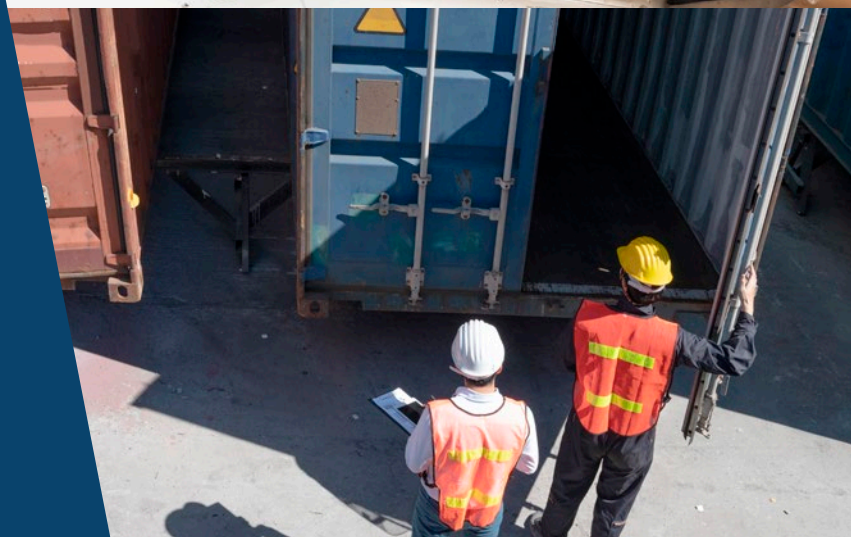
OLYMPUS®



Visual Inspection Solutions:
Defense and Security

Olympus Scientific Solutions

Aircraft:
Fixed Wing

In the defense field, safe and efficient operation of aircraft is critical. Aircrafts must be ready to fly anytime and anywhere.

Routine aircraft maintenance is essential to make sure aircrafts stand up to the rigors of daily operations.

This section introduces remote visual inspection solutions for the aircraft engines and bodies used for defense and security.

Aircraft Engine Inspection

Application

Military aircraft require both good flight performance and durability to operate in harsh environments. Routine engine maintenance is vital for daily flight operations.

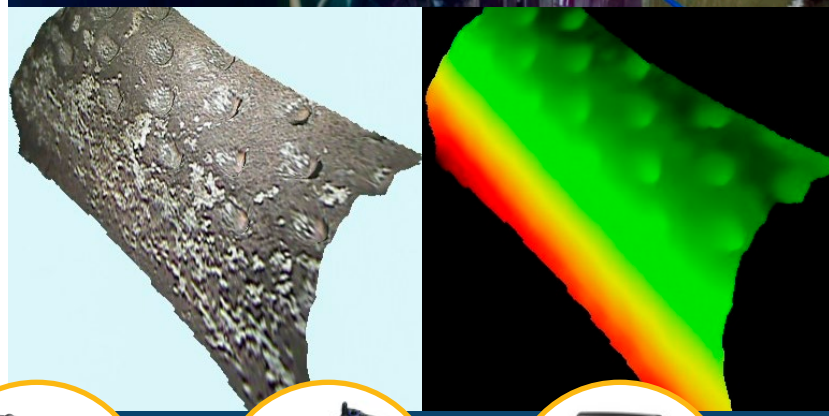
For engine maintenance at the base, a reliable, durable videoscope is important for effective support of flight operations.

Challenges

- Maintainers must deliver reliable videoscope inspections
- Even small defects must be quickly found so that the aircraft is in good condition for an urgent mission
- Videoscopes must be durable to perform in any weather and environment

Solutions

- The IPLEX™ videoscope series is chosen by defense organizations all around the world due to its reliability for engine inspections
- User-friendly system makes it simple to quickly and easily make image adjustments, manipulate the scope, and take defect measurements
- High-quality imaging with intelligently adjusted brightness clearly exposes the condition of blades and combustion chambers in their actual colors
- Military-grade ruggedness (MIL-STD) and IP-compliant design offers reliable performance, even in harsh outdoor environments
- Wide selection of videoscope models from handheld to large screen options with advanced functionality enables you to find the right videoscope for your inspection needs



Recommended Products

IPLEX NX, IPLEX GX/GT, and IPLEX G Lite videoscopes

Aircraft Corrosion Detection

Application

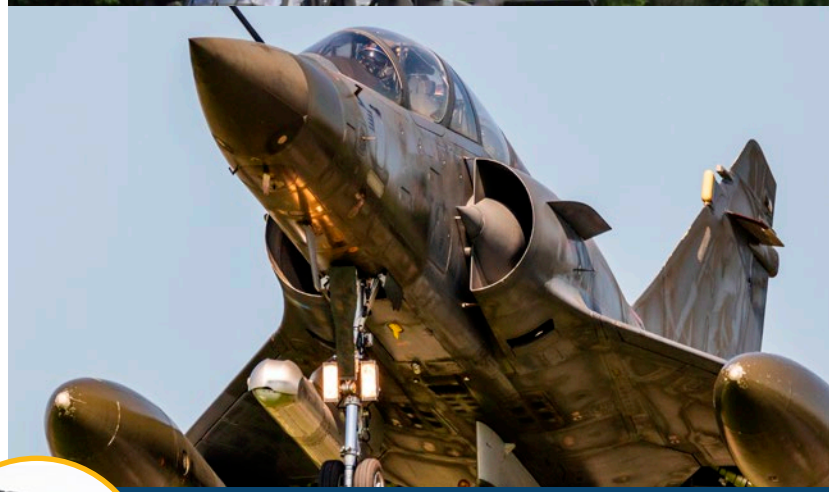
The airframe is constantly exposed to harsh environments, including freezing or high temperatures, wind, and rain. It sometimes faces corrosion, cracks, and structural fatigue. Airframe inspections are mainly performed with non-destructive inspection equipment such as ultrasonic and eddy current flaw detectors. However, inspections of the airframe interior, which cannot be accessed directly, are conducted with an industrial videoscope.

