IN *FULL* **HD**

inViz X98

## Next-Generation Digital Full HD Pan-Tilt-Zoom Camera

Highly Corrosion-Resistant **Titanium Housing** with a Compact **Ø 98 mm**. Engineered for Use in **Industrial**, **Chemical**, **Pharmaceutical**, **Nuclear** Sectors & More

Advanced **Dual-Touch** Interface with **Joysticks**, **Buttons**, and **Scroll Wheels** for Professional Control

The most **Ergonomic** Control Unit on the Market, featuring IP64 Protection and an **Aluminum-Carbon Fiber** Housing for Maximum User Comfort

10.1" IPS-TFT Display with **Full-HD+** and **1920 x 1200** Pixels for Outstanding, **Uncompressed Image Quality**

Intuitively Designed Camera Control **Icons** Placed **Outside the Inspection Image** Ensure an Unobstructed View and Maximum Operating Efficiency
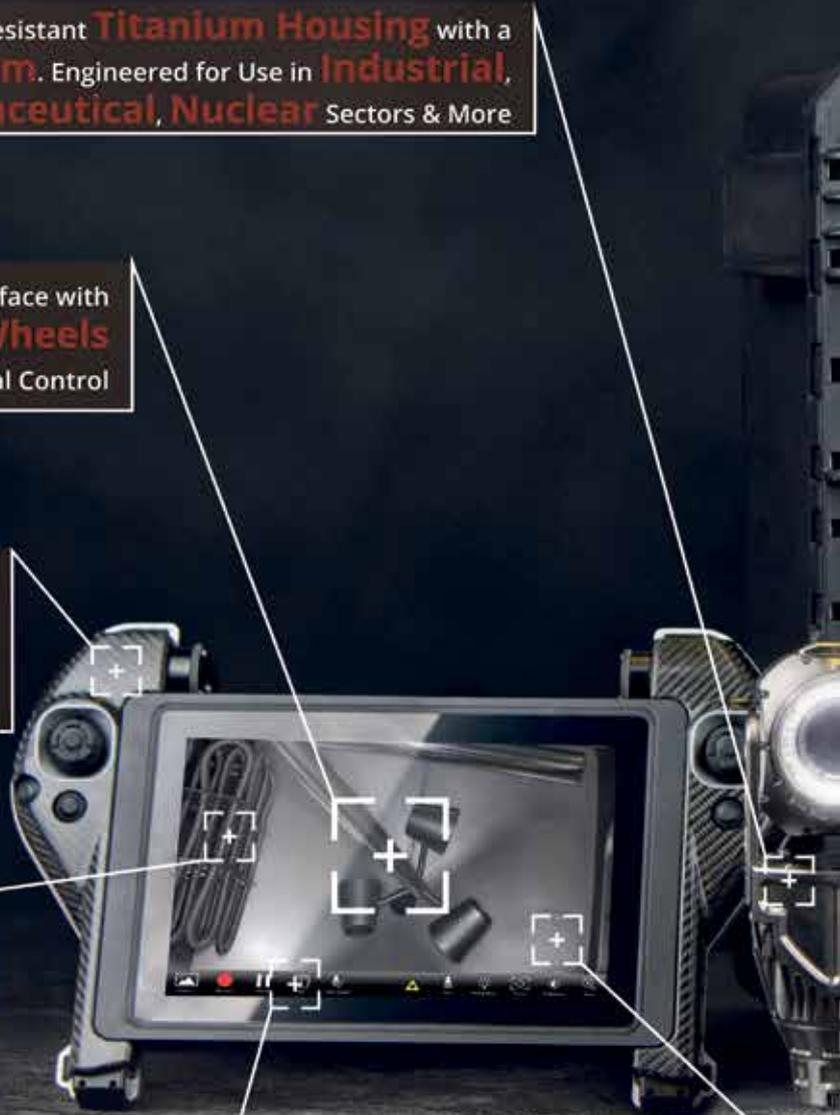
Up to **8 Hours** of Inspection Time with a Standard Professional-Grade Battery

Compact **All-in-One** Solution with an Impressive Total Weight of Just **18 kg***

