

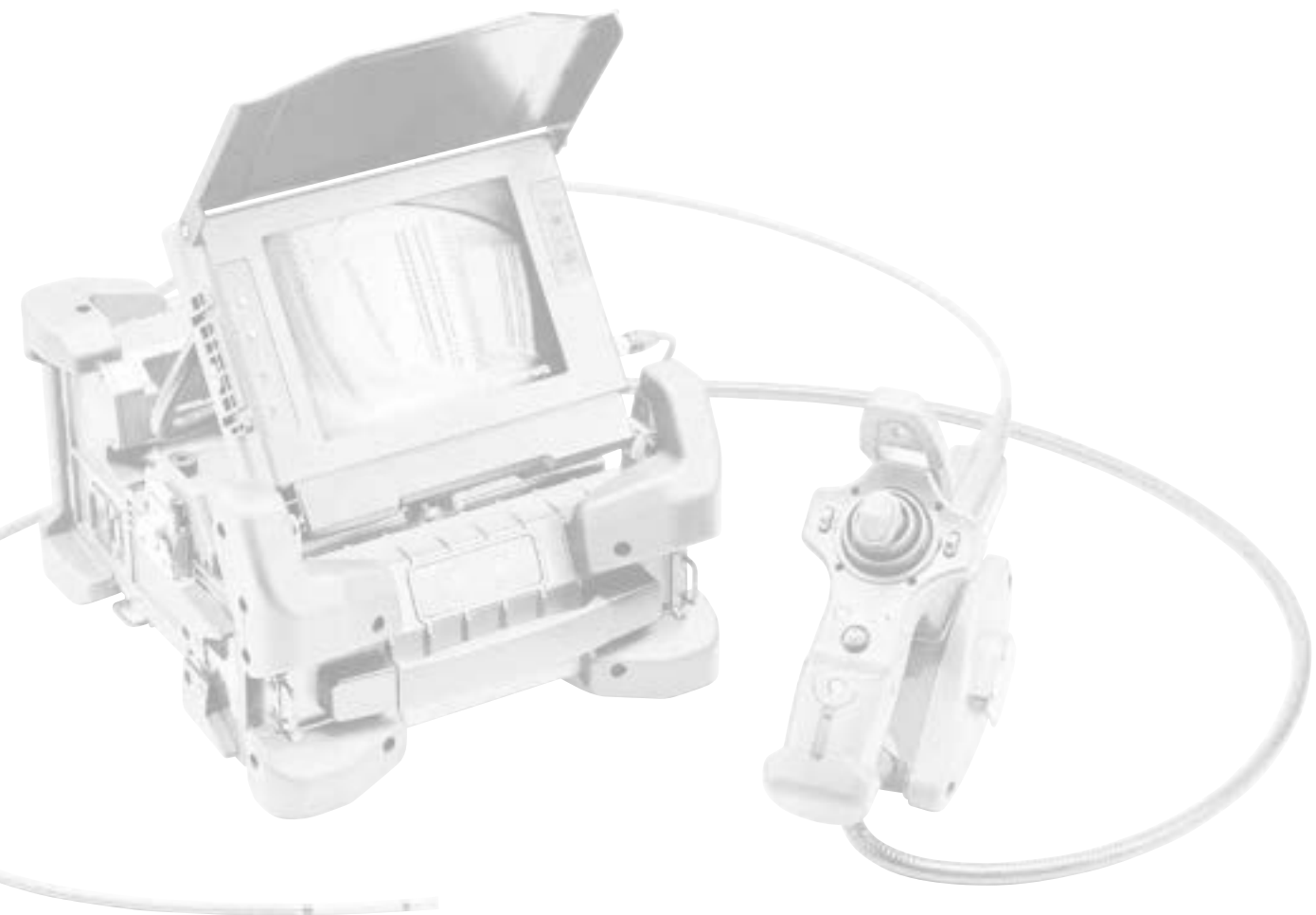
**OLYMPUS**<sup>®</sup>

Your Vision, Our Future

Industrial Videoscope

**IPLEXFX**

**NEW**



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# A Revolution in Remote Visual Inspection has arrived...

