Flexible Endoscopy in Surgery
Flexible endoscopy is becoming increasingly prevalent in general and visceral surgery. The modular IMAGE1 S™ camera system combines rigid (2D, 3D and 4K) as well as flexible endoscopy in one system and thus allows the use of both applications.

Special Features:

- For use with KARL STORZ video endoscopes (video choledochoscopes, TROIDL flexible rectoscopes, colonoscopes, gastroscopes)
- Possible to combine rigid and flexible endoscopy thanks to the modular IMAGE1 S™ camera platform
- Picture-in-Picture mode enables the simultaneous display of laparoscopic and endoscopic images
- Cost-effective solution as it eliminates the need for a second video tower
IMAGE1 S™ Overview

Rigid Endoscopy

Flexible Endoscopy

3D Endoscopy

Rigid Endoscopy

Flexible Endoscopy

3D Endoscopy

Flexible Endoscopy

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CO$_2$mbi® LED – LED Technology with Air or CO$_2$ Insufflation

The CO2MBI® LED is a unique cold light fountain with an integrated air or CO$_2$ insufflation pump. Particularly during longer procedures, CO$_2$ insufflation minimizes post-operative pain as CO$_2$ gas is more quickly absorbed by the patient’s body. In the eco mode, the unit automatically switches to air insufflation in the pause phase and thus actively saves CO$_2$.

Special Features:

- Choice of insufflation with regular room air or CO$_2$ according to individual requirements
- Powerful LED technology is durable, energy-saving, environmentally friendly and significantly reduces running costs
- Procurement costs amortized after just a few years
- Automatic light source control
- Touch screen
- For use with KARL STORZ video endoscopes
<table>
<thead>
<tr>
<th>Specifications:</th>
<th>TL 100 S1 Cold Light Fountain CO2MBI® LED SCB</th>
</tr>
</thead>
<tbody>
<tr>
<td>With:</td>
<td>High-performance LED, KARL STORZ-SCB</td>
</tr>
<tr>
<td>Including:</td>
<td>Irrigation Bottle Holder</td>
</tr>
<tr>
<td></td>
<td>Holding Ring, for water bottles</td>
</tr>
<tr>
<td></td>
<td>Water Bottle</td>
</tr>
<tr>
<td></td>
<td>Irrigation Adaptor, for water bottles</td>
</tr>
<tr>
<td></td>
<td>SCB Connecting Cable</td>
</tr>
<tr>
<td></td>
<td>Universal Wrench</td>
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</tbody>
</table>

**Specifications:**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illumination technology</td>
<td>High-performance LED</td>
</tr>
<tr>
<td>Color temperature</td>
<td>approx. 6400 K</td>
</tr>
<tr>
<td>LED module service life</td>
<td>approx. 30,000 h</td>
</tr>
<tr>
<td>Light intensity adjustment</td>
<td>automatic via SCB</td>
</tr>
<tr>
<td></td>
<td>manual via SCB</td>
</tr>
<tr>
<td></td>
<td>manual via touch screen</td>
</tr>
<tr>
<td>Light outlets</td>
<td>1</td>
</tr>
<tr>
<td>Unit communication</td>
<td>KARL STORZ Communication Bus (2x SCB)</td>
</tr>
<tr>
<td>Power consumption</td>
<td>120 VA</td>
</tr>
<tr>
<td>Power supply</td>
<td>100-240 VAC</td>
</tr>
<tr>
<td>Line frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Dimensions (w x h x d)</td>
<td>305 x 110 x 380 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>8.5 kg</td>
</tr>
<tr>
<td>Cleaning</td>
<td>wipe disinfection</td>
</tr>
<tr>
<td>Protection classes</td>
<td>1, CF</td>
</tr>
<tr>
<td>Pump</td>
<td>integrated insufflation pump with two power levels</td>
</tr>
<tr>
<td>Insufflation</td>
<td>room air and two CO₂ insufflation modes</td>
</tr>
<tr>
<td>Gas supply</td>
<td>choice between low and high pressure</td>
</tr>
</tbody>
</table>

Further light sources for flexible and rigid endoscopy can be found in the Telepresence catalog.
Flexible Video Choledochoscopes

The flexible video choledochoscopes from KARL STORZ allow exploration of both the intra- and extrahepatic bile ducts as well as the surgical removal of gallstones.