Dimmable **Wide-Angle LED** for Perfect Illumination with up to **2000 Lumens**

At Just **1900g**, a Milestone in State-of-the-Art Technology and a True **Lightweight**

Continuous **360°** Rotation Combined with **±165°** Tilt Capability and Ultra-Fast **Speed Positioning**

Future-Proof Platform Designed to Support all Next-Generation Full-HD Inspection Camera Heads

*Depending on configuration

XPANDING YOUR VU
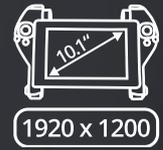
DISPLAY

Native Full HD display at
optimal screen size
thanks to a dedicated
control bar
WITHOUT cropping
of the inspection image.

WEATHER RESISTANCE

The VUnit meets
IP65 protection standards,
making it resistant to dust
and water spray,
perfect for outdoor use.

HDMI

Uncompressed live image
without overlays for
seamless system integration,
real-time analysis,
and cross-location
collaboration.

MODULARITY

With its smart design and
optional expansion slot,
the system can be easily
adapted
to meet specific customer
requirements.

RESOLUTION

The uncompressed Full HD resolution of 1920 x 1080 pixels
provides lossless PNG inspection images
and Full HD video recordings.

TOUCHSCREEN

The capacitive dual-touch screen allows simple operation WITHOUT a touch pen and even with protective gloves (PPE).
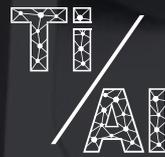
DAYLIGHTPROOF

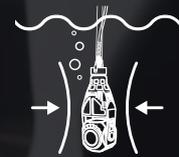With a brightness of 850 nits, the screen remains perfectly readable
even in DIRECT sunlight.

DESIGN

With a diameter of just 97.8 mm, the INVIZx98 meets ALL requirements in terms of accessibility and robustness.

HOUSING

Corrosion-resistant titanium for maximum robustness or hard-anodized aluminium for low weight and minimal surface contamination.

WATERTIGHT

The INVIZx98 is certified watertight as standard up to a depth of 45 meters (4.5 bar/ 65 psi), with optional extension available up to 60 meters (6 bar/ 87 psi).

ROTATION

Fast 360° rotation in under 4 seconds or precise positioning during operation with zoom.

ILLUMINATION

Separate light control with two nearly stepplessly dimmable white light LED channels with turbo mode up to 2000 lumens. Optional: UV lighting with 365 nm.

ZOOM

The 10x optical zoom delivers crisp, clear detail, with an adjustable field of view from 68° to 6°, ideal for wide and close-range views.

BATTERY OPERATION

Up to 8 hours of mobile work with standard professional grade batteries and UNINTERRUPTED power transition between battery and mains.

FOCUS

With a minimum focus distance of just 10 mm, high-detail inspections are possible even at close range - perfect for confined spaces.

TEMPERATURE

The operating temperature range of minus 25 °C to plus 48 °C (–13 °F to 118 °F) can be extended up to plus 75 °C (167 °F) with active air cooling.

Superior image quality

FULL-HD WITHOUT COMPROMISE

The INVIZx98 delivers uncompressed Full-HD (1920 x 1080) with exceptional light sensitivity (0.125 lux) and a 68° field of view. Powered by state-of-the-art Sony® IMX® sensor technology and a minimum focus distance of just 10 mm, it captures some of the sharpest, most detailed inspection images in its class. This is achieved by strictly eliminating lossy data compression and avoiding any error-prone downscaling or upscaling of image content. Thanks to its outstanding low-light performance, the INVIZx98 delivers clear, high-contrast imaging even in very dark environments, minimizing the need for external lighting. This helps to avoid disruptive reflections, shadows, or glare while enhancing overall image quality.

Titanium or aluminium?

AEROSPACE TECHNOLOGY FOR EXTREME DURABILITY

Engineered with aerospace-grade titanium, the INVIZx98 delivers unmatched durability and dependability. Weighing just 1,900 g (4.2 lbs), it combines extreme ruggedness with a lightweight design. It is optionally watertight up to 60 m (6 bar) and resistant to saltwater, acids, bases, and solvents, ideal for inspections in the harshest environments. When weight is critical and surface contamination is a concern: INVIZx98 Al, made from hard-anodized aluminum.