Introducing a videoscope system that combines portability with performance; modularity with reliability; simplicity with advanced functionality; ease of use with durability. Only one product does this — the new IPLEX FX.





1

# Rugged and Durable

Designed to withstand the bumps, drops and falls of the everyday industrial workplace.

The IPLEX FX introduces new levels of durability to industrial videoscopes with its shock-resistant case design and wear-resistant scope exterior. Adding “strength-of-construction” to a frequently used, job-essential tool produces one tough, reliable and long-lasting piece of industrial inspection equipment.

## Cast Magnesium-alloy Chassis for Impact Resistance

The main component of the IPLEX FX base unit chassis is magnesium — renowned for its strength and light weight. A typical material used for industrial environment equipment, magnesium was chosen to provide the impact resistance and solid base that withstands the knocks and bumps that commonly occur to industrial videoscopes. In addition to

a crush-resistant chassis each corner is protected by rubber bumpers, further softening a drop and maximising product reliability while reducing potential for damage. The IPLEX FX survived the repetitive 4-foot drop test for compliance to MIL-STD 810F.\*



The chassis corners are protected by rubber bumpers to reduce the impact force created by the typical bumps and knocks of an industrial workplace.

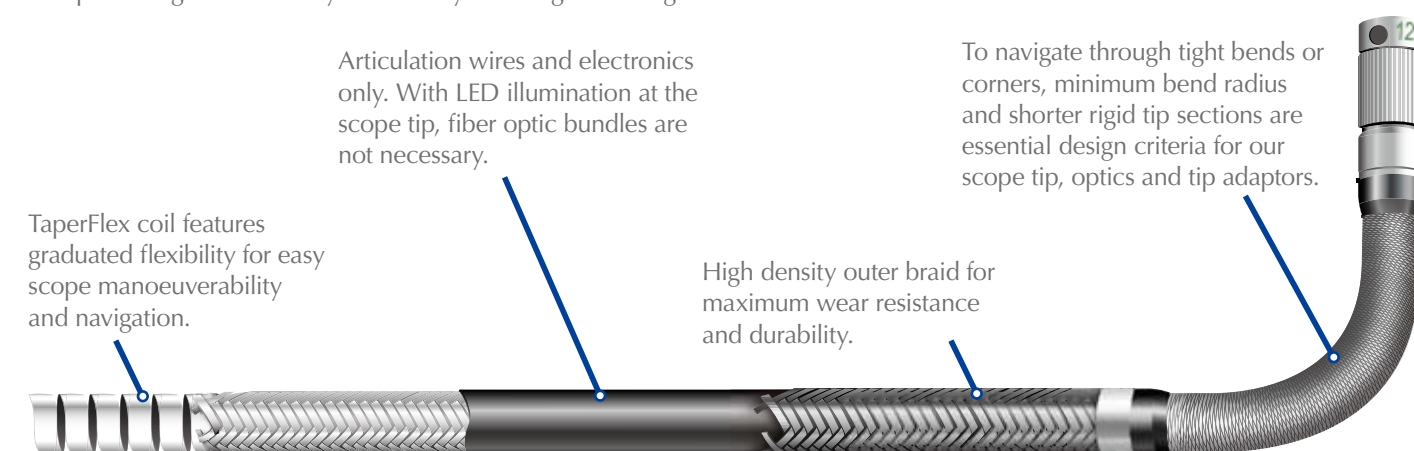
The crush resistant cast magnesium chassis is the core of the IPLEX FX mechanical design strength. The extra durability in construction results in extra protection against equipment damages.

\* MIL-STD (The United States Defense Standard) is used to help achieve standardisation objectives by the U.S. Department of Defense.

## Abrasion Resistant Insertion Tube

The most critical component of any remote visual inspection tool is the insertion tube. It performs the basic requirement of accessing the inspection area and frequently navigating through narrow paths with abrasive and rough surfaces. The IPLEX FX insertion tube is the latest Olympus IPLEX design, with enhanced crush protection and 3x greater fray resistance. Strength was added to the insertion tube without compromising the flexibility and ability to navigate through

the most difficult inspections. As with all of our IPLEX products, the IPLEX FX is designed with the Olympus Tough TaperFlex graduated stiffness design for maximum scope flexibility towards the scope end. The IPLEX FX scope unit is available in three insertion tube diameters: 6.0 mm, 4.0 mm and a 6.2 mm model with internal working channel.\*



TaperFlex coil features graduated flexibility for easy scope manoeuvrability and navigation.

