GE
Measurement & Control

XL Go+™ VideoProbe®

Inspection Technologies

XL Go+ delivers increased probability of detection with new XpertSuite™

Feel more confident about your assets and the decisions you need to make

See more easily

XL Go+™ VideoProbe® is one of the most portable and versatile video borescopes on the market today and with new XpertSuite™ features like enhanced steering responsiveness, improved probe light output, a sunlight readable LCD and external monitor, XL Go+ provides you with the best possible quality of defect information.

Make better decisions through better defect detection.

See the Difference

See how the XpertSuite features improve probabilitiy of detection. **To watch**, snap a photo of the icon or go to

http://bit.ly/xEvbF8

Redefine Portability

Whether you're climbing a 100 meter tower to inspect a wind turbine gearbox, crawling atop a refinery heat exchanger or creeping under a turbofan jet engine on a test stand, a portable video borescope is essential.

The XL Go+ VideoProbe system combines portability with performance—delivering sharp, clear digital images on a system designed to meet inspection needs across a wide range of industry applications.

XL Go+ combines cordless operation with a host of features found in systems three times as large. Unlike other video borescopes, the XL Go+ has no bulky base unit, no backpacks, no tethered scopes or power cords to get in the way—ensuring unlimited inspection access and unprecedented ease of use.

XL Go+ in wind turbine nacelle

XL Go+ in gas trubine

Redefine Image Quality

The ultra-compact XL Go+ VideoProbe system doesn't sacrifice image quality for the sake of portability. Its white LED and crystal–clear active matrix VGA LCD give inspectors the sharp, detailed images needed to ensure accurate detection and analysis, even in applications with poor lighting conditions. The XpertBright™ LCD has enhanced image quality for better readability in sunny or snowy outdoor environments and harsh indoor lighting. An intuitive user interface makes it easy to save still images or record motion video to the internal flash memory or removable USB® ThumbDrive®.

XL Go+'s Versatile Features

- **XpertSuite**—enhances the probability of detecting and identifying flaws using precise steering, superior visibility and easier viewing.
- **LED technology**—produces more light output than most other LED video borescope, uses less power and runs cooler than traditional illumination systems.
- **VGA LCD**—matches display to CCD imager performance for outstanding image quality.
- **Still images and motion video**—captures non-compressed BMPs, compressed JPGs or MPEG video.
- **Optical tip adapters**—offers numerous Field-of-View, Depth-of-Field and Direction-of-View options for enhanced versatility in multiple applications, and are more reliable than LED lenses.

XL Go+ with XpertVision™ External Monitor

XL Go+ in engine inspection

Redefine Ruggedness

The XL Go+ VideoProbe system is constructed to withstand the rigors of the industrial workplace. Shock absorbing materials and seals are strategically incorporated to resist impact damage and to prevent dust and water intrusion.

To ensure top performance in a wide range of environmental conditions, XL Go+ has been subjected to a battery of performance tests.

Performance Tests

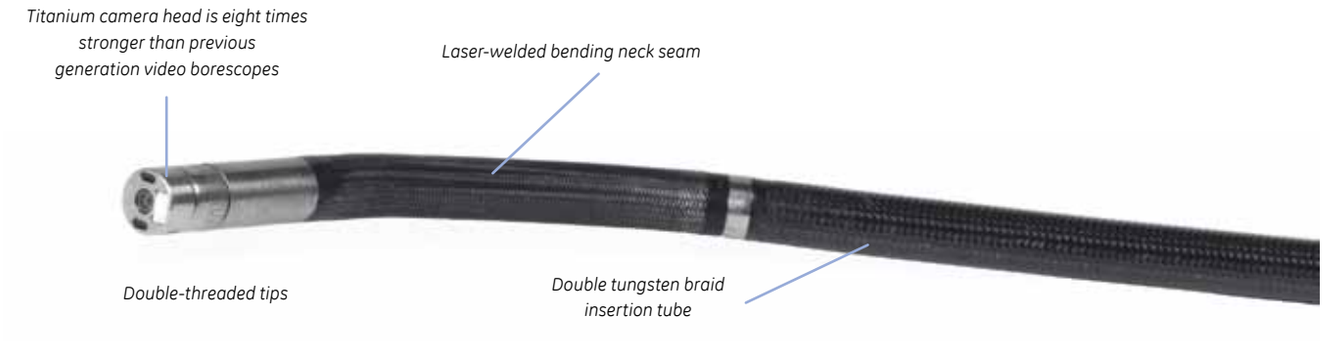
- **MIL-STD-810G**[1]
  - Test Method 506.4 Rain and Blowing Rain
  - Test Method 507.4 Humidity
  - Test Method 509.4 Salt Fog
  - Test Method 510.4 Sand and Dust
  - Test Method 511.4 Explosive Atmosphere
  - Test Method 514.5 Vibration
  - Test Method 516.5 Shock
  - Test Method 521.2 Icing/Freezing Rain
- **MIL-STD-461F**[2] **(Above Deck)**
  - Test Method RE102 Radiated Emissions
  - Test Method RS103 Radiated Susceptibility

