

Technical Specifications

HI-DEF PTZx

High-Definition Remote Visual Inspection Cameras.

Eddyfi Technologies delivers the visual inspection tools you need to see inside and inspect process and pressure components for cleanliness and mechanical damage; helping you assess conditions and retrieve loose parts in hazardous locations or where human entry isn't an option.

UNRIVALED INSPECTION

Hi-Def PTZx is a portable, Pan-Tilt-Zoom, fully high-definition (1920×1080), color video inspection system loaded with features to efficiently inspect tanks, vessels, drums, and other large, confined spaces and piping systems. Hi-Def PTZx is packaged in three variations: 3.0, 4.3, and 5.4, which allow for optimized size and capabilities for different applications.

KEY APPLICATIONS

- Large-diameter pipes, tanks, and vessels
- Nuclear reactor vessel, nozzles, and internals
- Nuclear fuel, spent-fuel pools, refueling operations
- Steam generator primary-side and secondary-side inspections
- Plastic, glass, refractory-lined, and stainless-clad vessels
- Catalyst vessels and tray towers
- Aircraft engine assembly and test cells

State-of-the-art integral white LEDs provides over 2000 lumens of cool white-light along with add-on auxiliary lighting to brighten the darkest of environments.



KEY FEATURES AND CAPABILITIES

- **Durability:** Corrosion-resistant, anodized aluminum with stainless-steel construction.
- **Long Distance Zoom:** Confidently inspect large openings with up to 40x optical zoom lens (depending on the model)
- **Easy Operation:** Simple joystick controls allow for intuitive 270° tilt and +/-180° pan rotation. Easily adjust light sensitivity for variations in surface reflection.
- **Mobile Deployment:** Integrated CCU bundles the 7-inch display, cable reel, and Hi-Def PTZx camera in one-hand carry package.
- **Built for harsh environments:** Verified to withstand 44 psi at 100 ft. (30m) depth and up to 50,000 RAD

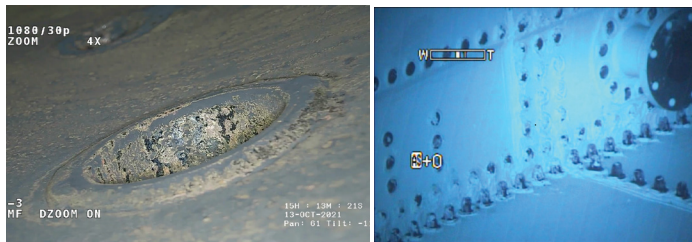


Figure 1: Inspection performed with Eddyfi Technologies High-Def PTZx (left) vs. an inspection performed with a standard definition PTZ (right). The difference in picture quality is undeniable.



Figure 3: Hi-Def PTZx 3.0 remote visual inspection tool.



Figure 4: Hi-Def PTZx 4.3 (top) shown with optional auxiliary lamps (bottom).



Figure 2: Hi-Def PTZx 3.0 in the surface mining industry. The camera is lowered down a drilled hole to an underground void (left), and a mine shaft with crib supports (right).



Figure 5: Hi-Def PTZx 5.4

CAMERA CONTROL UNITS

Modular:

- Versatile solution for control room shelf
- Compact ergonomic design with intuitive rear panel connections
- Magnetic swivel mount for display/recorder

Integrated:

- Portable one-hand carry solution
- High-strength composite construction for decreased weight
- Spools 45m (150ft) of integrated cable
- Swing-out built-in display/recorder



Figure 6: Modular (left) and integrated (right) camera control units.



Figure 8: Ligament cracks observed using the Hi-Def PTZx camera.

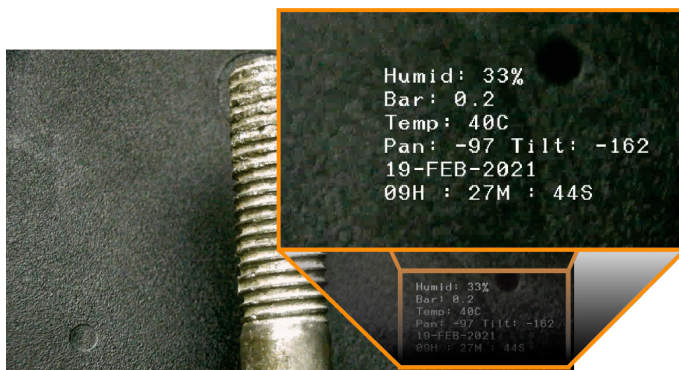


Figure 9: Display/recorder text overlay. Text, data, and position are customizable.

