

GE
Inspection Technologies

Fiberscopes

Remote Visual Inspection

Precision Optics
Durable Construction
Cost Effective





A large family of rugged, high performance inspection tools

A wide range of diameters, lengths and viewing options, combined with a high-resolution image guide, make GE Inspection Technologies flexible fiberscopes ideal for a variety of remote visual inspection applications. They excel in capturing bright, clear images from deep inside turbines, compressors, pipes, tanks and other hard-to-reach places.

Full Range of Models

With over 30 standard models from which to choose, you are sure to find the right fiberscope for your inspection application. Standard articulating models have diameters as small as 2.4 mm (0.94 in.) and lengths up to 2.7 m (8.9 ft.).

Non-articulating models are available from 0.5 mm (0.20 in.) diameter and in lengths as long as 2.0 m (6.6 ft.).

High-resolution Images

The super thin fiberoptic technology used by GE Inspection Technologies fiberscopes allows thousands more fibers to be packed into the same size image bundle. Our "Superfine" image guides have up to 50 percent more fibers than other fiberscopes of similar diameter. The high quality of smaller fibers provides a sharper, smoother image and reveals finer details of the inspection surface.



Ergonomic Body

The trim, sleek body is comfortable for hands of all sizes and the conveniently-placed articulation and focus controls enable single-handed operation.

Designed To Be Used

Our flexible fiberscopes are built to withstand today's tough industrial applications. With a stainless steel monocoil core, waterproof sealant, and stainless steel or tungsten outer braid, the scopes are built for durable performance in a variety of inspection environments.

For UV Inspections

Quartz illumination fibers are available for applications where a UV light source is required with the fiberscope. Quartz has much greater efficiency when transmitting UV light and will provide more intense output to stimulate UV-sensitive dyes and penetrants.



Image of Turbo Impeller



Turbine Inspection

Hardware Features

Tip Articulation

This aids maneuverability and has a scanning capability which can provide a panoramic view of the area being inspected. Tip Articulation is controlled by a conveniently-located lever which operates the two-way articulating tips. Two concentric knobs are used on four-way systems. Both types have locking mechanisms to maintain a fixed articulation angle during inspection.



Eyepiece

The standard DIN eyepiece connects easily to a c-mount video camera system by way of a variable focus coupler. The ocular assembly incorporates a diopter focus adjustment to suit operators with varying eyesight characteristics.

Light Guide

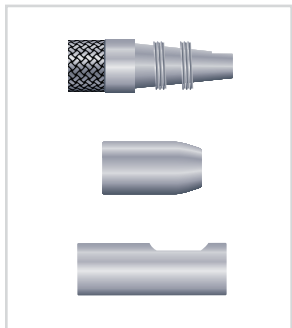
A continuous high-efficiency fiber bundle maximizes light transmission from light source to scope tip. Various entrance adapters are available which enable the instrument to be used with a wide variety of light sources including those of other manufacturers.

Insertion Tube

A strong stainless steel monocoil provides protection from crushing forces, while a stainless steel or tungsten braid cover resists wear from sliding over rough and sharp surfaces. The Insertion Tube is made watertight with layers of PVC and soft urethanes. The flexible Insertion Tube adapts easily to curves and bends and can be maneuvered around corners and over obstacles, yet is torsionally stiff to allow it to be twisted for better access and positioning.

Interchangeable Tip Optics

These enable both forward-view and 90° side-view inspections with one fiberscope. The Tip optics are retained by a double screw-thread which ensures that the tips are positively secured to the instrument. The forward-viewing tip headguard is standard and the 90° side-view Tip Optics are optional and diameter-specific.



Technical Specifications

Operating Temperature:

-18° to 82° C (0° to 180° F)

Watertight:

Insertion Tube and Bending Neck to 1 bar (14.7 psi)
Scope Body splashproof

Liquid Compatibility:

Can be immersed in water, synthetic and mineral lubricating oil, mineral and synthetic hydraulic fluid (not Skydrol®), gasoline, diesel and jet fuel. (Instrument must be cleaned of contaminating fluid after use and before storage.)

Insertion Tube Bend Radius:

Scope Diameter
2.4 mm to 6 mm
8.4 mm
12.5 mm

Minimum Bend Radius
32 mm (1.25 in.)
36 mm (1.5 in.)
51 mm (2.0 in.)

Specifications subject to change without notice.

