JENOPTIK

JenLas® **ASAMA** Diode Pumped Thin Disk Laser

integrated into
INNOVAVENT® LASER OPTICS

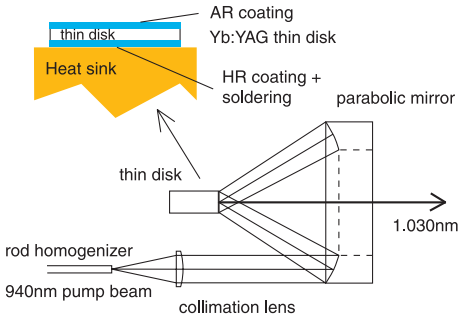
JenLas® **ASAMA** Diode Pumped Thin Disk Laser

JenLas® ASAMA Laser Technology

The JenLas® ASAMA is a q-switch diode pumped thin disk laser emitting at 515nm. Its Yb:YAG thin disk technology* provides a laser beam which is perfect for homogenization and Gaussian beam focusing with a large depth of focus.

Thin disk laser resonators are nearly free of thermal lens effects. The 940nm IR pump beam is folded and reimaged to the thin disk to absorb more than 90% of the pump power.

The JenLas® ASAMA concept makes use of integrated q-switching by cavity dumping. This technology allows high repetition rate operation (100 kHz) at extremely low pulse energy fluctuations and pulse length control ranging from 300ns to more than 1200ns. Power levels of 100W are achieved.



Simplified thin disk arrangement with pump optics.

Si thin film crystallization and semiconductor dopant activation processes can be optimized by the high flexibility of beam parameters.

Optimized for Gaussian Line Focus Generation

The spectral bandwidth of the Yb:YAG emission reduces the temporal coherence length to less than 10% of a comparable Nd:YAG SHG laser. A unique anamorphic resonator provides M^2 values of 4.5 and >15 for the two axes of the emitted beam. Homogenization in the high M^2 axis results in a nearly modulation-free intensity profile, while long Rayleigh length focusing is obtained for the small M^2 axis. This is of high importance for stable and well controlled processes.

* licensed from IFSW Stuttgart

JenLas® ASAMA laser head

	ASAMA 100-2 and 100-1	ASAMA 80-8
wavelength/nm	515	515
power, repetition rate	100W @ 50kHz / 100kHz	80W @ 10kHz
pulse energy	2mJ / 1mJ	8mJ
pulse length (FWHM)/ns	300-600	300-1200
pulse-to-pulse power fluctuation (1σ)/%	<1	<1
M_x^2/M_y^2	4.5±0.7 / >15	4.5±0.7 / >15
spectral bandwidth	>=200pm FWHM	>=200pm FWHM

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