IVA SYSTEM CASE 2
The Olympus System Case 2 is a compact, portable, easy-to-use system that can contain a videoscope up to a length of 7.5m, collection of tips, 14L2B light source, choice of IV-6 or IV-4A camera control unit, high-resolution LCD screen, IW/R1 or DSI-2 image management system and either a MAJ-522 or PSU-PLUS power supply for operation.

**SPECIFICATIONS**
- Dimensions: 470(H) x 435(W) x 220(D)mm
- Weight: 22kg (maximum depending on contents)
- Power Input: 110-230V 50-60 Hz or 12V DC

INFRA-RED TELESCOPIC CAMERA SYSTEM
For general visual inspection. The Infra-Red Telescopic Camera System (ITCS) features a CCD camera with integral infrared illumination mounted on a telescopic arm, together with a compact monitor and battery module. The complete system is supplied in a single rugged carrying case.

- Up to 12 metres viewing distance in darkness.
- Up to 2 hours battery life in continuous case.
- High-resolution monochrome monitor.
- Padded nylon with sun shield. Neck and waist straps with quick release buckles.

Custom Packaging
Packaging has always been a very important part of the Olympus product range. We have therefore standardised our packaging to suit various customer needs including dedicated customised packaging for Olympus can offer a variety of hardcase and softbag solutions.

A wide range of videoscopes for specialist inspection

### SERIE 6 VIDEOSCOPES
#### INDUSTRIAL VIDEOSCOPE
**IV6C6-13/20/35/50/75**
**IV7D6X1-26 (NTSC type, LCD monitor mountable)**
**IV7D6X2-26 (PAL type)**
**IV5C6X1-15**

Series 6 videoscopes can be used in a wide variety of specialist inspections, including F100 (IV7D6X1-26) and T700/CT-7 (IV5C6X1-15) inspections.

- Full-screen display.
- Four-way angulation.
- Tapered Flex (TF) tube for enhanced insertion.
- Five button remote operation.
- Diameters of 5.1mm, 6mm, 7.3mm (with Channel) and 8.4mm.

- **IV5C6 Optical Adaptor Specifications**
- **IV5C6 Optical Adaptor Specifications**
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- **IV5C6 Optical Adaptor Specifications**

- **IV7D6X1/IV7D6X2 Scope Specifications**
- **IV7D6X1/IV7D6X2 Scope Specifications**
- **IV7D6X1/IV7D6X2 Scope Specifications**
- **IV7D6X1/IV7D6X2 Scope Specifications**
- **IV7D6X1/IV7D6X2 Scope Specifications**

- **MAJ-456 Rigid Sleeve Specifications**
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### PACKAGING
Packaging has always been a very important part of the Olympus product range. We have therefore standardised our packaging to suit various customer needs including dedicated customised packaging for Olympus can offer a variety of hardcase and softbag solutions.
REMOTE CONTROL OPERATION USING THE SERIES 6 SCOPE

INSERTION TUBE:
10845mm
7500mm
60
900g (2lb)
16000mm
150W tungsten-halogen
15845mm
7780mm

A wide selection of image management functions include measure, recall, delete, freeze, store and play modes available. Images and data can be downloaded to floppy disk or Smart-Media card for later review of inspection results on a PC. Images stored on a PCMCIA memory card can be downloaded to a PC. Easy to use, menu driven software for quick capture and storage of still video images and data.

All functions controllable from the DSM-2

REMOTE CONTROL OPERATION USING EITHER THE SERIES 6 SCOPE

ACCESSORIES FOR SERIES 6 & SERIES 5 VIDEOSCAPES

DIGITAL STORAGE AND MEASUREMENT SYSTEM

DSM-2

Compact digital image recorder:
- Freeze, store and play modes available.
- Picture quality selectable from three settings – HIGH, MIDDLE or LOW; a maximum of 99 still image frames can be recorded in LOW mode.
- Images stored on a PCMCIA memory card can be down loaded to a PC.
- Remote control operation using either the Series 6 scope’s “Five Button” control pad or the MAJ-590 wired remote controller.

C-MOUNT CCD CAMERA

Zooming and other advanced functions of the IV-6A are available for fiberscopes and borescopes when the OTC-6 C-Mount CCD Camera is used. (Note: the OTC-6 camera is used with IV-6A only)

INDUSTRIAL DIGITAL IMAGE RECORDER

IW-R1

Compact digital image recorder:
- Freeze, store and play modes available.
- Picture quality selectable from three settings – HIGH, MIDDLE or LOW; a maximum of 99 still image frames can be recorded in LOW mode.
- Images stored on a PCMCIA memory card can be down loaded to a PC.
- Remote control operation using either the Series 6 scope’s “Five Button” control pad or the MAJ-590 wired remote controller.

