iPLEX

Superb Image Quality
with a Portable Videoscope

NEW

A Videoscope with a Clear Vision

The IPLEX RX and IPLEX RT provide unsurpassed image quality yet are user-friendly, and boast a portable design. The videoscopes are ideal for inspectors who require uncompromised and precise inspections.

Exceptional Image Quality

- Our brightest and sharpest image quality
- Recorded images and movies in high quality
- Expanded image adjustment capability* for optimum inspections
- Large 6.5 in. monitor

Operation with Ease

- Compact and portable casing
- Multi-positioning design for comfortable inspection for any application
- Excellent scope maneuverability with TrueFeel™ and Tapered Flex™ technologies
- Intuitive and quick operation

Sharp and bright image of engine combustion chamber

Comfortable operation using shoulder strap

Rugged and Durable

- Heavy-duty system compliant with MIL-STD and IP55
- High-durability insertion tube withstanding crush and abrasion
- 100 °C / 212 °F capable insertion tube with temperature alert*

Advanced Functionality

- Stereo Measurement* for objective inspections (to be released in May 2014)
- PDF display function* enabling efficient inspection work
- InHelp™ software to streamline all steps from inspection to report generation

The IPLEX RX faces the elements on a rainy day

The IPLEX RX monitor displaying a manual PDF during inspection

*IPLEX RX only

Exceptional Image Quality
to Improve Inspection Quality

Our Best Image Quality

The IPLEX RX and RT feature the best image quality of our videoscopes. Our unique PulsarPic™ image processor reduces noise and sharpens images, resulting in the exceptionally high resolution image.

The IPLEX RX and RT faithfully and brightly reproduce very small defects, and the sharp and clear images enable accurate and reliable inspections.

2X Brighter Illumination System

The IPLEX RX and RT feature a new LED illumination system that is approximately twice as bright as conventional videoscopes, while dynamically adjusting light output to reduce halation when metal or reflective surfaces are inspected.
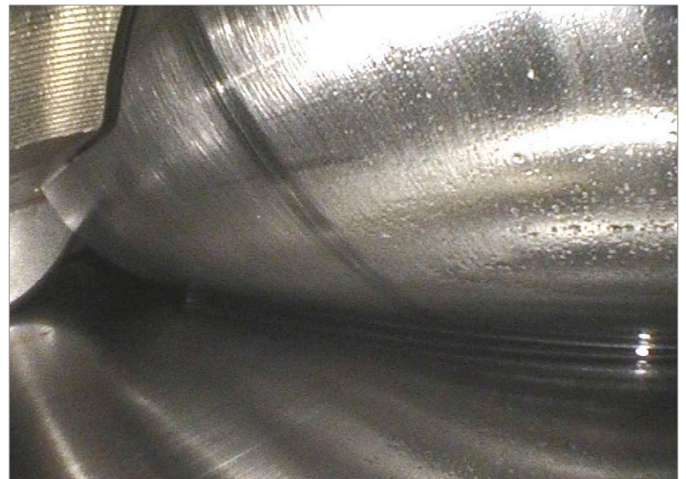
The PulsarPic™ image processor interacts intelligently with our illumination system to deliver an optimized amount of light and gain enhancement to provide images that are very clear and sharply defined.
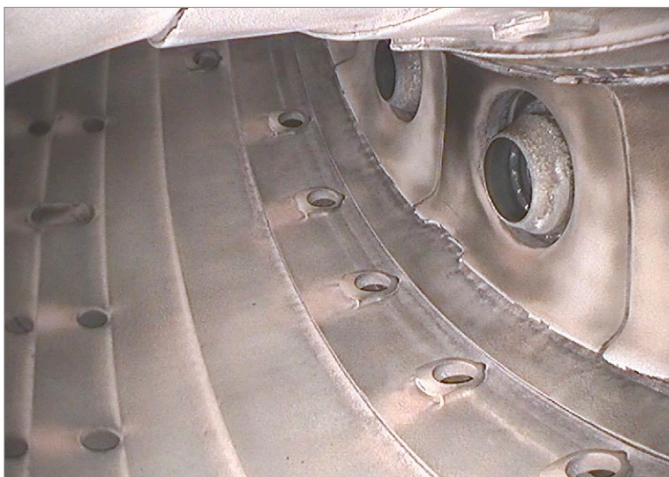
Diverse Applications

