

Sol 1064 nm

Compact Q-Switched DPSS Laser

Sol 1064 nm Platform – Main Features

Three available models: 4W - 10W - 20W @ 1064 nm

3 output powers for different Customer's needs

Complete Interchangeability:

- Same mechanical footprint: 235 x 105 x 96 mm³

Dimensions and fixing are the same for all Sol models

- Same I/O interface

I/O Connector (DB25) and driving signals compatible for all Sol models

- Same DC Supply Input

All Sol models are 24 V DC powered (MAX power consumption 250W)

Sol 1064 nm Platform – Main Features

Rugged design for industrial environment

Permanently aligned, no optical fiber or RF cables, sealed and protected, no access to internal parts

Forced Air cooling with Thermostatic fan

Constant case temperature for better laser performances, more efficient heat dissipation, noise reduction

Beam Expander and Red Aiming Beam

Beam Expander and Aiming Beam already integrated in the unit for a better compactness

Sol 10W and 20W – Key features

Active Q-Switched DPSS laser

Electronic Pulse Energy Modulation resulting in:

- Variable shot time for special applications
- First Pulse Suppression (FPS)
- Automatic (and/or Gated) First Pulse Killing (FPK)
 - Pulse Amplitude Modulation for FPS or Grey Levels
- Optimized Laser Pulse Forming at every Rep.rate

Single Shot to 200 kHz extended frequency range

Sol 10W and 20W - Applications

- Material processing
- Metal / Plastic Marking
- Scribing
- Thin film removal
- Micro-machining
- Nonlinear optics

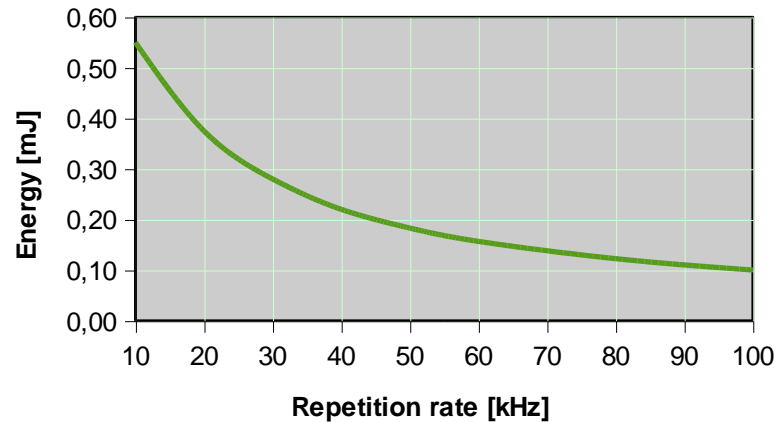


Sol 10W and 20W

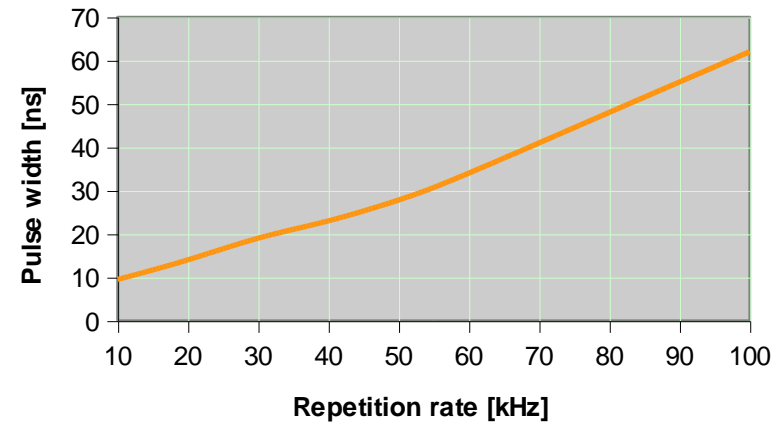
Models	Sol 10 W 1064 nm	Sol 20 W 1064 nm
Output power	> 10 W	> 20 W
Rep.Rate Range	10 to 100 kHz (optional Single Shot to 200 kHz)	
Laser Pulse Duration	6 to 60 ns	
Pulse Energy	0.5 mJ	0.9 mJ
Peak Power	50 kW	140 kW
M ²	< 2	
Beam diameter (with BEX)	< 8 mm	
Polarization	Linear 100 : 1 (optional circular polarization)	
Power Consumption	< 200 W	< 250 W
Weight	4.5 kg	
Cooling	Forced air cooling (120 CFM – 200 m ³ / h)	