Challenges

- Bright illumination is needed to inspect areas with large or dark spaces
- Accurate detection of discolored points is required
- Damage severity must be assessed through measurement
- Corrosion preventative treatment cannot be performed inside the airframe

Solutions

- IPLEX™ NX videoscopes offer intelligent brightness adjustment through PulsarPic™ technology to enable a higher probability of detection
- Renders colors reliably to show defects in their actual colors
- User-friendly 3D stereo measurement helps maintainers get reliable measurement results with intuitive visualization of flaws, such as corrosion and other defects
- With a working channel scope, corrosion preventative compounds can be sprayed in confined areas



Recommended Products

IPLEX NX videoscope with working channel and stereo measurement

Bulkhead UV Inspection

Application

Due to high acceleration forces caused by in-flight maneuvers, certain critical areas of the airframe may show signs of fatigue. For instance, the fastening holes in the upper bulkheads close to the wing mounts are key locations for nondestructive visual inspection of microcracks. If not detected early, the material strength around the wing area can degrade and lead to catastrophic failure of the airframe.

Challenges

- Difficult to visually identify microcracks in white light conditions
- The location of microcracks adds complexity to the inspection

Solutions

- IPLEX™ GX/GT videoscopes offer easy switching of LED modules to enable visual inspection under ultraviolet (UV) light conditions as part of fluorescent penetrant inspection (FPI)

Recommended Products

IPLEX GX/GT and IPLEX G Lite videoscopes with the UV LED module

Foreign Object Debris (FOD)

Application

Even very small foreign object debris (FOD) in the engines and airframes can potentially cause critical damage and catastrophic accidents. At military sites, FOD must be swiftly removed without disassembling the aircraft components in case of an emergency flight mission.

Examples of foreign objects:

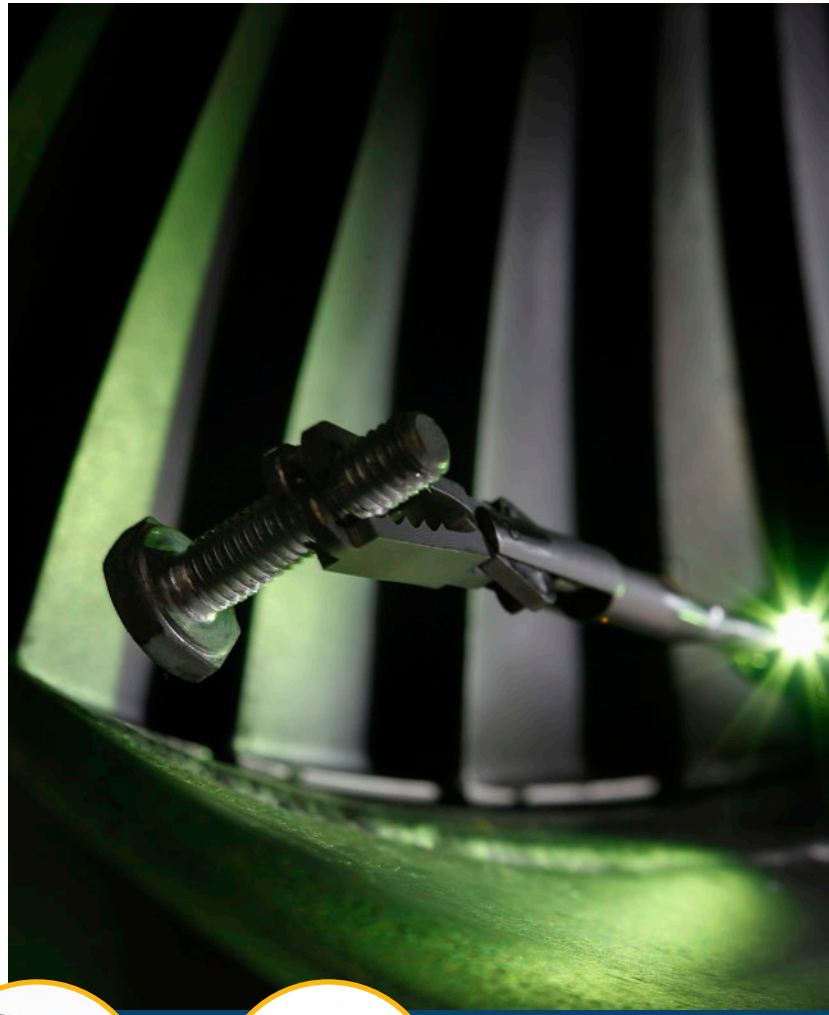
- Bolts or screws dropped into panels or under the ejection seat of the cockpit
- Debris or wildlife vacuumed into the engine

Challenges

Identifying and removing FOD is especially challenging when access to the object is limited.

Solutions

The IPLEX™ NX videoscope can be combined with a working channel scope to enable remote visual inspection and FOD removal using various internal retrieval tools.



Recommended Products

IPLEX NX videoscope and working channel with a full selection of internal retrieval tools

Landing Gear Inspection

Application

Aircraft landing gear is subjected to extreme stress during takeoff and landing. The stress can cause tiny cracks on the cylinder wall of the landing gear, which can lead to potential component failure.

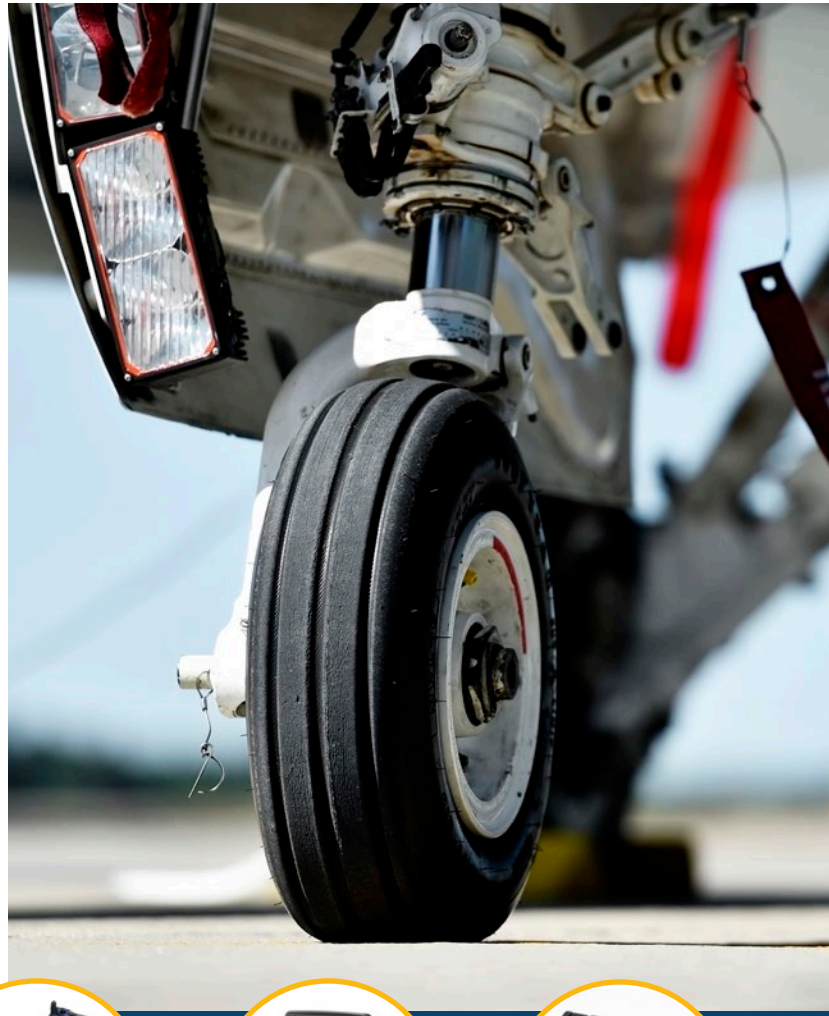
The area is normally inspected with magnetic particle and fluorescent penetrant techniques that require you to disassemble the landing gear, including paint and plating removal.