Technical Specifications

Specifications subject to change without notice.

Fiberscope Models with Articulation

Part No.	Diameter mm (in.)	Working Length m (ft.)	Articulation	Direction of View	Field of View	Depth of Field mm (in.)	Side View Tip	Insertion Tube/ Bending Neck Braid**
2.4 mm Diameter								
F2D07	2.4 (0.094)	0.7 (2.3)	2-Way 130°	0°	45°	4.0 (0.16) – infinity	No	tungsten
F2D12	2.4 (0.094)	1.2 (3.9)	2-Way 130°	0°	45°	4.0 (0.16) – infinity	No	tungsten
3.0 mm Diameter								
F3D05	3.2 (0.126)	0.5 (1.6)	2-Way 120°	0°	45°	4.0 (0.16) – infinity	No	stainless steel
F3D10	3.2 (0.126)	1.0 (3.3)	2-Way 120°	0°	45°	4.0 (0.16) – infinity	No	stainless steel
F3D12	3.2 (0.126)	1.25 (4.1)	2-Way 120°	0°	45°	4.0 (0.16) – infinity	No	stainless steel
4.0 mm Diameter								
F4D10	4.0 (0.157)	1.0 (3.3)	2-Way 120°	0°	45°	4.0 (0.16) – infinity	No	tungsten
F4D15	4.0 (0.157)	1.5 (4.9)	2-Way 120°	0°	45°	4.0 (0.16) – infinity	No	tungsten
F4D18	4.0 (0.157)	1.8 (6.1)	2-Way 120°	0°	45°	4.0 (0.16) – infinity	No	tungsten
F4S10	4.0 (0.157)	1.0 (3.3)	2-Way 120°	90°	45°	4.0 (0.16) – infinity	No	tungsten
F4S15	4.0 (0.157)	1.5 (4.9)	2-Way 120°	90°	45°	4.0 (0.16) – infinity	No	tungsten
F4S18	4.0 (0.157)	1.8 (6.1)	2-Way 120°	90°	45°	4.0 (0.16) – infinity	No	tungsten
5.0 mm Diameter								
F5X10	5.0 (0.197)	1.0 (3.3)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	stainless steel
F5X15	5.0 (0.197)	1.5 (4.9)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	stainless steel
F5X18	5.0 (0.197)	1.8 (6.1)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	stainless steel
F5S10	5.0 (0.197)	1.0 (3.3)	2-Way 120°	90°	45°	6.0 (0.24) – infinity	Yes	stainless steel
F5S15	5.0 (0.197)	1.5 (4.9)	2-Way 120°	90°	45°	6.0 (0.24) – infinity	Yes	stainless steel
F5S18	5.0 (0.197)	1.8 (6.1)	2-Way 120°	90°	45°	6.0 (0.24) – infinity	Yes	stainless steel
6.0 mm Diameter								
F6X10	6.0 (0.236)	1.0 (3.3)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
F6X15	6.0 (0.236)	1.5 (4.9)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
F6X18	6.0 (0.236)	1.8 (6.1)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
F6X30IG*	6.0 (0.236)	2.7 (8.9)	2-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
8.0 mm Diameter								
F8X10	8.0 (0.331)	1.0 (3.3)	4-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
F8X15	8.0 (0.331)	1.5 (4.9)	4-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
F8X18	8.0 (0.331)	1.75 (6.1)	4-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten
F8X30IG*	8.0 (0.331)	2.7 (8.9)	4-Way 120°	0°/90°	45°	6.0 (0.24) – infinity	Yes	tungsten

* Industrial grade not superfine image guide , ** Polyimide cover over braid optional

