

Features

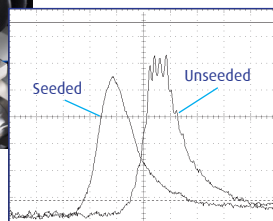
- **>3m coherence length**
- **0.003cm^{-1} linewidth**
- **Up to 3.5J per pulse**
- **$M^2 < 2$**
- **Built in SLM DPSS Injection Seeder**
- **532nm, 355nm, 266nm & 213nm options**
- **Invar optical rail system**
- **MOBIUS microprocessor laser head monitor**
- **LUCi - Touch screen or computer control**
- **Twin head option**

Applications

- **OPO Pumping**
- **Holography**
- **Interferometry**
- **LIDAR**

Optional upgrades

- **Motorised 1064nm attenuator**
- **Motorised harmonic tuning**
- **Automatic peak energy tuning**
- **Motorised wavelength output selector**

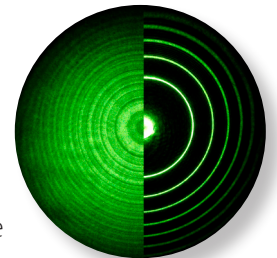


LPY700G UNITY Series Injection Seeded Pulsed Nd:YAG Lasers

The **LPY700G UNITY** series lasers are all-in-one dedicated high power injection seeded Nd:YAG laser systems, with a single longitudinal mode (SLM) output. Injection seeding ensures linewidths better than 0.003cm^{-1} at 1064nm and smooth temporal profile for every pulse.

The laser incorporates a dedicated CW SLM injection seeding laser built directly onto the same proven self-supporting invar frame that the oscillator and amplifiers are mounted to. All the optical components including the laser oscillator, amplifiers, harmonics and all other optional components are also mounted onto the same invar rail system. This assures the long term alignment stability that is a must for applications such as pumping OPOs, holography, doppler LIDAR and interferometry. The rail is mechanically decoupled from the laser head case to maintain optimum output and alignment.

The oscillator is configured as a Gaussian resonator offering a highly focusable beam with low divergence and an M^2 less than 2. The laser is fitted with a motorised attenuator and beam dump shutter after the oscillator to allow full control and stabilisation of the seeded output.



The **LPY700G UNITY** series lasers have a full suite of microprocessor controlled feedback sensors. The system has options for 2nd (532nm), 3rd (355nm) 4th (266nm) and 5th (213nm) harmonic generation. All the seeder controls and laser control electronics are fully integrated and the whole system is designed to operate in both seeded and un-seeded mode at the flick of switch.

Motorised harmonics tuning options and a dual wavelength option with motorised harmonic switching between the two chosen wavelengths are also available.

TECHNICAL DATA

Model	LPY7875G-10U	LPY7864G-10U	LPY787G-10U	LPY764G-10U	LPY707G-10U
Repetition Rate (Hz)	10	10	10	10	10
Output Energy (mJ) ⁽¹⁾					
1064nm	3500	2600	2000	1250	850
532nm	1570	1250	1000	675	425
355nm	650	550	400	225	150
266nm	250	220	195	125	95
Pulse Stability (±%) ⁽²⁾					
1064nm	2	2	2	2	2
532nm	3	3	3	3	3
355nm	4	4	4	4	4
266nm	6	6	6	6	6
Pulse Length (ns) ⁽³⁾					
1064nm	6-12	6-12	6-9	6-9	6-9
Parameter					
Oscillator configuration	Gaussian	Gaussian	Gaussian	Gaussian	Gaussian
System configuration	Osc/Amp/Amp	Osc/Amp/Amp	Osc/Amp	Osc/Amp	Osc/Amp
M ² @ 1064nm	<2	<2	<2	<2	<2
Beam diameter (mm)	15	15	12.5	9.5	9.5
Beam divergence (mrad) ⁽⁴⁾	0.7	0.7	0.5	0.5	0.5
Linewidth @ 1064nm (cm ⁻¹)	0.003	0.003	0.003	0.003	0.003
Pointing stability (μrad) ⁽⁵⁾	<70	<70	<70	<70	<70
Lamp life (pulses) ⁽⁶⁾	10 ⁷	10 ⁷	>3x10 ⁷	>3x10 ⁷	>3x10 ⁷
Timing jitter seeded (ns) ⁽⁷⁾	3	3	3	3	3
Services					
Voltage (VAC) ⁽⁸⁾	220-250	220-250	220-250	220-250	220-250
Frequency (Hz) ⁽⁹⁾	50/60	50/60	50/60	50/60	50/60
Power phase	Single	Single	Single	Single	Single
Operating amb temp (°C) ⁽¹⁰⁾	5-35	5-35	5-35	5-35	5-35
Laser cooling ⁽¹⁰⁾	Water	Water	Water	Water	Water
PSU type (19" Rackmount)	24U	24U	16U	16U	12U

