

Data Sheet FiberLight

The miniature UV/vis light source for mobile spectroscopy and on-line process analysis

FiberLight is a very compact light source for the ultraviolet, visible and near infrared spectral range (from 200 nm to 1100 nm). The heart of FiberLight is an electrode-less RF induced deuterium lamp or line source.

The miniature lamp opens up UV spectroscopy to portable, battery operated instruments. Application examples are organic chemistry, pharmaceuticals, petrochemicals, agriculture, the environment and life science for on-site analyses and diagnosis. Another area of applications is in small instruments for on-line process analysis.

FiberLight is a complete UV/vis light source. It consists of the lamp unit, with deuterium and tungsten lamps in shine-through array, shutter and optical coupling with SMA fiber optic connection. There is also an optional version without optical fiber connector for direct illumination of the measurement cell. All elements are mounted on a circuit board and are externally controlled through TTL signals. FiberLight can be operated with a 12Vdc/0.6A power supply.

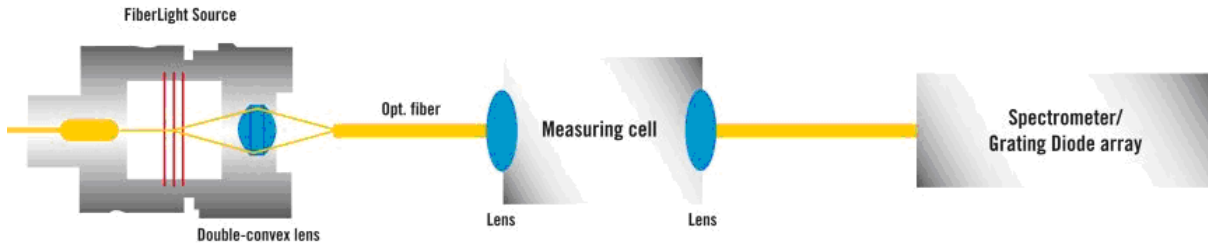


Key features of Heraeus FiberLight:

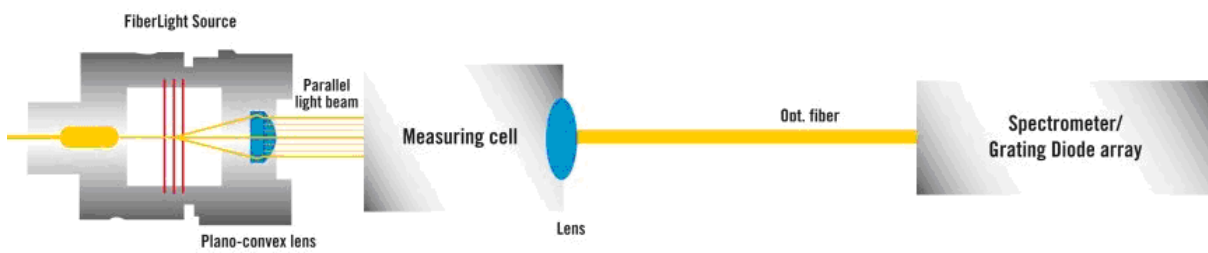
- RF induced deuterium and visible light source
- Electrodeless lamp, instant switch on/ switch off
- Exchangeable lamp modules for different UV/vis or line spectra
- Ready to use - whole unit mounted on compact circuit board
- Very small size
- Low power consumption, low heat generation

FiberLight versions

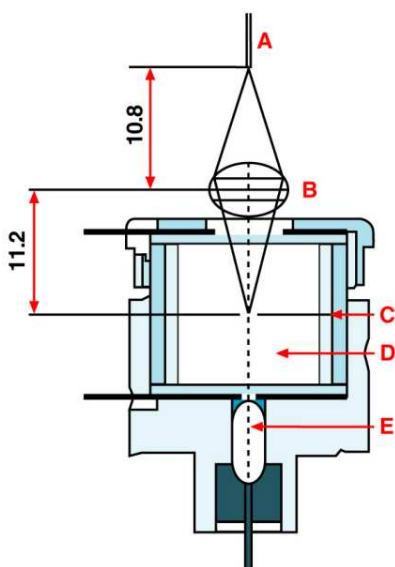
With double-convex lens for coupling into optical fiber



