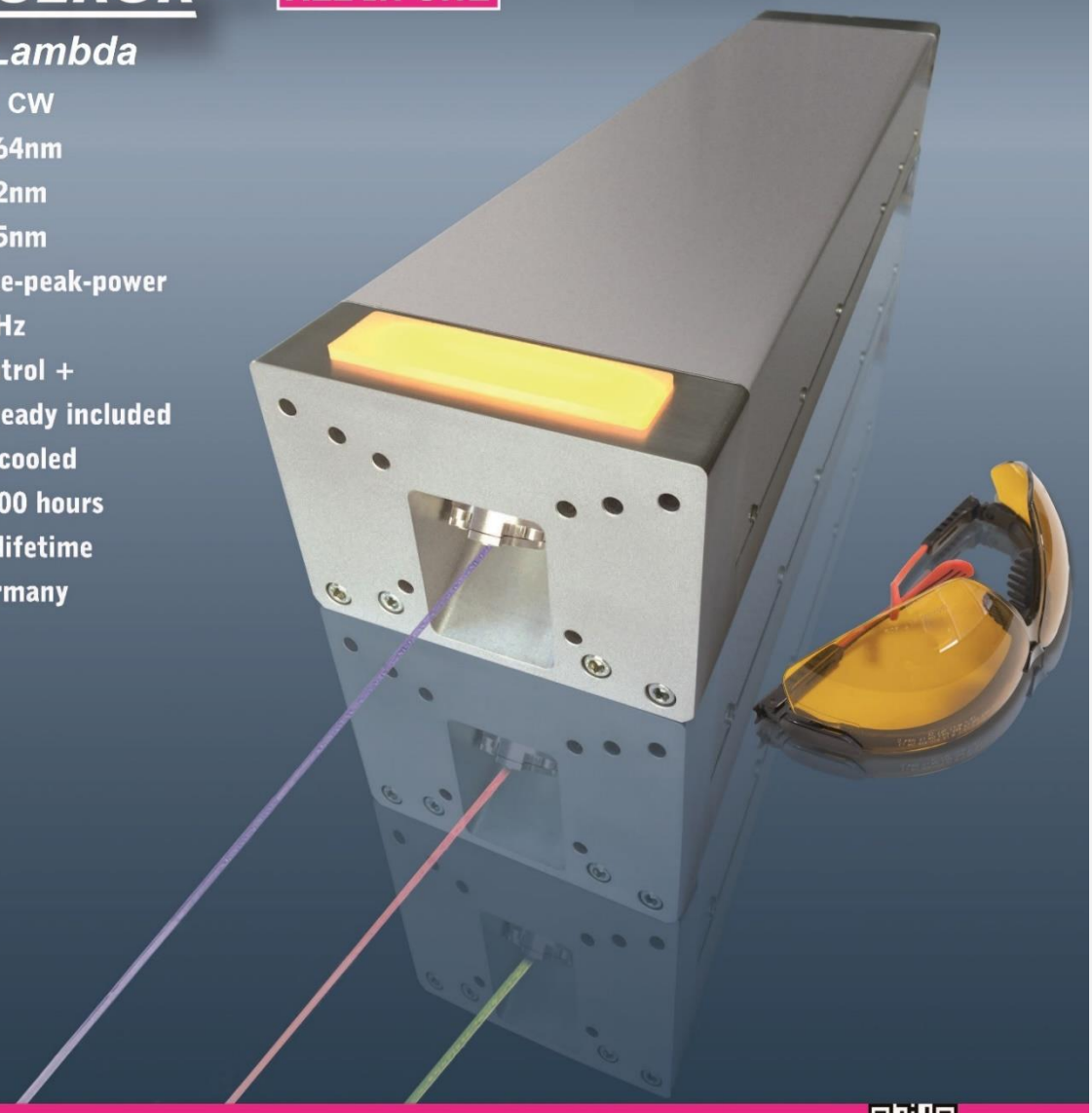
COMPACT LASER SOLUTIONS

CONQUEROR SERIES

ALL IN ONE

Model 3 Lambda

- up to 30 W, CW
- 24 W @ 1064nm
- 12 W @ 532nm
- 10 W @ 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