Articulation wires and electronics only. With LED illumination at the scope tip, fiber optic bundles are not necessary.

High density outer braid for maximum wear resistance and durability.

To navigate through tight bends or corners, minimum bend radius and shorter rigid tip sections are essential design criteria for our scope tip, optics and tip adaptors.

\* IPLEX scope diameters are specified as the minimum ring gauge diameter that the scope can pass through.



2

# Go Anywhere... Use Anywhere

Rain, desert sand, dusty workshop, or even just a spilt drink. The IPLEX FX is designed to operate in the most demanding (or not-so-demanding) environments.

IPLEX FX  
VIDEOSCOPE

PUS

The simplicity and portability of Olympus videoscopes has seen their usage extend to areas not considered 'traditional' application areas. Go to these harsher environments, but take a system designed for the job... IPLEX FX.

## True Portability — Compact, Lightweight, Battery-powered

Power is provided to the IPLEX FX by an internally mounted, Lithium-ion battery which provides over two hours run-time. The compact size of the IPLEX FX makes portable operation a reality — either body-wear the lightweight system or place it on a surface and allow the non-slip, rubber corners to hold it in place while you carry out your inspections.



## Temperature Resistance

The IPLEX FX scope units are resistant to insertion in higher temperature environments — now 100° C meaning that inspections can take place sooner as you won't need to wait as long for the area to cool. Additionally, a temperature sensor provides a two-stage visual warning in order to prevent overheating.



High temperature warning display

## Resistance to Harsh Environments

To prevent the ingress of debris, all mechanical joints are hermetically sealed and input/output connectors are covered.



IPLEX FX complies with internationally recognised Military Standards (MIL-STD 810F\*). This compliance assures a greater level of environmental performance than regular industry standards and provides increased reliability against dust and fluid.

The inventive design of the FX has removed the need for a cooling fan, and therefore no air intake is required. This results in even greater environmental resistance.

IPLEX FX is MIL-STD 810F and MIL-STD 461E tested.

MIL-STD 810F Test

- Vibration Test
- Drop Test at 4 feet
- Blowing Rain Test
- Humidity Test
- Salt Fog Test
- Sand and Dust Test
- Icing/Freezing Rain Test
- Explosive Atmosphere Test

MIL-STD 461E Test

- EMI Test



Explosive atmosphere testing



IP55 water resistance testing

\* MIL-STD (The United States Defense Standard) is used to help achieve standardisation objectives by the U.S. Department of Defense.



3

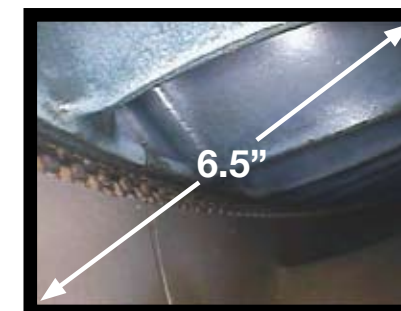
## See Clearly and Accurately

See the smallest details to make the best, most informed decisions — image quality that is synonymous with the Olympus name.

As a leader in the photographic camera market, Olympus understands what is needed to deliver accurate and colour-rich images. This experience continues to be transferred to industrial inspection equipment.

### Daylight-view High Resolution LCD Monitor

Clear observation in direct sunlight is made possible with the new 6.5-inch daylight-view LCD monitor — the minimum recommended screen size for accurate and reliable observation of fine detail. Colour reproduction and contrast are maintained, ensuring inspections are not compromised when working outdoors. The environmental resistance of the LCD also matches that of the IPLEX FX system.