Turbine blades

Bearing of wind gearbox
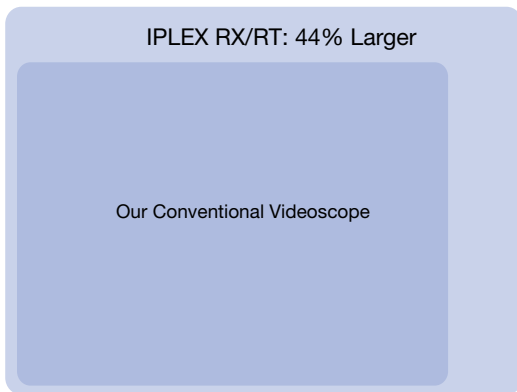
Combustion chamber

Welding

Still Images and Movies as Crisp as Live Images

The IPLEX RX and RT can record inspected images to a removable USB flash drive as JPEG still images and MPEG–4 movies.

The improved image quality of recorded images and movies enables accurate image diagnosis not only in the field but also at the office with the use of our free image management software, InHelp viewer.

IPLEX RX/RT: 44% Larger

Our Conventional Videoscope

Comparison of image sizes

Large Monitor Providing Easy Yet Accurate Inspections

The compact IPLEX RX and RT are equipped with a 6.5 in. monitor. The large monitor displays small defects clearly from a comfortable distance for inspectors for easy identification.

6.5 in.

Optimized Image Gradation

The IPLEX RX features our unique image processing capability, WiDER™, which brings out the darkest areas of an image without washing out the details of the brighter regions. The innovative technology provides optimum inspections of large areas or even highly reflective areas.

In addition, the IPLEX RX is equipped with sharpness and color adjustment functions to create optimal images depending on objects and applications.

Sharpness: Level -1/ Color: Standard/ Normal gain setting

Sharpness: Level 2/ Color: Vivid/ WiDER™ gain setting

Operation With Ease
for All Remote Visual Applications

Compact and Portable Design

The IPLEX RX and RT weigh just 2.9 kg/ 6.4 lb including the two-hour operating Li-ion battery. The compact and portable design allows you not only to easily ship or transport the IPLEX RX and RT to inspection sites but to smoothly carry them to difficult-to-access locations.

The IPLEX RX carried up a ladder with a shoulder strap

The compact and neat design is easy to carry with one hand

Comfortable Inspections in Optimal Styles

The versatile design of the IPLEX RX and RT offers comfortable use to almost anyone. The pivoting handle of the monitor can change into a stand during inspections, and allows you to place the videoscope wherever you want to optimize viewing distance and angles. The video output capability of the IPLEX RX and RT enables inspections in a group or from remote locations by connecting the external monitor. Furthermore, the IPLEX RX and RT can be used while being carried with a shoulder belt or connected onto a tripod.

The same inspected image is shared between two operators with an external display connected to the IPLEX RX for remote observation
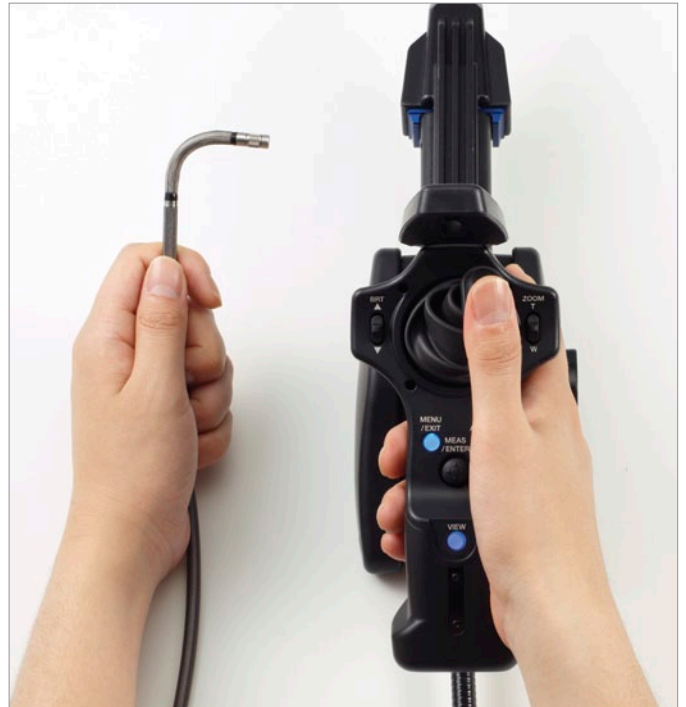

The IPLEX RX sits on a surface using its pivoting handle to angle the image just right

Smooth and Accurate Approach to a Target

The innovative articulation technologies equipped on the IPLEX RX and RT allow for smooth and accurate approaches to the most demanding inspection paths.