Sol 10W Performances Curves

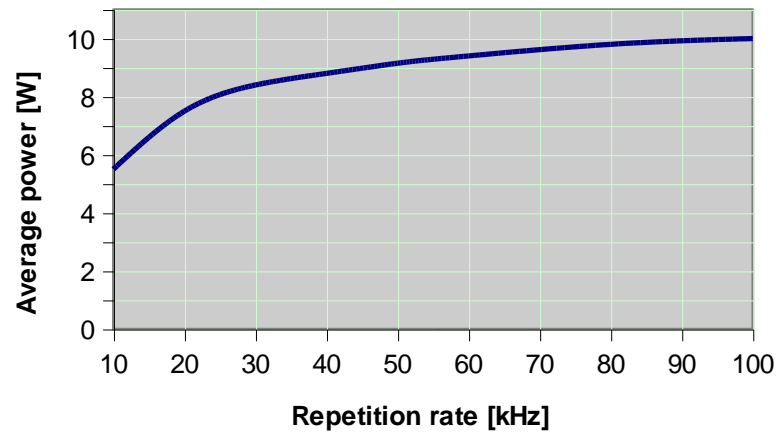
Sol 10 W: Pulse Energy



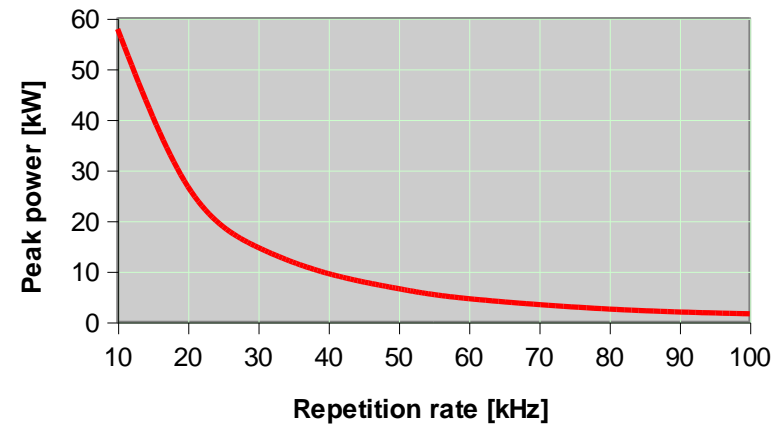
Sol 10 W: Pulse Width



Sol 10 W: Average Power

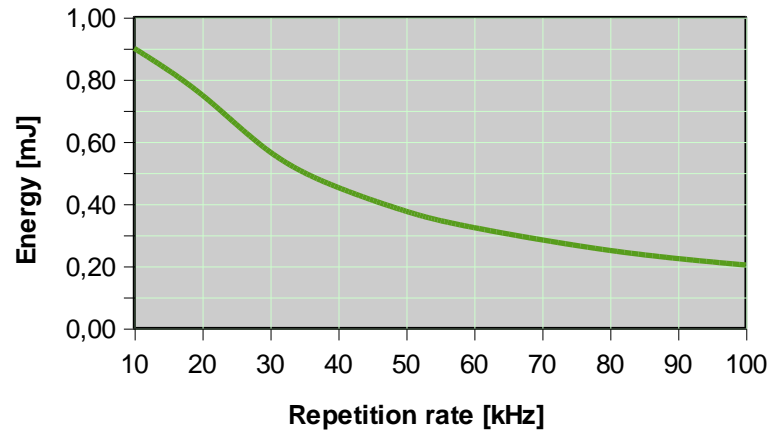


Sol 10 W: Peak Power

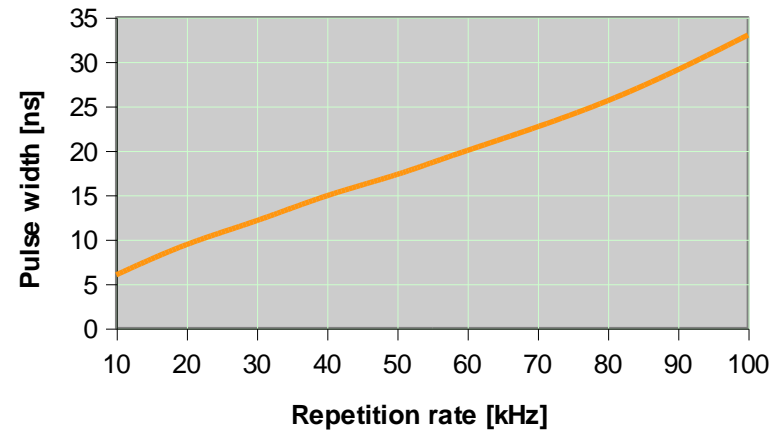


Sol 20W Performances Curves

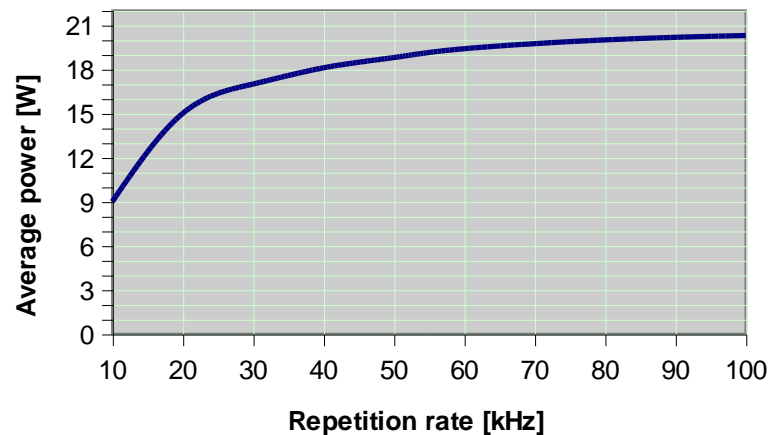
Sol 20 W: Pulse Energy



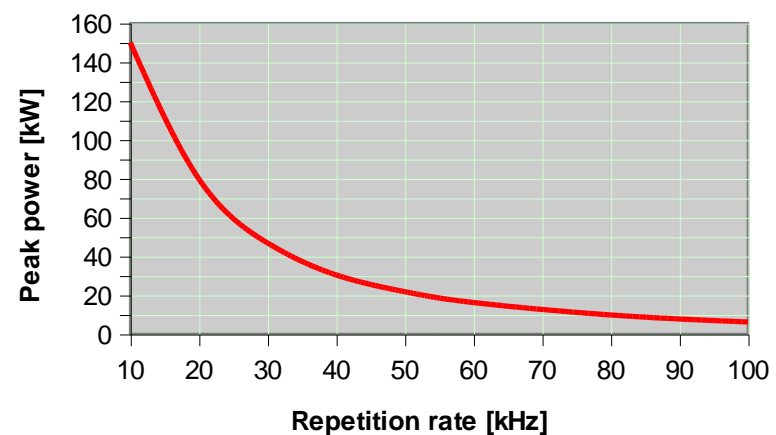
Sol 20 W: Pulse Width



Sol 20 W: Average Power



Sol 20 W: Peak Power



Sol 4 W – Key features