Challenges

- Disassembly of the landing gear requires downtime and adds costs
- Light reflection on the metal shaft prevents a clear view
- Even tiny discoloration from corrosion cannot be overlooked
- Very small defects, such as hair cracks, are difficult to find

Solutions

- Videoscopes can directly access the target in a narrow space, enabling you to observe the condition of the landing gear without detaching the helicopter body
- IPLEX™ videoscopes offer intelligent brightness adjustment through PulsarPic™ technology to deliver clear images and eliminate halation
- High-quality images with rich color reproduction shows discoloration caused by corrosion
- With an interchangeable UV light source on the IPLEX GX/GT and G Lite videoscopes, fluorescent penetrant inspection can be performed during the inspection, while the IPLEX NX videoscope with a working channel enables you to spray fluorescent dye on the shaft



Recommended Products

IPLEX GX/GT and IPLEX G Lite videoscopes with the UV LED module; IPLEX NX videoscope with a working channel

Aircraft:
Rotary Wing

Helicopters play an indispensable role in defense and rescue missions. They provide agility, rapid deployment, and field landing availability.

Helicopter maintenance specialists deliver thorough helicopter inspections from the engine and rotor to the fuselage and landing components to help ensure a well-executed flight at any location.

This section introduces remote visual inspection solutions for helicopters used for defense and rescue.

Visual Inspection Solutions: Defense and Security

Olympus Scientific Solutions

Helicopter Engine Inspection

Application

The helicopter engine can be potentially damaged from exposure to harsh environments, such as high temperatures, sand, sea water, and bird strike during flight. For safe flight operations, the engine is regularly inspected with a videoscope to detect damages such as cracks, dents, nicks, and erosion. This remote visual inspection method can show the interior condition of the helicopter engine without disassembling it.

Challenges

- Inspectors in the military must deliver reliable inspections
- A quick engine check is required to get the helicopters ready for the mission
- The engine is located at the top of the helicopter, so portable inspection equipment is preferred
- A 4 mm (0.16 in.) scope is often required
- Bright illumination is needed during combustion chamber inspection

Solutions

- IPLEX™ GX/GT and IPLEX G Lite videoscopes offer high-quality imaging with intelligently adjusted brightness to clearly expose the condition inside the engine in its actual colors
- User-friendly system enables you to quickly and easily make image adjustments, manipulate the scope, and take defect measurements
- Military-grade ruggedness (MIL-STD) and IP-compliant design offers reliable performance, even in harsh outdoor environments
- Lightweight, portable videoscopes are easy to carry on the top of the helicopter
- Thin 4 mm (0.16 in.) diameter insertion tube with bright illumination is useful for inspecting hard-to-reach, large spaces

Recommended Products

IPLEX GX/GT and IPLEX G Lite videoscopes

Helicopter Rotor—Strap Pack Inspection

Application

The strap pack is the mechanical component that attaches helicopter rotor blades to the main hub. This critical component absorbs in-flight rotor stresses and is exposed to harsh environmental conditions. Catastrophic failure of the strap pack because of material cracks and corrosion causes in-flight rotor separation, leading to an aircraft crash. Frequent defect inspections are conducted to keep the strap pack in good condition. Industrial videoscopes are used to discover defects hidden between the parts.

Challenges

- Inspection is required even in tough environments to help ensure the aircraft is ready to fly on a mission at any time
- The strap pack is located on the top of the helicopter body and tail
- The gap between the strap-pack parts is narrow and intricate

Solutions

- Durable IPLEX™ G Lite videoscopes can withstand harsh environments such as sand, dust, and rain, as well as physical shock in compliance with MIL-STD-810 and IP65
- Lightweight and portable videoscopes are easy to carry on the top of the helicopter
- Thin 4 mm (0.16 in.) diameter insertion tube fits into confined spaces
- Close up focus with near-focus optical adaptor offers precise observation of suspected defects