The improved TrueFeel™ articulation controller features precise and quick scope tip articulation by just light-touch operation, achieving smooth navigation through intricate paths.

The insertion tube is designed with the unique Tapered Flex™ to optimize both the scope stiffness and flexibility for excellent scope maneuverability.

TrueFeel articulation providing a precise and controlled bend at the distal end

Quick and Easy Operation

The most common operations such as scope articulation, image adjustment and recording can be easily activated by pressing dedicated Quick Access keys on the lightweight handset. The menu setting of the IPLEX RX and RT is simplified for easy and quick operation.

The handheld controller boasting Quick Access keys capable of over 14 actions in a single touch

User-friendly Menu Icons

All menus of the IPLEX RX and RT are displayed with easy-to-understand icons. An inspector can intuitively recognize the menus and efficiently operate the desired feature or setting.

The IPLEX RX intuitive menu shows the options for image overlay

Rugged and Durable
for Reliable Performance Even in Harsh Environments

Robust Body

The IPLEX RX and RT pass the impact tests including vibration and drop from a height of 1.2 m/ 3.9 ft.

The tough system compliant with Military Standards withstands rough treatment and ensures reliable operation in difficult environments.

Operable in All Weather

The IPLEX RX and RT comply with internationally recognized Military Standards (MIL-STD-810F/G and MIL-STD-461F)* as well as IP55, passing a range of severe environmental tests, such as blowing rain/dust, high humidity, and icing rain. In addition, the daylight view monitor featuring low-reflection displays clear images even under bright sunlight.

*Reference page 11 for MIL-STD compliance details

RAIN   SUNLIGHT   DUST

High-durability Insertion Tube

Operators are often required to inspect objects inside narrow paths with rough or sharp surfaces. The insertion tube of the IPLEX RX and RT has a crush and abrasion-proof design and is covered with a tough, special processed tungsten braid.

In addition, the IPLEX RX insertion tube features high temperature resistant up to 100 °C/ 212 °F. A high temperature sensor beeps and display visual warning to prevent overheating.
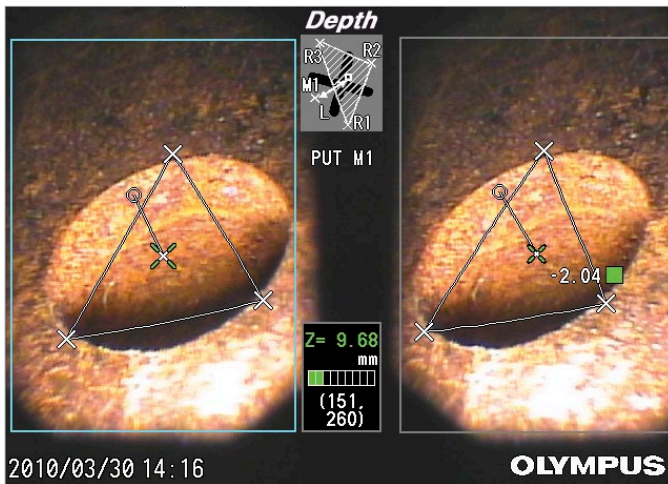

Special processed tungsten braid

Advanced Functionality
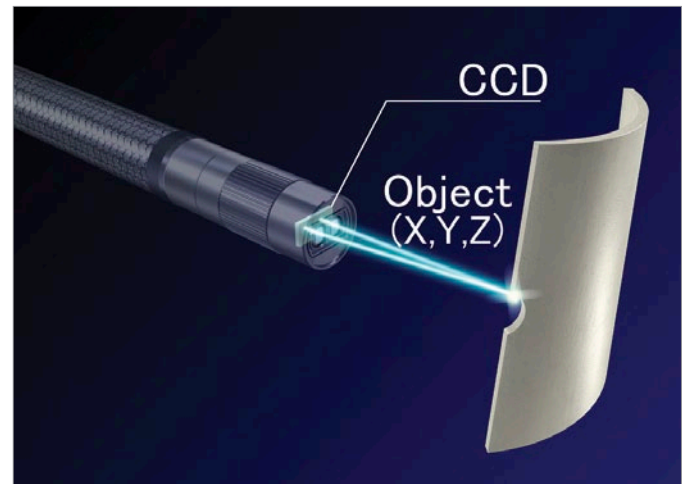## to Provide Outstanding Inspection Accuracy and Work Efficiency

Stereo Measurement for Reliable Inspection (to be released in May 2014)

Our advanced Stereo Measurement technology offers outstanding reliability and accuracy for your inspections. By capturing image information through two parallax lenses, the IPLEX RX permits accurate measurement of almost any object from any angle.