### Optimized Images with Interchangeable LED Tip Adaptors

To provide high quality, faithfully reproduced images and accurate colour, the IPLEX FX features an outstanding optical system, new noise reduction and Olympus' own WiDER™ (Wide Dynamic Extended Range) image processing technology. WiDER™ delivers bright, contrast-balanced images across the entire depth of field.

**WiDER**



Image at standard gain setting.



Image with WiDER™ gain applied. WiDER™ gain brightens the darker areas while maintaining the light level and details shown in the bright area.

### New LED Illumination with SmartTip™ Optical Adaptors

Now the light source is in the SmartTip™ optical adaptor with LED's providing illumination, meaning lamp changes are no longer required. This revolutionary new design contributes to reduction in overall system size and power consumption, while maintaining the ability to change direction of view and field of view. This design applies to SmartTip™ optical adaptors for both standard inspections and Stereo Measurement for all three insertion tube diameters. Additionally, Hi-Beam mode boosts illumination up to 1.5x for expanded inspection capability.





# 4

## Multi Purpose Operation

A wide variety of scopes and a feature-rich system increase your inspection capabilities.



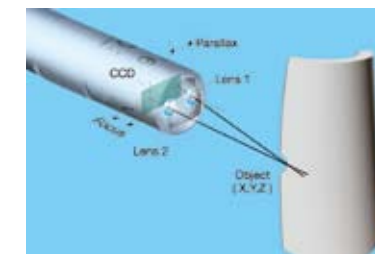
The IPLEX FX can perform almost any kind of inspection thanks to a wide range of interchangeable scopes, including models up to 18 m long and one with a working channel. More than just another inspection tool, the IPLEX FX is a reliable, feature-rich system capable of precise, real-time measurement and foreign object retrieval.

### Measurement Accuracy

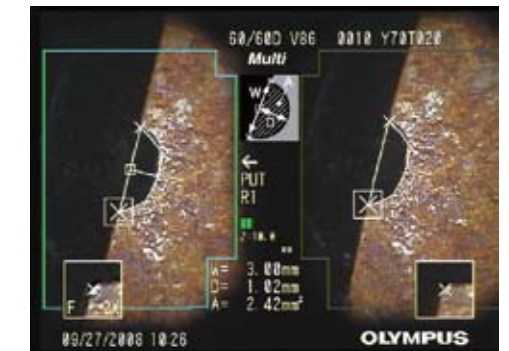
The IPLEX FX uses Stereo Measurement technology for accurate, three-dimensional defect measurement at any target angle. With the addition of Olympus' unique Multi and Offset Measurement modes, the IPLEX FX offers a more intuitive measurement environment with eight different modes for accurate evaluation of most inspection targets. Multi Measurement mode is a quick two-point defect identification technique that simultaneously calculates point-to-line, area and distance results. Stereo Measurement tip adaptors are available in direct and side view models for all three insertion tube diameters.

IPLEX FX Stereo Measurement Modes

- Distance
- Point-to-line
- Depth
- Area
- Lines
- Profile
- Multi
- Offset (new)



Mechanism of Stereo Measurement



Multi Measurement mode

Our unique Spot-Ranging™ feature is the industry's only real-time tip-to-target distance measurement tool. As a rule, a videoscope's measurement accuracy depends on the scope's distance from the target. With the IPLEX FX, the user can easily determine whether the scope tip is close enough to calculate the most accurate measurement on the first try.

### Interchangeable Scopes

The IPLEX FX offers a range of interchangeable scopes, allowing you to choose the right one to fit the job. This means a single IPLEX FX can be configured for a variety of inspections. Scopes are available in diameters of 4.0 mm and 6.0 mm and in various lengths ranging from 2 m to 18 m. A 7.5 m scope with a smooth outer coating is also offered. This scope is ideally suited to nuclear and pharmaceutical inspections where ease of cleaning and decontamination are priorities.



### Foreign Object Retrieval

Adding to the array of versatile IPLEX FX benefits is a new 6.2 mm diameter scope featuring an internal working channel. Six retrieval tools allow you to remove foreign objects from inside inspection areas — ideal for helping avoid costly overhauls — and perform hook and drag inspections in engines. Both forward and side view Stereo Measurement tip adaptors are also available with the working channel scope, providing a complete inspection solution.





