

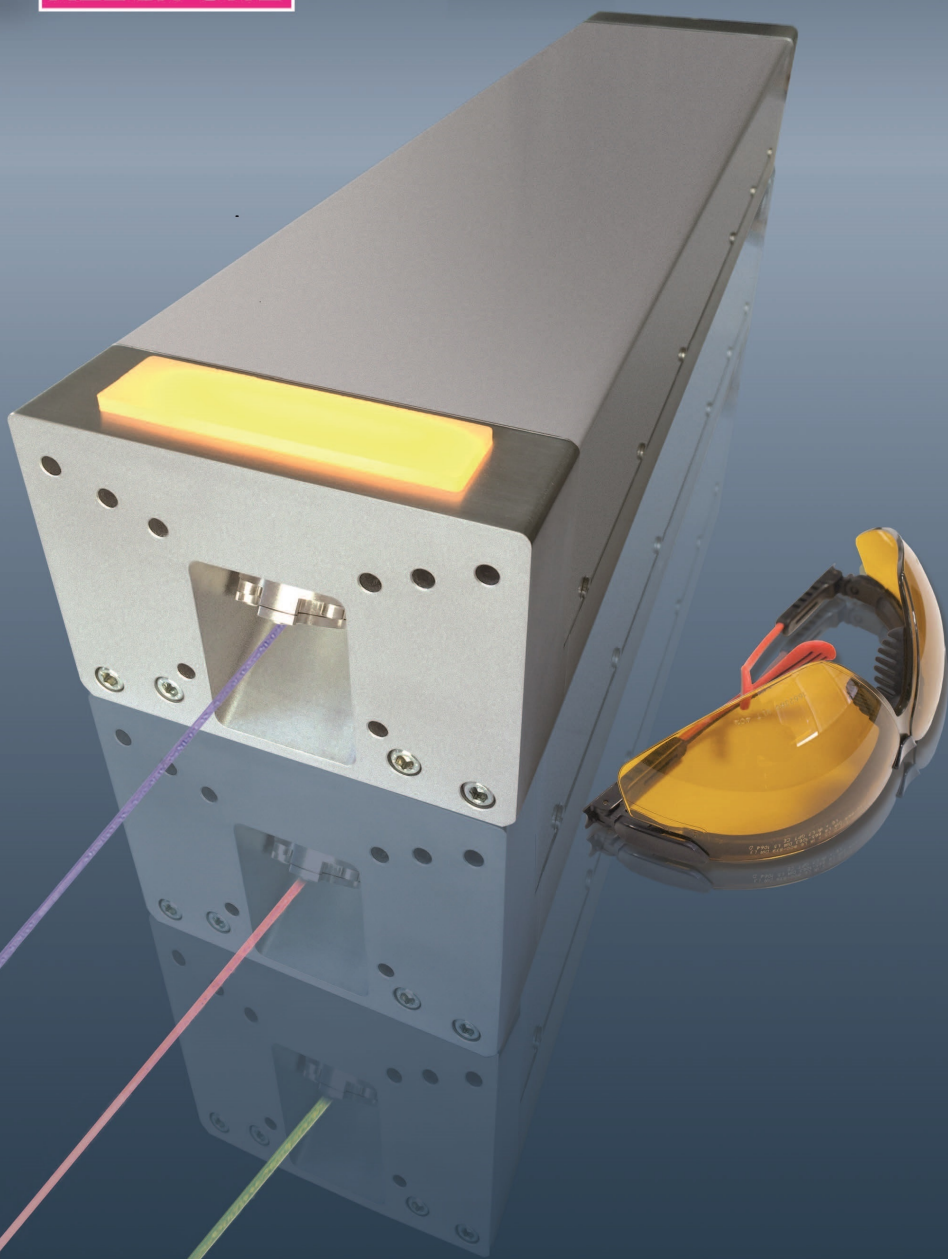
# COMPACT LASER SOLUTIONS

**CONQUEROR**<sup>SERIES</sup>

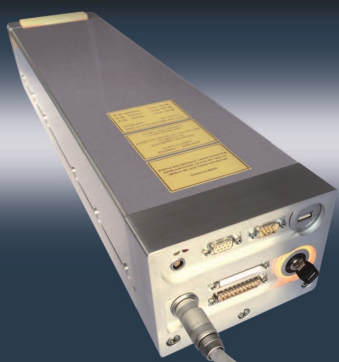
**ALL IN ONE**

## *Model 3 Lambda*

- up to 50 W, CW
- 50 W @ 1064nm
- 25W @ 532nm
- 20W @ 355nm
- 100kW pulse-peak-power
- 1Hz – 500kHz
- scanner-control +  
software already included
- entirely air-cooled
- up to 100.000 hours  
laser-diode-lifetime
- made in Germany



[www.compactlaser.com](http://www.compactlaser.com)