With plano-convex lens for direct illumination of measurement cell

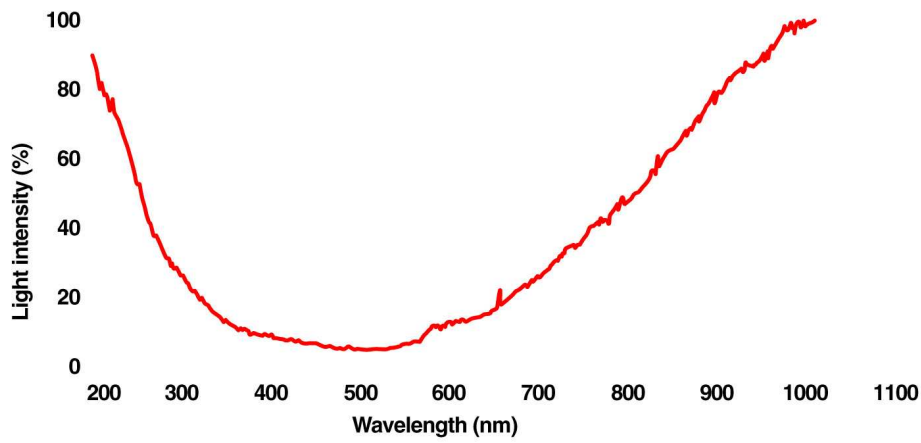


Cross section of FiberLight lamp module

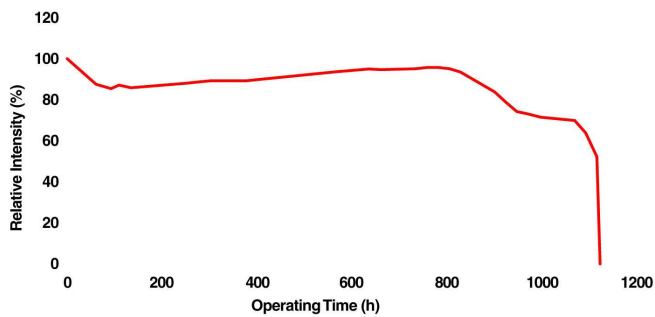


- A: optical fiber
- B: lens
- C: aperture
- D: deuterium lamp
- E: tungsten lamp

Spectral distribution of FiberLight DTM 6/10 (deuterium lamp and tungsten lamp)



Lamp life characteristic FiberLight DTM 6/10 (measured at 250 nm)

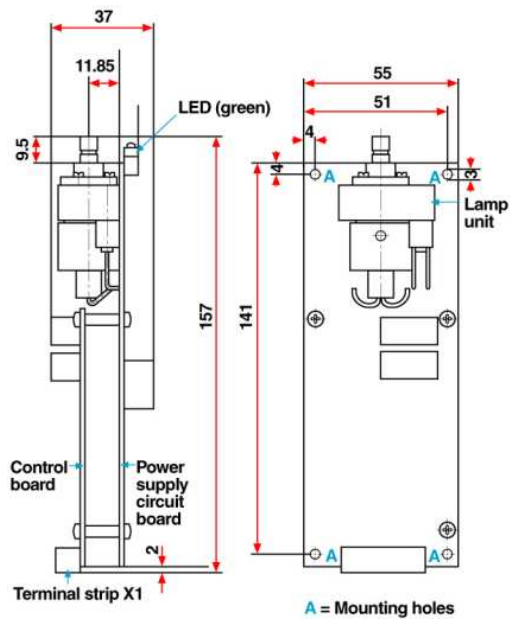


Technical data:

FiberLight with deuterium and tungsten lamp	DTM 6/10	DTM 6/50	DTM 6/11
Light exit	SMA 905	SMA 905	parallel beam direct to measurement cell
D2 lamp spectral output (nm)	200-400; option: 185-400	200-400; option: 185-400	200-400; option: 185-400
D2 lamp radiant intensity (W/sr @ 240 nm)	$> 5 \times 10^{-8}$	$> 5 \times 10^{-8}$	$> 5 \times 10^{-8}$
D2 lamp stability (AU)	$< 1 \times 10^{-3}$	$< 1 \times 10^{-3}$	$< 1 \times 10^{-3}$
D2 lamp drift (%/h)	0.25	0.25	0.25
Tungsten lamp spectral output (nm)	400 - 1100	400 - 1100	400 - 1100
Aperture diameter (mm)	1.0	0.5	1.0
Recommended fiber diameter (μm)	400 - 600	200 - 600	-
Power consumption (W)	6	6	6
Power requirements	12 Vdc/ 0.6 Adc	12 Vdc/ 0.6 Adc	12 Vdc/ 0.6 Adc
Control	TTL	TTL	TTL
Window material	fused quartz; option: synthetic quartz	fused quartz; option: synthetic quartz	fused quartz; option: synthetic quartz
Cooling	not required	not required	not required
Lifetime (h)	1000	1000	1000

FiberLight with line source	AMM 6/10	NEM 6/10	KRM 6/10	HEM 6/10	XEM 6/10
Light exit	SMA 905	SMA 905	SMA 905	SMA 905	SMA 905
Line source spectral output	Mercury lines	Neon lines	Krypton lines	Helium lines	Xenon lines
Aperture diameter (mm)	1.0	1.0	1.0	1.0	1.0
Recommended fiber diameter (μm)	400 - 600	400 - 600	400 - 600	400 - 600	400 - 600
Power consumption (W)	6	6	6	6	6
Power requirements	12 Vdc/ 0.6 Adc	12 Vdc/ 0.6 Adc	12 Vdc/ 0.6 Adc	12 Vdc/ 0.6 Adc	12 Vdc/ 0.6 Adc
Control	TTL	TTL	TTL	TTL	TTL
Window material	fused quartz	fused quartz	fused quartz	fused quartz	fused quartz
Cooling	not required	not required	not required	not required	not required
Lifetime (h)	1000	1000	1000	1000	1000

Dimensional outline of FiberLight module



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