Recommended Product

IPLEX G Lite videoscope

Helicopter Rotor—
Drive Shaft Inspection

Application

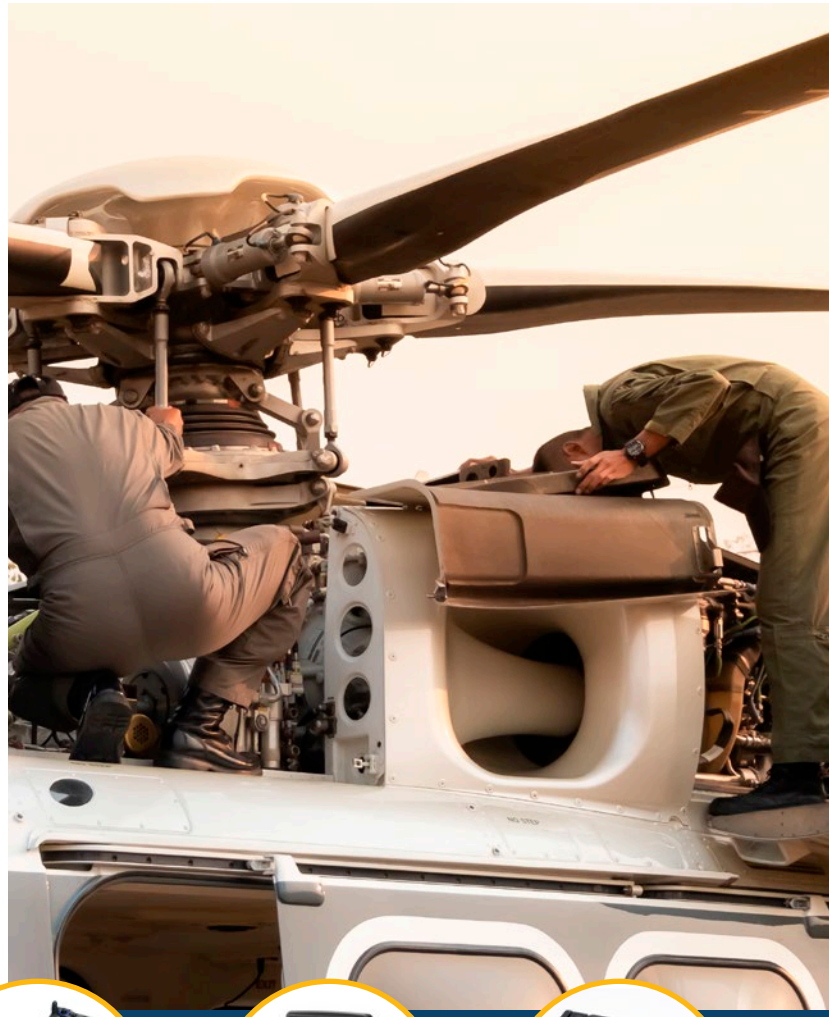
The drive shaft connects the main rotor and the tail rotor to transfer torque and flex couplings to handle the vibration and geometry of the aircraft. The weight of the helicopter and the air resistance lead to a high workload on both of these rotors. The shaft supporting the rotors is also heavily loaded. The aged deteriorations on the shaft, such as corrosions and cracks, can potentially cause fatal damage and catastrophic accidents.

Challenges

- Disassembly of the helicopter body is required to perform the shaft inspection
- Light reflection on the metal shaft prevents a clear view
- Even tiny discoloration of corrosion cannot be overlooked
- It's difficult to reach the shaft from the top of the helicopter body and tail
- Very small defects, such as hair cracks, are difficult to find

Solutions

- Videoscopes can access the shaft through the gap of the helicopter frame, enabling you to observe the condition of the shaft without disassembling the helicopter body
- IPLEX™ videoscopes with intelligent brightness adjustment through PulsarPic™ technology can deliver clear images and eliminate halation
- High-quality imaging with rich color reproduction shows the discoloration caused by corrosion
- The IPLEX G Lite ultra-portable videoscope can be easily carried to the elevated areas
- With the interchangeable UV light source on the IPLEX GX/GT and G Lite videoscopes, fluorescent penetrant inspection can be performed during the videoscope inspection, while the IPLEX NX videoscope with a working channel enables you to spray fluorescent dye on the shaft



Recommended Products

IPLEX NX videoscope with a working channel; IPLEX GX/GT and IPLEX G Lite videoscopes with the UV LED module

Marine Systems

Naval forces must safeguard a nation's maritime borders and work with other defense forces when needed. Consequently, ship inspections are vital to help ensure the fleet is ready for service.

Marine vessels have numerous small, large, and complex machineries that need regular maintenance to extend their life. Nondestructive testing helps ensure the vessels are in good condition.

This section introduces remote visual inspection solutions that can be done onboard and in dry dock

Propulsion: Turbine

Application

Gas turbines are an important part of many marine applications, including power generation and, in some cases, direct propulsion through a reduction gearbox.

These turbines are commonly modified versions of aero-derivative turbines with different access ports for videoscope inspection.

Challenges

The challenges of marine turbine engines are the same as aero turbine engines, such as the ability to locate small defects.

Solutions

- IPLEX™ NX videoscope offers intensely bright laser diode illumination
- IPLEX GX/GT videoscopes have modular designs where multiple scopes and light sources can be exchanged for different visual inspection applications

Recommended Products

IPLEX NX videoscope and IPLEX GX/GT videoscopes

Propulsion: Diesel

Application

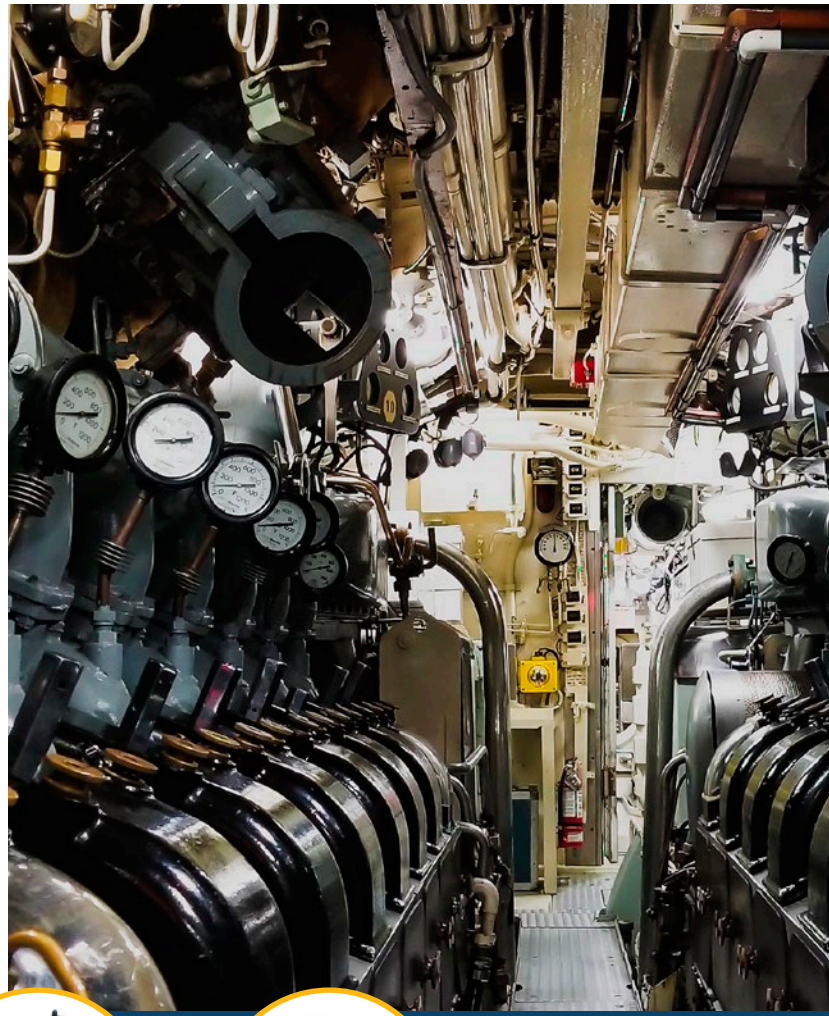
Diesel engines are commonly used as direct or indirect power plants in large- and medium-sized vessels. Either via reduction gearbox or via electric generators, marine diesel engines need frequent inspection as standard preventative maintenance. No matter the size, the typical diesel engine components include pistons, cylinders, valves, and injectors. Remote visual inspection instruments are effective tools to detect wear on these moving parts.

