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Your Vision, Our Future

**NEW** Industrial Videoscope

**iPLEX II R**

**iPLEX MX R**

**iPLEX SX II R**

# The iPLEX R Series Features and Specifications

The iPLEX II R Series and iPLEX MX R Series comply with the European RoHS Directive. The use of lead, mercury, cadmium, hexavalent chromium, PBBs or PBDEs is restricted.

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## OLYMPUS INDUSTRIAL

Olympus Corporation



ISO 9001 Registered Certificate No. 136050

Quality Management System



ISO 14001 Registered Certificate No. 152012

Environmental Management System

KeyMed Limited



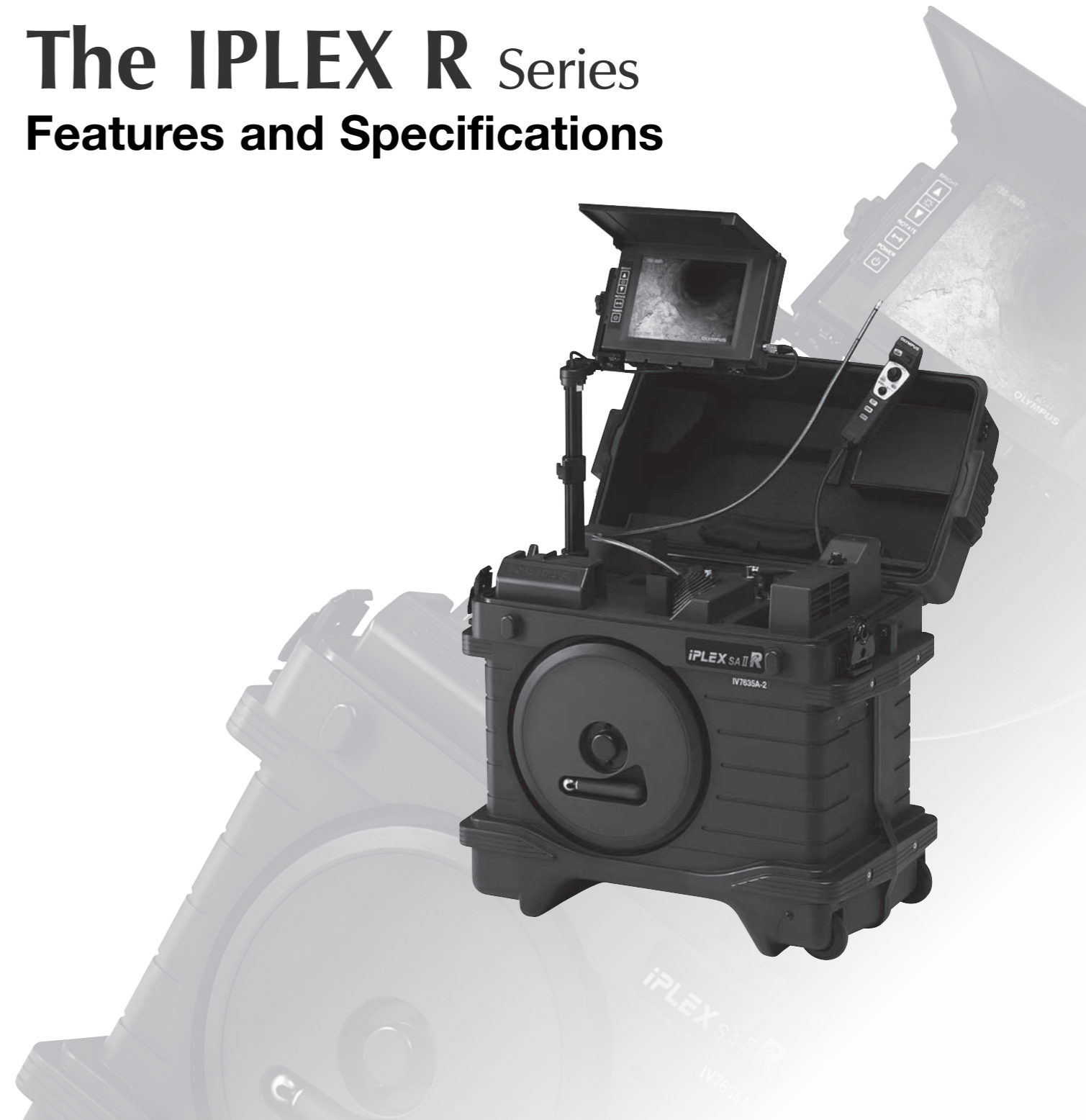
ISO 9001 Registered Certificate No. FM 20093

Quality Management System



ISO 14001 Registered Certificate No. EMS 65964

Environmental Management System



## IPLEX II R Features and Specifications

Basic model designed for total user-friendliness. High resolution LCD monitor with dramatically improved resolution and dynamic range.