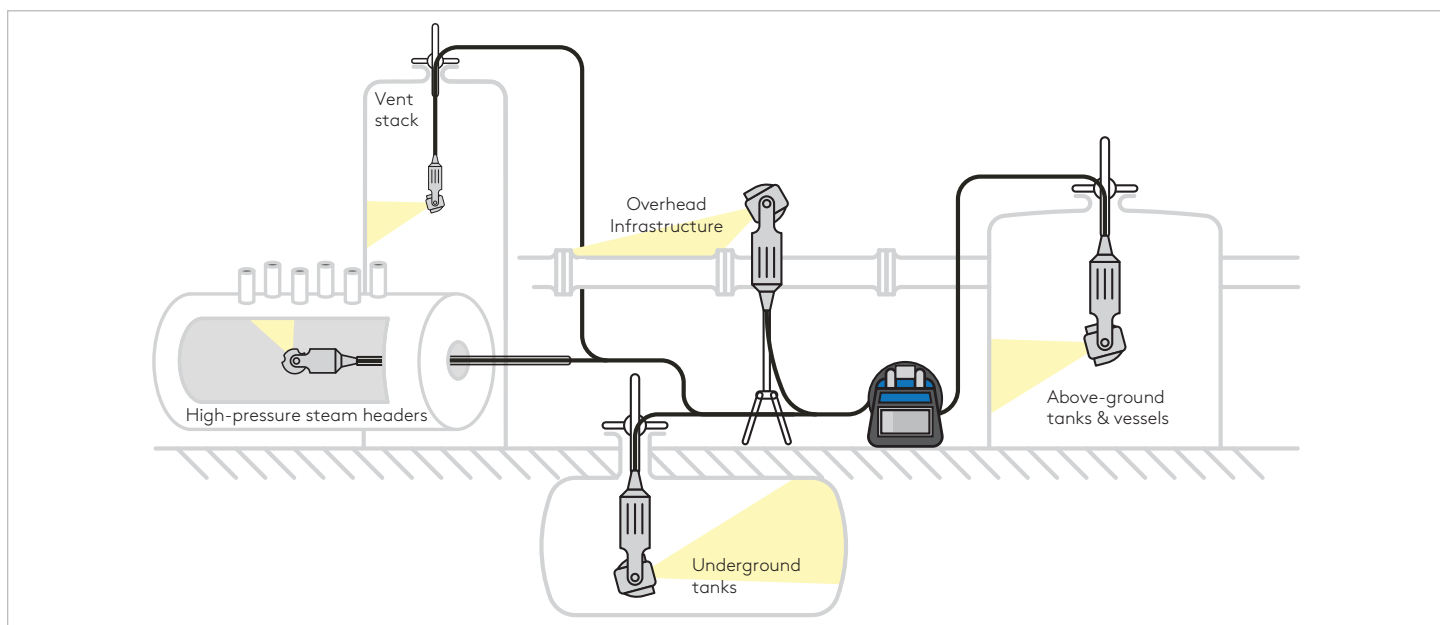


Figure 7: Hi-Def PTZx applications.

SPECIFICATIONS

VIDEO	HI-DEF 3.0	HI-DEF 4.3	HI-DEF 5.4
Optical/digital zoom	10x/12x	30x/12x	40x/12x
Effective pixels	2.13 MP	2.13 MP	2.13 MP
Sensitivity	0.5 lux	0.5 lux	0.5 lux
Horizontal FOV (wide-tele)	W 54°/T 4.9°	W 59°/T 2.1°	W 65.6°/T 1.9°
Brightness adjustment	±7 step	±7 step	±5 steps
Minimum focal distance	W 0.01m/T 1.0m	W 0.01m/T 1.2m	W 0.01m/T 1.0m

LIGHTING	HI-DEF 3.0	HI-DEF 4.3	HI-DEF 5.4
Type	Integral, long-life LED lamps		
Integrated lighting	1,500 lumens	2,000 lumens	6,300 lumens
Auxiliary lighting	N/A	1,000 lumens x2	N/A

MECHANICAL	HI-DEF 3.0	HI-DEF 4.3	HI-DEF 5.4
Minimum access hole	76mm (3.0in)	110mm (4.4in)	137mm (5.4in)
Head weight	1.1 kg (2.4 lb)	2.7 kg (6lb)	3.0kg (6.7lb)
Material	Anodized aluminum w/ stainless steel construction	Anodized & nickle-plated aluminum	Anodized aluminum w/ stainless steel construction
Temperature range	-10°C to 49°C (14°F to 120°F)		
Pressure rating	3 bar (44 psi), 30m (100ft) of water		
Internal purge and pressurization	Inert or dry air up to 0.7 bar (10 psi)		
Pan/Tilt	±180°/±135		
Radiation life expectancy	50,000 RAD average total dose*		

SYSTEM	HI-DEF 3.0	HI-DEF 4.3	HI-DEF 5.4
Integrated weight with 50.5m (100ft cable)	10.7kg (23.7lb)	12.4kg (27.3lb)	12.7kg (28lb)
Modular weight w/ monitor	3kg (6.7lb)	3kg (6.7lb)	3kg (6.7lb)
# boxes	One with two handles		
Maximum cable length	152m (500 ft)		
Power requirement	110-240 VAC; 4 A; 50/60 Hz		
Outputs	2 HDMI, 12 VDC accessory power		
Text overlay with keyboard	Time & date, pan & tilt, zoom, temperature, pressure, & humidity (internal), image title		
Single-button home position	Saved pan, tilt, & zoom positions		

INTERFACE	
Video	2 HDMI ports
Accessory power	12 VDC
System power	100-240 VAC, 4 amp, 50/60 Hz

ACCESSORIES	
Tank flange mount	Shipping case
Lowering pole,	178mm (7in) HD monitor
Pole camera adapter	HD recorder

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HI-DEF PTZx