HEAD OFFICE
Litron Lasers Ltd
8 Consul Road
Rugby
Warwickshire CV21 1PB
England

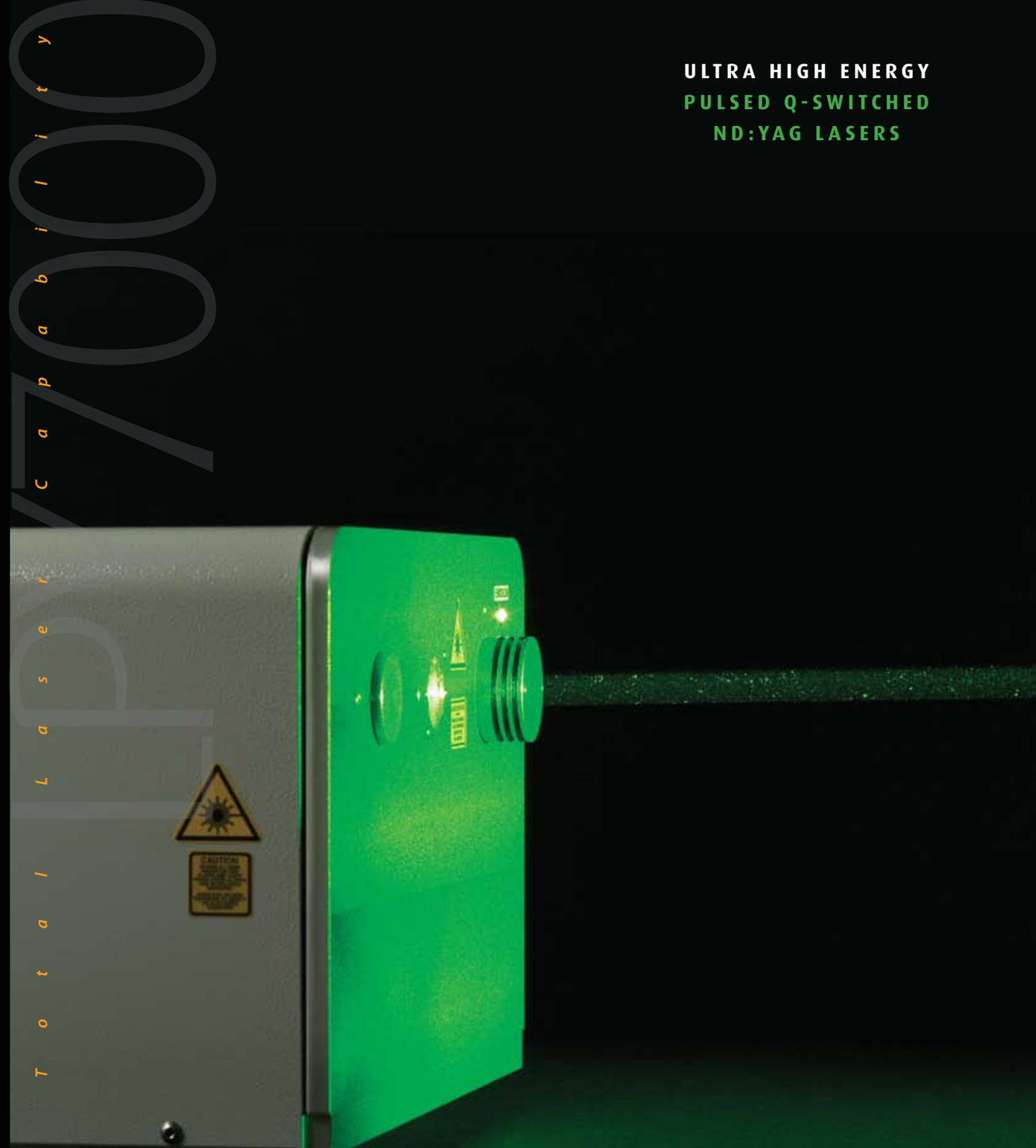
T +44 (0)1788 574444
F +44 (0)1788 574888
E sales@litron.co.uk