# 5 Versatile Image Management

Archiving, reporting and sharing inspection results made quick and simple.



These days, inspections don't end when you've packed up your videoscope. It's just the beginning. The IPLEX FX is equipped with an array of recording options and external interface solutions for a seamless transition to post-inspection analysis and archiving.

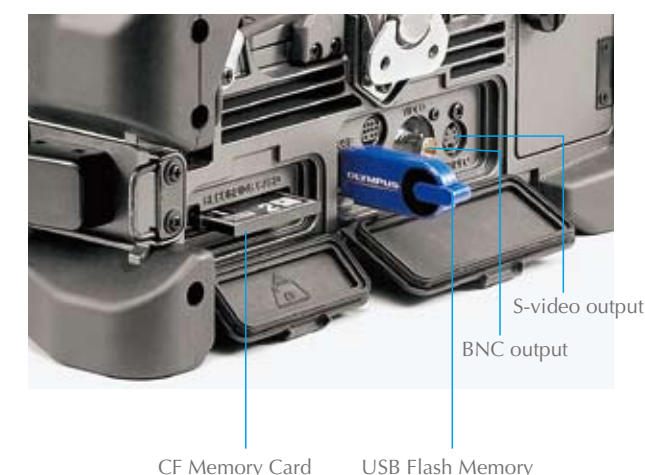
## ImageNotepad™ for Extended Image Annotation

Information frequently needs to be added to videoscope images to aid post-inspection diagnosis and create reports. IPLEX FX makes this process an integral part of inspections with easy-to-use ImageNotepad™. Fields for titles and text are available for entering key words and phrases to allow extended descriptions of inspected objects. Additionally, text input is simplified by display of a list of predicted words each time a letter is entered. This valuable information is immediately accessible as part of each image when inspection data is transferred to a computer.



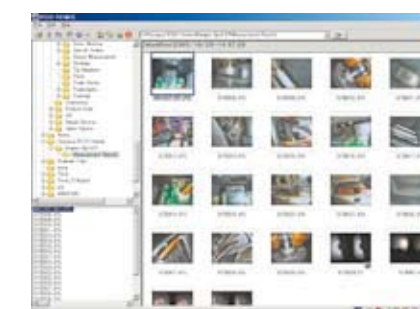
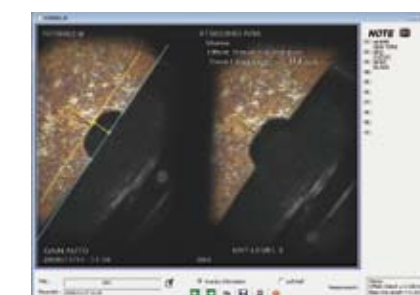
## Inspection Recording Options

Archiving, sharing and reporting inspection results are made simple with the IPLEX FX. It features still image and movie recording to internal memory, removable compact flash cards or USB flash drives. Due to the rigours of the industrial inspection workplace, the IPLEX FX is designed to store images on solid-state media devices, ensuring that valuable data is not lost due to the instability of storage media with movable parts. All file formats are Windows-compatible (still format: JPEG, TIFF; movie format: AVI) and can be easily used in reports or attached to e-mail for instant sharing of inspection results. The IPLEX FX is also compatible with other recording devices via S-video and composite video outputs. For more efficient on-site viewing, the IPLEX FX's movie viewing functions now include pause, fast-forward and rewind.



## IPLEX Viewer Plus Software

The new IPLEX Viewer Plus software is a PC-based program featuring standard image viewing, file management and post-inspection stereo measurement calculations. Recognising that inspection software is required by both the inspector and off-site personnel, IPLEX Viewer Plus is designed to be easily shared and used without PC administrator level installation. IPLEX Viewer Plus is available as a free website download.





# 6

## Ease of Use

Built to fit our customer's needs, simplicity was a key element to the overall design of the IPLEX FX system.



With the IPLEX FX quick access control buttons and intuitive software menu, inspectors of all skill levels can easily utilise the advanced software features that produce accurate and confident inspection results.