Easy to integrate and to use:

Power Level & Laser Gate signals only



Output Power > 4 W

Extremely cost-effective

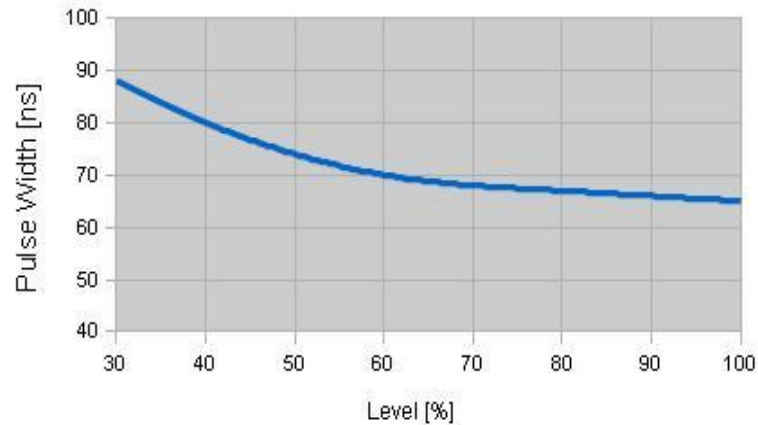


Sol 4W

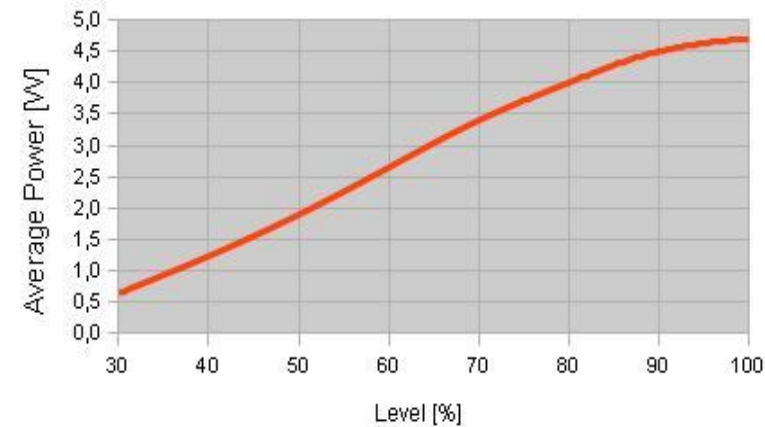
Model	Sol 4 W 1064 nm
Output power	> 4 W
Rep.Rate Range	5 to 25 kHz
Laser Pulse Duration	60 to 90 ns
Pulse Energy	0.2 mJ
Peak Power	3 kW
M ²	< 1.5
Beam diameter (with BEX)	< 8 mm
Polarization	Linear 100 : 1 (optional circular polarization)
Power Consumption	< 150 W
Weight	4.5 kg
Cooling	Forced air cooling (90 CFM – 150 m ³ / h)