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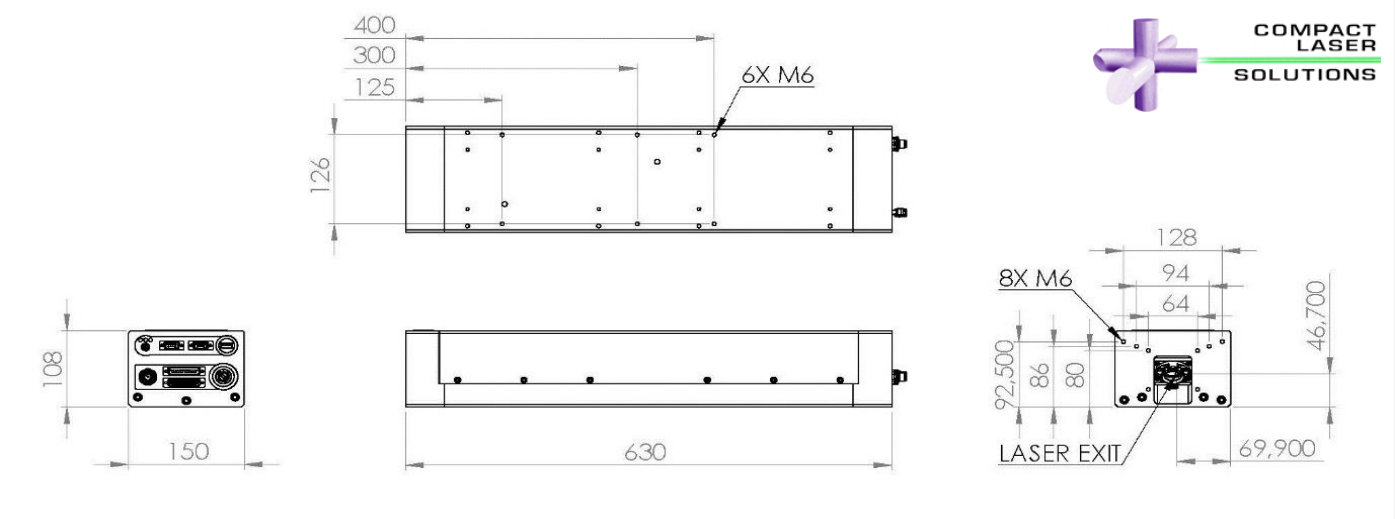
CONQUEROR ALL IN ONE - *Model 3 Lambda*

Betriebsart Mode of Operation	**gepulst / pulsed**		
Leistungsklasse Power Class	**30W CW @ 1064nm**		
Wellenlänge Wavelength	**1064nm**	**532nm**	**355nm**
Strahlqualität Beam Mode	**TEM_{00}**		
*** M^2**	**< 1.3**		
Polarisation	**Linear > 100:1**		
Max. Pulsenergie Max. Pulse Energy	**600µJ**	**300µJ**	**300µJ**
Minimale Pulsweite Minimal Pulse Width	**< 12ns**	**< 10ns**	**< 8ns**
Repetitionsrate Repetition Rate	**1 Hz - 500kHz**		
mittlere Leistung Average Output Power	**24W @ 50kHz <14ns**	**12W @ 50kHz <12ns**	**10W @ 50kHz <10ns**
Laserklasse Laser Class	**4**		
Kühlung Cooling	**Wasserkühlung oder ausschließlich Luftkühlung water-cooled or entirely air-cooled**		
Kühlungsystem 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^2 over the range of repetition rate

CONQUEROR ALL-IN-ONE *Model 3 Lambda* drawings (scale in mm)



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Product advantages of the CONQUEROR ALL-IN-ONE *3 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_{00})
- 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
- Use of one single laser diode pump module only
- 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_{00} of $M^2 < 1.3$ 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
- Consequently, no danger of damage of the laser and its accessories (for example gantry-systems) caused by leakage
- 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

- Use of one single laser pump module only
- Total system power consumption, less than 300W
- 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 depanelling
- Silicon micro machining, solar cell, ITO and LED processing
- Wavelength dependent spectroscopic and laser-material interaction studies (LIPS, MALDI, RAMAN)

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