Handheld Videoscope
with Advanced Image Quality and Functionality
Dramatically improve your field inspections with a palm-sized, ultralight videoscope.

With its durable design and improved performance that allows it to be used in diverse environments, the iPLEX UltraLite is the industry’s choice in handheld remote visual inspections.
Outstanding Mobility
With its unique ergonomic design, the IPLEX UltraLite videoscope fits in the palm of your hand. Because it is extremely lightweight, it can be used to perform field inspections with the greatest of ease.

Surprisingly compact and lightweight
The IPLEX UltraLite weighs only 700 g with its lithium-ion battery. This easy-to-use videoscope is so small and light that it is the perfect companion for the inspector who works in areas with limited access or in cramped spaces or has to navigate narrow stair cases or steep ladders.

Palm-sized ergonomic design
The ergonomic IPLEX UltraLite fits snugly into the palm of your hand, and provides speedy, fatigue-free operation even during prolonged inspections.

Outstanding Usability
The IPLEX UltraLite offers intuitive manipulations for efficient, accurate inspections.

Icon-based menus for instant recognition and intuitive operations
IPLEX UltraLite menus feature simple, intuitive icons that let you quickly identify and activate the desired functions.

Quick-access hot buttons
IPLEX UltraLite eliminates complicated menu settings. The IPLEX UltraLite functions can be easily operated with just one hand. By pressing dedicated, direct-access keys, you can quickly articulate scope tip, record images, adjust brightness, and input text.

Quick, precise scope articulation
The IPLEX UltraLite features quick, precise articulation. The scope tip instantly and accurately responds to the articulation control and approaches targets precisely, enabling fast, efficient inspections.
Outstanding Quality
With its innovative, compact design, the IPLEX UltraLite offers uncompromising, industry-leading durability and image quality.

Durable chassis withstands drops and falls
The IPLEX UltraLite’s durability has been thoroughly proven. It passes our 1.2 m drop test, and withstands inspection-site drops and falls. The LCD monitor is equipped with a very strong and durable glass, passing a steel-ball drop test compliant with the international standard, IEC-61010.

Rugged design for reliable operation in harsh environments
Operators are often called on to conduct inspections in difficult environments. The IPLEX UltraLite stands up to rain, sand and dust, and compliant with IP55.

Ideal for outdoor inspections, the IPLEX UltraLite faithfully produces brilliant images, under sunlight.

Insertion tube resists crushing and abrasion
The IPLEX UltraLite’s insertion tube is both crush- and abrasion-resistant. It is also designed with unique Olympus Tapered Flex™ technology* for outstanding scope maneuverability. With its durability and graduated flexibility, the IPLEX UltraLite insertion tube enables you to inspect objects inside winding and rough paths.

A crush-resistant steel coil layer makes the insertion tube more durable.

The Tapered Flex™ tube* features gradient flexibility for easy scope maneuverability and navigation.

A high-density outer braid provides maximum wear resistance and durability.

A bright LED illumination at the scope tip eliminates the need for fiber optic bundles.

*Available on IV86 series.

Sharp live-image and clear movies for reliable observation and analysis
When it comes to remote visual inspections, image quality is one of the highest priorities. The IPLEX UltraLite is equipped with our unique Olympus image processor, and produces sharp and clear images. Along with its superb colour-reproducing capability, the IPLEX UltraLite enables you to accurately detect even small defects.

Observed images can be stored in a connected SD or SDHC card as high-quality JPEG still images and MPEG-4 movies.
Outstanding Functionality

The IPLEX UltraLite now offers several new hardware and software features to enhance the efficiency and accuracy of your inspections and analysis.

Extra-bright illumination with versatile optical adaptors

For optimal direction and magnification covering various types of objects, the IPLEX UltraLite offers a comprehensive range of interchangeable optical tip adaptors. The bright LED mounted on the tip adaptors clearly illuminates targets. In addition, Hi-Beam mode is newly equipped on the IPLEX UltraLite, which boosts illumination up to 2X for expanded inspection capability.