New era

THE PATH TO AUTO MATION

The INVIZx98 offers continuous 360° rotation and a 330° tilt range (± 165°), enabling a comprehensive panoramic view. It can return to its home position or any predefined angle in under two seconds. Custom viewing angles can be stored, and the zero position can be redefined, simplifying navigation inside containers and supporting repeatable inspection routines. These capabilities streamline work-flows and boost efficiency in complex inspection environments.

POWERFUL ILLUMINATION

PRECISION LIGHTING
FOR DEMANDING ENVIRONMENTS

The INVIZx98 features two independently controllable white-light LED channels that deliver a combined output of up to 2000 lumens in turbo mode.

Each channel can be adjusted separately, allowing for customized illumination, ideal for using shadows deliberately to highlight surface irregularities such as scratches, cracks, or indentations.

An optional 365 nm UV light for cleanliness inspection, along with the ability to connect additional laser modules or high-power LED boosters, significantly enhances the system's lighting performance and application versatility.

Dual Laser   Booster   365 nm

Broad range of applications

UNLIMITED VERSATILITY

The INVIZx98 sets new standards across a wide spectrum of inspection scenarios. Its outstanding performance benefits large-scale components that require intensive illumination, panoramic visibility, and zoom capabilities, such as tanks, reactors, or agitator vessels.

It proves especially reliable in underwater inspections, such as those involving nuclear assemblies, marine components, or other flooded environments, thanks to its corrosion resistance and watertightness up to 60 meters.
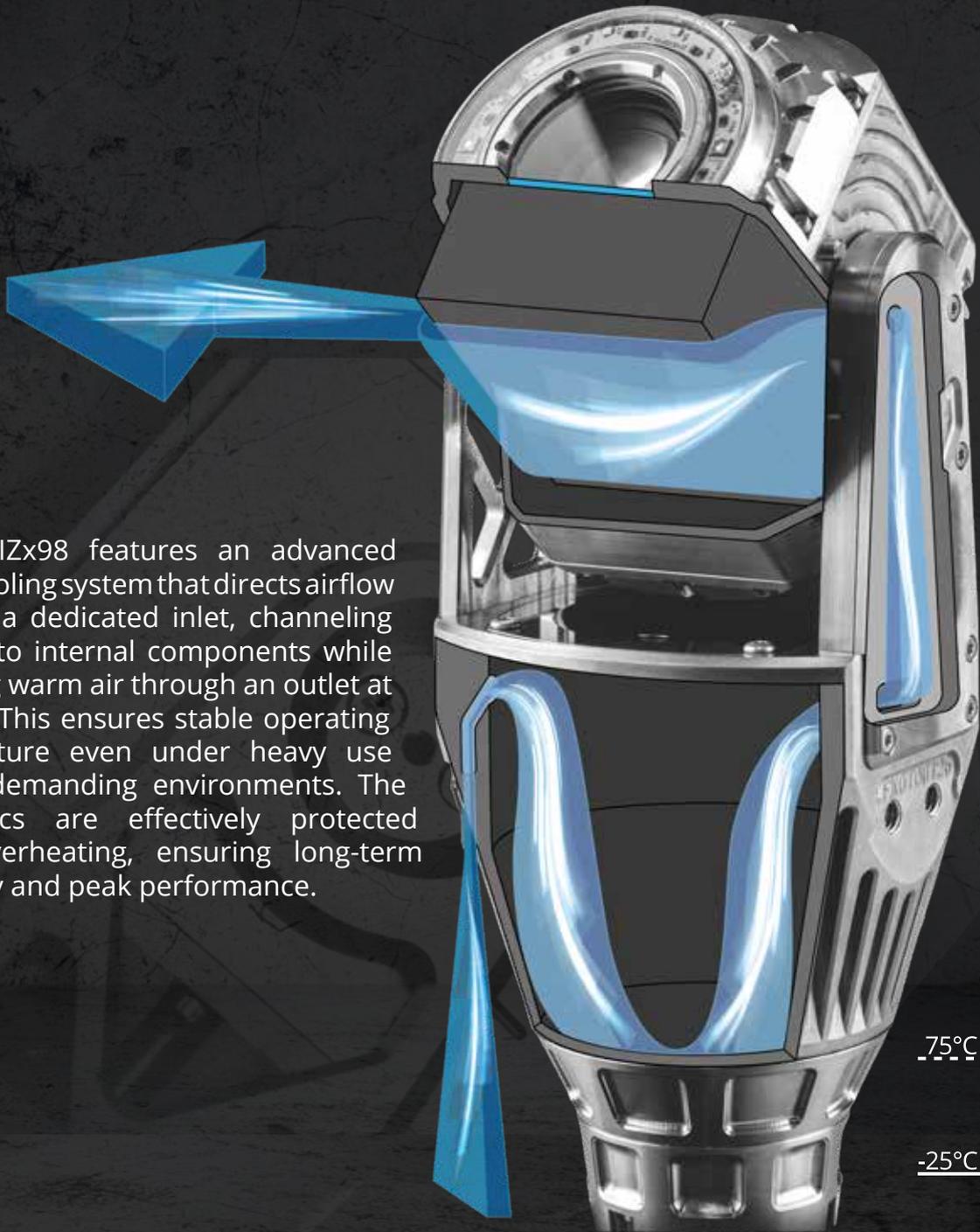
CUSTOM SOLUTIONS