Special Features:

- “Chip-on-the-tip” technology for excellent image quality*
- Compatible with the IMAGE1 S™ platform and backward-compatible to IMAGE 1 HUB™ HD
- Menu navigation via camera head (e.g., Picture-in-Picture)
- Minimal sheath circumference – 2.8 and 5.3 mm
- Infinitely adjustable deflection up to 270°
- Direct transmission of hand movements through to the distal end

*To view the application video, please scan the QR code
11292 VSK  **Flexible Video Choledochoscope**, steerable, deflection of distal tip: 270°/270°
- Direction of view: 0°
- Angle of view: 90°
- Working channel inner diameter: 1.2 mm
- Sheath size: 2.8 mm
- Working length: 50 cm

11292 VSUK  **Same**, with contrapositive deflection mechanism

**For use with the following camera systems:**
- **IMAGE1 S™**

11292 VPK  **Flexible Video Choledochoscope, PAL**, deflection of distal tip: 210°/140°
- Direction of view: 0°
- Angle of view: 120°
- Working channel inner diameter: 2.1 mm
- Sheath size: 5.3 mm
- Working length: 37 cm

11292 VPUK  **Same**, with contrapositive deflection mechanism

**For use with the following camera systems:**
- **IMAGE1 S™ in conjunction with Video Endoscope Adaptor TC 001**
- **IMAGE 1 HUB™ HD** in conjunction with Video Endoscope Adaptor 22 2000 77
- **TELECAM/TELE PACK X LED** in conjunction with Video Endoscope Adaptor 20 2130 70

Further information on flexible video choledochoscopes is available in the Laparoscopy catalog.

Further information on camera systems is available in the Telepresence catalog.
KARL STORZ TROIDL SILVER SCOPE® Flexible Rectoscope

The flexible TROIDL SILVER SCOPE® rectoscope combines the fundamental advantages of flexible endoscopy with the application possibilities of rectoscopy.

Special Features:

- Working length of 40 cm ensures easy handling
- Up to 210° inversion improves visualization and, consequently, diagnostic and therapeutic options thanks to forward and retrograde viewing
- Field of application especially suited for surgical conditions and procedures in the rectal area
- Fatigue-free work thanks to ergonomically shaped control unit
- Possibility to combine rigid and flexible endoscopy thanks to modular IMAGE1 S™ camera platform
13912 PKSK  **TROIDL Rectoscope**, flexible, 11.8 mm x 40 cm, color system PAL,
- Direction of view: 0°
- Sheath diameter: 11.8 mm
- Working channel diameter: 3.4 mm
- Deflection up/down: 210°/120°
- Deflection left/right: 120°/120°
- Field of view: 140°
- Working length: 40 cm

13912 NKS/13912 NKS  **Same**, color system NTSC

**For use with the following camera systems:**
- **IMAGE1 S™**
- **IMAGE 1 HUB™ HD**
- **TELECAM/TELE PACK X GI**

**Please note:**
One of the following video endoscope adaptors is required to connect the flexible TROIDL Rectoscope 13912 PKS/13912 NKS to a camera control unit:

**For use with IMAGE1 S™:**
- TC 001  **IMAGE1 S™ Video Endoscope Adaptor**, color systems PAL/NTSC, length 60 cm, for use with IMAGE1 S™ X-LINK TC 301

**For use with IMAGE 1 HUB™ HD:**
- 22 2000 77  **Video Endoscope Adaptor**, color systems PAL/NTSC, length 90 cm

**For use with TELECAM/TELE PACK X GI:**
- 20 2130 70  **Video Endoscope Adaptor**, for use between KARL STORZ video endoscopes and TELECAM Camera Control Units (CCU) or TELE PACK video units

**Further information on the TROIDL flexible rectoscope is available in the Laparoscopy catalog.**

**Further information on camera systems and units is available in the Telepresence catalog.**
Flexible SILVER SCOPE® Gastroscopes

The IMAGE1 S™ camera platform from KARL STORZ in conjunction with the SILVER SCOPE® series sets new standards in gastroenterology and offers examiners versatile visualization options for diagnostics and treatment.