C-MOUNT CCD CAMERA

Monitor observation with a fiberscope or borescope.
## HIGH INTENSITY LIGHT SOURCES

<table>
<thead>
<tr>
<th>Model</th>
<th>Lamp</th>
<th>Weight (kg)</th>
<th>Dimensions (mm)</th>
<th>Power supply</th>
<th>Power consumption</th>
<th>Light guide fitting</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILH-2A</td>
<td>50W metal halide</td>
<td>3.0</td>
<td>173x235x85</td>
<td>100-230V 50-60Hz 115V 400Hz</td>
<td>100W</td>
<td>1) Olympus</td>
</tr>
<tr>
<td></td>
<td>16mm diameter borescopes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2) additional lamp</td>
</tr>
<tr>
<td></td>
<td>(with additional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tray)</td>
</tr>
<tr>
<td></td>
<td>lamp tray)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ILH-2B</td>
<td>50W metal halide</td>
<td>3.0</td>
<td>173x235x85</td>
<td>100-230V 50-60Hz (with mains</td>
<td>100W</td>
<td>1) Olympus</td>
</tr>
<tr>
<td></td>
<td>arc lamp</td>
<td></td>
<td></td>
<td>adaptor) 12V DC</td>
<td></td>
<td>2) 16mm diameter</td>
</tr>
<tr>
<td></td>
<td>(with mains borescopes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2) additional lamp</td>
</tr>
<tr>
<td></td>
<td>adaptor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>tray)</td>
</tr>
<tr>
<td>KLS-4250S</td>
<td>250W metal halide arc lamp</td>
<td>26</td>
<td>250x320x450</td>
<td>100-120V 50-400Hz/220-240V 50-60Hz</td>
<td>550VA</td>
<td>Olympus</td>
</tr>
<tr>
<td></td>
<td>4 bar, 190 litz/m minimum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UV</td>
<td>200W</td>
<td>7.5</td>
<td>265x150x256</td>
<td>220-240V AC 50Hz</td>
<td>700VA</td>
<td>Olympus</td>
</tr>
</tbody>
</table>

**Note:** All the above have constant colour temperature mechanical shutters to control light output, except for the ILK-D1 and ILK-D2 which have a four-position light guide sockets. The ILK-D2 is fitted with an automatic light cutout, which operates when the light guide is removed.
When selecting a light source for a particular application, consideration should be given to its specification, but perhaps the area that causes most confusion is the lamp itself.

A number of details on light source lamps will benefit from some technical explanation, to ease the task of comparing one light source with another.

**SPECTRAL OUTPUT**

The spectral output of a lamp details the amount of electro-magnetic radiation produced across a range of wavelengths, from ultra-violet (UV), through the visible spectrum, to infra-red (IR). Radiation wavelengths are expressed in nanometres (nm), one nanometre being $10^{-9}$ metres.

The visible spectrum is between approximately 390 and 770nm, with ultra-violet being below and infra-red being above this range. In order to give true colour images, the light source should have a relatively even output across the visible spectrum. Ideally, the amount of IR radiation produced should be minimised, as IR radiation is converted to heat, which may then require a dissipation system, adding cost, volume and weight to the light source.

The spectral outputs of the three most frequently used lamp types are shown in Figure 1 and compared with that of the sun.

**FIGURE 1 SPECTRAL OUTPUT OF TYPICAL LAMPS**

**COLOUR TEMPERATURE**

The colour temperature of a lamp is an indication of its radiance and is measured in degrees absolute (°K in SI units).

Typically, tungsten-halogen lamps have a colour temperature of 3,200°K, whilst metal-halide and xenon arc lamps are around 5,600°K. The colour temperature of the sun is 5,900°K.

With tungsten-halogen lamps, the colour temperature can be reduced by decreasing the voltage across the lamp filament. Some light sources use this method to adjust the ‘intensity’ of the light output. Unfortunately, this ‘rheostat’ type control increases the ‘yellowing’ of the resultant illumination.

For this reason, most Olympus light sources use a mechanical shutter to control light output, as the full colour temperature of the lamp is preserved.

**POWER**

A lamp’s power rating refers to the power required to operate it — it is not a direct indication of a lamp’s illumination power. For instance, a 500W tungsten-halogen lamp will not produce a higher illumination output per unit area than a 50W metal-halide or xenon lamp.

**OUTPUT**

The way in which a lamp’s output is quoted can be confusing. Generally speaking, for RVI applications, it is only relevant to consider the amount of electro-magnetic radiation within the visible spectrum being concentrated onto the light guide, known as the lamp’s luminance, normally expressed in candela per square millimetre (cd/mm²).

However, the light source is only one part of an RVI system. Other important factors to consider include the size of fibre bundle in the endoscope, the type of light guide used, whether it is integral to the scope or separate, and whether CCTV or photography is required.

Different types of light guide have different spectral transmissions and in general liquid light guides offer a better transmission at the higher end of the visible spectrum and in the UV than fibre light guides, leading to a whiter illumination.

**SUMMARY**

In summary, the best answer is to try the complete RVI system on a typical application. This will show whether a more powerful light source is required, or if a simple tungsten-halogen unit produces sufficient illumination.