The IPLEX II R can be upgraded to the IPLEX SA II R after purchase.

### Scope Variation

Outer diameter:

- ø4.4mm with insertion tube length of 3.5m: IV7435-2
- ø6.0mm with insertion tube length of 3.5m: IV7635-2
- ø6.0mm with insertion tube length of 5.0m: IV7650-2
- ø6.0mm with insertion tube length of 7.5m: IV7675-2
- ø6.0mm with insertion tube length of 9.6m: IV7696-2

Insertion tube length refers to the length from the distal end to the main unit case when the insertion tube is fully pulled out.

### Basic Functions

- **Solid, user-friendly mechanical design:** Insertion tube winding drum and handle, Three-step extendable rod handle, Carriage caster, Integrated bumper
- **Interchangeable optical adaptor:** For the specifications, see "Optical Adaptor Specifications." (The distal end optical adaptor is to be purchased separately.)
- **Angulation range (up-down/right-left):** IV76 Series - 150°, IV74 Series - 120°
- **Tough Tapered Flex insertion tube:** Tube design that becomes more pliable towards the distal end with crush resistance more than 3 times as high as that of a conventional model
- **Scope length index line:** Provided at every 1m from the distal end
- **LCD monitor:** 6.3" XGA full-colour, detachable from main unit
- **LCD fixing device (monopod):** Two-step expandable, maximum height 964 mm
- **Remote Controller:** Provided with LCD monitor connector

- **50W metal-halide light source:** Lamp life is 300 hours at minimum
- **Integrated shock-resistant case**
- **AC power supply:** Voltage-100 to 120 V/220 to 240 V, Max power consumption: 250 VA, Frequency-50/60/400 Hz
- **DC power supply:** Voltage: 12 V to 30 V Max power consumption: 288 W

### CCU Functions

- **Freeze:** Selectable between freeze and field, 4-frame memory possible (4-frame memory is available only for IPLEX II R.)
- **Stepless digital zoom:** Max 3x
- **Exposure:** 17 to 500 msec (NTSC), 20 to 500 msec (PAL)
- **Brightness adjustment:** 7 steps
- **Enhancement:** 3 steps
- **Menu language selection:** Japanese or English
- **Video signal output:** Composite video output terminal (BNC)-1 (75Ω), S-video terminal-1 (75Ω)
- **Audio signal output:** Monaural x 1 (RCA Pin)

