

Tempest

High Energy Nd:YAG Laser Systems



Tempest is a high-performance pulsed Nd:YAG laser system. A proven resonator design provides superior beam pointing and energy stability. Tempest combines the highest possible energy levels with minimum beam divergence. Tempest provides the widest range of repetition rates — enhanced by continuous pulsing, single shot, and burst mode triggering options — and is available in five wavelengths.

Features

- Pulse energy per unit volume is highest in the industry — from 100 to 300 mJ at 1064 nm.
- Beam divergence less than 1 mrad at 1064 nm.
- Repetition rates from 10 to 50 Hz.
- Wavelength availability: 1064, 532, 355, 266, and 213.
- Compact head configuration minimizes optical bench space requirement and simplifies OEM package design.
- Controllable flashlamp voltage
- Internal closed-loop cooling system

Tempest Products

		Tempest 10	Tempest 20	Tempest 30	Tempest 50	Tempest 300
Repetition Rate (Hz)		10	20	30	50	10
Energy¹ (mJ)	1064 nm	200	200	180	100	300
	532 nm	100	100	90	50	180
	355 nm	50	50	40	--	75
	266 nm	30	30	20	--	40
	213 nm	5	4	--	--	--
Energy Stability² (±%)	1064 nm	2	2	2.5	3	2
	532 nm	3.5	3.5	4	5	4
	355 nm	8	8	9	--	9
	266 nm	9	9	10	--	10
	213 nm	10	10	--	--	--
Pulse Width³ (ns)		3-5	3-5	3-5	4-6	3-5
Beam Diameter (mm)		5	5	5	4	6
Divergence⁴ (mrad)		< 1	< 1	< 1	<5	<1
Beam Pointing Stability (µrad)		< 100	< 200	< 250	<300	<200
IR Beam Quality⁵ (TDL)		1.5	1.5	2	9	1.5
Jitter (±ns)		0.5	0.5	0.5	0.5	0.5

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. Times diffraction limited, at 1/e² point

Physical Characteristics

	Laser Head		Power Supply	Control panel
	Tempest 10, 20, 30, & 50	Tempest 300		
Length	13.0" / 330mm	15.0" / 381mm	19.0" / 483 mm	6.0" / 152 mm
Width	7.0" / 178mm	7.0" / 178mm	8.6" / 218 mm	8.1" / 206 mm
Height	3.5" / 89 mm	3.5" / 89 mm	15.0" / 381 mm	3.5" / 89 mm
Weight	12 lbs / 5.5 kg	15 lbs / 6.8 kg	55 lbs / 25 kg	5 lbs / 2.3 kg
Length Umbilical	8 ft / 2.4 m	8 ft / 2.4 m		10 ft / 3 m

Operating Requirements

Temperature	70° ± 10° F (21° ± 5° C)
Relative Humidity	20—80% non-condensing
Voltage	95—125 V or 200—250 VAC, 50/60 Hz
Power	600 Watts



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