Note: *All tests were performed on a fully functioning system, including monitors.*

See Testing

See how XL Go+ performs during testing.
To watch, snap a photo of the icon or go to

http://bit.ly/wkSIFK



Note: *6.1 mm Ø probe shown at 2:1 scale*

[1] United States Department of Defense - Test Method Standard for Environmental Engineering considerations and laboratory tests
[2] United States Department of Defense Interface Standard – Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment


Torsional Strain Relief
provides insertion tube rotation independent of hand-set
XpertBright Readable LCD
provides maximum readability in harsh lighting environments for enhanced image quality
A
B
C
D
XL Go+
Soft Keys
adapts to menu state
Soft Keys
adapts to menu state

A: Second USB® Port
allows use of additional memory devices

B: Headphone Jack
allows recording and listening to audio annotation

C: VGA Video Out Port
*displays XL Go+ video on Xpert**Vision** monitor or other external devices*

D: Covered USB Port
protects memory device

XpertSteer Probe Articulation
offers quick steering responsiveness for tight probe control - bump steering enables slight adjustments to probe position

High Strength Housing
uses impact-resistant materials for system durability

Colored Housing
provides high visibility

Shock Absorbing Materials
protects system from impact damage

Li-Ion Battery
provides two hours of operation (four-hour battery optional)

Shown Actual Size

XpertSuite™ Improves Probability of Detection

XL Go+ has a host of new features designed to help increase the probability of detection. XpertSuite complements the Go's superior image quality to provide enhanced performance to assist in locating and measuring defects.

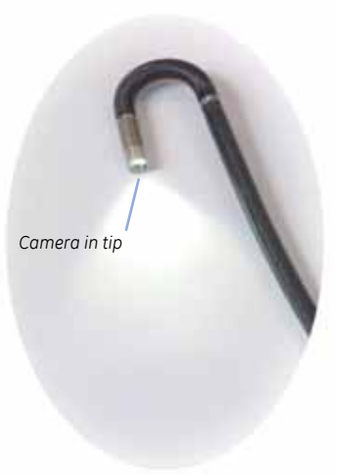
XpertVision™ External Monitor

An optional battery-operated monitor supplements the XL Go+ system. The monitor easily connects to the Go and provides additional viewing by a second inspector or remote observation.

XpertVision External Monitor

XpertBright™ Readable LCDs

Both the XL Go+ and the XpertVision LCDs are designed for maximum readability in strong outdoor lighting, harsh factory lighting or snowy environments. XpertBright enables optimum viewing while enhancing image quality.



XpertSteer™ Probe Articulation

Coupled with Servomotor All-Way® articulation, XpertSteer offers quick, responsive steering. When you stop steering the probe stops moving - no more overshooting. A bump steering feature enables tight probe control. A small "bump" of the joystick moves the probe at a small increment for better defect visibility.

XpertLight™ Probe Illumination

Increased probe light output improves the image quality and the likelihood of a thorough inspection. The increase in light output also improves performance in larger area applications.

Temperature Warning System

A sensor integrated into the camera head monitors temperature and provides three levels of on-screen indication to prevent damage from high-temperature environments.

Probe Operating Temperature up to 100°C (212°F)

The probe can gain faster access in higher-temperature applications where cooling time is needed (e.g., aircraft engines).

Data Storage Options

Save still images and MPEG motion video to internal flash memory or choose between two external USB® ThumbDrive® bays.

XL Go+ in large gas turbine

Powerful Software Technology

Advanced User Interface

Intuitive drop-down menus combined with on-screen cues make XL Go+ simple to operate and powerful enough to offer text, audio and graphic annotation.

File Manager

XL Go+ uses a convenient method for recalling files, creating folders, copying and viewing thumbnail images. Save images directly to USB® ThumbDrive® and transfer files from the system to USB drives.

File management system with a thumbnail-based image and video recall system

Patented Menu Directed Inspection (MDI)

MDI is the first software tool to standardize the inspection process in the NDT industry. This optional patented software helps guide inspectors through the inspection process and intelligently names saved images and videos, and auto-generates reports—saving time, improving quality and increasing productivity.

