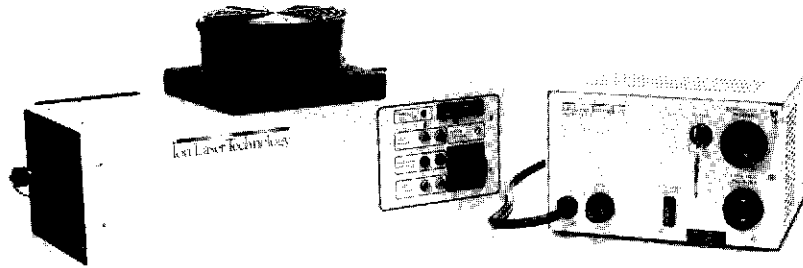


ILT Model 5500A

Air-Cooled Argon Ion Laser



STANDARD FEATURES

- 300mW Multiline Output
- TEM₀₀/Polarized Beam
- Rugged Metal/Ceramic Plasma Tube
- Enlarged Gas Reservoir for Extended Tube Life
- Thermostat Controlled Air Cooling
- Hands Off Operation
- Excellent Power and Pointing Stability
- CDRH Certified
- 4 Invar Rod Resonator
- Switching Power Supply
- Light Feedback Regulation
- Remote Interface - Control Via Host System

OPTIONAL FEATURES

- Tuneable/Singleline - Littrow Prism 457nm to 514nm
- Remote Control-RPC-50
- Remote Air Cooling
- WC Compatible

SYSTEM

The 5500A contains a field proven off the shelf ILT plasma tube designed to operate in TEM₀₀ mode, and provide a polarized output beam. This model has standard 300mW multiline output with light control feedback regulation or may be equipped with ILT's optional littrow prism. This option will allow the end user to tune the laser from 457nm to 514nm and will guarantee 100% spectral purity.

PLASMA TUBE

The ILT plasma tube is constructed of BeO ceramic with enlarged metal end shrouds. This provides high thermal conductivity and large gas volume for extended tube lifetime. This tube is designed with brewster windows sealed on each end and external mirrors, providing high polarization and high spectral purity when used with our littrow prism option. This design also gives the end user a simple and less expensive, typically half the cost, tube to refurbish when the time comes.

RESONATOR

The plasma tube is housed in a lightweight aluminum resonator structure which utilizes a four invar rod design. This design provides excellent mechanical and beam pointing stability. The mirror mounts are held in place with a one piece, solid spring steel adjustment gimble. This unique combination provides field proven, hands free operation. The resonator also incorporates a molecular sieve dryer system attached to teflon tube to mirror seals which provides guaranteed maintenance free operation, even in humid environments.

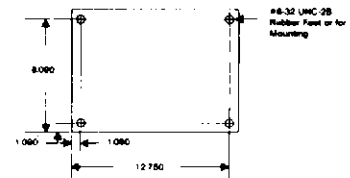
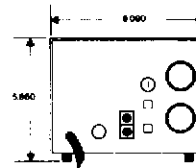
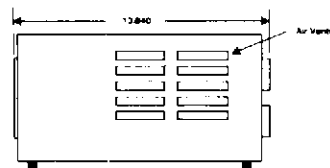
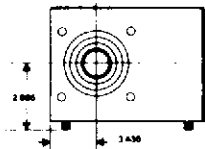
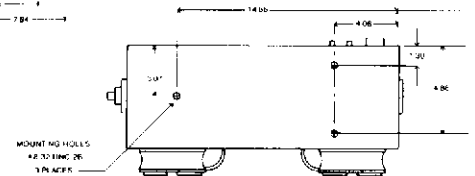
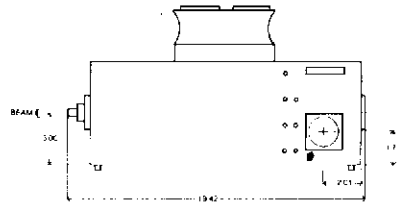
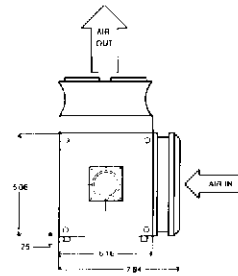
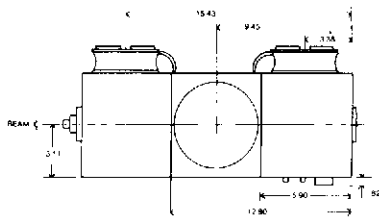
Laser head cooling is accomplished by using three high volume fans. Two side mounted fans located at each end of the resonator, and one top mounted fan located in the center of the resonator. Air moves across the anode and cathode shrouds and exits through a fully brazed pure copper heat sink.

A fan thermostat controls cooling fans and monitors tube temperature. Fans turn on when tube is up to operating temperature and turn off only after tube is completely cooled down. As a result, the tube can warm up and cool down faster.

POWER SUPPLY

The laser head is powered by the Model 5405, high efficiency, switching power supply. This power supply incorporates a mosfet switching regulator and light feedback regulation which gives the user excellent amplitude and long term power stability. The 5405 is supplied with interlock remote connection, key switch, and remote control interface. The system can be controlled manually via power control on laser head or remotely by a host system or the Model RPC-50 remote control. The RPC-50 has a 4 inch high resolution LED bar graph display. This display reads out laser power and tube current. The RPC-50 also has run/standby switch, and display of system interlocks that provide diagnostic information in the event of system failure.

Ion Laser Technology has united high technological ingenuity with no nonsense design to provide our customers with the most reliable laser systems available today. This commitment combined with quick turnaround by ILT service technicians, demonstrates Ion Laser Technology's standard of performance plus support.



OUTPUT SPECIFICATIONS

Multiline 300mw (all lines)

SingleLine	457.9nm	465.8nm	476nm	488nm	496.5nm	501nm	514nm
Tunable	15mw	10mw	30mw	100mw	25mw	15mw	100mw

PERFORMANCE SPECIFICATIONS

Beam Diameter $1/e^2$.82mm
Beam Divergence	.78mrad
Full angle	
Polarization	> 100:1
E-Vector Vertical	
A.R. Spot	< .25%
Transverse Mode	TEM ₀₀
(Higher order modes available on multiline models with output powers up to 600mw)	
Warm-up time (cold start)	
Multiline models	< 5 mins.
Littrow Prism models	< 15 mins.
From standby	Immediate
Beam Pointing Stability	
After warm-up	< 30 microradians
Periodic	10 microradians
Beam Amplitude Noise	
DC to 2MHZ	< 1% RMS
Long Term Power Stability	
2 hours at constant ambient conditions	1%

ELECTRICAL SPECIFICATIONS

Voltage	220VAC ± 10%
Current	20 Amp
Frequency	60 hz
Optional	47 to 63 Hz
Phase	Single
Power Supply	30 KHz
Switching Frequency	

SHIPPING SPECIFICATIONS

Power Supply Weight	20 lbs.
Shipping Weight	23 lbs.
Laser Head Weight	20 lbs.
Shipping Weight	31 lbs.

*Specifications subject to change without notice