Additionally, our unique Spot-Ranging™ feature on the IPLEX RX, the industry's only real-time tip-to-target distance measurement tool, navigates the scope tip to the optimum distance from a target for the most precise measurement on the first try.

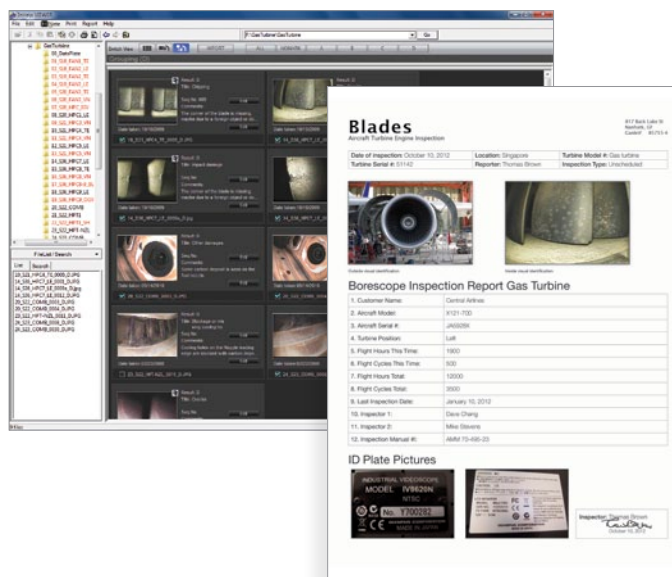Depth measurement accomplished with the IPLEX RX Stereo Measurement

Principle of Stereo Measurement technology

InHelp™ Inspection Assist Software

InHelp, the inspection data management and reporting* software, streamlines many aspects of remote visual inspections with the IPLEX RX and RT. The software greatly improves work efficiency and simplifies inspections by organizing stored images on the IPLEX RX and RT, generating detailed inspection reports* on a PC with simple click operation.
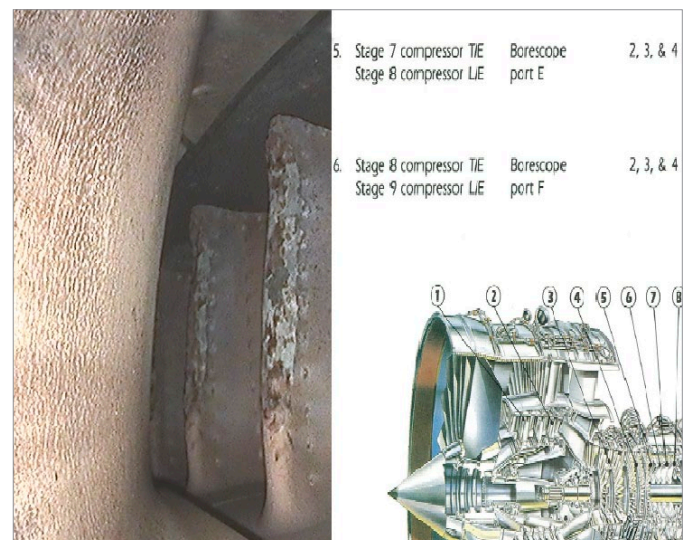
*Report generating function is an option.

Instruction Manual Display

IPLEX RX has a function to display PDF document. Instead of alternately facing printed inspection manuals and inspected images, you can see both of them on the IPLEX RX monitor at once. This unique capability improves your inspection speed and efficiency.

