TRL SERIES SPECIFICATIONS Super Gaussian Twin Rod Oscillator

Model	TRL G 850-10	TRL G 650-10	TRL G 450-10	TRL G 400-20	TRL G 350-30
Repetition Rate (Hz)	10	10	10	20	30
Output Energy (mJ)					
1064nm	850	650	450	400	350
532nm	435	325	220	200	175
355nm [1]	230	150	130	120	70
266nm	100	70	60	50	40
213nm	20		10		
Pulse Stability (±%) [RMS] [2]					
1064nm	2 [0.6]	2 [0.6]	2 [0.6]	2 [0.6]	2 [0.6]
532nm	3 [1]	3 [1]	3 [1]	3 [1]	3 [1]
355nm	4 [1.3]	4 [1.3]	4 [1.3]	4 [1.3]	4 [1.3]
266nm	6 [2]	6 [2]	6 [2]	6 [2]	6 [2]
213nm	9 [3]		9 [3]		
Power Drift (±%) [3]					
1064nm	3	3	3	3	3
532nm	5	5	5	5	5
355nm	5	5	5	5	5
266nm	10	10	10	10	10
213nm	14		14		
Pulse Duration (ns) [4]					
1064nm	~6	~6	~6	~6	~6
532nm	~5	~5	~5	~5	~5
355nm	~5	~5	~5	~5	~5
266nm	~5	~5	~5	~5	~5
213nm	~4		~4		
Beam Parameter					
Beam Diameter (mm) [5]	9.5	8	6.5	6.5	6.5
Beam Divergence (mrad) [6]	0.5	0.5	0.5	0.5	0.5
M^2 @ 1064nm [7]	<2	<2	<2	<2	<2
Pointing Stability (µrad) [8]	<70	<70	<70	<70	<70
Timing Jitter (ns) [9]	<0.5	<0.5	<0.5	<0.5	<0.5
Linewidth @ 1064nm (cm-1)	<0.7	<0.7	<0.7	<0.7	<0.7
Polarisation Ratio (%)	>90	>90	>90	>90	>90
Spatial Profile Near Field [10]	>0.75	>0.75	>0.75	>0.75	>0.75
Spatial Profile Far Field [11]	>0.95	>0.95	>0.95	>0.95	>0.95
Lamp Life (pulses)	10^8	10^8	10^8	10^8	10^8
Services					
Voltage	220-250VAC	220-250VAC	220-250VAC	220-250VAC	220-250VAC
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Power Phase	Single	Single	Single	Single	Single
Cooling	Air Cooled	Air Cooled	Air Cooled	Air Cooled	Air Cooled
Ambient Temp [12]	8-30°C	8-30°C	8-30°C	8-30°C	8-30°C
PSU Type	LPU1000	LPU1000	LPU1000	LPU1000	LPU1000

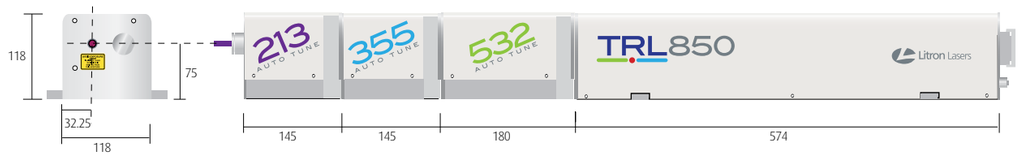
AJA 00/2074

Our policy is to improve the design and specification of our products. The details given in this document are not to be regarded as binding.

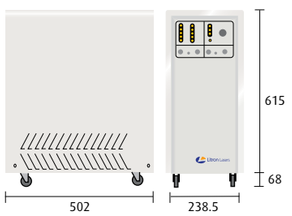
1. High energy 355nm as standard with standard 2HG module.
2. Peak to Peak Energy - 100% of pulses.
3. 8 Hours continuous running without adjustment.
4. FWHM - Fast photodiode and >1Ghz oscilloscope.
5. 100% diameter at laser exit port.
6. Full angle for 90% of the output energy.
7. Measured using ISO 11146-1:2005.
8. Measured using ISO 11146-1:2005.
9. Jitter is measured with respect to the Q-switch trigger input.
10. Least squared fit to Gaussian at ~ 0.4m from the laser output.
11. Least squared fit to Gaussian at the focus of a 1m lens.
12. 5 to 80% relative humidity (non condensing).

