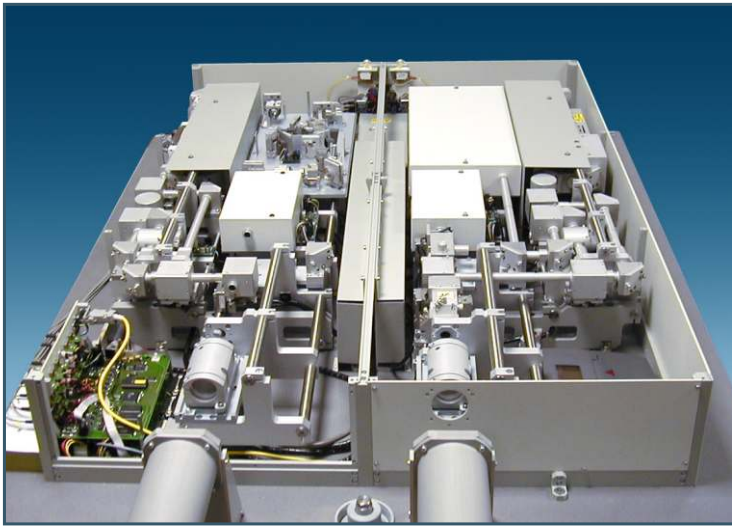




TWO-CHANNEL LASER SYSTEM

NEW OPPORTUNITIES FOR ATMOSPHERIC MONITORING !



Two-channel Laser System

With the progress of the human technological potential, elimination or minimization of the effects of global atmospheric pollution has become a must for the absolute majority of states in their environmental activity. The acquisition of on-line information about the state of the atmospheric layer is an integral part of both global and regional atmospheric monitoring. Lidar systems utilizing laser radiation sources become more and more often integrated into the systems of atmospheric monitoring.

The SOLAR TII two-channel laser system is specially designed for use in lidar complexes to monitor the aerosol component, to determine the level of the atmospheric pollution with gases (NH_3 , SO_2 , NO_x , O_3 , or others), to monitor the vertical distribution of ozone in stratosphere, as well as in other applications.

FEATURES

- ◆ Simultaneous lasing at several wavelengths
- ◆ Broad spectral range (235 to 1064 nm)
- ◆ Generation of narrow-linewidth (down to 35 pm) radiation
- ◆ A wide range of output energies (1 to 650 mJ)
- ◆ Automatic setting and control of output parameters
- ◆ Energy and wavelength control for each output pulse in both of the channels in the real time scale.
- ◆ Heat/Impact-resistant construction & stable parameters
- ◆ Completely automatic system for measuring each pulse parameters
- ◆ High noise-immunity
- ◆ Control and data transfer via fiber optics

SPECIFICATIONS

LASER PARAMETERS

Wavelength

Channel I

Nd:YAG laser:	532 nm, 266 nm
Ti:Sapphire laser	
at fundamental:	700-950 nm
at second harmonic:	350-475 nm
at third harmonic:	235-315 nm

Channel II

Nd:YAG laser:	1064 nm, 355 nm
Ti:Sapphire laser	
at fundamental:	700-950 nm
at second harmonic:	350-475 nm
at third harmonic:	235-315 nm

Laser line-width (max)

Nd:YAG laser:	0,005 nm
Ti:Sapphire laser:	0,035 nm

Max. wavelength stability

(with 8hrs-continuous laser running): 0,02 nm

Beam diameter (before output telescope)

Nd:YAG laser:	<= 7,5 mm
Ti:Sapphire laser:	<= 3,0 mm

ENERGY CHARACTERISTICS

Pulse energy (before output telescope)

Nd:YAG laser	
1064 nm:	650 mJ
532 nm:	400 mJ
355 nm:	150 mJ
266 nm:	120 mJ
Ti:Sapphire laser	
at fundamental:	75 mJ
at second harmonic (450 nm):	30 mJ
at third harmonic (300 nm):	10 mJ

TIME CHARACTERISTICS

Max. pulse width (1064 nm):	16 ns
Pulse repetition rate:	10 Hz (20 Hz)

SPATIAL CHARACTERISTICS

Max. beam divergence:	0,5 mrad
Telescopes:	achromatic 8x
Separation between channel optic axes:	350 mm

PULSE PARAMETERS MEASURED AND MEASUREMENT ACCURACY

Pulse energy measurement	
measurement range:	1-650 mJ
measurement accuracy:	+/- 3%
Wavelength measurement	
measurement range:	230-959 nm
measurement accuracy	
700-950 nm:	0,04 nm
350-475 nm:	0,02 nm
235-315 nm:	0,013 nm

ELECTRIC CHARACTERISTICS

Power requirements:	single phase, 220V +/-20%, 50-60 Hz, 1850 W (max)
External synchronization:	TTL level (+5V)

OVERALL SIZE, WEIGHT

Laser heads module:	1500x1200x250 mm, 385 kg
Power & Cooling unit:	420x510x1080 mm, 96 kg