Challenges

Engine blocks are confined in complex environments that are highly reflective and oily. In this case, the visual inspection challenge is how to achieve a balance between bright illumination and reduced halation for maximum probability of detection.

Solutions

- IPLEX™ videoscopes with PulsarPic™ illumination and oil-clearing tip adaptors
- PulsarPic technology automatically adjusts illumination with the CCD image capture frame rate so that high illumination is achieved with less power and over exposure is reduced in highly reflective surfaces; as a result, halation in metallic or oily environments is reduced
- Oil-clearing tip adaptors draw oil away from the tip adaptor lens using natural capillary action



Recommended Products

PLEX GX/GT videoscopes and IPLEX G Lite videoscope

Propulsion: Nuclear

Application

Nuclear submarines enclose many critical internal components, such as steam generators, reactors, steam turbines, propulsion systems, pumps, heat exchangers, and the drivetrain in gearboxes. Periodic inspection and proactive maintenance are essential to avoid lengthy and costly downtime.

Challenges

- Poor image quality and lower probability of detection (POD) due to electromagnetic interference
- Confined and complex environments
- Radioactive environments
- Inspecting long pipes with complex networks
- Small defects need to be quickly found to minimize dry-dock time
- Videoscopes must be durable to perform in any weather and environment

Solutions

- IPLEX™ videoscopes offer bright illumination, high-quality imaging, and a portable design for effective remote visual inspection even in challenging inspection environments
- 3D measurements enable further investigation and accurate measurement for reliable reference against the relevant standard
- Videoscopes feature military-grade ruggedness (MIL-STD-810G and MIL-STD-461F/G) for operating environment performance
- Wide range of scopes available in various diameters (2.4–8.5 mm or 0.09–0.33 in.) and lengths (2–30 m or 6.56–98.4 ft)

Recommended Products

IPLEX NX videoscope with stereo measurement and 3D modeling; IPLEX GAir videoscope

Heat Exchangers

Application

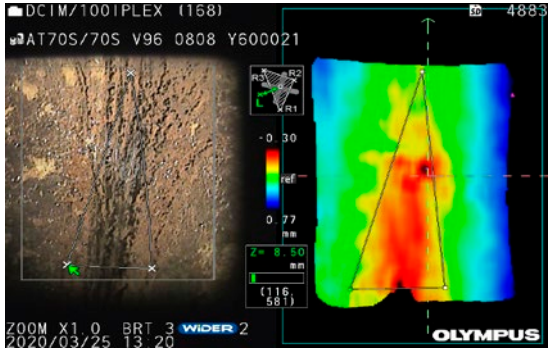
Heat exchangers on surface vessels and submarines play an important role to help ensure relevant systems are operating at optimal temperatures. Direct and indirect cooling systems can be vulnerable to galvanic corrosion and fouling, leading to inefficiency and ultimately system failure.

Challenges

No matter the heat exchanger design, accessibility to confined spaces and long tubing are the main challenges of visual corrosion inspection.

Solutions

Regular inspections using any IPLEX™ videoscope can help identify problems such as corrosion and check the internal condition of nearly all heat exchangers on marine vessels. The IPLEX NX videoscope increases your probability of detection (POD) thanks to an optimal combination of illumination, sensor resolution, and image processing.



Recommended Products

IPLEX NX videoscope with stereo measurement and 3D modeling

Land Systems

Nondestructive testing of defense equipment plays a critical role in keeping forces ready to defend homeland security.

Land defense systems are subjected to a high degree of stress. Even a small flaw or vulnerable location caused by corrosion or wear and tear can result in the failure of a critical component and damaged asset.

Maintenance is essential to make sure the tanks and heavy-duty vehicles stand up to the rigors of daily operations.

This section introduces essential remote visual inspection solutions for land defense systems.

Engine/Transmission

Application

Videoscopes are well suited for inspections of automotive engines and transmissions. The benefits of visually inspecting hard-to-access locations without disassembly is reduced maintenance costs and increased mission readiness.

Challenges

Both engine and transmission boxes are confined in complex environments that are highly reflective and oily.

Solutions

- IPLEX™ videoscopes with PulsarPic™ technology and dynamic pulse illumination automatically adjusts light output to optimize exposure from highly reflective surfaces
- Oil-clearing tip adaptors: draw oil away from the tip adaptor lens using natural capillary action

Recommended Products

IPLEX GX/GT videoscopes and IPLEX G Lite videoscope

Gun Barrel Bore Inspection

Application

As the gun barrel is deformed or the inner surface of the bore is worn, firearms may malfunction. Weapons maintenance combine a 4 mm videoscope with a centering device to inspect the bore for deformation and material wear.

Challenges

- Due to the close distance between the gun barrel inner wall and videoscope lens, images can become blurred if the videoscope lens is only far focused
- Gun barrel internal surfaces are metallic and very reflective, so they require an optimal balance of illumination brightness and probability of detection (POD)
- For large gun barrels, the videoscope insertion tube would lay on the bottom surface, causing a lower probability of detection

Solutions

- IPLEX™ videoscopes offer a near-focus tip adaptor for both the direct and side view, enabling an optimal inspection of the bore such as deformation or material wear
- You can check the inner surface of the muzzle using a clear image with minimal image noise to maximize the POD of defects or material wear
- Various accessories such as centering devices can maintain consistency in the gun barrel bore inspection so images can be compared over time

Recommended Product

IPLEX GT videoscope

System Maintenance

Various facilities and equipment are installed and operated in air force, naval, and army bases.