InHelp™ Inspection Assist Software

InHelp, the optional inspection data management and reporting software streamlines many aspects of remote visual inspections with the IPLEX UltraLite. The software greatly improves work efficiency and streamlines inspections by organising stored images on the IPLEX UltraLite and generating detailed inspection reports on a PC with simple click-operation.

Proven Stereo Measurement*

Our Stereo Measurement technology provides defect measurements from various angles with simple operation. Diverse Stereo Measurement modes including distance, height and depth enable quantitative defect diagnosis.

Additionally, our unique Spot-Ranging™ feature on the IPLEX UltraLite, 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.

*Available on the Stereo Measurement model.
**Carrying case**
Even when packed with the IPLEX UltraLite and all of its accessories, the standard carrying case weighs a light 3.5 kg, providing easy transport and storage.

**Durable carrying case**
*MAJ-2019*
This optional durable case fully protects the instrument from damage during shipment. It is small enough to fit in the overhead compartment of most aircraft, making it ideal for frequent transport.

**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.
Note: The carrying case can store 250 mm and 340 mm length types.

**Lithium-ion battery**
*IB-1*  
**Battery charger**
*IC-1*  
The battery provides approximately 90 minutes of operating time.
Note: Approximately 70 minutes of operating time in Hi-Beam mode setting.

**Optical tip adaptors**
The wide range of UltraLite tip adaptors meets the optical requirements of any application.

**SDHC card**
An SDHC card with a 4 GB capacity is supplied as standard.

**AC power adaptor**
The IPLEX UltraLite can be operated with either the provided AC adaptor or the battery.
## IPLEX UltraLite Specifications

### SCOPE VARIATION

<table>
<thead>
<tr>
<th>Model No.</th>
<th>IV8420U</th>
<th>IV8435U</th>
<th>IV8620U</th>
<th>IV8635U</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insertion Tube</strong></td>
<td>Scope Diameter*1</td>
<td>φ4.0 mm</td>
<td>φ6.0 mm</td>
<td></td>
</tr>
<tr>
<td><strong>Scope Length</strong></td>
<td>2.0 m</td>
<td>3.5 m</td>
<td>2.0 m</td>
<td>3.5 m</td>
</tr>
<tr>
<td><strong>Exterior</strong></td>
<td>High-durability tungsten braid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tube Flexibility</strong></td>
<td>Uniform stiffness</td>
<td>Tapered Flex™ tube with flexibility gradually increasing toward the distal end.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Approx. System Weight (with battery)</strong></td>
<td>700 g</td>
<td>760 g</td>
<td>800 g</td>
<td>900 g</td>
</tr>
<tr>
<td><strong>Articulation Section</strong></td>
<td>Articulation Angle (UP/DOWN/RIGHT/LEFT)</td>
<td>130 °</td>
<td>120 °</td>
<td></td>
</tr>
<tr>
<td><strong>Articulation Mechanics</strong></td>
<td>Joystick controlled scope tip articulation with articulation lock mechanics</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 The insertion tube can be inserted into a φ4.0 mm or φ6.0 mm hole.

### BASIC FUNCTIONS

- **Dimensions (W x D x H)**: 120 x 190 x 190 mm
- **Temperature Sensor**: 2-stage indicator for high temperature warning
- **Locking Mechanism**: Double-Threaded Attachment, with O-ring seal.
- **Illumination**: Multiple ultra-high intensity LEDs, Hi-Beam mode available for extra-bright illumination.
- **Tip Adaptor Identification**: Automatic recognition of tip adaptor attachment and detachment.
- **Quick Access Buttons**: The following features have dedicated quick access buttons, levers, or joysticks on the palmheld system: Live mode, Brightness, Zoom, Freeze Image, Record Still/Video, Articulation Control, Menu Access, Saved Recording Index Access, Quick Last Image Recall.
- **LCD Monitor**: 3.7 in. LCD
- **Power Supply**: Battery: 7.2 V, Approx. 90-minute operating time
  AC power: 100 V to 240 V, 50/60 Hz (with supplied AC adaptor)
- **USB Connector**: Version 2.0 standards
- **Harsh Environment Resistance**: Rain- and dust proof (compliant with IP55), Drop-proof

