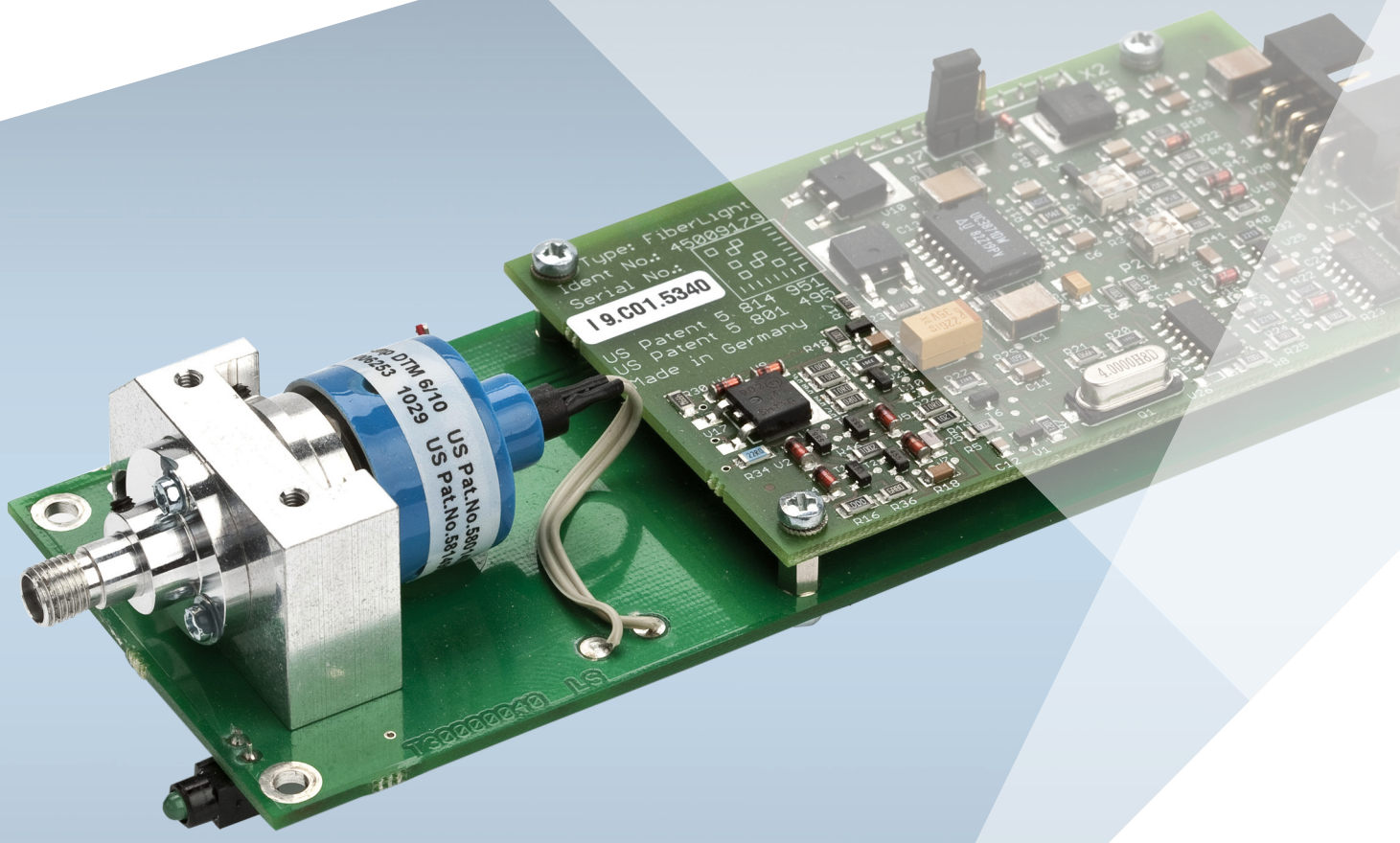
FiberLight® D2

Designed for mobile spectroscopy applications



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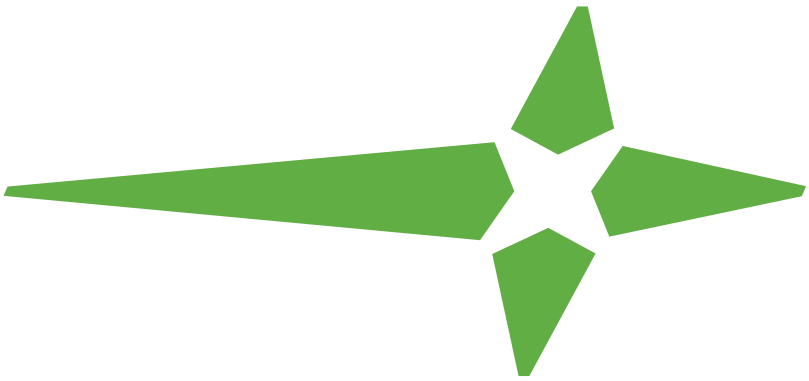

About Excelitas®

Excelitas is a leading provider of advanced, life-enriching technologies that make a difference, serving global market leaders in the life sciences, advanced industrial, next-generation semiconductor and avionics end markets. Headquartered in Pittsburgh, PA, USA, Excelitas is an essential partner in the design, development and manufacture of advanced technologies, offering leading-edge innovation in sensing, detection, imaging, optics and specialty illumination for customers worldwide.

Excelitas is at the forefront of addressing many of the relevant megatrends impacting the world today, including precision medicine, industrial automation, artificial intelligence, and connected devices (IoT).