www.litronlasers.com

Litron Lasers

Litron Total Laser Capability

ULTRA HIGH ENERGY
PULSED Q-SWITCHED
ND:YAG LASERS



Litron Lasers

LPY7000 High Energy Pulsed Nd:YAG Lasers

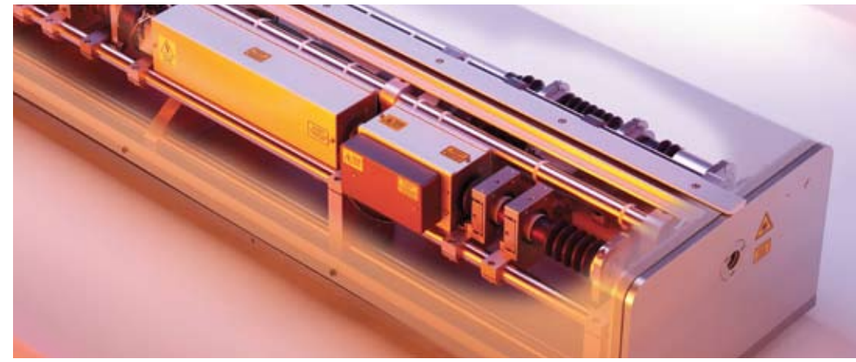
Power, precision, performance.

FEATURES

- ***Rugged Industrial Build***
- ***Up to 3.5J @ 1064nm***
- ***Telescopic or Gaussian Resonators***
- ***Optional Seeder Package***
- ***All Harmonics to 5th Available***
- ***Full RS232 Software Control***
- ***Custom Systems up to 10J***

APPLICATIONS INCLUDE

- ***Dye laser pumping***
- ***OPO pumping***
- ***Spectroscopy***
- ***LIBS***
- ***LIDAR***
- ***PIV***



Superior Performance Through Superior Design

The LPY7000 lasers offer extremely high Q-switched outputs up to 3.5J and repetition rates of up to 50Hz. Based around our proven self-supporting invar frame their robust build quality suits them to both industrial and scientific applications. Energies up to 10J are also available at 1064nm with extra amplification.

The lasers are provided in an oscillator, pre-amplifier, main-amplifier arrangement. The oscillator may be configured as a stable-telescopic resonator offering a low order multimode output with a smooth spatial and temporal profile, or as an unstable Gaussian-coupled resonator offering a single transverse mode output with slightly higher peak powers.

Lamp change is performed in a matter of minutes with no need for any re-alignment at all. An optional IP54 sealed case ensures that the laser is protected against the ingress of dirt and moisture when used in industrial environments.

LPY7000 with additional 10J output stage doubled to 532nm outputting 5J at 1Hz , beam diameter 25mm.

An LPY7000 outputting 1J of 532nm at 30Hz.

LPY·7000

LPY7000 High Energy Pulsed Nd:YAG Lasers

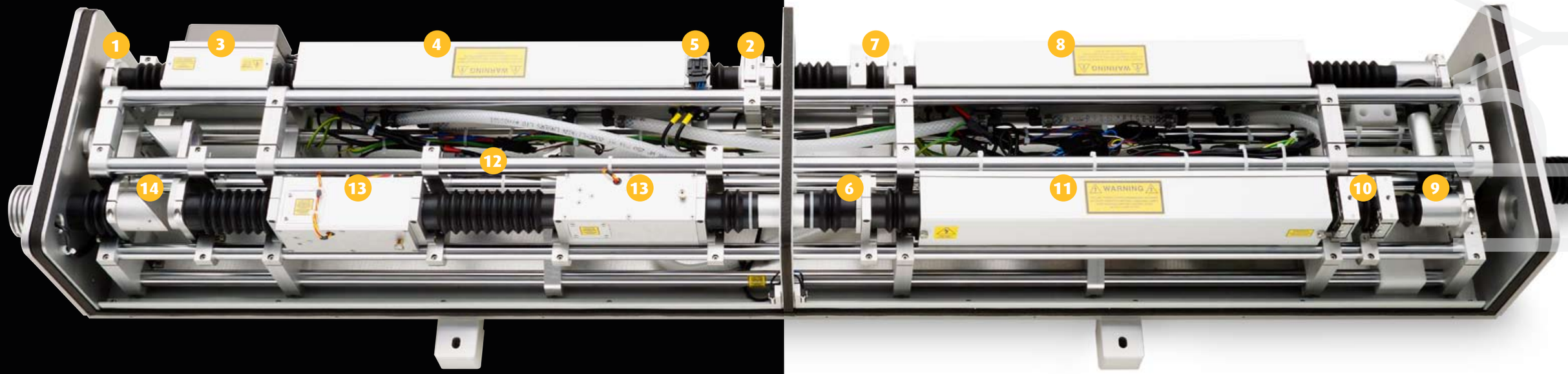
Power, precision, performance uncovered.