Tip Map

XL Go+ has a Tip Map that aids inspectors in guiding the tip. A grid shows the tip direction and helps inspectors maintain orientation or better navigation.

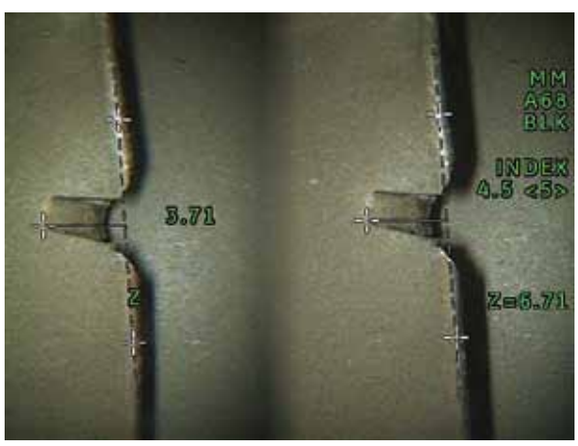
Measurement

The XL Go+ is the only video borescope to offer ShadowProbe®, StereoProbe® and Comparison measurement capabilities. Inverse + and Zoom features allow precise cursor placement.

Supported Measurement Features

Feature	ShadowProbe®	StereoProbe®	Comparison
Length/Distance	■	■	■
Depth	■	■	
Point to Line	■	■	■
Skew	■		
Area	■	■	■
Multi-Segment Length	■	■	■
Circle Gauge	■		■
3x Zoom Windows	■	■	■
Five Measurements per Image	■	■	■

ShadowProbe measurement



StereoProbe measurement

System and Accessories

Standard Accessories

A: *Operating Manual*

B: *Optical Tip Case*

C: *8GB ThumbDrive®*

D: *AC Battery Charger*

E: *XL Go+ System with two-hour battery*

F: *Standard Shipping/Storage Case*

Optional Accessories

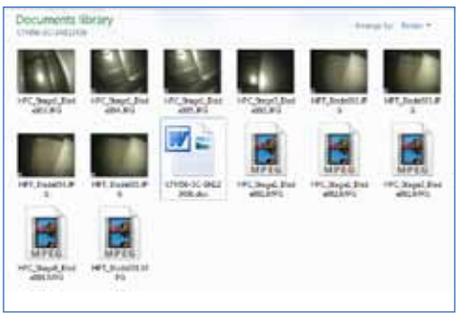
G: *XpertVision External Monitor*

H: *Tube Gripper & Rigidizer*

I: *Mini Magic Mount Kit*

J: *Four-Hour Battery*

Mini Magic Mount Kit Empty and Mounted



Menu Directed Inspection Software

Tube Gripper

Two- and Four-Hour Battery

Rigidizers and Grippers

Technical Specifications

System

Case Dimensions: 48.8 x 38.6 x 18.5 cm (19.2 x 15.2 x 7.3 in)
System Weight:
- **In Case:** 6.5 kg (14.3 lb)
- **Without Case:** 1.73 kg (3.8 lb)

Power: 7.2V, 5100 mAh or 10,200 mAh Battery Pack
AC: 90-264 VAC, 47-63 Hz, <1.2Arms @ 90 VAC
DC: 10.2V +5%/-3%,4.9 A

Construction: Polycarbonate housings with integrated Versalon™(JP) bumpers
Dimensions: 9.53 x 13.34 x 34.29 cm (3.75 x 5.25 x 13.50 in)
LCD Monitor: Integrated transflective 9.40 cm (3.70 in) active matrix VGA color LCD with XpertBright, 640 x 480 resolution
Joystick Control: 360° All-Way® tip articulation with XpertSteer, bump gesture, menu access and navigation
Button Set: Access user functions, measurement and digital functions
Audio: Integrated 2.5 mm headset/microphone jack
Internal Memory: 4 GB flash memory
Data I/O Ports: Two USB® 2.0 ports
VGA Video Out
Brightness Control: Auto and Variable
Illumination Type: White LED
Long Exposure: Up to 12 seconds via auto and manual mode
White Balance: Factory default or user defined
XpertVision (optional external monitor):
- **Weight:** 1.12 kg (2.46 lb) with battery
- **LCD:** 16.25 cm (6.4 in) diagonal active matrix VGA color LCD with XpertBright
- **Resolution:** 640 x 480 pixels
- **Sunlight Readable:** 1100 Cd/Msquared
- **Mounting:** 75 x 75 mm (1/4-20) and vesa mount
- **Battery Run Time:** 2 hours