MECHANICAL DATA

Laser Head with Doubler & Tripler/Quadrupler Units



LPU1000 PSU



LUCi Remote Control Box

Litron Lasers

www.gmp.ch

GMP SA Main office: Avenue des Baumettes 17 CH-1020 Renens Tél. 021 633 21 21 Fax. 021 633 21 29 info@gmp.ch
GMP SA Büro Zürich: Dübendorfstrasse 11a CH-8117 Fällanden Tel. 044 825 34 00 Fax. 044 825 34 01 info@gmp.ch

Litron Total Laser Capability

GMP GENERAL MICROTECHNOLOGY & PHOTONICS

Litron Compact High Energy Lasers

TRL Series

Super Gaussian Series Compact High Energy Q-switched Pulsed Nd:YAG Lasers

TRL850/450

Litron Lasers

TRL Series

Super Gaussian Compact High Energy Q-switched Pulsed Nd:YAG Lasers

LUCi – Touchscreen Remote Control

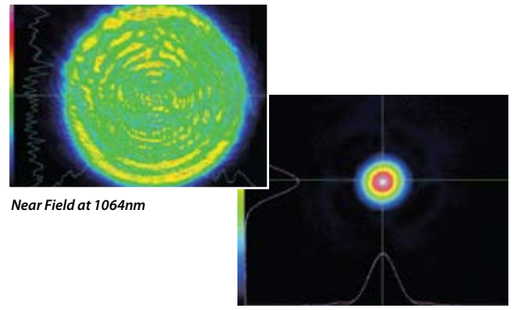
Full access to all the control parameters and sensor feedback from the laser head and power supply via an intuitive user interface.

Integrated Motorised Attenuator

A high resolution motorised variable attenuator is available. This provides continuous energy adjustment of the laser output without altering the beam spatial profile or focusing parameters.

Intellihead - Intelligent Laser Head Technology

The Intelligent laser head uses a dedicated microprocessor card installed in the laser head to provide precision control over a host of functions including harmonic temperature stabilisation, automatic harmonic tuning, energy monitoring and attenuator controls. The system is continuously monitoring the Intellihead card and the PSU microcontroller providing feedback to the user via the LUCi controller.

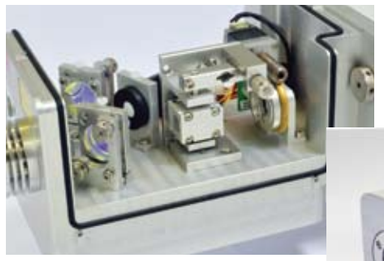


Near Field at 1064nm

Far Field at 1064nm >95% Gaussian fit.

Bolt-on Harmonics Modules

All the harmonic wavelengths of Nd:YAG (532nm, 355nm, 266nm and 213nm) are available via dedicated separate modules for each wavelength.



Auto stabilisation of 532nm.

Self contained UV harmonics.

Fast connect umbilical.

Twin rod oscillator .

Twin-rod Super Gaussian Oscillator

A twin-rod birefringence compensating oscillator design is standard on the TRL series. This feature ensures the highest beam homogeneity possible. The benefits are seen in a high brightness, low M^2 beam and more efficient harmonic conversion.

Automatic Harmonic Tuning and Auto-stabilisation

All the harmonic modules are available with automatic harmonic tuning linked to the LUCi controller. All wavelengths are also available with optional auto-stabilisation. This feature maintains the set energy over long periods of continuous operation and includes a PSU control function to compensate for the lamp aging process.

Turnkey Operation

The TRL series use an all-in-one fully air cooled power supply. The laser head and LUCi connect directly to the PSU and the whole laser can be assembled and running in less than 15 minutes.

Future-proof your Investment

Modularity is at the heart of Litron's design philosophy. The standardised mechanical mounting system for the harmonics modules ensures that any future developments or add-on modules will also be available for your TRL laser. The laser system firmware and LUCi software can be easily upgraded via a USB memory stick.

Litron Lasers