

Solo PIV

Nd:YAG Laser Systems



Reliable Operation

- Thermally compensated resonator assures stable operation.
- Requires minimal maintenance, increasing system up-time.
- Field-proven reliability permits users to concentrate on their applications, rather than on system upkeep.

Exceptional Performance

- Superior, proven design provides stable, high-energy output with excellent beam quality and pulse-to-pulse stability.
- Compact resonator design provides excellent beam pointing and energy stability.
- Predictable, high performance ensures that your work gets done faster.

Solo PIV is a compact, dual laser-head system designed to provide a highly stable green light source for Particle Image Velocimetry (PIV) applications. It is ideally suited for most liquid and many air-based PIV experiments, and its small size provides excellent flexibility in setting-up such experiments.

Features

- **Small laser head requires minimum space**
- **Single power supply simplifies setup and enhances mobility**
- **High output energy**
 - 15 - 120 mJ at 532 nm
- **Highly flexible design with repetition rates**
 - From 1 to 15, 30, or 50 Hz, depending on model selected
- **Operating convenience provided through multiple triggering capabilities**
 - Continuous internal trigger
 - External TTL trigger
 - Single input pulse activating laser lamp and Q-switch
 - Separate pulses to control lamp & Q-switch independently for precise laser pulse timing control
- **Easy set up:**
 - Single power supply features internal, closed-loop cooling system
 - Operates on 95-240 VAC single phase source
- **Convenient operation made possible with:**
 - Remote positioning of a single power supply - saves valuable lab space
 - Local control panel on power supply with all system controls, including optional optical attenuator
- **Hi/Lo power switch permits energy reduction during optics alignment**



NEW WAVE
RESEARCH

Solo PIV Products

		Solo I-15	Solo II-15	Solo II-30	Solo III-15	Solo IV-50	Solo 120
Repetition Rate (Hz)		15	15	30	15	50	15
Energy¹ (mJ)	532 nm	15	30	30	50	50	120
	355 nm ⁵	NA	NA	NA	NA	NA	35
	266 nm	NA	NA	NA	NA	NA	25
Energy Stability² (±%)	532 nm	4	4	4	4	6	4
	355 nm ⁵	NA	NA	NA	NA	NA	7
	266 nm	NA	NA	NA	NA	NA	9
Beam Diameter (mm)		2.5	2.5	2.5	3.5	3.5	4.5
Pulse Width³ (ns)		3-5	3-5	3-5	3-5	3-5	3-5
Divergence⁴ (mrad)		< 3	<3	<3	<4	<5	<2
Beam Pointing Stability (urad)		<100	<100	<100	<100	<200	<100
Jitter (±ns)		1	1	1	1	1	1

1. Optical losses due to optional attenuator will reduce maximum energy by 10%
2. Pulse-to-pulse for 98% of shots after 30 minute warm up
3. Full width half maximum

4. Full angle for 86% of the energy, at 1/e² point
5. For single-head operation. Only one laser head may be optimized for 355 nm.

Physical Characteristics

	Laser Head*		Power Supply		
	Solo I, II, III	Solo IV, 120	Solo I, II, III	Solo IV	Solo 120
Length	13.775" / 350 mm	16.06"/408 mm	18.5" / 470 mm	21.2" / 538 mm	19.0"/483 mm
Width	7.0" / 178 mm	8.0"/203 mm	8.875" / 200 mm	10.6" / 269 mm	8.6"/218 mm
Height	3.187" / 81 mm	4.125"/105 mm	14.375" / 365 mm	15.16" / 385 mm	15.0"/38 mm
Weight	10 lbs. / 4.5 kg	21.5 lbs./9.8 kg	48 lbs. / 22 kg	53 lbs. / 24 kg	55 lbs/25 kg
Length Umbilical	8 ft / 2.4 m	8 ft / 2.4 m			

* Width and height include mounting plate

Operating Requirements

Temperature	70° ± 10° F (21° ± 5° C)
Relative Humidity	20—80% non-condensing
Voltage	95—240 V, 50/60 Hz
Power	Solo I, II, III 15 Hz-300 watts; 30 Hz-500 watts
	Solo 120 500 watts
	Solo IV 1500 watts



www.new-wave.com

USA
New Wave Research, Inc
48660 Kato Road
Fremont CA 94538-7339
Tel: 510-249-1550
Tel: 800-566-1743
Fax: 510-249-1551
Email: Lasers@new-wave.com

Japan
New Wave Research, KK
5F Chojiya Building, 1-36-4,
Shinjuku-ku, Shinjuku
Tokyo, 160-0022 Japan
Tel: +81-3-3351-0131
Fax: +81-3-3351-0121
Email: NewWaveKK@new-wave.com

Taiwan
New Wave Research G. C. Co., Ltd.
2Fl., No. 118, Shinhu 3 Rd.,
Neihu Dist., Taipei
Taiwan 114
Tel: 886-2-8792-7585
Fax: 886-2-8792-7584
Email: NewWaveGC@new-wave.com

Europe
New Wave Research Co. Ltd.
Suite B Oak Park Business Centre
Arlington Road
Eynesbury, St Neots
Cambs PE19 6WA, England, UK
Tel: 44-(0)1480 403325
Fax: 44-(0)1480 476899
Email: NewWaveEU@new-wave.com

Shanghai
Room 606, Dragon Pearl Complex
2123, Pudong Road, Pudong,
Shanghai, China
Tel: 86-21-5860-9889
Fax: 86-21-5860-0424