Daily and regular maintenance of facilities and equipment is essential to keep them in good condition for a sudden mission.

This section introduces remote visual inspection solutions for defense facilities.

Pressure Vessel Inspection

Application

In system maintenance, videoscope inspections are performed to inspect internal conditions and monitor defects in areas such as pressure vessels. Calcium, sodium, and other dissolved contaminants can accumulate—especially in welded areas and joints—causing corrosion and blockage. Heat-induced corrosion is also a main source of material degradation in a pressurized container. Efficient videoscope inspection is critical for mission readiness.

Challenges

- Access to the pressure vessel may be limited, so a videoscope with a long length is needed
- Depending on the vessel size, visibility may be extremely low due to limited illumination from the videoscope

Solutions

- Both IPLEX™ NX and IPLEX GAir videoscopes enable up to 12 seconds of long exposure for better visibility in dark environments
- The IPLEX NX videoscope offers intensely bright laser diode illumination, and the IPLEX GAir videoscope has powerful LEDs located in the distal end of the insertion tube that can provide bright illumination in large, dark spaces without the intensity decay common in other long videoscopes
- IPLEX NX videoscope with 5 or 7.5 m (16 or 25 ft.) and IPLEX GAir videoscope with 20 m or 30 m (66 or 98 ft.) length options enable extended reach for large and difficult-to-access inspection locations

Recommended Products

IPLEX NX videoscope and IPLEX GAir videoscope

Fuel/Storage Tank Inspection

Application

Remote visual inspection of fuel/storage tanks is an effective way to identify foreign particles or leaks that may lead to dangerous situations. Depending on the industry standard, a combination of external nondestructive examination (NDE) and internal remote visual inspection (RVI) may be required for maximum mission readiness.

Challenges

Besides the typical challenges of inspecting inside a dark, confined space, the presence of explosive and hazardous material, even for empty tanks, is the most difficult aspect of this inspection.

Solutions

Most IPLEX™ industrial videoscopes are certified in compliance with the MIL-STD-810G standard for explosive atmospheres.

The MIL-STD-810G Method 511.5/6 Procedure 1 test is performed to demonstrate the ability of material to operate in fuel-air explosive atmospheres without causing ignition or demonstrate that an explosive or burning reaction occurring within encased material will be contained and will not propagate outside the test item. This method applies to all material designed for use in the vicinity of fuel-air explosive atmospheres associated with aircraft, automotive, and marine fuels at or above sea level.

IMPORTANT: The Olympus videoscopes listed above DO NOT conform to ATEX Directive 2014/34/EU. Users are advised to perform individual risk assessments associated with using Olympus visual inspection products in your specific environments, using a hot work permit for instance.

Recommended Products

IPLEX NX videoscope, IPLEX GX/GT videoscopes, and IPLEX G Lite videoscope

Security and Law Enforcement

In the security and law enforcement fields, maintaining national security is one of the most important missions. Staff must be ready at all times to prevent illegal activity and perform disaster rescue operations.

This section introduces remote visual inspection solutions used to assist security forces and rescue teams.

Police and Security Services

Application

With increasing pressures on the prison services, it is vital that staff are properly equipped to thoroughly search all areas of buildings and cells. The concealment of drugs and weapons is a major problem, and many prisoners are finding more sophisticated ways of smuggling and concealing items.

Challenges

- Inspection needs to be performed quickly and with minimum disruption
- Drugs and weapons can be hidden in a very tiny space or large area, and inspection equipment must be small and portable

Solutions

- The IPLEX™ G Lite videoscope supports long exposures and enables clear images even in large spaces such as an attic; these imaging features help reduce the risk of overlooking drugs and weapons hidden in prisons and cells
- Since it is small, lightweight, and can be powered by a battery, the videoscope can be brought anywhere in a prison or a suspicious place in a cell (e.g., wall, ceiling, gap in a roof, toilet, or drainpipe) to inspect for hidden drugs

Recommended Product

IPLEX G Lite videoscope

Customs/Border Control

Application

With so many vehicles (e.g., marine vessels, aircraft) arriving at ports and borders every day, the opportunity to transport goods illegally is almost limitless. Cars, heavy goods, vehicles, and containers are regularly used to conceal an increasing range of contraband.

Challenges

- Videoscopes must withstand harsh inspection environments because customs or border control inspections are usually outdoors and can take place in any weather
- Videoscope illumination must be able to adjust dynamically because inspection targets may vary in size from very small to very large spaces
- Videoscopes must be portable and easy to operate as customs and border inspectors may need many different types of equipment for the same inspection task

Solutions

- The IPLEX™ G Lite videoscope is compact, lightweight, and battery operated for easy transport and handling onboard a vessel or in a vehicle
- With military-grade ruggedness (MIL-STD) and an IP-compliant design, the IPLEX G Lite videoscope is resistant to common harsh environments, while the 6 mm (0.24 in.) insertion tube is waterproof up to a depth of 10 m (32.9 ft.)
- The videoscope supports long exposures and enables clear images, even in large spaces such as diesel tanks on ships; these imaging features help reduce the risk of overlooking narcotics and smuggled goods