### Dimensions and Weight

508mm (W) x 290mm (D) x 528mm (H), 22kg

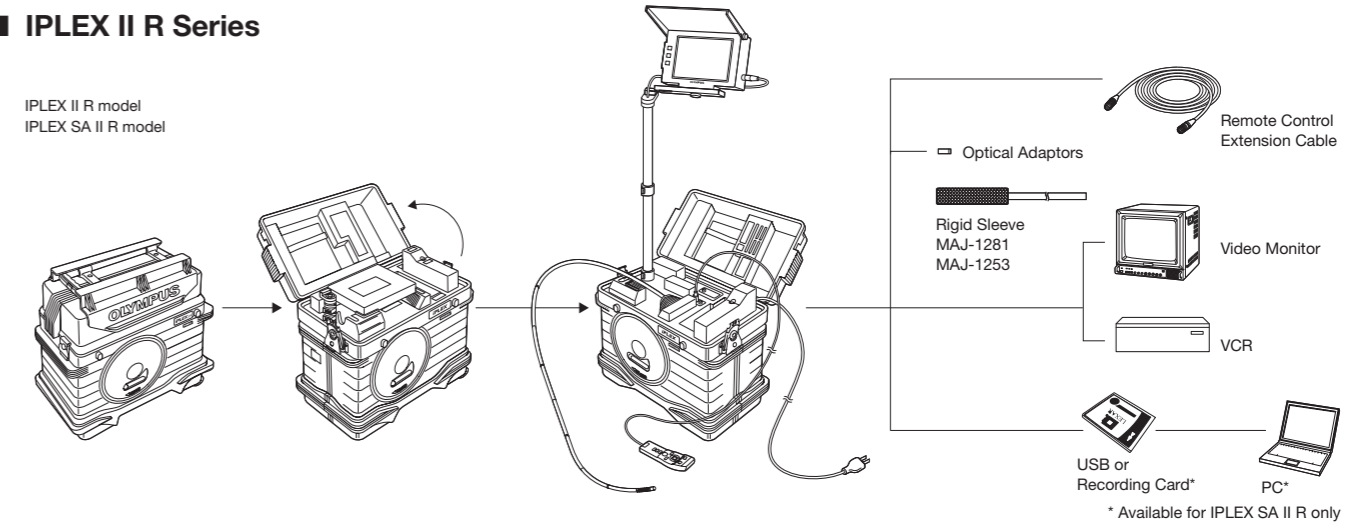
### Optical Adaptor Specifications

Scope	Optical Adaptor	Optical System				Distal End	
		Field of view	Direction of view	Depth of field	F No.	Outer diameter	Rigid distal end length*
IV74	AT40D-IV74	40°	Forward	200~∞mm	2.4	ø4.4mm	19.7mm
	AT80D/NF-IV74	80°		8~∞mm	9.5		20.2mm
	AT80D/FF-IV74	80°		35~∞mm	3.1		20.1mm
	AT120D/NF-IV74	120°		4~190mm	9.2		20.2mm
	AT120D/FF-IV74	120°	25~∞mm	3.3	20.1mm		
	AT80S-IV74	80°	Side	25~∞mm	3.7		23.1mm
	AT120S/NF-IV74	120°		1~20mm	9.6		23.1mm
	AT120S/FF-IV74	120°		6~∞mm	6.0		23.1mm
AT40D-IV76	40°	Forward		200~∞mm	2.4	ø6.0mm	19.3mm
AT80D/NF-IV76	80°		8~∞mm	9.5	19.8mm		
AT80D/FF-IV76	80°		35~∞mm	3.1	19.7mm		
AT120D/NF-IV76	120°		4~190mm	9.2	19.8mm		
AT120D/FF-IV76	120°		25~∞mm	3.3	19.7mm		
AT80S-IV76	80°		Side	18~∞mm	4.0		25.2mm
AT120S/NF-IV76	120°			1~25mm	9.6		25.2mm
AT120S/FF-IV76	120°			5~∞mm	5.9		25.2mm
AT100D/100S-IV76	100°/100°	Forward/Side		2~150mm	7.0	27.2mm	
AT220D-IV76	220°	Forward	3~100mm	4.3	ø8.4mm	21.1mm	

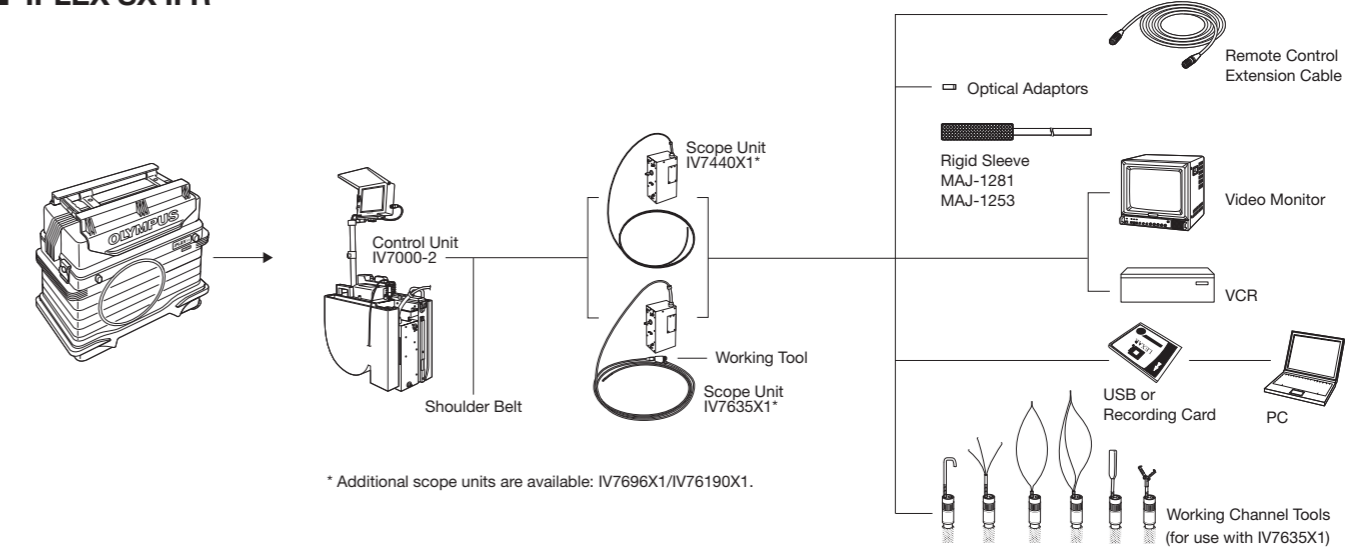
\* The rigid portion at the scope's distal end when the adaptor is mounted.