Standards Compliance and Classifications

MIL-STD-810G: United States Department of Defense Environment Tests Sections 506.4, 507.4, 509.4, 510.4, 511.4, 514.5, 516.5, 521.2
MIL-STD-461F: United States Department of Defense Electromagnetic Interference RS103 and RE102 (Navy above deck)
Standards Compliance: Group 1, Class A: EN61326-1
UL, IEC, EN CSA-C22.2:61010-1
UN/DOT T1-T8

Camera

5.0 mm (0.197), 6.1 mm (0.242 in) and 8.4 mm (0.331 in) Diameter Probes
- **Image Sensor:** 1/6 inch Color SUPER HAD™ CCD camera
- **Pixel Count:** 440,000 pixels
- **Housing:** Titanium

3.9 mm (0.154 in) and 6.2 mm (0.244 in) Diameter Probes
- **Image Sensor:** 1/10 inch Color SUPER HAD™ CCD camera
- **Pixel Count:** 290,000 pixels
- **Housing:** Titanium

Operating Environment

Tip Operating Temp: -25°C to 100°C (-13°F to 212°F)
Reduced articulation below 0°C (32°F)
System Operating Temp: -20°C to 46°C (-4°F to 115°F)
Storage Temperature: -25°C to 60°C (-13°F to 140°F)
Relative Humidity: 95% maximum, non-condensing
Waterproof: Insertion tube and tip to 14.7 psi (1 bar, 10.2 m of H_2O, 33.5 ft of H_2O)
Ingress Protection: IP55

Software

Operating System: Real-time, multi-tasking operating system
User Interface: Simple drop-down, menu-driven operation
Menu navigation using articulation joystick
File Manager: Embedded file manager software supporting:
File and Folder creation, naming, deleting
Store to internal flash (C:\) or USB ThumbDrive®
Copy between USB and C:\
Audio Data: PC compatible (.AAC) file format
Image Control: Invert, Zoom (5X digital)
Image Capture and Recall
Digital Zoom: Continuous (5.0X)
Image Formats: Bitmap (.BMP), JPEG (.JPG)
Video Format: MPEG 4
Text Annotation: Built-in full screen text overlay generator
Graphic Annotation: User placement of arrows
Articulation Control: "Steer & Stay" articulation lock/fine articulation
Tip "Home" return to neutral forward-tip orientation
User-selectable fine or coarse control
XpertSteer probe articulation offers quick steering responsiveness for tight probe control - bump steering enables slight adjustments to probe position
Software Updates: Field updateable via USB ThumbDrive
Languages: English, Spanish, French, German, Italian, Russian, Japanese, Korean, Portuguese, Chinese, Polish

Tip Articulation

Insertion Tube Length	Straight Tube
2.0 m, 3.0 m, 3.2 m, 4.5 m	Up/Down – 160° min, Left/Right – 160° min
6.0 m, 8.0 m, 9.6 m	Up/Down – 150° min, Left/Right – 150° min

Note: *Typical articulation exceeds minimum specifications*

CAMERA DIAMETER	INSERTION TUBE WORKING LENGTH					
3.9 mm (0.154 in)	2.0 m (6.6 ft)	3.0 m (9.8 ft)				
5.0 mm (0.197 in)	2.0 m (6.6 ft)	3.0 m (9.8 ft)				
6.1 mm (0.242 in)	2.0 m (6.6 ft)	3.0 m (9.8 ft)	4.5 m (14.8 ft)	6.0 m (19.7 ft)	8.0 m (26.2 ft)	
6.2 mm (0.244 in)		3.2 m (10.5 ft)				
8.4 mm (0.331 in.)	2.0 m (6.6 ft)	3.0 m (9.8 ft)	4.5 m (14.8 ft)	6.0 m (19.7 ft)	8.0 m (26.2 ft)	9.6 m (31.5 ft)