Recommended Product

IPLEX G Lite videoscope

Search and Rescue

Application

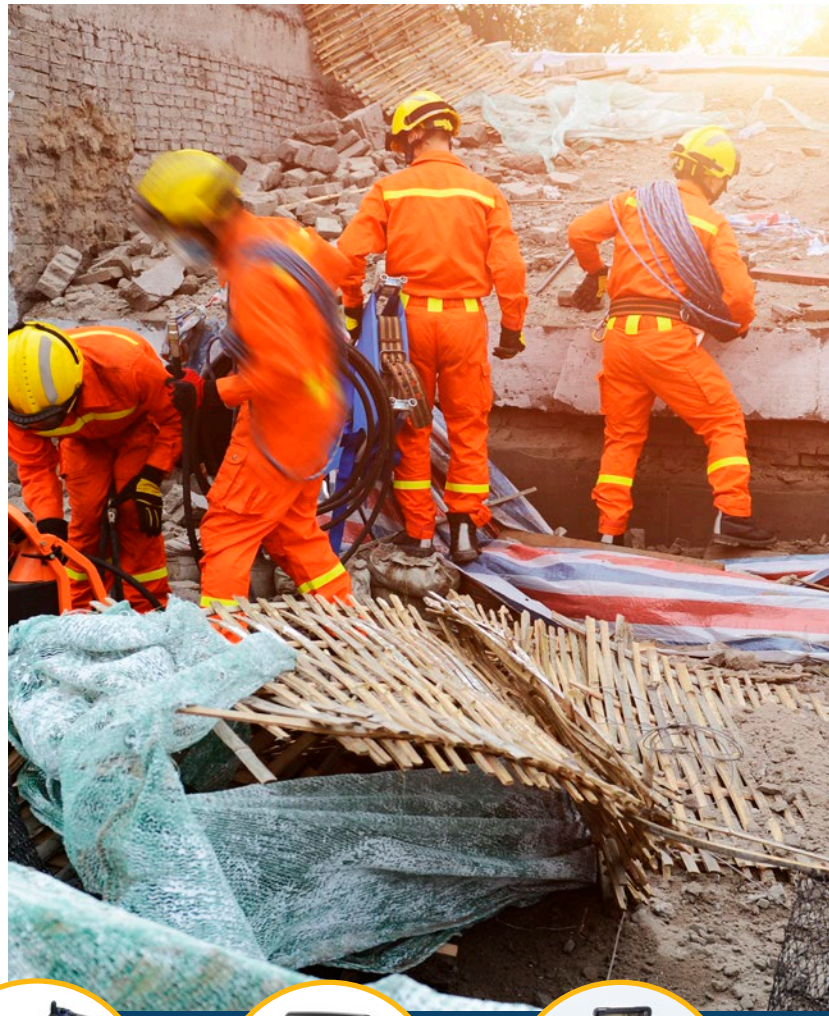
The search for survivors in collapsed buildings from earthquakes, explosions, or poor building construction is a difficult and dangerous task. Remote visual inspection enables operators to search in cavities through small apertures with minimal debris disturbance. Fire and rescue services use videoscopes to more safely check buildings and to perform searches in accidents where great care is needed in the rescue of survivors.

Challenges

- Search and rescue operations often occur in extremely harsh environments, so videoscopes must be durable and work reliably in any weather conditions
- Operators may need long insertion tubes to navigate complex debris and reach survivors far away from the entry location

Solutions

- The IPLEX™ G Lite videoscope is compact, lightweight, and can be battery-powered, making it possible to search for people who have fallen into the gaps of collapsed houses, manholes, and high-rise buildings; the search for survivors can be performed early during the rescue operation thanks to its portability
- IPLEX G series videoscopes offer insertion tube lengths up to 30 m (98 ft.) with a fully articulated distal end and interchangeable optical tip adaptors; some models also have compatible guide tubes up to 10 m (32 ft.) to protect the scope and increase scope rigidity
- Most IPLEX G series videoscopes are certified to comply with the US Department of Defense testing standards (MIL-STD) and Ingress Protection (IP) standards, and the 8 mm (0.31 in.) scope insertion tube is waterproof up to a depth of 30 m (98.4 ft.)



Recommended Products

IPLEX GT, IPLEX G Lite, and IPLEX GAir videoscopes

Covert Surveillance

Application

To visually identify persons or objects in a confined space without detection, law enforcement operators require visual inspection solutions with an infrared light source and a portable design.

Challenges

- Any visual inspection solution must be highly portable and easy to use to reduce user error or operational delays
- Covert surveillance is necessary to maintain a tactical advantage

Solutions

- The IPLEX™ G Lite videoscope is compact, lightweight, and battery operated for law enforcement tactical operations
- Wireless live streaming on the IPLEX G Lite videoscope enables multiple operators to view the same live image, enabling the team to make critical decisions in real time
- The infrared (IR) LED light source enables the operator to search and monitor the inside of the darkroom covertly; the buttons and screen can be turned off (stealth mode) while wireless live streaming is activated to reduce light emission

Recommended Product

IPLEX G Lite videoscope

Explosives Disposal

Application

Explosive ordinance disposal (EOD) operators may need visual inspection solutions to search for or inspect confined spaces for explosives. The inspection solution can be considered both a safety and operational tool.

Challenges

- There may be a risk of detonation if the suspicious package is exposed to visual light, so EOD operators may need videoscopes with infrared light sources
- Any visual inspection solution must be portable and easy to use to reduce user error or operational delays
- Operators must make real-time decisions by visually observing the condition of explosives

Solutions

- For explosives equipped with a trigger sensitive to visible light, the IPLEX™ G Lite videoscope with an infrared light source may reduce the risk of detonation
- The IPLEX G Lite videoscope is compact, lightweight, and battery operated; it can also be easily installed onto existing robotic platforms
- Wireless live streaming on the IPLEX G Lite videoscope enables multiple operators to view the same live image from a distance of up to 10 m (32 ft.)

Recommended Product

IPLEX G Lite videoscope

Remote Visual Inspection Technology

IPLEX™ Features and Benefits

IP/MIL-STD-compliant systems offer durability and reliability for increased uptime in tough environments

MIL-STD Compliance

Type	Method	Applicable product
General vibration	MIL-STD-810G, METHOD 514.7	IPLEX NX IPLEX GX/GT IPLEX G Lite
Transit drop	MIL-STD-810G, METHOD 516.7	
Blowing rain	MIL-STD-810G, METHOD 506.6	
Humidity	MIL-STD-810G, METHOD 507.6	
Salt fog	MIL-STD-810G, METHOD 509.6	
Blowing dust	MIL-STD-810G, METHOD 510.6	
Icing/freezing rain	MIL-STD-810G, METHOD 521.4	
Explosive atmosphere	MIL-STD-810G, METHOD 511.6	
Electromagnetic interference (EMI)	MIL-STD-461G, RS103 Above Deck	IPLEX NX (IV9635X1N, IV9435N and IV9450N only) IPLEX GX/GT, IPLEX G Lite
	MIL-STD-461F, RS103 Above Deck	IPLEX NX (excluding IV9635X1N, IV9435N and IV9450N)