## IPLEX II R Series/IPLEX SX II R/IPLEX MX R System Charts

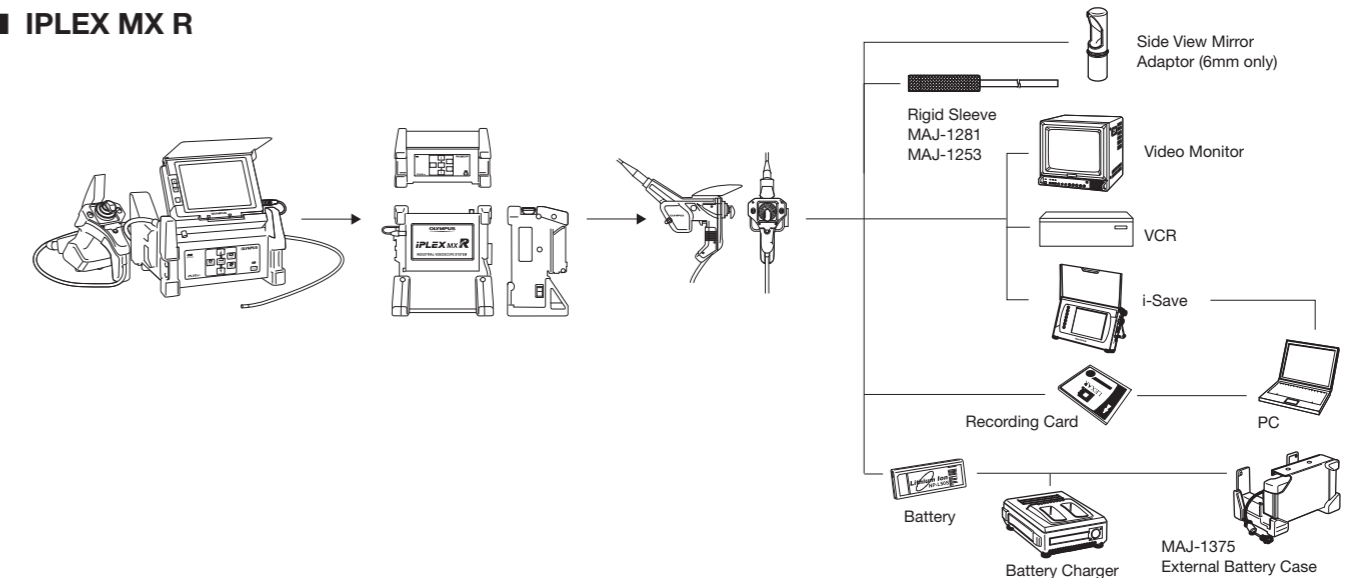
### IPLEX II R Series



### IPLEX SX II R



### IPLEX MX R



## IPLEX MX R Features and Specifications

A battery powered videoscope that can go anywhere, bringing freedom to your inspections.

