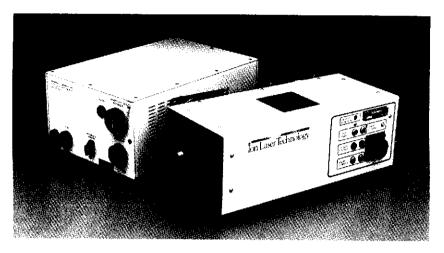
# ILT Model 5490A Air-Cooled Argon Ion Laser



#### STANDARD FEATURES

- 100mW Multiline Output
- TEMoo/Polarized Beam
- Metal/Ceramic Plasma Tube
- Double Size Gas Reservoir for Extended Life
- · Hands Off Operation
- Thermostat Controlled Air Cooling
- Switching Regulator Power Supply
- · Excellent Power and Pointing Stability
- Invar Rod Resonator
- · Light Feedback Regulation
- CDRH Certified

# OPTIONAL FEATURES

- Tuneable/Singleline-Littrow Prism 457nm to 514nm
- Multimode Optics up to 300mW Output
- 19" Rackmount Power Supply Model 5401
- Remote Control (RPC-50) W/Standby Interlock
- Remote Cooling for Systems Requiring Cooling Fans to be Located Away from Laser Head
- WC Option Compatible Allows User to Quick Change From Singleline to Multiline Operation

# SYSTEM

The ILT Model 5490A Argon Ion Laser is an advanced, stat of the art coherent light source, designed with reliability in mind. The 5490A is our most versatile laser offered, and is compatible with all of ILT's available options. This in combination with a rugged ceramic/metal plasma tube, invar resonator, switching power supply and light feedback regulation, the 5490A offers a wealth of advantages for laboratory or OEM applications.

# PLASMA TUBE

The II.T 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.

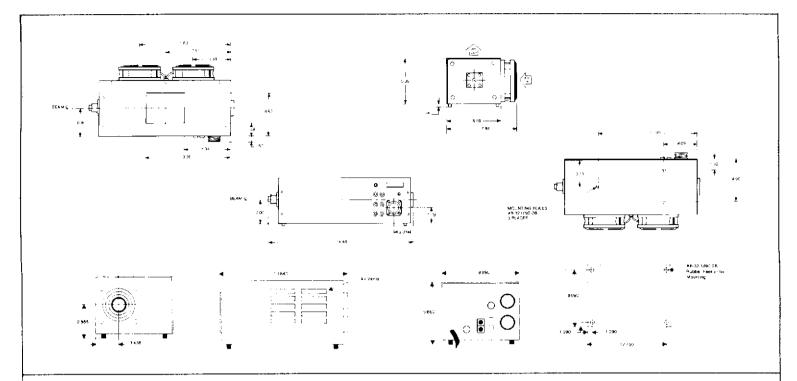
Laser head cooling is accomplished by using two high volume fans located at each end of the resonator. Air moves across the anode and cathode shrouds and exits through a fully brazed pure copper heat sink.

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 5400 or optional 5401, high efficiency. switching regulator power supply. These power supplies incorporate a MOSFET switching bridge and high frequency isolation transformer. This exclusive design permits a wide range of operating voltages (100VAC, 120VAC, or 240VAC) and adds total line isolation. Both supplies come standard with light feedback regulation which gives the user excellent amplitude and long term power stability. The 5400 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

Beam Diameter 1/e<sup>2</sup>

Long Term Power Stability

2 hours at constant ambient conditions

Multiline

100mw (all lines)

SingleLine Tuneable

457.9nm 6.0mw

165.8nm 5.5mw

476/472.7nm 10.0mw

 $488 \mathrm{nm}$ 40.0mw 496.5nm 10.0mw

.65mm

1%

514nm  $\overline{40.0}$ mw

501nm

7.0mw

Voltage

# PERFORMANCE SPECIFICATIONS

7,041.7,7,141.01.01	
Beam Divergence	.95mrad
Full angle	
Polarization	> 100:1
E-Vector Vertical	
A.R. Spot	<.25%
Transverse Mode	TEM <sub>oo</sub>
(Higher order modes available on multiline models	s with increase output power)
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

# ELECTRICAL SPECIFICATIONS

 $115VAC \pm 10\%$ 

Optional	220VAC ± $10%$
Current	20 Amp
Frequency	60 hz
Optional	47 to 63 Hz
Phase	Single
Power Supply	30 KHz
Switching Frequency	
SHIPPING SPECIFICAT	TONS
Power Supply Weight	20 lbs.
Shipping Weight	23 lbs.
Laser Head Weight	20 lbs.
Shipping Weight	31 lbs.
*Specifications subject to change without notive	DANGER