When standard tools aren't enough, viZaar develops custom solutions tailored to your unique inspection needs. Thanks to expansion options, the INVIZx98 can be precisely adapted to special inspection tasks, making it a reliable companion for every challenge.

360°

+165° -165°

M6
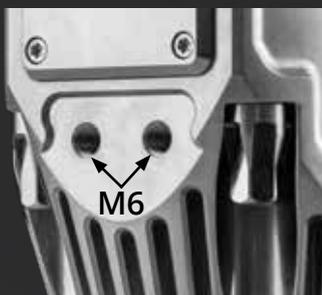
ACTIVE COOLING

INNOVATIVE THERMAL MANAGEMENT

The INVIZx98 features an advanced active cooling system that directs airflow through a dedicated inlet, channeling cool air to internal components while expelling warm air through an outlet at the top. This ensures stable operating temperature even under heavy use and in demanding environments. The electronics are effectively protected from overheating, ensuring long-term reliability and peak performance.

75°C

48°C

-25°C

Vunit

FULL-HD CONTROL UNIT WITH INTEGRATED VIDEO DOCUMENTATION

1 Aluminum-Carbon Composite: Lightweight yet Highly Durable

2 Scroll Wheel for Quick Adjustments

3 Intuitive Joystick Control for Easy Camera Head Movement

4 Direct-Access Buttons

5 Capacitive Dual-Touchscreen, fully Operable with Protective Gloves (PPE)

6 External Storage Options: USB + SD Card

7 HDMI Output for Uncompressed Image Output

397 mm | 15.6 in

241 mm | 9,4 in

75 mm | 2.9 in

High-Resolution Display

- 10,1" IPS-TFT-Panel
- Display Resolution: 1920 × 1200 px
- Native Full-HD Inspection Image: 1920 × 1080 px
- 16.7 Million Colors
- Brightness: 850 cd/m² (850 nits)
- User-Friendly Interface with Intuitive Icon Navigation, Direct-Access Buttons, Joysticks, and Scroll Wheels

Ergonomic Design

- Compact, Ergonomic Grip Design
- Ideally Positioned Joysticks for Fatigue-Free Operation
- Ultra-Light Housing made from Aluminum-Carbon Composite

ADAPTIVE OPERATION

FOR MAXIMUM FLEXIBILITY

The VUnit sets new standards in adaptability and user comfort. Whether positioned on a tabletop, securely mounted for hands-free use or worn with a neck strap, it adapts effortlessly to the needs of the operator. It can also be controlled directly from the VUcase, making it especially practical for mobile inspections.

For improved ergonomics, the VUnit can even be suspended to provide a clear and comfortable viewing position. This adaptability ensures smooth operation in any inspection environment, regardless of on-site challenges.