Special Features:

- The KARL STORZ S-Technologies (CLARA, CHROMA, SPECTRA*) make it easier for examiners to assess the mucosal structure
- Ergonomically shaped control unit for fatigue-free working
- Large deflection area for a complete view
- Homogeneous image brightness, even under difficult lighting conditions
- Individually programmable remote control buttons, double assignment

* not for sale in the U.S.
<table>
<thead>
<tr>
<th>Product Code</th>
<th>Model Name</th>
<th>Endoscopy Type</th>
<th>Scope Diameter</th>
<th>Working Channel Diameter</th>
<th>Working Length (mm)</th>
<th>Deflection</th>
<th>Endoscope Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>13820 PKSK/NKSK</td>
<td>Flexible Video Gastroscopic Scope</td>
<td>Slim Gastroscope</td>
<td>5.9 mm</td>
<td>2 mm</td>
<td>1100 mm</td>
<td>210°/100°</td>
<td>5.9 mm</td>
</tr>
<tr>
<td>13823 PKSK/NKSK</td>
<td>Flexible Video Gastroscopic Scope</td>
<td>Medium Gastrooscope</td>
<td>7.8 mm</td>
<td>2.8 mm</td>
<td>1100 mm</td>
<td>210°/100°</td>
<td>7.8 mm</td>
</tr>
<tr>
<td>13821 PKSK/NKSK</td>
<td>Flexible Video Gastroscopic Scope</td>
<td>Routine Gastroscope</td>
<td>9.3 mm</td>
<td>2.8 mm</td>
<td>1100 mm</td>
<td>210°/100°</td>
<td>9.3 mm</td>
</tr>
<tr>
<td>13826 PKSK/NKSK</td>
<td>Interventional Gastroscopic Scope with Double Channel</td>
<td>Gastroscope with Water Jet Channel</td>
<td>12 mm</td>
<td>3.8 mm and 2.8 mm</td>
<td>1100 mm</td>
<td>210°/100°</td>
<td>12 mm</td>
</tr>
</tbody>
</table>

Further information on flexible SILVER SCOPE® gastroscopes is available in the Gastroenterology catalog.

Further information on camera systems and units is available in the Telepresence catalog.
Flexible SILVER SCOPE® Colonoscopes

The IMAGE1 S™ camera platform from KARL STORZ in conjunction with the SILVER SCOPE® series sets new standards in gastroenterology and offers examiners versatile visualization options for diagnostics and treatment.

Special Features:

- KARL STORZ S-Technologies offer the examiner five visualization modes
- Homogeneous image brightness, even under difficult lighting conditions
- Ergonomically shaped control unit for fatigue-free working
- Excellent deflection, tight radius
- Individually programmable remote control buttons, double assignment
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| 13920 PKSK/NKSK | Flexible Video Sigmoidoscope, with reduced outer diameter | Direction of view: 0°  
Sheath outer diameter: 11.2 mm  
Working channel diameter: 3.4 mm  
Working length: 800 mm  
Deflection up/down: 210°/180°  
Deflection left/right: 160°/160° |
| 13926 PKSK/NKSK | Flexible Video Colonoscope, with reduced outer diameter | Direction of view: 0°  
Sheath outer diameter: 11.2 mm  
Working channel diameter: 3.4 mm  
Working length: 1330 mm  
Deflection up/down: 210°/180°  
Deflection left/right: 160°/160° |
| 13927 PKSK/NKSK | Flexible Video Colonoscope, with reduced outer diameter | Direction of view: 0°  
Sheath outer diameter: 11.2 mm  
Working channel diameter: 3.4 mm  
Working length: 1530 mm  
Deflection up/down: 210°/180°  
Deflection left/right: 160°/160° |
| 13924 PKSK/NKSK | Flexible Video Colonoscope | Direction of view: 0°  
Sheath outer diameter: 12.9 mm  
Working channel diameter: 3.8 mm  
Working length: 1400 mm  
Deflection up/down: 180°/180°  
Deflection left/right: 160°/160° |
| 13925 PKSK/NKSK | Flexible Video Colonoscope with Water Jet Channel | Direction of view: 0°  
Sheath outer diameter: 12.9 mm  
Working channel diameter: 3.8 mm  
Working length: 1600 mm  
Deflection up/down: 180°/180°  
Deflection left/right: 160°/160° |

Further information on flexible SILVER SCOPE® colonoscopes is available in the Gastroenterology catalog.

Further information on camera systems and units is available in the Telepresence catalog.
It is recommended to check the suitability of the product for the intended procedure prior to use.