Technical Specifications

Tip Optics

Tip View (DOV)	Tip Color	Field of View (FOV)*	Depth of Field (DOF)	3.9 mm Optical Tip Part #	5.0 mm Optical Tip Part #	6.1 mm Optical Tip Part #	6.2 mm Optical Tip Part #	8.4 mm Optical Tip Part #
Standard Tips								
FORWARD	NONE ☒	80˚	6–80 mm (0.24–3.15 in)	PXT480FG				
FORWARD	ORANGE	90˚	3-40 mm (0.12-1.57 in)	PXT490FN				
FORWARD	NONE ☒	50˚	50 mm (1.97 in)–infinity		PXT550FF	XLG3T6150FF		
FORWARD	WHITE ○	50˚	12–200 mm (0.47–7.87 in)		PXT550FG	XLG3T6150FG		
FORWARD	ORANGE	80˚	3-20 mm (0.12-0.79 in)		PXT580FN	XLG3T6180FN		
FORWARD	YELLOW	90˚	20 mm (0.79 in)-infinity			XLG3T6190FF		
FORWARD	BLACK	120˚	5–120 mm (0.20–4.72 in)			XLG3T61120FG		
FORWARD	BLACK	100˚	5–120 mm (0.20–4.72 in)		PXT5100FG			
FORWARD OBLIQUE	PURPLE	50˚	12–80 mm (0.47–3.15 in)			XLG3T6150FB		
FORWARD	NONE ☒	40˚	100 mm (3.94 in.)–infinity				PXT6240FF	
FORWARD	YELLOW	120˚	25 mm (0.98 in.)–infinity				PXT62120FF	
FORWARD	BLACK	120˚	4–190 mm (0.16–7.48 in.)				PXT62120FN	
FORWARD	BLACK	120˚	5–200 mm (0.20–7.87 in.)					XLG3T84120FN
FORWARD	NONE ☒	40˚	250 mm (9.84 in)–infinity					XLG3T8440FF**
FORWARD	WHITE ○	40˚	80 - 500 mm (3.15 - 19.68 in)					XLG3T8440FG
FORWARD	YELLOW	80˚	25–500 mm (0.98–19.68 in)					XLG3T8480FG
SIDE	BROWN	80˚	4–80 mm (0.16–3.15 in)	PXT480SG				
SIDE	RED	90˚	2-16 mm (0.08-0.63 in)	PXT490SN				
SIDE	BROWN	50˚	45 mm (1.77 in.)–infinity			XLG3T6150SF		
SIDE	GREEN	50˚	9–160 mm (0.35–6.30 in)		PXT550SG	XLG3T6150SG		
SIDE	BLUE	120˚	4–100 mm (0.16–3.94 in)			XLG3T61120SG		
SIDE	BLUE	100˚	4–100 mm (0.16–3.94 in)		PXT5100SG			
SIDE	RED	80˚	1–20 mm (0.04–0.79 in)		PXT580SN	XLG3T6180SN		
SIDE	GREEN	80˚	18 mm (0.71 in) – infinity				PXT6280SF	
SIDE	BLUE	80˚	5 mm (0.20 in) – infinity				PXT62120SN	
SIDE	BROWN	40˚	250 mm (9.84 in)–infinity					XLG3T8440SF**
SIDE	GREEN	80˚	25–500 mm (0.98–19.68 in)					XLG3T8480SG
SIDE	BLUE	120˚	4–200 mm (0.16–7.87 in)					XLG3T84120SN
ShadowProbe® Measurement Tips								
FORWARD	WHITE ○	50˚	12–30 mm (0.47–1.18 in)			XLG3TM6150FG		
SIDE	BLUE	50˚	7–24 mm (0.28–0.94 in)			XLG3TM6150SG		
StereoProbe® Measurement Tips								
FORWARD	BLACK	50˚/50˚	5–45 mm (0.20–1.77 in)	PXTM45050FG				
FORWARD	BLACK	60˚/60˚	4–80 mm (0.16–3.15 in)		PXTM56060FG	XLG3TM616060FG	PXTM626060FG	
FORWARD	BLACK	60˚/60˚	4–50 mm (0.16–1.97 in)					XLG3TM846060FG
SIDE	BLUE	50˚/50˚	4–45 mm (0.16–1.77 in)	PXTM45050SG				
SIDE	BLUE	45˚/45˚	2–50 mm (0.08–1.97 in.)		PXTM54545SG			
SIDE	BLUE	50˚/50˚	2–50 mm (0.08–1.97 in)			XLG3TM615050SG		
SIDE	BLUE	60˚/60˚	4–80 mm (0.16–3.15 in)				PXTM626060SG	
SIDE	BLUE	60˚/60˚	4–50 mm (0.16–1.97 in)					XLG3TM846060SG

*FOV is specified diagonally.
**Indicates tips with maximum brightness.

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Standards Compliance
Every Measurement System is supplied with a Certificate of Compliance that indicates that the probe was manufactured and tested to measurement standards traceable to NIST (National Institute of Standards and Technology). Further, every Measurement System is supplied with a measurement verification block that contains test targets which are NIST traceable.

ISO 9001
REGISTERED COMPANY

TÜV Rheinland of North America, Inc. US

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