

Polaris

Pulsed Nd:YAG Laser Systems



Polaris systems are cost-effective, compact flash-lamp pumped Nd:YAG laser systems. Designed specifically to support a wide range of industrial and scientific applications, Polaris utilizes a combination of available wavelengths, energy levels, and repetition rates provide the greatest application flexibility. Optimized design produces energy levels and beam divergence that do not vary dramatically with repetition rate. Polaris systems also have excellent pulse stability for all wavelengths.

Features

- Combination of available energy levels, wavelengths, and repetition rates provide considerable application flexibility
- Beam divergence less than 4.5 mrad at 1064 nm.
- Repetition rates from 10 to 30 Hz.
- Wavelength availability: 1064, 532, 355, and 266.
- Compact design saves space and simplifies OEM package design
- Q-switched activation
- Optional motorized optical attenuator



NEW WAVE
RESEARCH

Polaris Products

		1064 nm	532 nm	355 nm	266 nm
Pulse Energy ^{1,2} (mJ)	Polaris II	50	30	7	5
	Polaris III	90	50	11	10
Beam Diameter ⁴ (mm)	Polaris II	3	2.75	2.5	2.5
	Polaris III	4	3.75	3.5	3.5
Pulse Width ³ (ns)		4-5	3-4	3-4	3-4
Beam Divergence (mrad)	Polaris II	<4.5	<3.5	<2.5	<2.5
	Polaris III	<5	<4	<3	<3
Pulse to Pulse Stability ² (±%)		3	4	5	6
Jitter (±ns)		1	1	1	1
Repetition Rate (Hz)	Polaris II	20 or 30			
	Polaris III	10 or 20			
Beam Pointing (urad)		< 100	< 200	<250	< 250
IR Beam Quality ⁵ (TDS)		6	--	--	--

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
Length	11.7" / 297 mm	14.5" / 368 mm	6.0" / 152 mm
Width	5.7" / 146 mm	7.65" / 194 mm	8.1" / 206 mm
Height	3.0" / 75 mm	10.9" / 277 mm	3.5" / 89 mm
Weight	10 lb. / 4.5 kg	30 lb. / 13.6 kg	5 lb. / 2.3 kg
Length Umbilical	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	100—240 VAC, 50/60 Hz
Power	250 watts



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