System Dimensions		
Laser Head (mm)		
1064 & 532nm output		326 (W) x 209 (H) x 1200 (L)
355nm & 266nm output		326 (W) x 209 (H) x 1400 (L)
2.6J & 3.5J output		326 (W) x 209 (H) x 1800 (L)
Laser Head (Inches)		
1064 & 532nm output		12.8 (W) x 8.2 (H) x 55 (L)
355nm & 266nm output		12.8 (W) x 8.2 (H) x 67 (L)
2.6J & 3.5J output		12.8 (W) x 8.2 (H) x 70.8 (L)
PSU		
12U	mm	605 (W) x 700 (D) x 615 (H)
	Inches	23.8 (W) x 27.5 (D) x 24.2 (H)
16U	mm	605 (W) x 700 (D) x 793 (H)
	Inches	23.8 (W) x 27.5 (D) x 31.2 (H)
24U	mm	605 (W) x 700 (D) x 1148 (H)
	Inches	23.8 (W) x 27.5 (D) x 45.2 (H)

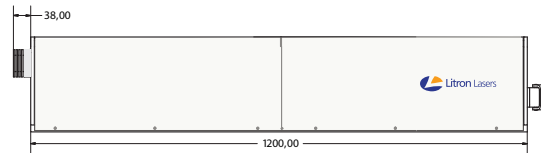
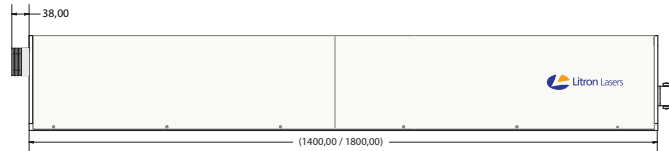
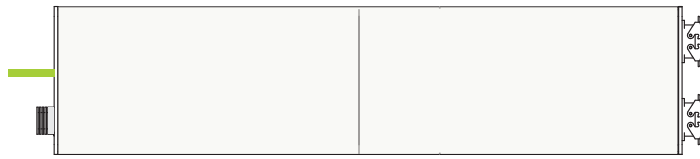
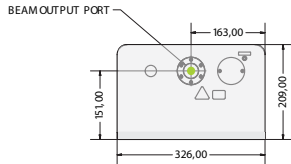
- (1) Dedicated 355nm laser models available - please contact Litron.
- (2) Peak to peak energy - 100% of pulses.
- (3) FWHM.
- (4) Full angle for 90% of the output energy.
- (5) Full angle.
- (6) Typical lifetime.
- (7) Jitter is measured with respect to the Q-switch trigger input.
- (8) 208VAC option requires autotransformer to be specified on order.
- (9) 50 or 60Hz to be specified on order.
- (10) Refer to cooling requirements table.

Water Cooling Requirements			System Weights	
Max water temp (°C)	20		Laser Head	
Nominal flow rate (lpm)	6-10		1064 & 532nm output	50kg
Min water pressure (Bar [psi])	2 [30]		355nm & 266nm output	60kg
Max water pressure (Bar [psi])	4.5 [65]		2.6J & 3.5J	100kg
External water filtration (Micron)	100		PSU	
Ext. chiller high pressure bypass (Bar [psi])	5 [73]		12U	100kg
Osc/Amp systems thermal load (kW)	~4		16U	130kg
Osc/Amp/Amp systems thermal load (kW)	~6		24U	205kg

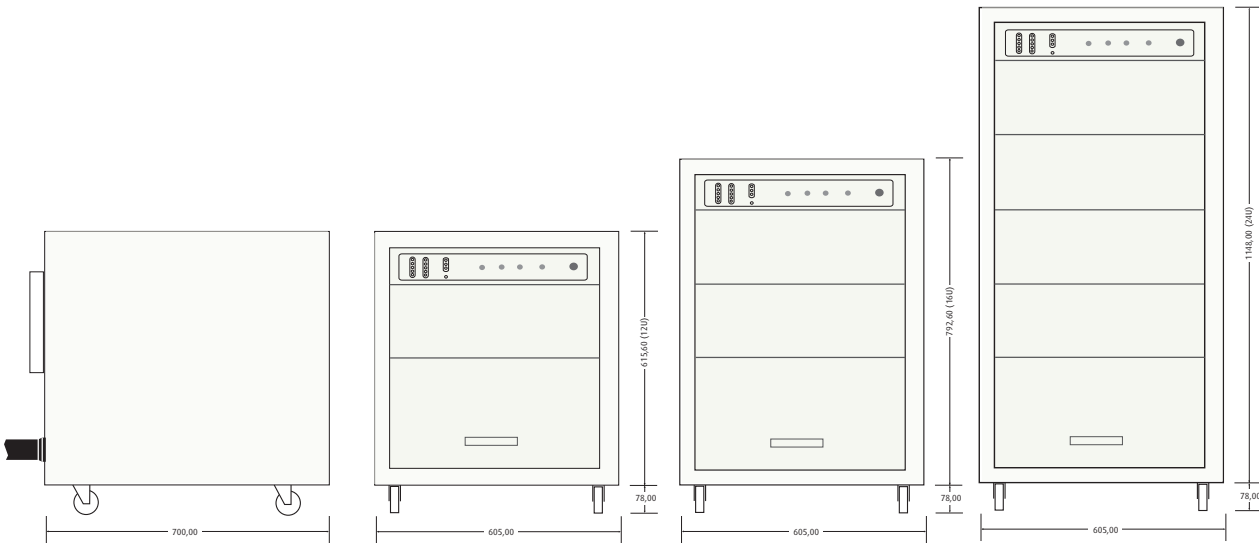
MECHANICAL DATA

Laser Head

All dimensions shown in mm unless stated.



Power Supply Unit



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.

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