### SOFTWARE MANIPULATIONS

- **Image Manipulations**: 5x digital seamless zoom
  10-step digital brightness control (including Gain, Exposure, and Monochrome boost controls)
- **Display Text Options**: 30-character title display

### RECORDING MANAGEMENT FUNCTIONS

- **Recording Media**: SD/SDHC Card (4 GB standard, compatible with recommended SD/SDHC cards)
- **Overlay**: Selectable 30 character title with date, time and system setting.
- **Still image Recording**
  - **Resolution**: H640 x V480 (Pixel)
  - **Format**: Compressed JPEG format (Exif 2.1 compliant)
  - **File Size**: Approx. 300 KB (Approx. 13,400 images per 4 GB memory)
- **Movie Recording**
  - **Resolution**: H640 x V480 (Pixel)
  - **Format**: AVI format Xvid MPEG-4 Compression
  - **File Size**: Approx. 600 KB per second (Approx. 120 min per 4 GB memory)

### STEREO MEASUREMENT FUNCTIONS

- **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 circumference and area measurement

### OPERATING ENVIRONMENT

- **Operating Temperature**
  - Insertion Tube: In air: –25 to 100 ºC
  - In water: 10 to 30 ºC
  - Other parts than above: In air: –10 to 40 ºC
- **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**: Operable underwater up to a water pressure equivalent to a depth of 3.5 m. Not operable underwater with stereo measurement tip adaptors.
  - **Other parts than above**: Operable in rain (battery compartment must be closed). Not operable underwater.
## OPTICAL TIP ADAPTOR VARIATION

### 6.0 mm Viewing Tip Adaptors

<table>
<thead>
<tr>
<th>Optical System</th>
<th>Field of view</th>
<th>Direction of view</th>
<th>Depth of field</th>
<th>Distal End</th>
<th>Outer diameter*1</th>
<th>Distal end*2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>40º</td>
<td>Forward</td>
<td>200 to ∞ mm</td>
<td></td>
<td>ø6.0 mm</td>
<td>19.8 mm</td>
</tr>
<tr>
<td></td>
<td>80º</td>
<td></td>
<td>8 to ∞ mm</td>
<td></td>
<td></td>
<td>25.2 mm</td>
</tr>
<tr>
<td></td>
<td>120º</td>
<td>Side</td>
<td>35 to ∞ mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>80º</td>
<td></td>
<td>4 to 190 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>120º</td>
<td></td>
<td>18 to ∞ mm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.0 mm Viewing Tip Adaptors

<table>
<thead>
<tr>
<th>Optical System</th>
<th>Field of view</th>
<th>Direction of view</th>
<th>Depth of field</th>
<th>Distal End</th>
<th>Outer diameter*1</th>
<th>Distal end*2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>120º</td>
<td>Forward</td>
<td>4 to 190 mm</td>
<td></td>
<td>ø4.0 mm</td>
<td>19.7 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25 to ∞ mm</td>
<td></td>
<td></td>
<td>19.6 mm</td>
</tr>
</tbody>
</table>

### Stereo Tip Adaptors (4.0 mm and 6.0 mm)—Exclusive for Stereo Measurement models

<table>
<thead>
<tr>
<th>Optical System</th>
<th>Field of view</th>
<th>Direction of view</th>
<th>Depth of field</th>
<th>Distal End</th>
<th>Outer diameter*1</th>
<th>Distal end*2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50º/50º</td>
<td>Forward/Forward</td>
<td>5 to ∞ mm</td>
<td></td>
<td>ø4.0 mm</td>
<td>25.0 mm</td>
</tr>
<tr>
<td></td>
<td>60º/60º</td>
<td>Side/Side</td>
<td>4 to ∞ mm</td>
<td></td>
<td></td>
<td>28.8 mm</td>
</tr>
</tbody>
</table>

*1. The adaptor can be inserted into a ø4.0 mm or ø6.0 mm hole when mounted on the scope.

*2. Indicates the length of the rigid portion at the scope’s distal end when mounted.