



In remote visual inspection applications the choice of light source is vital. When deciding which is the most appropriate, consideration must be given to size, weight and light output.

The Olympus range of light sources have been designed to meet the customers needs and requirements, from the high intensity range of light sources, which offer versatility and maximum light output, to the more economical, lower power consumption tungsten range.

- If viewing over longer distance, or in particularly dark areas, use a high intensity light source, which incorporates an arc lamp, such as metal halide or UHP.
- If a lower cost light source is required, and viewing distance is smaller, then use a Tungsten halogen light source
- If using from a battery, or if low power consumption is required, then a low wattage lamp (such as ILH-2B) will offer longest battery life.

Remember that a high intensity arc lamp will provide much more light than a Tungsten halogen lamp, particularly with small diameter instruments. Contact your local distributor for selection advice, and try the complete system on a typical application.

SPECTRAL OUTPUT (see Figure 1)

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.

COLOUR TEMPERATURE

The colour temperature of a lamp is an indication of its radiance and is measured in degrees absolute ($^{\circ}$ K in SI units).

Typically, tungsten-halogen lamps have a colour temperature of 3,200 $^{\circ}$ K, whilst metal-halide and UHP arc lamps are around 5,600 $^{\circ}$ K. The colour temperature of the sun is 5,900 $^{\circ}$ 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, all 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 50W metal-halide or UHP lamp will produce a higher illumination level (in output per unit area) than a 500W tungsten-halogen lamp.

HIGH INTENSITY LIGHT SOURCES ILH-2A/ILH-2B

The ILH-2A and ILH-2B light sources have a custom designed high output 50W metal halide arc lamp. This produces nearly x 3 the output of the ILK-7. The unit is small in size and as well as being used with borescopes and fiberscopes, can be installed into the System Case 2 or used separately

Both the ILH-2A and ILH-2B have two Hirose power outputs offering a 12VDC 2 amp total for operation of Olympus ancillary equipment.

SPECIFICATIONS

Lamp:	50W Metal Halide
Weight:	3kg
Dimensions:	173 x 235 x 85mm
Power Supply:	ILH-2A – 110-230V 50-60Hz, 115V 400Hz ILH-2B – 110-230V 50-60Hz, 115V 400Hz (with AC Adaptor) 12VDC

Power Consumption: 100W max



ILP-1

The ILP-1 light source has been specifically designed for large void inspections. Incorporating the latest UHP lamp technology it is now the brightest, most powerful light source ever produced by Olympus.

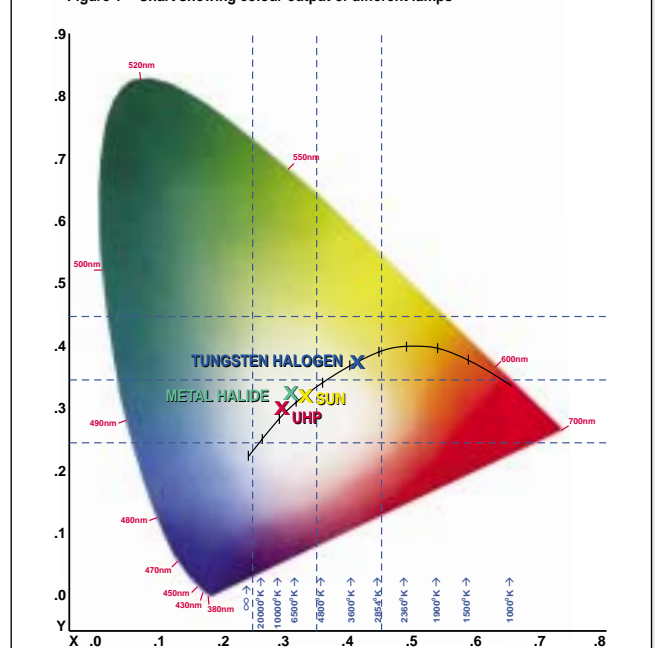
The ILP-1 has two Hirose power outputs offering a 12VDC 4 amp total for operation of Olympus ancillary equipment.

SPECIFICATIONS

Lamp:	120W Ultra High Performance (UHP)
Weight:	4kg
Dimensions:	197 x 288 x 105mm
Power Supply:	100-120VAC, 200-240VAC, 115VAC 400Hz
Power Consumption:	230W max



Figure 1 - Chart showing colour output of different lamps



TUNGSTEN HALOGEN LIGHT SOURCES ILK-7/ILK-7A/ILK-7B

The ILK-7 range of light sources incorporates a 150W tungsten-halogen lamp offering features necessary to meet most industrial needs.

SPECIFICATIONS

Lamp:	150W tungsten-halogen
Weight:	2.3kg
Dimensions:	178 x 230 x 76mm
Power Supply:	ILK-7 – 100-120V 50-60Hz, 115V 400Hz ILK-7A – 100-240V 50-60Hz, 115V 400Hz 12VDC ILK-7B – 100-240V 50-60Hz, 115V 400Hz

Power Consumption: 190W max



LIGHT SOURCE ILK-D1

The ILK-D1 portable light source has been specifically designed for use with a battery belt, being operated from a 12V supply. The light source has a large spring clip to enable it to be mounted on a belt or jacket pocket.

SPECIFICATIONS

Lamp:	75W tungsten-halogen
Weight:	0.6kg
Dimensions:	140 x 80 x 60mm
Power Supply:	12VDC
Power Consumption:	80W



LIGHT SOURCE ILK-D2

The ILK-D2 is a compact, portable light source powered from a 12V DC supply. It can be mounted on a belt using a spring clip.

SPECIFICATIONS

Lamp:	100W tungsten-halogen
Weight:	0.6kg
Dimensions:	75 x 147 x 168mm
Power Supply:	12VDC
Power Consumption:	105W



LIGHT SOURCE KLS-131

The KLS-131 light source can be used as a stand alone system or as part of the modular borescope system. It is available with either XLR connector or crocodile clips for car battery use.

SPECIFICATIONS

Lamp:	50W tungsten-halogen
Weight:	0.6kg
Dimensions:	137 x 53mm
Power Supply:	12VDC
Power Consumption:	80W



LIGHT SOURCE ILK-M1

The ILK-M1 light source is specifically designed for use with X Series Small Diameter borescopes. It is battery powered and uses a 2.5V lamp.

SPECIFICATIONS

Lamp:	Tungsten-halogen
Weight:	50g
Dimensions:	2.8mm diameter
Power Supply:	3VDC type battery



Battery Options

For portability, many Olympus Industrial light sources can be powered from battery packs. Different models are available to suit individual needs, all including long life nickel-cadmium cells.



The IC-2 belt incorporates a built-in charger which can be used from 100 and 230V supplies.

The 'Lok-on' belt uses separate battery packs, to allow continuous use.