Optional report generation can be added to compliment the InHelp software

Comparison display between an inspected image and PDF document

IPLEX RX/RT Features and Specifications*

SCOPE VARIATION

IPLEX RX model no.	IV9420RX	IV9435RX	IV9620RX	IV9635RX	IV9650RX*1	IV9675RX*1
IPLEX RT model no.	IV9420RT	IV9435RT	IV9620RT	IV9635RT	IV9650RT*1	IV9675RT*1
Scope diameter	φ4.0 mm (0.157 in.)		φ6.0 mm (0.236 in)			
Scope length	2.0 m (6.6 ft)	3.5 m (11.5 ft)	2.0 m (6.6 ft)	3.5 m (11.5 ft)	5.0 m (16.4 ft)	7.5 m (24.6 ft)
Exterior	High durability tungsten braid					
Tube flexibility	Uniformed stiffness		Tapered Flex™ tube with flexibility gradually increasing toward the distal end.			
Articulation angle up/down/right/left	130°	130°	150°	130°	*1	*1
Approx. system weight (with battery)	2.9 kg (6.4 lb)	3.0 kg (6.6 lb)	3.1 kg (6.8 lb)	3.2 kg (7.1 lb)	*1	*1

*1. To be released in May, 2014

	IPLEX RX	IPLEX RT
INSERTION TUBE		
Articulation mechanics	Improved TrueFeel™ scope tip articulation with electronic power-assisted, manual articulation	
Temperature sensor	2-stage indicator for high temperature warning.	N/A
Illumination	Ultra-high intensity LED illumination	
Optical tip adaptor locking mechanism	Double threaded attachment, with O-ring seal	
HANDHELD CONTROL UNIT		
Dimensions (W xD x H)	365 mm x 93 mm x 192 mm (14.4 in. x 3.7 in. x 7.6 in.)	
Weight	Approx. 1.0 kg (2.2 lb)	
Quick access buttons	The following features have dedicated quick access buttons, levers or joysticks on the hand control unit: Scope articulation control, Image controls, Record still/video, Menu access	
MAIN UNIT		
Dimensions (W x D x H)	227 mm x 64 mm x 189 mm (8.9 in. x 2.5 in. x 7.4 in.) Maximum Dimension: 239 mm x 99 mm x 215 mm (9.4 in. x 3.9 in. x 8.5 in.)	
LCD monitor	6.5 in. daylight-view LCD, anti-reflective type	
Power supply	Battery: 10.8 V nominal, approx. 120-minute operating time. AC power: 100 V to 240 V, 50/60 Hz (with supplied AC adaptor)	
Video output standard	VGA	
USB connector	Type A connector, Version 2.0 standards	
SOFTWARE MANIPULATIONS		
Image manipulations	5X digital zoom, 10 step brightness control	
Gain control	3 step adjustable gain control with exclusive WiDER™ brightness level balancing technology.	N/A
Sharpness control	4 step adjustable sharpness control	N/A
Saturation control	3 step adjustable control of color saturation	N/A
Display text options	30-character title display	
RECORDING MANAGEMENT FUNCTIONS		
Recording media	USB flash memory (1 GB standard, compatible with recommended USB flash device)	
Overlay	Selectable 30 character title with date, time and system setting.	
Thumbnail image display	Recorded images can be displayed as thumbnails.	
Still image recording	Resolution — H 768 x V 576 (Pixel)	
	Recording format — Compressed JPEG format	
	Size of a single image — Approx. 300 KB (Approx. 3,400 images per 1 GB memory)	
Video recording	Resolution — H 640 × V 480 (Pixel)	
	Recording format — AVI MPEG-4 format. Can be played on the Windows Media Player.	
	Size of a single image — Approx. 500 KB per second (Approx. 30 min. per 1 GB memory)	
STEREO MANAGEMENT FUNCTIONS — OPTIONAL FUNCTION FOR IPLEX RX* (to be released in May, 2014)		
Distance	Distance between two points	
Point-to-line	Perpendicular distance between a point and a user-defined line	
Depth	Orthogonal depth/height distance between a point and a user-defined plane	
Area/lines	Multiple point circumstance and area measurement	

*Stereo Measurement functions are available by upgrading the IPLEX RX.

OPERATING ENVIRONMENT

Operating temperature	Insertion tube	In air: –25 ℃ to 100 ℃ (–13 ℉ to 212 ℉) IPLEX RX –25 ℃ to 80 ℃ (–13 ℉ to 176 ℉) IPLEX RT
		In water: 10 ℃ to 30 ℃ (50 ℉ to 86 ℉)
	Other parts than above	In air: –10 ℃ to 40 ℃ (14 ℉ to 104 ℉) with battery 0 ℃ to 40 ℃ (32 ℉ to 104 ℉) with AC power adaptor
Relative humidity	All parts	15 % to 90 %
Liquid resistance	All parts	Operable when exposed to machine oil, light oil or 5 % saline solution.
Waterproofing	Insertion tube	Water pressure resistance: IV94 series — Up to an equivalent to 3.5 m (11.5 ft) in depth IV96 series — Up to an equivalent to 7.5 m (24.6 ft) in depth
	Other parts than above	Operable in blowing rain conditions (Battery compartment must be closed). Not operable underwater.