MODULAR DESIGN

QUICK REPLACEMENTS EASY MAINTENANCE

The VUnit is divided into five independent modules, each of which can be quickly and easily replaced when needed. This modular concept simplifies maintenance, speeds up repairs, and significantly reduces downtime and service costs.

Its user-friendly design allows components to be replaced on-site without the need for special tools or technical support. This ensures the VUnit remains fully operational and ready to adapt to evolving inspection demands.

VUapp

DEVELOPED BY INSPECTORS FOR INSPECTORS

The VUapp is a purpose-built software solution, designed specifically to meet the demands of professional inspection workflows. It combines a powerful architecture with an intuitive user interface, enabling Full-HD video recording and lossless PNG image capture with exceptional quality.

With its DualCapture technology, the VUapp allows simultaneous video recording and still image capture, without any loss in quality. The integrated text generator with comment function makes it easy to overlay key system data, pressure values or camera positions directly onto recordings.

Even with large volumes of data, the advanced metadata search function ensures quick and targeted retrieval of inspection results.

Software updates can be installed effortlessly on-site via flash drive, keeping your system up to date without the need for time-consuming shipping or service appointments.

UNCOMPRESSED VIDEO OUTPUT

STREAMLINED AI INTEGRATION

The VUnit's integrated HDMI output delivers uncompressed inspection imagery, free from disruptive graphical overlays, ready for direct integration into existing AI systems.
With an impressive action-to-image latency of just 120 ms, reliable real-time analysis is ensured. Its open interface enables fluid integration of customer-specific AI applications, supporting automated inspection workflows, reduced processing times, and efficient downstream data handling.

Moreover, the HDMI interface promotes cross-location collaboration:
Inspection results can be captured on-site and simultaneously shared and analyzed in real time with remote team members. This not only cuts travel costs but also enhances decision-making and significantly improves process reliability.

VUcase

## TRANSPORT CASE WITH INTEGRATED VIDEO INTERFACE

The VUcase is the ideal interface for the INVIZx98 and the VUnit, combining exceptional functionality, flexibility, and durability in one smart, field-ready design. Its built-in video interface and versatile power options enable professional-grade operation in any environment.

The system can be powered via mains or high-capacity professional-grade lithium-ion batteries, offering up to 8 hours of continuous use. A seamless switch between power sources during operation ensures uninterrupted inspections.

The VUcase also provides generous storage space for the camera head, connection cables, VUnit, and accessories. With IP53 protection in horizontal position and the ability to operate the system even with the lid closed, the VUcase proves exceptionally resilient, even under challenging weather conditions.

DYNAMIC VIDEO TRANSMISSION & CUSTOM INTEGRATION
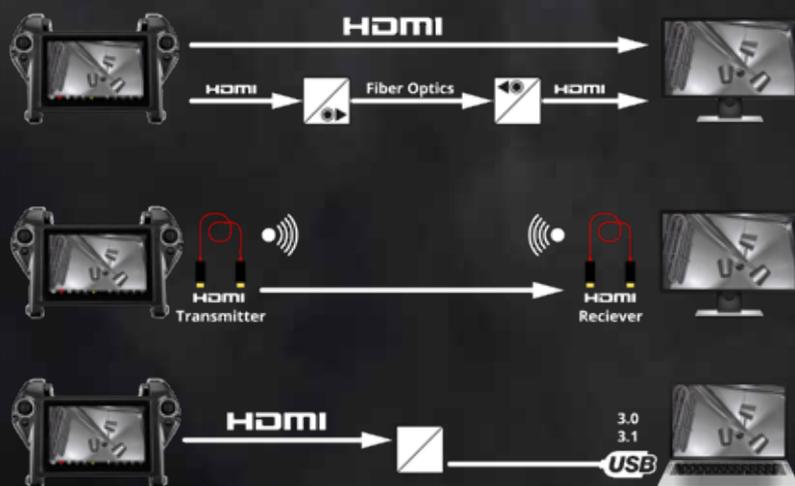
The VUnit's standardized HDMI interface enables straightforward and commercially proven solutions for both wired and wireless video transmission.
The three most common methods are illustrated in the adjacent graphics.