- High efficiency via clear, high-resolution images and stepless zoom
- Excellent mobility thanks to compact, lightweight, battery-powered design
- Simple, intuitive operation
- Access the inspection area regardless of location

### Scope Variation

Outer diameter:

- ø4.4mm with insertion tube length of 1.5m: IV7415X2
- ø4.4mm with insertion tube length of 3.0m: IV7430X2
- ø6.0mm with insertion tube length of 2.0m: IV7620X2
- ø6.0mm with insertion tube length of 3.0m: IV7630X2
- ø6.0mm with insertion tube length of 5.0m: IV7650X2
- ø6.0mm with insertion tube length of 8.0m: IV7680X2

### Insertion tube/Control unit

#### ■ Insertion tube

Tube exterior: Tungsten with special processing

Flexibility: TTF tube design that becomes more pliable towards the distal end

#### ■ Optics

Field of view: 120° (IV76X2 models) / 100° (IV74X2 models)

F No.: F3.3

Direction of view: Forward

Can be changed to side view by using the side view mirror adaptor (ø6.0mm only)

Depth of field: 18-1000mm (IV76X2 models)  
12-76mm (IV74X2 models)

Illumination method: LED

#### ■ Articulation section

Articulation angle:

4 way, UP/DOWN/RIGHT/LEFT 120°

(IV7620X2/IV7630X2/IV7415X2/IV7430X2)

4 way, UP/DOWN/RIGHT/LEFT 90° (IV7650X2/IV7680X2)

Articulation control:

Joystick control with power assist mechanism

Manual angulation (IV7680X2)

Weight: 0.5kg (IV7415X2/IV7430X2/IV7620X2)/0.6kg (IV7630X2/IV7650X2)

### Main unit

#### ■ CCU

Brightness adjustment: 11 steps

Long exposure: Up to 1 sec. Exposure time is set automatically.

Boost mode: Monochrome brighter image by high gain amplifier than ordinary colour image

Zoom: Electronic linear zoom up to 3x

On screen display: Date, time and Olympus logo (selectable)

Menu language: English, German, French, Spanish and Japanese (selectable)

Video output: BNC x 1, S-video x 1

#### ■ Image recording

Image format: JPEG

Medium: CF card provided as standard (128MB supplied)

Recordable images: Over 920 images with 128MB CF card

#### ■ LCD

5.6 inch TFT full colour

#### ■ Quiet mode

The system will operate at a slower fan speed and emit less audible noise when the AC power supply or external battery are used

#### ■ Power supply

AC (AC adaptor): 100-120V, 200-240V 50/60Hz

DC (Internal battery): 14.4V Max power consumption 27W

Battery operation time: 2.5 hours (Optional External Battery Case enables additional 2.5 hours operation)

#### ■ Dimensions

200mm (W) x 220mm (H) x 80mm (D) (excluding projections)

223mm (W) x 247mm (H) x 137mm (D) (including projections)

#### ■ Weight

AC operation (AC adaptor): 3.4kg (including LCD)

DC operation (Internal battery): 3.8kg (including LCD and battery)

### Carrying case

#### ■ Dimensions

620mm (W) x 410mm (H) x 240mm (D) (excluding wheels)

#### ■ Portability

Wheel and belt for transportation

### Accessories

#### ■ Side View Mirror Adaptor

AT50S-IV76X2 (for ø6.0mm models)

You can change the direction of view by mounting the side viewing tip adaptor. The diameter of the side viewing tip adaptor is 7.4mm

#### ■ External Battery Case

MAJ-1375

Attaches the second battery for an additional 2.5 hours of operation

#### ■ Battery Charger

JL-2PLUS/OL-0 (115V)

JL-2PLUS/OL-1 (220V)

Exclusively designed to recharge IPLEX MX R batteries. Charges two batteries sequentially

#### ■ Battery

NP-L7S (Li-ion battery)

Designed for use with the IPLEX MX R. One battery lasts approximately 2.5 hours under normal operating condition

#### ■ Belt Set

MAJ-1377

Exclusively for the IPLEX MX R, this set includes a shoulder belt, waist belt, and scope lock belt to provide comfortable and safe transportation of equipment during use (supplied in standard set)

#### ■ AC Adaptor

MAJ-1376N (115V)

MAJ-1376P (220V)