MIL-STD COMPLIANCE

The operating environment performance is confirmed by the following MIL-STD-810F/G and MIL-STD-461F.
No warranty is given as to damage-free under any conditions. Please ask Olympus sales representative for details.

Type	Method
Vibration	MIL-STD-810F, Method 514.5, Procedure I (General vibration test)
Shock	MIL-STD-810G, Method 516.5, Procedure IV (Transit drop test)
Water resistance	MIL-STD-810F, Method 506.4, Procedure I (Rain and Blowing rain test)
Humidity	MIL-STD-810F, Method 507.4
Salt fog	MIL-STD-810F, Method 509.4
Sand and dust	MIL-STD-810G, Method 510.4, Procedure I (Blowing dust test)
Icing/freezing rain	MIL-STD-810F, Method 521.2
Electromagnetic Interference (EMI)[1]	MIL-STD-461F, RS-103, (Radiated susceptibility test for non-metallic above deck shipboard conditions)
Explosive atmosphere	MIL-STD-810F, Method 511.4, Procedure I (Operation in an explosive atmosphere test)

[1]. Excluding IV9675RX and IV9675RT.

Tip Adaptor Optical Specifications

OPTICAL TIP ADAPTOR VARIATION

		6.0 MM VIEWING TIP ADAPTORS							
		AT40D-IV96	AT80D/NF-IV96	AT80D/FF-IV96	AT120D/NF-IV96	AT120D/FF-IV96	AT80S-IV96	AT120S/NF-IV96	AT120S/FF-IV96
Optical system	Field of view	40°	80°		120°		80°	120°	
	Direction of view	Forward					Side		
	Depth of field[1]	200 to ∞ mm	9 to ∞ mm	35 to ∞ mm	2 to 200 mm	19 to ∞ mm	15 to ∞ mm	1 to 25 mm	3 to ∞ mm
Distal end	Outer diameter[2]	ø6.0 mm							
	Distal end[3]	18.4 mm	18.9 mm	18.8 mm	18.9 mm	18.8 mm	24.2 mm		

		4.0 MM VIEWING TIP ADAPTORS					STEREO TIP ADAPTORS (4.0MM AND 6.0MM)[4]			
		AT80D/FF-IV94[4]	AT120D/NF-IV94	AT120D/FF-IV94	AT100S/NF-IV94	AT100S/FF-IV94	AT50D/50D-IV94	AT50S/50S-IV94	AT60D/60D-IV96	AT60S/60S-IV96
Optical system	Field of view	80°	120°		100°		50°/50°		60°/60°	
	Direction of view	Forward			Side		Forward/Forward	Side/Side	Forward/Forward	Side/Side
	Depth of field[1]	35 to ∞ mm	2 to 200 mm	17 to ∞ mm	2 to 15 mm	8 to ∞ mm	[4]	[4]	[4]	[4]
Distal end	Outer diameter[2]	ø4.0 mm					ø4.0 mm		ø6.0 mm	
	Distal end[3]	19.0 mm			21.7 mm		[4]	[4]	[4]	[4]

[1]. Indicates the viewing distance with optimal focus.
[2]. The adaptor can be inserted into a ø4.0 mm and ø6.0 mm hole when it is mounted on the scope.
[3]. Indicates the length of the rigid portion at the scope's distal end when mounted.
[4]. To be released in May, 2014.

Accessories

Lithium-ion Battery
NC2040NO29
Battery charger*
CH5000C (USA type) /
CH5000X (European type)
The battery provides long-lasting operations.

Rigid Sleeve Sets
MAJ-1253 (for 6.0 mm insertion tube)
MAJ-1737 (for 4.0 mm insertion tube)
Sets are available for 6.0 mm and 4.0 mm scopes.
Each set consists of three rigid sleeves of 250 mm,
340 mm and 450 mm lengths.

Optical Tip Adaptor
The wide range of the IPLEX RX and RT tip adaptors
meets the optical requirements of any application.

Guide Tube for 6.0 mm diameter Long Scope
MAJ-1825-75
Protects the scope and assists in smooth entry
when inserting it into a wide pipe. Available on
the 6.0 mm diameter scope in 7.5 m length.

AC Power Adaptor
The IPLEX RX and RT can be operated with either
the provided AC power adaptor or the battery.