Sol 4W Performances Curves

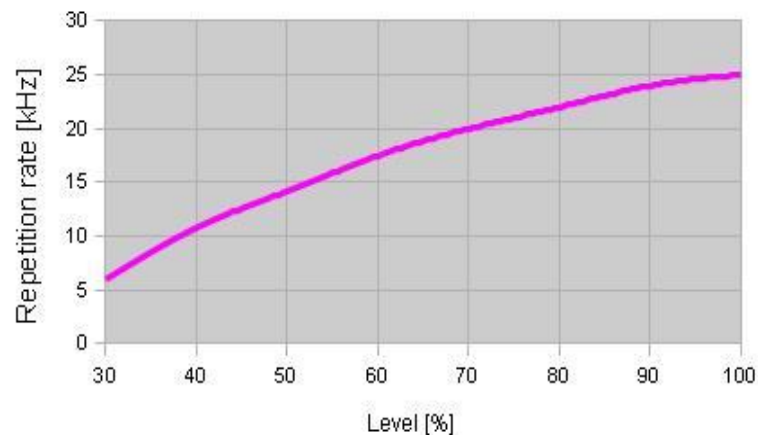
Ext. Level vs Pulse Width



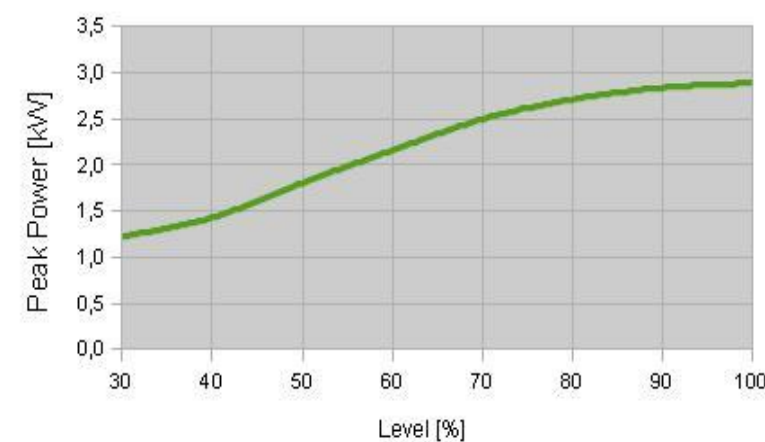
Ext. Level vs Average Power



Ext. Level vs Rep. Rate



Ext. Level vs Peak Power



Sol 4 W - Applications

- Material processing
- Metal / Plastic Marking
- Scribing
- Engraving



Sol Platform – Options

Red Aiming Beam:

- already integrated for Sol 10W and Sol 20W
- 2 mW @635nm
- TTL driving signal present on IO interface

External Beam Expanders:

- customized external BEX for different output diameters available on request

Monitoring Photodiode:

- constant diode power checking
- monitor signal present on IO interface

Sol Platform – Options

Mechanical Shutter:

- external mechanical shutter module
- TTL driving signal present on IO interface

- AC DC Power Supply:

- external 24 V AC-DC power supply available only on request

- Extended Frequency Range:

- from Single Shot to 200 kHz
- only for Sol 10 W and Sol 20 W

- Water Cooled Version

Sol Platform – Warranty & Service

Warranty:

2-years full warranty (standard)

1-year warranty extension at TBD

Back-up unit availability...TBD

Service and maintenance:

- periodical cleaning of fan and heatsink
- periodical check of laser output window

Spare part for on-field replacement:

- red aiming beam
- fan
- external beam expander
- external mechanical shutter

Sol Platform – Future Developments

- Sol 30 W 1064 nm in the same footprint (Release June 2012)
- Sol 5 W and 10 W @ 532 nm (Release June 2012)
- Sol 2 W @ 355 nm (Release August 2012)

Sol Platform – Mechanical Drawings