### Operating Environment

Operating temperatures	Insertion tube	In air: -25 ~ 80°C (-13 ~ 176°F)
	Other parts than above	Under water: 10 ~ 30°C (50 ~ 86°F)
Operating atmospheric pressure	Insertion tube	In air: 1013 hPa Under water: 1013 ~ 1317 hPa
	Other parts than above	In air: 1013 hPa
Relative humidity		15 ~ 90%
Liquid resistance	Insertion tube, remote control	No trouble even when machine oil, light oil or 5% saline is attached
	Other parts than above	No trouble with the IPLEX MX R case outer finishing even when machine oil, light oil or 5% saline is attached
Water proofing	Insertion tube	Waterproof: Can be used under water
	Other parts than above	Neither waterproof nor rain-proof

### Side View Mirror Adaptor Specifications

Mirror adaptor	Outer diameter	Direction of view	Field of view	Depth of field
AT50S-IV76X2	ø7.4mm	Forward-oblique 50°	50°	5~∞mm

\* A mirror image is reflected on part of the forward-viewing image

## IPLEX SA II R Features and Specifications

High-end model with image recording unit and stereo measurement. Optional network function allows operation from remote locations.

### Scope Variation

Outer diameter:

- ø4.4mm with insertion tube length of 3.5m: IV7435A-2
- ø6.0mm with insertion tube length of 3.5m: IV7635A-2
- ø6.0mm with insertion tube length of 5.0m: IV7650A-2
- ø6.0mm with insertion tube length of 7.5m: IV7675A-2
- ø6.0mm with insertion tube length of 9.6m: IV7696A-2

Insertion tube length refers to the length from the distal end to the main unit case when the insertion tube is fully pulled out.

### Basic Functions

IPLEX II R and IPLEX SA II R share the same basic functions. Please refer to the specifications of IPLEX II R.

### CCU Functions

In addition to CCU functions of IPLEX II R, the below functions are available for IPLEX SA II R.

- **Gain:** Selectable from Low, Standard, Boost
- **Colour tone correction**  
Red/blue/intermediate colour enhancement, Monochrome imaging
- **Mirror image inversion**  
With lateral-viewing adaptor or lateral-viewing Stereo Measurement adaptor attached
- **Comparison**  
Live image and retrieved image are displayed on half-split screen view. Can also be recorded
- **Menu language selection**  
PAL: English, German, French, Spanish, Italian, Russian and simplified Chinese  
NTSC: English, French, Spanish, Japanese, Korean and traditional Chinese
- **Video signal input**  
S-video terminal: 1

### Recording Management Functions

- **Still image recording/playback**  
File format: When stereo adaptor is selected - Uncompressed TIFF, When other adaptor is selected - JPEG (standard quality or high quality)  
File size: Uncompressed TIFF - 640 KB, Standard quality JPEG - 100 KB, High-quality JPEG - 200 KB  
Resolution: NTSC - 640 x 480 pixels, PAL - 768 x 576 pixels
- **Audio recording/playback**  
Recording time: Max 60 sec, File format: WAV
- **Movie recording/playback**  
File format: Selectable between Windows Video file .AVI or QuickTime MJPEG .MOV formats (.AVI requires Windows XP or DirectX version 9 for PC playback)  
Resolution: NTSC - 320 x 240 pixels, PAL - 384 x 288 pixels
- **Recorded data managing**  
Combining movie files and still image storage possible during movie recording

### Optical Adaptor Specifications

IPLEX II R and IPLEX SA II R model share the same Optical Adaptor. Please refer to the specifications of IPLEX II R.

### Stereo Measurement Optical Adaptor Set Specifications

Scope	Set Name	Optical Adaptor	Optical System				Distal End	
			Field of view	Direction of view	Depth of field	F No.	Outer diameter	Rigid distal end length
IV74	MAJ-1044D	AT60D/60D-IV74	60/60°	Forward	5~∞mm	7.5	ø4.4mm	26.3mm
	MAJ-1044S	AT50S/50S-IV74	50/50°	Side	4~∞mm			30.7mm
IV76	MAJ-1046D	AT60D/60D-IV76	60/60°	Forward	5~∞mm	7.5	ø6.0mm	25.9mm
	MAJ-1046S	AT60S/60S-IV76	60/60°	Side	4~∞mm			30.7mm

- **Removable storage medium**  
128 MB Compact Flash card provided as standard - compatible with up to 2Gb
- **Thumbnail display**  
9-frame display
- **Image file operation**  
Copy, move, delete and folder functions available
- **Search function**  
Date search
- **Image title entry**  
Up to 30 alphanumeric characters and symbols can be entered.
- **USB terminal**  
USB version 1.1. Allows direct PC connectivity
- **IPLEX MANAGER software**  
For Windows 95, NT, 98, 2000, XP (Some functions are not available with Windows 95 or NT.)
- **Direct recording to PC**  
Still image and still image with audio
- **Transfer of recorded data to PC**
- **Remote operation by PC (via USB)**