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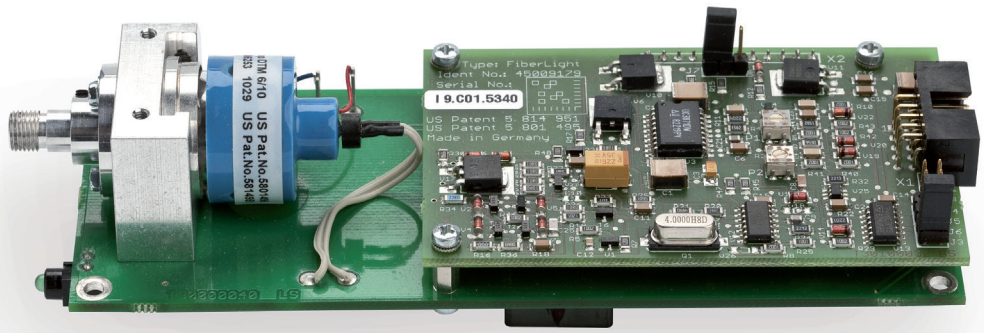
FiberLight® D2

The FiberLight D2 is a compact UV-VIS light source designed for mobile spectroscopy applications and all types of mobile applications that require a low power consumption. FiberLight D2 has a continuous spectrum covering the whole range from vacuum UV to near Infrared.

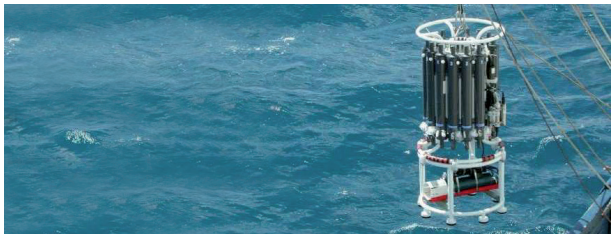
The FiberLight D2 System is a complete UV-VIS light source, combining a deuterium lamp, with a 0.25 Watt tungsten lamp, a shutter, optical system and a SMA 905 connector. All elements are mounted on a printed circuit board. Both lamps and the shutter can be separately controlled by a TTL signal. FiberLight D2 requires an external 12 VDC / 600 mA supply.