Type	Method	Applicable product
Low atmosphere	MIL-STD-810G, Method 500.6	IPLEX NX
High temperature	MIL-STD-810G, Method 501.6	
Cold temperature	MIL-STD-810G, Method 502.6	
Conducted susceptibility power leads	MIL-STD-461G, CS101	IPLEX NX (IV9635X1N, IV9435N, and IV9450N only)
Conducted susceptibility bulk cable injection	MIL-STD-461G, CS114	
Conducted susceptibility damped sinusoidal transient	MIL-STD-461G, CS116	
Radiated emission magnetic field	MIL-STD-461G, RE101	
Radiated emission electric field	MIL-STD-461G, RE102 Below Deck	
Radiated susceptibility magnetic field	MIL-STD-461G, RS101	

IP Compliance

Type	Compliant standard	Applicable product
Dust and water proofing	IP55	IPLEX NX
	IP65	IPLEX GX/GT IPLEX G Lite

IPLEX™ Benefits and Features

User-friendly

- Well-organized menu structure enables inspectors of any experience level to operate the videoscope quickly and efficiently
- Small handheld body can be carried to hard-to-reach locations without stress*1
- Multi-position system design with a large screen enables you to flexibly position the system where you need it*2
- TrueFeel™ articulation enables the scope to quickly reach the exact point you want to observe*3

*1 IPLEX G Lite videoscope
*2 IPLEX GX/GT videoscopes, IPLEX NX videoscope
*3 IPLEX GX/GT videoscopes, IPLEX G Lite videoscope

High-quality construction

- SmartTip™ technology*1 self-identifies and documents the tip adaptor with the captured images
- Working channel*2 scope and tip adaptor enable foreign object debris (FOD) removal and stereo measurement without changing the scope or tip adaptor
- Olympus IPLEX videoscopes feature four-layer, tungsten braided insertion tubes that are durable and flexible

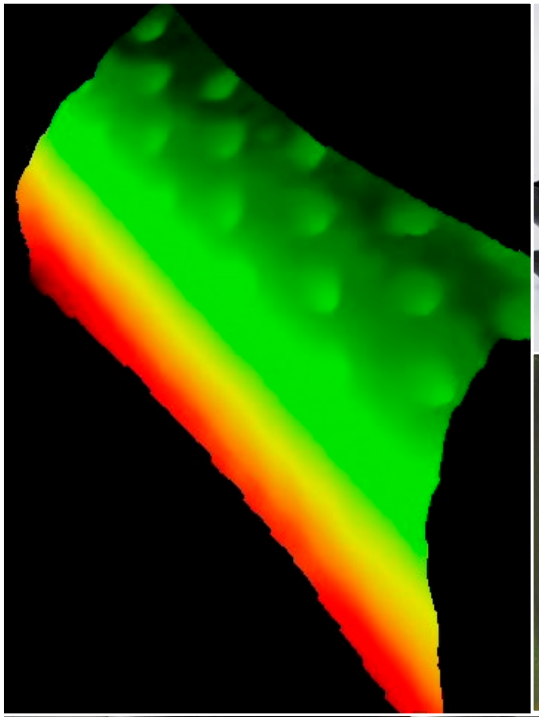
*1 IPLEX NX videoscope
*2 IPLEX GX videoscope, IPLEX NX videoscope with working channel

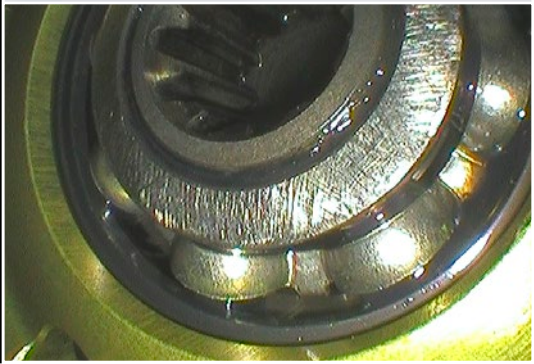
IPLEX™ Benefits and Features

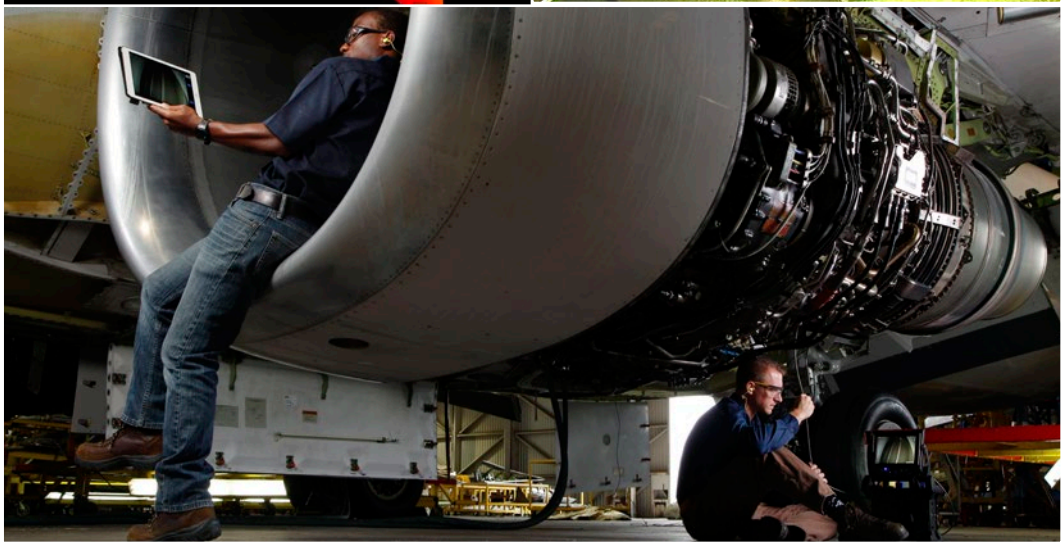
Wide range of applications

- Interchangeable LED capability covers from general inspection with white light to special observation with infrared (IR) and ultraviolet (UV) *1
- Interchangeable working channel diameter scopes: 4 mm/6 mm/6.2 mm (0.16 in./0.23 in./0.24 in.) scopes can be used for a variety of inspections with one system*2
- A range of interchangeable adaptors are available depending on the inspected object
- Stereo measurement and 3D modeling*3 enable you to quickly perform defect measurements with confidence; with 3D modeling, you can see the details of your inspection target from multiple angles
- Wireless live image capability*4 enables inspection from a remote location

*1 Excluding the IPLEX NX videoscope
*2 IPLEX GX videoscope, IPLEX NX videoscope with working channel
*3 IPLEX NX videoscope
*4 Excluding the IPLEX NX videoscope







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