### Measurement Functions

- **Scaler measurement**  
Measures the distance between points  
The calculation is based on the known length in the same inspection image
- **Stereo measurement** (Requires Stereo Measurement tip adaptor for operation)
- **Distance**  
Measures the distance between the two plotted points
- **Point-to-Line**  
Measures the distance between a hypothetical line between two designated positions and the required point
- **Depth**  
Measures the depth/height from a hypothetical plane inside three designated positions to the required point
- **Area/Lines**  
Calculates the area surrounded by multiple designated positions and plots multiple positions for measurement of curved surfaces (maximum of 20 points)
- **Profile**  
The cross section of two designated points is represented with computer graphics

### Network Functions

Optionally available:

- Ethernet/wireless connection (AdHoc and Infrastructure modes supported)
- Live streaming of moving images
- Remote operation of all menu commands
- Send still images by E-mail
- Fully configurable to suit LAN requirements

### Dimensions and Weight

508mm (W) x 290mm (D) x 528mm (H), 22kg

## IPLEX SX II R Features and Specifications

All the features of IPLEX SA II R with interchangeable insertion tubes of 4.4mm, 6.0mm or 6.2mm diameter. The 6.2mm diameter model incorporates an internal working channel for foreign object retrieval.

### Scope Variation

Outer diameter:

- ø4.4mm with insertion tube length of 4.0m: IV7440X1
- ø6.0mm with insertion tube length of 9.6m: IV7696X1
- ø6.0mm with insertion tube length of 19.0m: IV76190X1
- ø6.2mm with insertion tube length of 3.5m: IV7635X1

Note: The IV7696X1 is available with braided insertion tube or smooth outer coating.

Insertion tube length refers to the length from the distal end to the main unit case when the insertion tube is fully pulled out.

### Basic Functions

IPLEX II R and IPLEX SX II R share the same basic functions. Please refer to the specifications of IPLEX II R.

In addition, the following functions are available for IPLEX SX II R:

- Interchangeable scope unit
- Working channel (IV7635X1 model only)
- Pocket style insertion tube winding drum

Note: IV7635X1 comes with index lines specific to F100 application. Working channel is available only for IV7635X1.

### CCU Functions

IPLEX SX II R and IPLEX SA II R share the same CCU functions. Please refer to the specifications of the IPLEX SA II R.

### Recording Management Functions

IPLEX SA II R and IPLEX SX II R share the same Recording Management Functions. Please refer to the specifications of IPLEX SA II R.

### Measurement Functions

IPLEX SA II R and IPLEX SX II R share the same Measurement Functions. Please refer to the specifications of IPLEX SA II R.

### Dimensions and Weight

508mm (W) x 290mm (D) x 528mm (H)  
406mm (W) x 159mm (D) x 398mm (H)  
without integrated shock-resistant case, 22.8kg (IV7635X1)

### Optical Adaptor Specifications

Scope	Optical Adaptor	Optical System				Distal End	
		Field of view	Direction of view	Depth of field	F No.	Outer diameter	Rigid distal end length*
IV7635X1 (ø6.2mm)	AT120D/NF-IV76X1	120°	Forward	4~190mm	9.2	ø6.2mm	20.6mm
	AT120D/FF-IV76X1	120°		25~∞mm	3.3		20.5mm
	AT80S-IV76X1	80°	Side	18~∞mm	4.0		24.6mm
	AT120S-IV76X1	120°		5~∞mm	5.9		24.6mm

\* The rigid portion at the scope's distal end when the adaptor is mounted

For the specifications of optical adaptors to suit other scopes, see Optical Adaptor Specifications on page 1