FiberLight D2

FiberLight D2 is the ideal light source for applications with limited space in the equipment, whether stationary, portable / handheld or even battery-driven instruments. Low power consumption, small dimensions and ease of operation open up new possibilities for instrument designers.

It is the only light source on the market with such a small size, integrated lamp driver and a smooth spectrum in the whole UV-VIS range. It is easy to integrate and handle. With the flexibility of the product and design Excelitas can meet the customers' needs.



The features of this light source open the way for new solutions in small spectroscopy equipment and UV-VIS optics:

- Compact size
- Low power consumption (6 Watt)
- Low heat dissipation
- Instant lamp ignition
- Cyclic operation
- Extended service life of up to 3 years
- Shutter function
- External control
- Easy coupling to optical fibers, measuring cells and capillaries

Applications

- Laboratory: UV-VIS Spectroscopy
- Environment: water quality monitoring, waste water analysis, marine chemistry, biological measurements, air quality monitoring
- Process control

Unique: **Instant ON and OFF**
Cyclic operation with stable light output for high measurement consistency

Lifetime and Cyclic Operation

The guaranteed continuous operating life of a FiberLight D2 deuterium lamp is more than 1000 hours. As the lamp is an Electrodeless Discharge Lamp (EDL) with high frequency excitation, it can be switched ON and OFF on demand and can be operated in cycles. The cyclic lamp operation results in an extended service life of up to three years. As an EDL, the number of ignitions does not reduce lifetime. In addition, pulse-to-pulse repeatability is extremely consistent to within 0.1%.

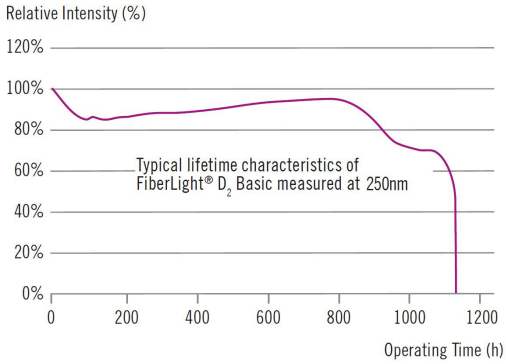
Instant ON and Instant Stability

The FiberLight D2 EDL is the only deuterium lamp that can be switched instantly ON and instantly deliver a stable light output. This feature makes it unique among UV light sources. FiberLight D2 is therefore the ideal light source in analytical instruments for waste water analysis and other pollution monitoring, where light absorption is measured for only a few seconds and repeated after long intervals. In such measurement devices, FiberLight D2 is switched ON only for the short measurement time, while it is OFF for most of the time. Nevertheless, measurement consistency is extremely good because of its pulse-to-pulse repeatability.

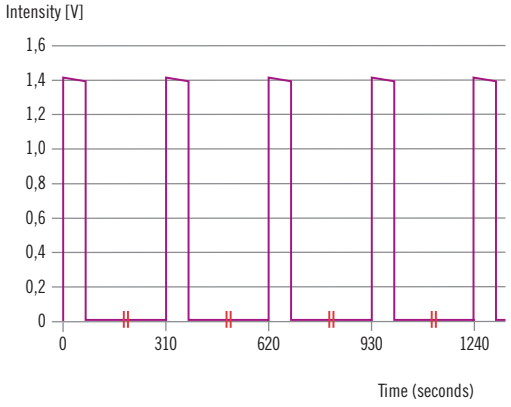
Application Example

To measure nitrate content in waste water, FiberLight D2 is switched ON for 10 seconds to measure the nitrate light absorption, and the measurement is repeated every 300 seconds. Measurement consistency is extremely good and under these operating conditions, lamp lifetime can be extended up to 3 years.

