

HIGH-SPEED PHOTO-SYSTEME

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NANOLITE Nanosecond-Flashlamps

The HSPS NANOLITE flash lamps have been improved up to the optimum efficiency now offering the shortest possible flash duration. Due to the extremely high luminous density of the point shaped spark (sparkflash gap typ. 1mm) they have a sufficiently high flash energy. The spark discharge can also take place in pressurized chambers so that the NANOLITE flash lamp can also be used in under- and overpressure locations.

Some fields of application for the nanosecond flash illumination for the photographic analysis of extremely fast events are e.g. in shock wave tubes, hypersonic windtunnels, droplet research (PIV), bubble formation, optical stress experiments, shadow-, schlieren- and interferometer photography.

Typical Data:

Lamp Type	KL-L	KL-M	KL-K
Flash duration	18ns	11ns	8ns
electric flash energy	25mJ	14mJ	9mJ
Max. flashing rates	20 kHz	20 kHz	20 kHz

Accessories:

Pressure chamber for NANOLITE lamps

Dimensions:

Diameter:	32mm		
Length:	200mm (KL-L);	120mm (KL-M);	120mm (KL-K)

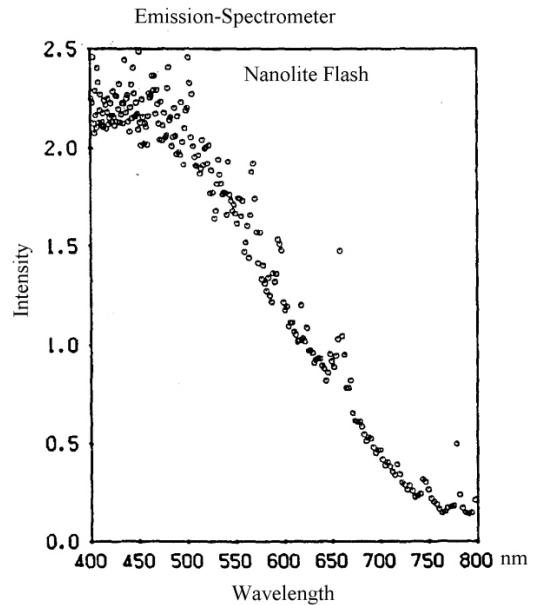
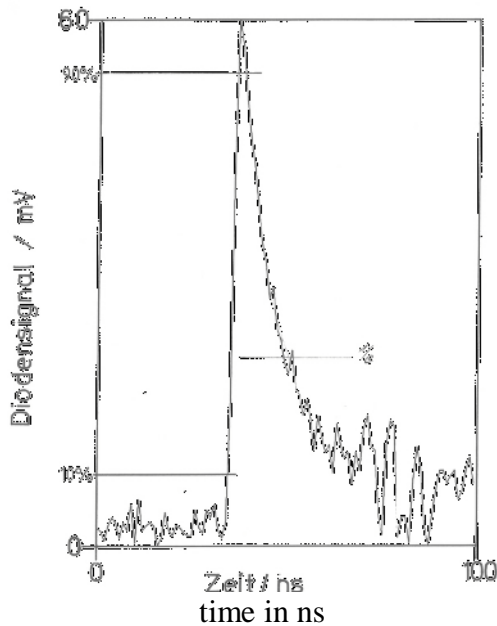
Light gain:

Considerable light gain (with minor increase of flash duration) can be achieved when using rare gas in the discharge chamber, e.g. measured for KL-L:

Rare gas	Optimum pressure bar	Halfwidth duration ns	Light gain factor
Argon	3	35	3
Krypton	1.5	55	5
Xenon	1.1	80	7

For more light output with flash duration >100ns it is possible to use our FX-Xenon flash lamps on the same drivers as the NANOLITE lamp up to 5 kHz. This lamp can also be applied in any of the above mentioned areas of research, especially for front illuminating of medium objectfields, for great fields in shadow photography and for particle image velocimetry (PIV).

The control units for both NANOLITE- and FX-Xenon-flashlamp are the NANOLITE Driver and the MINISTROBOKIN.



Fraunhofer Institut für Kurzzeitdynamik
 Freiburg
 Flashlamp NANOLITE KL-L
 Detector: Photodiode (Risetime 200ps)
 Transientrecorder: Tektronics DAS 602
 1ns-Steps
 10mV/Sect
 Risetime: 10%-90% $2.1 \pm 0.2\text{ns}$
 Falltime: 90% to 1/e $11.3 \pm 0.5\text{ns}$