Fiberscope Models without Articulation

Part No.	Diameter mm (in.)	Working Length cm (in.)		Direction of View	Field of View			Insertion Tube Covering
0.5 mm Diameter								
FCN05D025	0.5 (0.0197)	25 (9.8)	-	0°	70°	-	-	Polyurethane
FCN05D06	0.5 (0.0197)	60 (23.6)	-	0°	70°	-	-	Polyurethane
FCN05D120	0.5 (0.0197)	120 (47.2)		0°	70°			Polyurethane
1.0 mm Diameter								
FCN1.0D025	1 (0.039)	25 (9.8)	-	0°	70°	-	-	Polyurethane
FCN1.0D06	1 (0.039)	60 (23.6)	-	0°	70°	-	-	Polyurethane
FCN1.0D120	1 (0.039)	120 (47.2)	-	0°	70°	-	-	Polyurethane
1.5 mm Diameter								
FCN1.5D025	1.5 (0.059)	25 (9.8)	-	0°	70°	-	-	Polyurethane
FCN1.5D06	1.5 (0.059)	60 (23.6)	-	0°	70°	-	-	Polyurethane
FCN1.5D120	1.5 (0.059)	120 (47.2)	-	0°	70°	-	-	Polyurethane
2.0 mm Diameter								
FCN2D05	2.0 (0.0787)	50 (19.69)	-	0°	60°	-	-	PVC
FCN2D10	2.0 (0.0787)	100 (39.37)	-	0°	60°	-	-	PVC
FCN2D15	2.0 (0.0787)	150 (59.06)	-	0°	60°	-	-	PVC
FCN2D20	2.0 (0.0787)	200 (78.74)	-	0°	60°	-	-	PVC

Custom lengths up to 9.0 m (29.5 ft.) available

Light Sources & Accessories

GE Inspection Technologies flexible fiberscopes are ideal for documentation and recording images, and with the appropriate adapter, can be used with color video cameras.

The following documentation accessories are available:

- Video Cameras for recording and documentation
- Monitors for displaying enlarged images.
- Light Sources



C-mount Color Video Camera



C-mount Video Coupler (with fixed or adjustable focus)



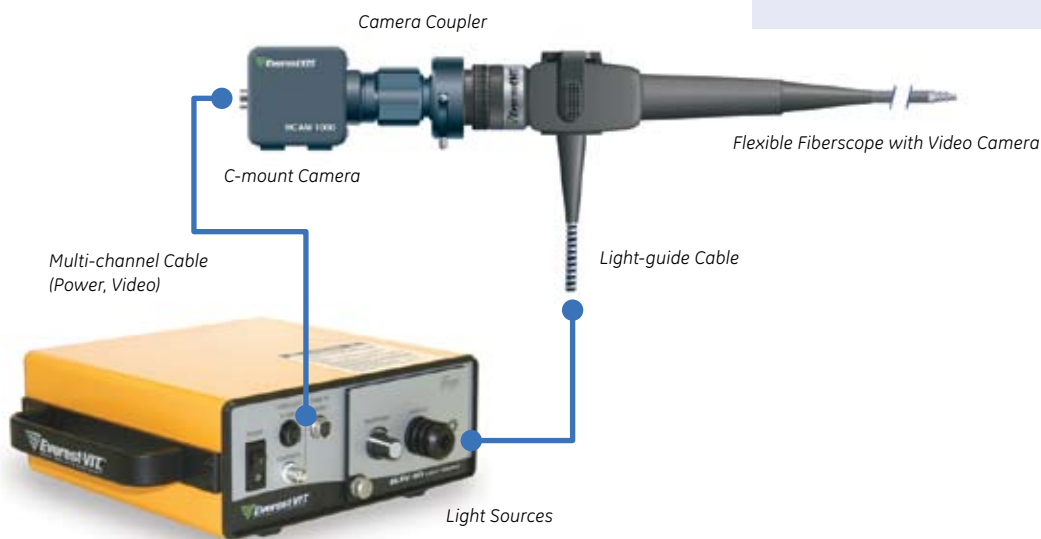
XLG3 Borescope Adapter. Couple any GE fiberscope to the XLG3 VideoProbe to allow use of image capture and data management.



Mini DV Digital Video Recorder/Monitor. Includes memory card for video clips and still image storage



High-resolution Monitor



ACMI



Olympus



Wolf

Adapters for connection to various Light Sources



ELSV-60
60 W metal-halide light source with integral camera power and video output channel.



ELS-24DC KIT
24 W metal-halide light source with high output and high color temperature.



ELSX-300
300 W Xenon light source with high output, and high color temperature.



ELS-120UV or FLS-200UV
Switchable UV/visible light sources



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GE Inspection Technologies: productivity through inspection solutions

GE Inspection Technologies provides technology-driven inspection solutions that deliver productivity, quality and safety. We design, manufacture and service ultrasonic, remote visual, radiographic and eddy current equipment and systems. We offer specialized solutions that will help you improve productivity in your applications in the aerospace, power generation, oil & gas, automotive or metals industries.

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