FiberLight D2 Lamp Life Characteristics



Cyclic Operation



Cyclic operation at 230 nm / measuring time: 300 OFF / 10 ON

FIBERLIGHT D2 LAMP VERSIONS

Replacement lamps				
Replacement lamp type	DTL 6/10	DTL 6/10S	DTL 6/50	DTL 6/50S
Part no.	45006253	80000756	45006266	80001018
				
Aperture size	1.0 mm	1.0 mm	0.5 mm	0.5 mm
Window material	Fused quartz	Fused synthetic silica	Fused quartz	Fused synthetic silica
Spectral distribution with optical fiber	185 – 1100 nm	160 – 1100 nm	185 – 1100 nm	160 – 1100 nm
Recommended fiber	100 – 600 µm	100 – 600 µm	200 – 1000 µm	200 – 1000 µm

For seamless integration into your measurement device, choose from a number of available options, including:

- Aperture size
- Window material
- Connection
- Light output
- Shutter

Please contact us to arrange your customized design, optimized for your application.

FIBERLIGHT D2 TECHNICAL SPECIFICATIONS

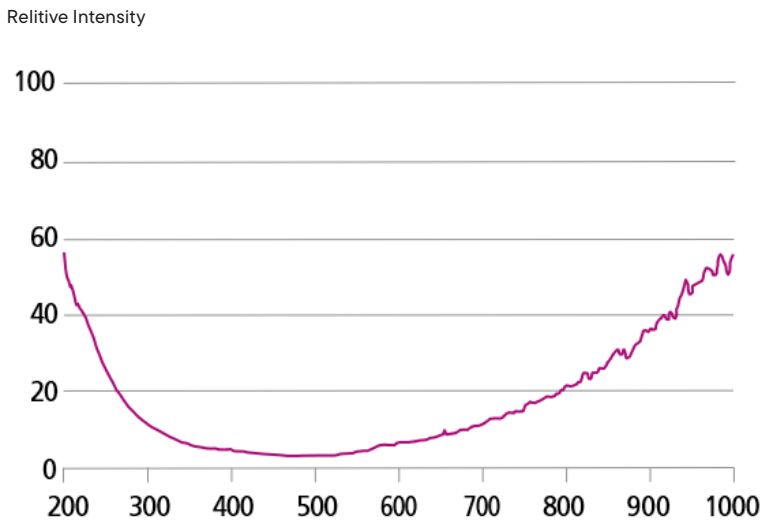
Technical Specifications - FiberLight D2	
Spectral distribution	160/ 185–1100 nm
Recom. optical fiber diameter	100 – 1000 µm
Light exit	Focused / collimated beam
Optical connection	SMA905 Fiber coupling
Shutter	Optional
Power requirements	12 Vdc / 0.6 Adc
Power consumption	6 W
Electrical connection	10-Pole terminal strip X1
Cooling	No cooling required*
Relative humidity	Max. 90%, non-condensing
Operating ambient temperature	5 – 35 °C
Dimensions	157 x 55 x 37 mm
Weight	130 g

*When placed in housing, active cooling might be required.

Technical Specifications - FiberLight D2 Deuterium Lamp	
Spectral distribution	160/185 – 400 nm
Window material	Fused synthetic silica / fused quartz
Aperture diameter	0.5 / 1 mm
Light output	≥ 8 x 10^{-7} W (coupled radiant flux 200 – 400 nm with 400 µm fiber)
Optical Stability	≤ 0.1 % RSD (200 – 280 nm)
Drift	≤ 1.5 %/h (200 – 280 nm)
Lifetime	≥ 1000 h (@ 230 nm – 50% intensity loss)

Technical Specifications - FiberLight D2 Tungsten Lamp	
Spectral distribution	400 - 1100 nm
Lifetime	≥ 2000 h

Spectral Distribution



Spectral Distribution of FiberLight D2: The spectral emission covers the entire range from 185 nm to 1100 nm; optional extended range from 160 nm to 1100 nm.

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(+49) 6023-405-9600

hng-analyticallamps@excelitas.com

excelitas.com

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Version: v1.0 Rev. Date: 10/12/2025