## CONQUEROR ALL IN ONE - *Model 3 Lambda*

Betriebsart Mode of Operation	gepulst / pulsed		
Leistungsklasse Power Class	50W CW @ 1064nm		
Wellenlänge Wavelength	1064nm	532nm	355nm
Strahlqualität Beam Mode	TEM <sub>00</sub>		
* M <sup>2</sup>	< 1.2		
Polarisation	Linear > 100:1		
Max. Pulsenergie Max. Pulse Energy	1000µJ	750µJ	500µJ
Minimale Pulsweite Minimal Pulse Width	< 10ns	< 8ns	< 7ns
Repetitionsrate Repetition Rate	1 Hz - 500kHz		
mittlere Leistung Average Output Power	45W @ 100kHz <14ns	25W @ 40kHz <12ns	20W @ 40kHz <10ns
Laserklasse Laser Class	4		
Kühlung Cooling	Wasserkühlung oder ausschließlich Luftkühlung water-cooled or entirely air-cooled		
Kühlungssystem Cooling System	Thermo-elektrische Kühlung thermo-electric cooling		
Elektrischer Anschluss Electrical Ratings	24V DC		
Leistungsaufnahme Power Consumption	< 200W		

We reserve the right to make technical modifications without prior notice. Errors and omissions excepted. 10% tolerances for measured values.

\* average M<sup>2</sup> over the range of repetition rate

## Product advantages of the CONQUEROR ALL-IN-ONE <sup>3</sup> Lambda

### High quality through excellent beam quality

#### Diode-pumped solid state laser

- State-of-the-art diode-pumped, q-switched solid state laser
- Software controlled triple wavelength selection: 1064nm and 532nm and 355nm
- Extraordinary high wall-plug efficiency combined with smallest "footprint"
- Very high pulse peak power even at high repetition rates
- Extremely high efficiency due to direct excitation of single transversal mode (TEM<sub>00</sub>)
- Optimized pulses due to external frequency conversion. Compared to internal frequency conversion, this features an important advantage: The damping factor of the pulses is reduced to a maximum. This results in a higher pulse- peak power at the same pulse length (FWHM) compared to internal frequency conversion. The heat effected zone (HAZ) is reduced to a minimum
- Multiple Pulse Control *CMPSJ* function
- Modular architecture consisting of hermetically sealed modules. Due to the fact, that the conversion-module which generates UV laser light is independent and sealed from the main laser module, it is protected from out-gassing to the greatest extend for maximum life time
- Software driven THG-shifter (outstanding 1600 spots available!)
- Revolving output window for prolonged utility in harsh environments

#### Beam quality and reliability

- Single transversal mode TEM<sub>00</sub> of  $M^2 < 1.2$  for all wavelengths
- Very good beam spot in focus yielding possibility of inducing a plasma in the air (optical breakdown) at 1Hz up to several kHz, depending on focusing alignment

### Simple integration into production environment

#### An ultra-small, compact. easy to use laser system, flexible in operation

- Easy installation into existing machines, minimum space required
- Medical approved, high density, 100/230V AC - 24V DC power supply with ultra-small footprint
- Plug and work laser system designed to be ready for use almost immediately after delivery

#### Easy installation and straightforward operation

- Easy and fast Installation and integration into your existing production line regarding hardware as well as software
- Maximum choice of parameters, such as pulse form
- Possibility to control add-on-modules such as optional AOMs
- Control unit consisting of one single circuit board only

### Low purchasing costs - low operating costs

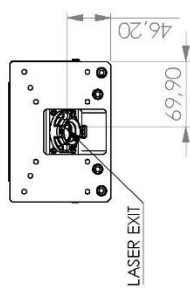
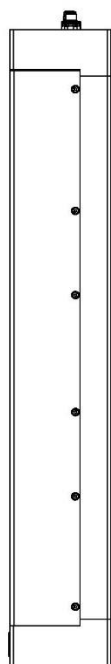
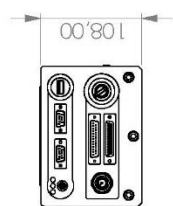
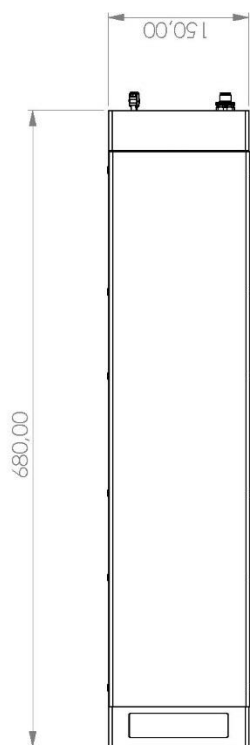
#### Low operating cost

- Total system power consumption, less than 400W
- Very low heat emission even under permanent use
- Maintenance costs are reduced to a minimum
- No additional material and spare parts like Ion exchangers, filters, cooling liquids etc. needed
- Estimated lifetime of the pump laser diode module: - 100,000 hours

### Scientific and industrial application

#### Material processing and plasma monitoring

- Optimized for micro-processing of glass, sapphire, diamond, plastics, ceramics and metals like gold, copper, brass, steel etc.
- PCB cutting, drilling and depaneling
- Silicon micro machining, solar cell, ITO and LED processing
- Wavelength dependent spectroscopic and laser-material interaction studies (LIPS, MALDI, RAMAN)



CONQUEROR ALL IN ONE