### TrueFeel™ Scope Tip Articulation

The IPLEX FX features TrueFeel™ scope tip articulation for power-assisted manual articulation and precision control. With instant movement and accurate feel, the user takes full control of the scope position resulting in easier and faster inspections.

### SmartTip™ Automatic Recognition Technology

The IPLEX FX introduces the industry's first intelligent tip adaptors. SmartTip™ optical tip adaptors are uniquely identified, allowing instant system settings change to match the tip adaptor optics and features without the need for manual user selection.

### Quick-access Hot Buttons

The all-new controller maximises the use of buttons, levers and joysticks for quick access to all essential menu functions. Image enhancements, recording buttons and measurement features are among the many basic-to-advanced features that are at the tips of your fingers.

### One-handed Scope Control and Interface

The ergonomic 750g scope handset is comfortable to use even during prolonged inspections and provides quick access to all frequently used menu commands. The unique IPLEX FX dual joystick design separates tip articulation and menu navigation, providing a more intuitive and comprehensible interface.



### Dual Recording Button

The FRZ/REC button located on both sides of the IPLEX FX controller accommodate both left-handed and right-handed users.





## IPLEX FX Accessories & Carrying Case

The IPLEX FX Carrying Case is designed for premium storage and protection of a complete IPLEX FX system and accessories. The carrying case is designed with custom cutouts for an IPLEX FX base unit, scope unit\* and accessories.

\* A custom carrying case designed for two scope units is also available.

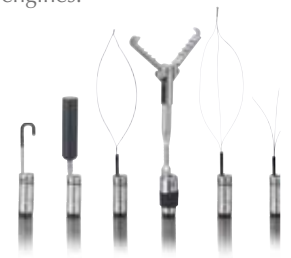
### Rigid Sleeves

Rigid sleeve sets are available for 6.2 mm, 6.0 mm and 4.0 mm scopes. Each set consists of three rigid sleeves — 250 mm, 340 mm and 450 mm lengths.



### Retrieval Tools

An assortment of versatile tools is available to remove foreign objects and facilitate inspections of complicated engines.



### Handheld Controller Holder

Allows the controller to be affixed to a tripod, making it useful for prolonged inspections.



### Guide Tube for Inspection of JT8D Engines

Provides a second movable joint for incredibly flexible control, which is ideal for inspecting the combustion chamber of JT8D engines. Available on the 2 m and 3.5 m scopes.

Notes: Pratt & Whitney approved for JT8D engine inspection.



### IPLEX FX Tip Adaptors

The IPLEX FX has a complete and comprehensive range of tip adaptors to meet the optical requirements of any application.



### Recording Media

A zipped pouch in the carrying case lid provides quick access to small accessories such as recording media, CompactFlash card reader, lens cleaner and IPLEX FX documentation.



### Batteries & Charger

The carrying case is designed to carry one battery charger and two batteries. With a full set of batteries, the IPLEX FX system is ready for inspection anywhere, anytime.



### Guide Tube for Long Scope

Protects the scope and assists in smooth entry when inserting it into a wide pipe. Available on scopes in lengths from 5 m to 18 m.



## The NEW IPLEX Videoscope Product Lineup

The IPLEX FX is the latest addition to the world's most innovative and technologically advanced videoscope product line. With over 25 different models to choose from, Olympus offers a remote visual inspection solution to meet your inspection needs.

### IPLEX II R

Available in lengths up to 9.6 m, the IPLEX II R series features recording, measurement and networking capabilities within a quick shipment-ready case.

### IPLEX SX II R

Internal working channel scope, 9.6 m smooth coated scope and a 19.0 m scope are among the multiple scope options available for a single IPLEX SX II R base system. With many options to choose from, the perfect videoscope system can be configured to meet a variety of inspection needs.



### IPLEX MX R

Weighing less than 4.5 kg (10 lbs), the IPLEX MX R features LED illumination, internal battery power, still image recording and standard image controls — providing a complete basic inspection tool for users of any skill level.

### IPLEX FX

The latest in videoscope technology, the IPLEX FX combines advanced functionality, configuration flexibility, compact size and portability inside the industry's first MIL-STD compliant housing.