### Stereo Measurement Optical Adaptor Set Specifications

Scope	Set Name	Optical Adaptor	Optical System				Distal End	
			Field of view	Direction of view	Depth of field	F No.	Outer diameter	Rigid distal end length
IV74	MAJ-1044D	AT60D/60D-IV74	60/60°	Forward	5~∞mm	7.5	ø4.4mm	26.3mm
	MAJ-1044S	AT50S/50S-IV74	50/50°	Side	4~∞mm			30.7mm
IV76	MAJ-1046D	AT60D/60D-IV76	60/60°	Forward	5~∞mm	7.5	ø6.0mm	25.9mm
	MAJ-1046S	AT60S/60S-IV76	60/60°	Side	4~∞mm			30.7mm
IV7635X1	MAJ-1241D	AT60D/60D-IV76X1	60/60°	Forward	5~∞mm	7.5	ø6.2mm	26.7mm
	MAJ-1241S	AT60S/60S-IV76X1	60/60°	Side	4~∞mm			32.4mm

## IPLEX II R Series Accessories

### Accessories

#### Optical Adaptor

You can change the field of view, direction of view, and depth of field by switching the optical adaptor on the scope tip. Refer to pages 1, 2 and 3 for detailed specification tables for each instrument.

#### Stereo Optical Adaptor

MAJ-1044D (for ø4.4mm dia. insertion tube, forward-viewing)  
MAJ-1044S (for ø4.4mm dia. insertion tube, side-viewing)  
MAJ-1046D (for ø6.0mm dia. insertion tube, forward-viewing)  
MAJ-1046S (for ø6.0mm dia. insertion tube, side-viewing)  
MAJ-1241D (for ø6.2mm dia. insertion tube, forward-viewing)  
MAJ-1241S (for ø6.2mm dia. insertion tube, side-viewing)  
The two objective lenses enable stereo measurement.

#### Forward/Side-Viewing Adaptor

AT100D/100S-IV76 for 6.0mm instruments  
This single optical adaptor offers enhanced inspection efficiency with both forward-viewing and side-viewing capabilities.

#### Ultra-Wide-Angle Adaptor

AT220D-IV76 for 6.0mm instruments  
Provides 220° wide-angle images for wide-range inspection. Even makes it possible to confirm the back of an inspection object - something that is impossible with conventional adaptors.

#### Accessory Bag

MAJ-1120  
Provides convenient, compact storage for the optional accessories. Can be attached to the IPLEX II R main unit.

#### Remote Control Extension Cable

MAJ-1091  
Length: 4m  
Extends the remote control cable, allowing more freedom of movement during operation. Attaching this cable and removing the monitor from the monopod allows you to operate the main unit while moving freely around a wider area.

#### Rigid Sleeve

MAJ-1281 (for ø4.4mm dia. insertion tube)  
Outer Diameter: ø5.9mm  
Length: 250mm/340mm/450mm  
MAJ-1253 (for ø6.0mm/ø6.2mm dia. insertion tube)  
Outer Diameter: ø7.5mm  
Length: 250mm/340mm/450mm  
Allows the insertion tube to perform as a rigid borescope. Simply fit and lock the sleeve onto the tip of the insertion tube.

### Operating Environment (IPLEX II R/IPLEX SA II R/IPLEX SX II R models)

Operating temperatures	Insertion tube	In air: -25 ~ 80°C Caution: Angulation to a large angle may become difficult under low temperatures Under water: 10 ~ 30°C (excluding IV7635X1)
	Other parts than above	In air: 0 ~ 40°C
Operating atmospheric pressure	Insertion tube	With IV7635-2, IV7650-2, IV7675-2, IV7696-2, IV7635A-2, IV7650A-2, IV7675A-2 & IV7696A-2: In air: 1013 hPa (1 atm) In water: 1013 ~ 1985 hPa (1 ~ 1.96 atm) With IV7435-2, IV7435A-2, IV7440X1: In air: 1013 hPa (1 atm) Under water: 1013 ~ 1368hPa (1 ~ 1.35 atm) With IV7635X1: In air: 1013 hPa (1 atm)
	Other parts than above	In air: 1013 hPa (1 atm)
Liquid resistance	Insertion tube, remote control Channel port (IV7635X1)	No trouble even when machine oil, light oil or 5% saline is attached
	Other parts than above	No trouble with the case outer finishing even when machine oil, light oil or 5% saline is attached
Water proofing	Insertion tube	Waterproof: Can be used under water (except IV7635X1)
	Remote control, LCD monitor Channel port (IV7635X1)	Rain-proof: Can be used in rain but cannot be used under water
	Other parts than above	Neither waterproof nor rain-proof