Ask us about simple integration of these transmission options into the VUcase housing.
For connecting to your IT systems (e.g., a laptop), we recommend using a commercially available HDMI-to-UVC converter (minimum USB 3.0).
This approach ensures that cybersecurity remains fully under your organization's control.

Coming soon

CAMERA HEAD	INVIZx98 Ti 45	INVIZx98 Al 45	INVIZx98 Ti 60
Type	1/3" Sony CMOS Sensor	1/3" Sony CMOS Sensor	
Resolution	1920 (H) x 1080 (V)	1920 (H) x 1080 (V)	
Zoom	10 x Optical Zoom	10 x Optical Zoom	
Focus Range	10 mm | 0.39 in	10 mm | 0.39 in	
Light Sensitivity	Color 0,125 lx	Color 0,125 lx	
Shutter Speed	1/30 (25) bis 1/30,000 sec	1/30 (25) bis 1/30,000 sec	
Camera Temperature Display	Yes	Yes	
Cable Length	3 m, 30 m, 50 m and optionally up to 80 m, wound on the viZaar® cable reel VUreel	3 m, 30 m, 50 m and optionally up to 80 m, wound on the viZaar® cable reel VUreel	
FOV	68° - 6,8°	68° - 6,8°	
Image Enhancement Features:	Wide Dynamic Range & Advanced Noise Reduction	Wide Dynamic Range & Advanced Noise Reduction	
ILLUMINATION			
Light Source	2 x 1000 lumen Dual wide-angle LEDs	2 x 1000 lumen Dual wide-angle LEDs	
OPERATING ENVIRONMENT			
Temperature Range	0°C to +48°C (32°F to 118.4°F)	0°C to +48°C (32°F to 118.4°F)	
Pressure Resistance:	4.5 bar (≈ 65 psi)	4.5 bar (≈ 65 psi)	6 bar (≈ 87 psi)
Internal Housing Overpressure:	Max. 2 bar (≈ 29 psi)	Max. 2 bar (≈ 29 psi)	
PAN AND TILT RANGE			
Pan Range:	360° continuous rotation	360° continuous rotation	
Tilt Range:	330° – from -165° to +165°	330° – from -165° to +165°	
Axis Speed:	Full 360° rotation in under 4 seconds	Full 360° rotation in under 4 seconds	
DIMENSIONS			
Weight:	1900 g | 4.19 lb	1400 g | 3.08 lb	
Dimensions (mm):	Width: 97.8 mm | 3.85 in Height: 135 mm | 5.3 in	Width: 97.8 mm | 3.85 in Height: 135 mm | 5.3 in	
Accessory Mounting:	M6 mounting points	M6 mounting points	
Housing:	Corrosion-resistant grade 5 titanium housing	Combination of red anodized and hard-anodized aluminum	Corrosion-resistant grade 5 titanium housing

ACCESSORIES

Accessory Box	• Adapter for strain relief, carbon poles, push poles and compressed air • Strain relief • Special tools for assembly	
Optional Batteries incl. charging system	• Stihl Akku AP 200 S • Stihl Akku AP 300 S • Stihl Akku AP 500 S	
Pneumatic Handpump	For pre-pressure adjustment and continuous pressure monitoring	
Carbon Poles	Used for mounting and guiding the camera head inside the test object; extendable and available in 1 m and 2 m lengths.	
Cable Strain Relief	Protects cable connections from tensile forces when removing the camera head; essential when the camera is used in a suspended position.	
Commercially Available Accessories Tested and Recommended for Operation with the VUnit	1. USB drive with hardware security: User-friendly stick with military-grade security architecture for reliable protection of sensitive inspection data. 2. Streaming solution for real-time applications: Plug-and-play system for true-color, latency-free transmission of the inspection image for AI applications or collaboration with remote teams.	
Manhole Tripod	Simplifies the inspection of containers / chambers through targeted guidance / mounting	

www.vizaar.com

inViz **X** 98

XPANDING YOUR **VU**®
IN *FULL* **HD**

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