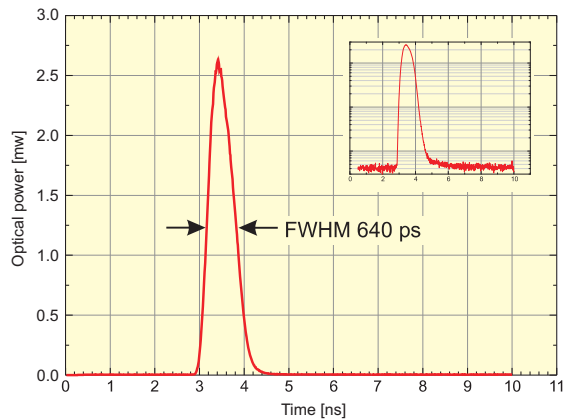


# PLS Series



## Sub-nanosecond Pulsed LEDs for PDL 800-B/-D/828



- Wavelengths from 245 to 600 nm
- Peak power up to 2.5 mW
- Pulse widths as short as 500 ps (FWHM)
- Repetition rates from single shot to 40 MHz
- Optional bandpass filter



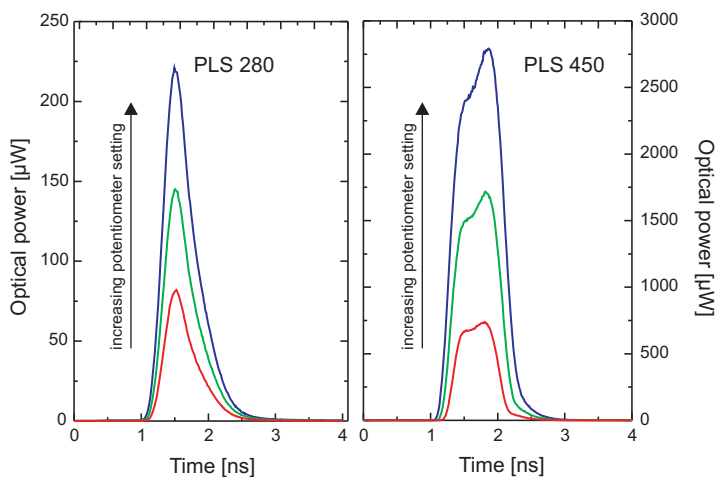
## Applications

- Time-resolved fluorescence spectroscopy
- Biochemical analysis
- Detection of molecules labeled with Perylene, Coumarin, Fluorescein and Rhodamine dyes
- Intrinsic protein fluorescence from Tryptophan or Tyrosine
- Testing of optoelectronic devices such as pin-diodes and PMTs

The PLS Series are the fastest miniature sub-nanosecond pulsed LED sources available. They combine short pulse widths (down to 500 ps FWHM) with high repetition rates (from single shot up to 40 MHz, depending on wavelength) in a compact and maintenance free set-up. They are interchangeable plug-in heads for the PDL Series drivers and provide an ideal excitation source to replace flash lamps or Argon-ion lasers for fluorescence lifetime measurements. Their spectral and timing characteristics are also particularly suitable for biomedical applications, e.g. for the detection of labeled substances as well as naturally fluorescent amino acids like tryptophan or tyrosine. With a combination of interchangeable PLS Series heads, the demand for a compact and affordable excitation source that covers a wide range of wavelengths is satisfied.

The system consists of a pulsed laser driver of the PDL Series (PDL 800-B, PDL 800-D, PDL 828 "Sepia II") and interchangeable LED heads. LED heads with center wavelengths between 245 and 600 nm are available and can be provided with optional spectral bandpass filters to excite samples with a narrow spectral range.

The pulse width and power level can be fine-tuned with the adjustable power level control of the PDL Series drivers, to tailor the pulse shape and power level to the application requirements. The laser drivers of the PDL Series feature easy to use controls either by means of a potentiometer on the front panel or by a setting in the control software (PDL 828).



## Specifications (Please check our website for updated information.)

PLS with max. repetition rate of 10 MHz							
Type	Wavelength (± 10 nm)	Average power @ 10 MHz			Spectral width		Pulse width (typ.)
		without filter	with colored glass filter	with band-pass filter*			
PLS 245	245 nm	-	-	0.4 µW	< 30 nm		800 ps
PLS 255	255 nm	-	-	1.0 µW	< 20 nm		800 ps
PLS 265	265 nm	-	-	1.0 µW	< 20 nm		700 ps
PLS 270	275 nm	-	-	2.0 µW	< 20 nm		650 ps
PLS 280 <sup>1</sup>	285 nm	-	1.0 µW	2.0 µW	< 20 nm		900 ps
PLS 290 <sup>1</sup>	295 nm	-	1.0 µW	2.0 µW	< 20 nm		900 ps
PLS 300 <sup>1</sup>	305 nm	-	0.8 µW	1.0 µW	< 20 nm		600 ps
PLS 310 <sup>1</sup>	315 nm	-	1.0 µW	1.1 µW	< 20 nm		600 ps
PLS 320 <sup>1</sup>	325 nm	-	0.5 µW	0.8 µW	< 20 nm		700 ps
PLS 330 <sup>2</sup>	335 nm	1.0 µW	-	-	< 20 nm		500 ps
PLS 340 <sup>2</sup>	345 nm	1.0 µW	-	-	< 20 nm		500 ps
PLS 360 <sup>3</sup>	355 nm	-	-	3.0 µW	< 20 nm		800 ps
PLS 575 <sup>2</sup>	575 nm	3.0 µW	-	-	< 20 nm		< 1.3 ns

PLS with max. repetition rate of 40 MHz						
Type	Wavelength (± 10 nm)	Average power @ 40 MHz		Spectral width (approx.)		Pulse width (typ.)
		without filter	with band-pass filter*	without filter	with band-pass filter*	
PLS 370 <sup>3</sup>	380 nm	-	8 µW	-	15 nm	600 ps
PLS 400 <sup>2</sup>	400 nm	50 µW	-	20 nm	-	800 ps
PLS 450	460 nm	80 µW	40 µW	40 nm	30 nm	800 ps
PLS 500 <sup>3</sup>	500 nm	30 µW	13 µW	45 nm	35 nm	900 ps
PLS 600	600 nm	20 µW	12 µW	20 nm	18 nm	950 ps

All PLS heads are supplied with an integrated lens.

<sup>1</sup>: always supplied with a colored glass filter

<sup>2</sup>: emission spectrally clean, no additional filter needed

<sup>3</sup>: always supplied with a bandpass filter

\*: available as an option

An internal security circuit prevents any damage if the UV LEDs

(PLS 245 to PLS 360 and PLS 575) are operated above 10 MHz.

All measurements may be subject to a 10 % calibration error.

**Dimensions: 30 × 66 / 80.5 mm**  
(∅ × length with lens / filter)

All Information given here is reliable to our best knowledge. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications and external appearances are subject to change without notice. Trademarks or corporate names are used for explanation and identification, to the owner's benefit and without intent to infringe.

© PicoQuant GmbH, December 2015



PicoQuant GmbH  
Rudower Chaussee 29 (IGZ)  
12489 Berlin  
Germany

Phone +49-(0)30-6392-6929  
Telefax +49-(0)30-6392-6561  
Email info@picoquant.com  
WWW http://www.picoquant.com