

PRÉSERVER
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FICHE TECHNIQUE LASER KRYPTON SPECTRA PHYSICS

FICHE N° 3517

Période de fabrication : -
Fabricant : Spectra Physics
Domaines : Physique
Sous-domaines : Optique
Organisme : Université de Rennes 1, Campus de Beaulieu
Ville : Rennes
Modèle :
Matériaux :

Description

Cette documentation décrit les caractéristiques et les différentes fonctions du laser Krypton SPECTRA PHYSICS modèle 164 ainsi que son alimentation.

Utilisation

Utilisable avec le laser



164
Ion Laser

Spectra Physics 250 West Middlefield Road Mountain View, California 94040 Telephone (415) 961-2550

Features

- Works on a single input — all krypton and mixed gas
- Stable output power — to ±0.5%
- No warm-up — no long life, no tube warm-up, hundreds of hours between gas fills
- Small size, light weight
- Built-in power master
- Electric — mechanical construction
- Simple in mirror and prism mounts
- Adjustable intensity aperture — from 100% power (collimated) to all wavelengths
- Adjustable magnetic field for constant power at all wave-lengths
- Output power continuously adjustable down to a few milliwatts
- High resolution gas fill system
- Fully regulated power supply — no transformer required
- Full service warranty

The Spectra-Physics Model 164 Ion Laser System has the same outstanding combination of output power, stability, compactness, and reliability at a modest cost. Spectra-Physics

Traditional attention to detail in engineering design and manufacturing makes the Model 164 truly a precision instrument in the field of Plasma Electronics. Consequently, data recording and various gas delivery laser pumping, biological experiments, general laboratory use are achieved with the inherent power of the Model 164 Ion Laser System.

The Model 164 Laser System consists of the Model 164 Laser Head and the Model 265 Power Supply connected by a standard stainless steel cable and water cooling lines. A large number of operating features have been built into the Ion Laser and Krypton gas fill system. All adjustments have the Ion Laser a truly versatile ion laser system.

Model 164 Laser Head
The Model 164 Laser Head was designed to a precision and superior operating characteristics of the Ion Laser tube. The laser tube contains the cathode, anode, "striking" resistor, structure and the Gas Plasma tube. The entire Ion Laser tube is easily removed for service. Inspection of the tube will make the 164 to all

Built-in Light Shielding
The light shield and the shield to serve all users and is a standard feature. Light shielding is provided with a front panel switch and allows you to obtain constant output power to within ±0.5% throughout the entire day or week, if required.

A built-in sensor and photo detector detects the output beam and through feedback controls the output. The plasma tube current is automatically adjusted to maintain a constant output power.

Gas Plasma Tube
Built to the highest material for ion laser plasma tubes and is used in the Model 164 Ion Laser System. The plasma tube current is automatically adjusted to maintain a constant output power.

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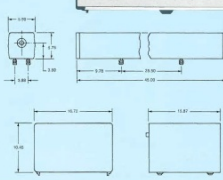
- Changing optics is easy in the 164. The mirrors and prisms are mounted in snap-in bayonet mounts which can be changed in a few seconds. The bayonet mirror and prism holders make an O-ring seal upon insertion to insure a hermetically-tight dust-free space between the mirror and prism. The O-ring seal of the O-ring seal is provided for the mirror holder but not in use.
- The Vertical and Horizontal thumbwheel controls, internal at the rear of the laser head, provide wavelength selection and fine tuning of laser power through directly-driven mirror mounts. For the experienced laser tuner, screwdriver adjustments of angular position of the mirror mounts are available on the rubber mount end of the laser head.

Self-Protect Features

The 164 system may be operated unattended because of the many self-protection features in its design. Among these are:

- a) A thermal cutoff for protection if exhaust water temperature becomes too hot.
- b) A low rate cutoff for protection if inlet water flow rate drops below a safe level.
- c) Individually fused power transistors, which protect the power supply circuitry from catastrophic failure.
- d) A voltage cutoff for protection if tube voltage becomes either too high or too low.

The Spectra-Physics 164 Ion Laser is protected by mechanical, electronic, and optical parts and assembly tube, are unconditionally warranted to be free from material for the first year following delivery.



The Spectra-Physics 164 Ion Laser is protected by mechanical, electronic, and optical parts and assembly. The laser tube, and its associated components, are unconditionally warranted to be free from material for the first year following delivery.

- one-year warranty. All
s, including the plasma
cts in workmanship and

Model 589
Air Spaced Etalon
Optional

Air spaced Etalon	Temperature Coefficient
Optional	Frequency Shift
	Typical Frequency
	Model 586 in conditioned N ₂
	Window Reflectance
	Transmission
	Free Spectral Range
	% of Single Frequency
	Multi-Frequency
	Spectral Purity

Etalon Dimensions	50mm dia. x 10mm long
Spacer Material	ULE® Titanium Silicate
Temperature Coefficient of Spacer	$\pm 0.2 \times 10^{-6} / ^\circ\text{C}$
Frequency Stability of Etalon	10 Mhz/1°C
Typical Frequency Stability of Model 566 in Model 164 in air-conditioned laboratory	8 Hours ± 225 Mhz 15 minutes ± 150 Mhz 10 seconds ± 15 Mhz
Window Reflectivity	$\leq .30 \pm .2\%$
Transmission	$\geq .98\%$
Free Spectral Range	≥ 10 GHz
% of Single Frequency Power	
Multi-Frequency Power	$\geq .02\%$
Spectral Range	450nm-525nm

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