

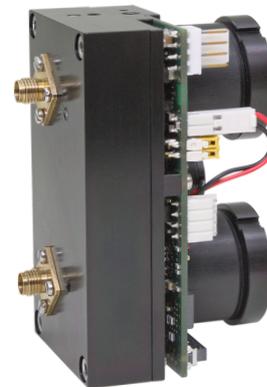
## LS-HMP: Compact, Intelligent, Reliable – The first pro-active OEM light source module

The miniature process lamp unit LS-HMP is a compact, universal use OEM light source module, designed for the integration into all kind of optical instrumentation. It contains two redundant long-life halogen lamps of 10.000 hours' lifetime each [alternative lamp types and/ or 1 channel version on request]. It comes with fiber-optic interface and filter holder, incl. lamp control with

all process relevant security functions, such as shutter and lamp monitoring as well as temperature control. The mechanical design allows an easy lamp exchange, e.g. through a service opening from outside a housing. The module is available with various communication interfaces, including I<sup>2</sup>Q and RS-485.

### [ Applications ]

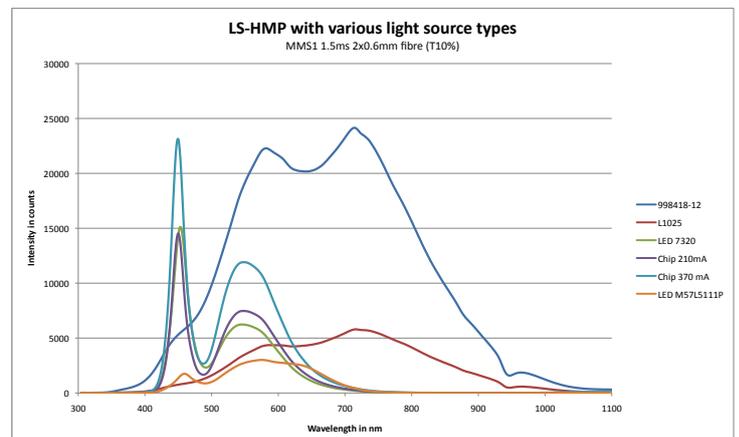
LS-HMP is part of tec5s product range of OEM subassemblies. These modules enable our customers to develop, innovate and improve their products faster reducing the burden on their own resources and shortening "time to market" significantly. Our customers therefore minimize their risk in development whilst saving time and money. tec5's knowledge of the "24/7" process industry and over 20 years' of experience in manufacturing complex opto-electronic products, for small and medium production quantities, guarantees a cost effective solution of the highest quality.



[ LS-HMP 2CH ]

### [ Advantages ]

- Controlled redundant OEM light source module
- Various Halogen, LED and Laser diode types can be integrated
- Long-life halogen lamps with a lifetime of up to 20.000 hours total run-time
- Automatic lamp monitoring, temperature and shutter control
- Easy lamp exchange through service opening from outside a housing
- Filter can be integrated for optimization of the spectral characteristics [e.g. conversion or bandpass filter]
- Optimized for use with tec5 spectrometer electronics with direct connection through I<sup>2</sup>C or RS-485
- SMA connector for adaptation to spectrometer system via optical fibers
- Compact design allows universal use as OEM module in process equipment



### [ Controls ]

A sophisticated control electronic checks the function of lamps and motor upon startup. During operation of the light source, the function of the lamp is monitored continuously. In case of failure, the spare lamp is activated automatically and failure is communicated in a status message. Moreover, the head and PCB temperature are monitored continuously in addition to operation hours of the two lamps. The control interface facilitates the access to the available data.

# Accessories

## Product Information [ LS-HMP ]

### [ 24/7 Requirements and Redundancy ]

Lamp failures are not predictable; they are a fact of life. Consequently tec5 not only chose a lamp with long life time of 10,000

hours, but also integrated an identical lamp to guarantee system reliability in the new LS-HMP.

### [ Technical Data ]

	Value	Comment
<b>Mechanical Properties</b>		
Dimensions [L x H x W]	Approx. 80 x 44 x 50	—
Material [h=ousing]	Aluminum housing	—
Optical connector	SMA	—
<b>Optical Properties</b>		
Lamp types	Halogen, LED or Laser diode	Lamp types vary in intensity, life-time and spectral range
Life-time	Typ. 10,000 hrs /lamp	Depends on lamp type
<b>Electrical Properties</b>		
Supply voltage	Typ. 5V DC	Stabilized power supply required
Current	0.2 - 2 A	Depends on type
Communication Interface	I <sup>2</sup> C, RS-485	—
Control of lamps	Yes	With current and voltage monitoring
Control of shutter	Yes	Direct control of motor, feedback of position

### [ User case | Product Versions ]

- Redundant lamp with 2 identical light sources
- 1 channel module (channel 2 not equipped)
- Alternating usage of the 2 channels as light source with switchable properties e.g. different intensities or spectral features (e.g. 2 different LEDs/ halogen with filters) on request. Both channels can be controlled independently.

Article Numbers	Article Description	Comment
11-1602002-00	LS-HMP 2CH redundant longlife	Long life
11-1602002-01	LS-HMP 2CH redundant 7W	High power
11-1602002-10	LS-HMP 1CH longlife	Long life
11-1602002-11	LS-HMP 1CH 7W	High power
11-1602006-00	Spare Lamp LS-HMP Longlife	Long life
11-1602006-10	Spare Lamp LS-HMP 7W	High power
11-1120005-00	LS-HMP Tool for Lamp Replacement	Optional

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