1 Rear Mirror

2 Intracavity Telescope
The intracavity telescope has a twofold use. Firstly it compensates for the thermal lensing of the laser rod. Secondly it reduces the intra-cavity beam diameter, thus effectively increasing the diffraction length in the resonator. The result is very low divergence output beams whose beam profiles are spatially extremely homogeneous.

3 Electro-optic Q-Switch
A KD*P Pockels cell is used within the Q-switch assembly.

4 Oscillator Pump Chamber
All pump chambers are machined from solid 316 stainless steel. The chambers are split such that the lamp housing can be removed easily during lamp changes, leaving the rod untouched. The chambers are fitted with close coupled ceramic reflectors for efficient and uniform pumping. A proprietary filter plate protects the laser rod from UV emission from the lamp and also in the event of a lamp failure. The design of the chambers is such that a large turbulent water flow leads to very uniform cooling of the rod, essential for good pointing and overall stability.



5 Intra-cavity Shutter
An electronically verified, electronically actuated, intra-cavity safety shutter is standard on all of Litron's lasers.

6 Output Coupler

7 Expanding Telescope
An expanding telescope is used to expand and collimate the oscillator output prior to amplification.

8 Preamplifier Pump Chamber

9 Steering Mirrors

10 Expanding Telescope

11 Main Amplifier Pump Chambers
The main amplifier is configured in a birefringence-compensated twin-rod topology. This minimises the depolarisation of the laser beam and leads to more uniform and more efficient harmonic generation.

12 Invar Rail
The lasers are built on a rugged self supporting invar rail. This feature sets them apart from all competitors as it is both more robust and more stable them conventional base-plate constructions. The modular nature of the rail allows for easy customisation of the lasers.

13 Harmonic Generation Unit

14 Output Stearing Mirrors

LPY7000 High Energy Pulsed Nd:YAG Lasers

SPECIFICATIONS

Model	LPY7864-10	LPY7864-20	LPY7864-30	LPY7864-50	LPY7875-10	LPY7875-20
Repetition Rate (Hz)	10	20	30	50	10	20
Output Energy (mJ)						
1064nm	2750	2250	2000	1400	3500	2750
532nm	1400	1100	1000	700	1750	1350
355nm	600	480	450	250	700	600
266nm	250	140	95	80	275	170
Parameter						
Divergence (mrad) (1)	0.5	0.5	0.5	0.5	0.5	0.5
Pointing Stability (urad) (2)	50	50	50	50	50	50
Pulse length (ns)	10-12	10-12	10-12	10-12	10-12	10-12
Jitter (ps) (3)	500	500	500	500	500	500
Stability (+/-%)	2	2	2	2	2	2
Beam diameter (mm) (4)	12.5	12.5	12.5	12.5	15	15
Services						
Voltage (VAC)	220-250	220-250	220-250	220-250	220-250	220-250
Frequency (Hz)	50-60	50-60	50-60	50-60	50-60	50-60
Water (l/min) @ 3-5bar	5	5	5	5	5	5

Note
(1) Full angle for 90% of the energy.
(2) Full angle.
(3) With respect to the external Q-switch trigger input.
(4) Quoted as the main amplifier rod diameter.

MECHANICAL DATA

All dimensions shown in mm

LPY•7000

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.