



## **Laser facility for ICF investigations**

**The D.V. Efremov Scientific Research Institute of Electrophysical Apparatus (NII EFA) is the leading developer of the equipment for fundamental researches in the field nuclear physics, high-energy physics, controlled thermonuclear fusion and others.**

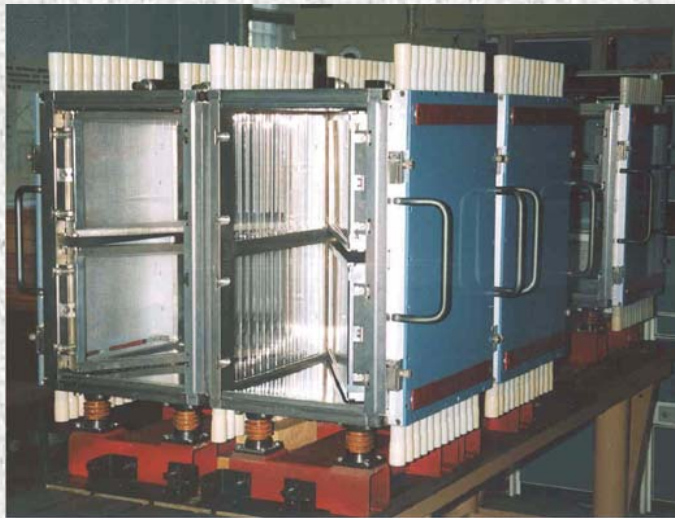
**STC "MIT" NII EFA has experience of developing (designing, manufacturing and treatment) of high power multi-frame amplifiers, spatial filters, supply systems and, control systems and diagnostics high-scale laser facilities.**

**Some examples of manufactured equipment are presented bellow.**



## Four beams disk laser amplifier

The wide-aperture neodymium glass disk laser amplifiers are the basic source of laser energy in high-power laser systems for inertial confinement fusion research



<b>Wavelength, <math>\mu\text{m}</math> .....</b>	<b>1,053</b>
<b>Aperture of each channel, mm .....</b>	<b>240 x 240</b>
<b>Dimensions of four beams module, mm ...</b>	<b>620 x 850 x 980</b>

The disk laser amplifier разработан совместно с Russian Federal Nuclear Center (RFNC – VNIIEF)



# ACTIVE ELEMENT (SLAB) OF DISK LASER AMPLIFIER

Neodymium doped phosphate glass KGSS 0180/35 made  
on platinum-free method

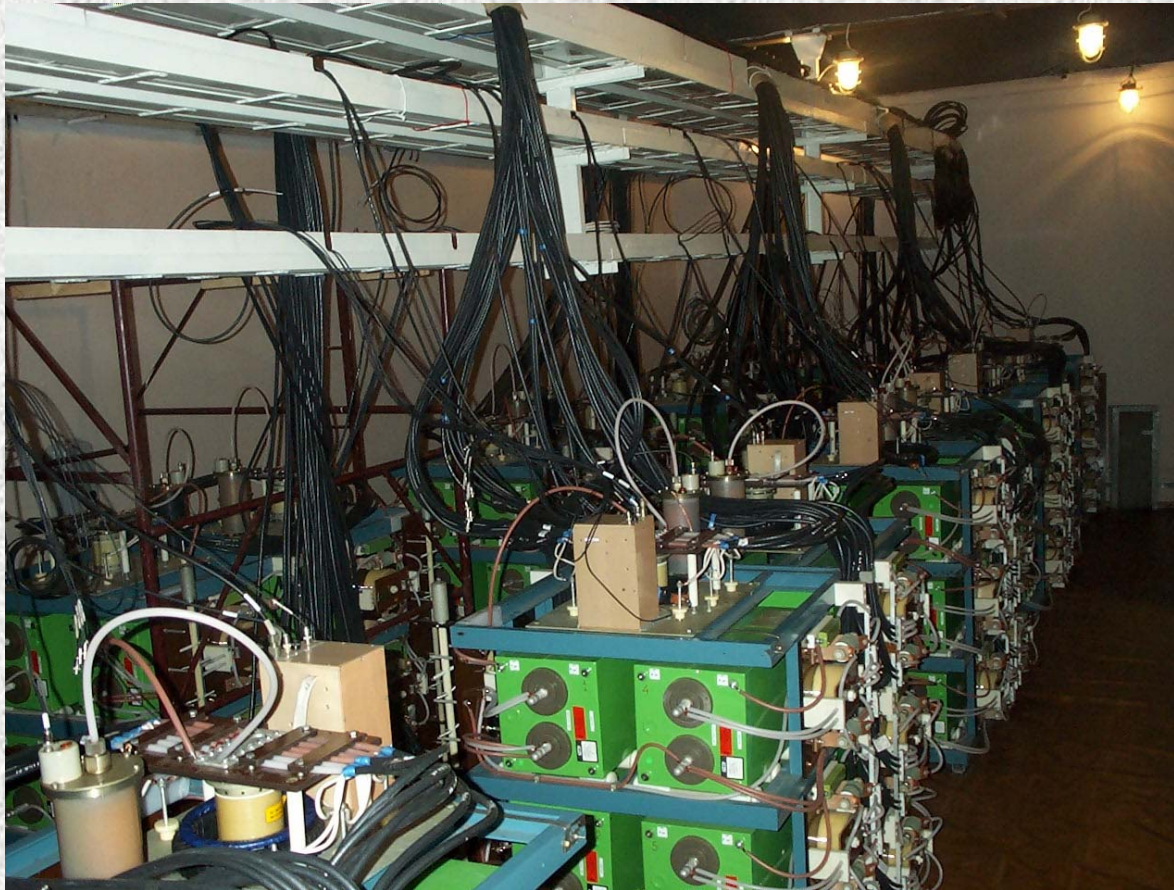


Dimensions, mm ..... 240x475x40  
Damage threshold (at pulsewidth 4 ns), J/cm<sup>2</sup> ..... 32 ± 6

Изготовитель активного элемента - НИТИОМ



# Disk amplifier pulse power supply of "4-frame" Facility





## Four beams spatial filters



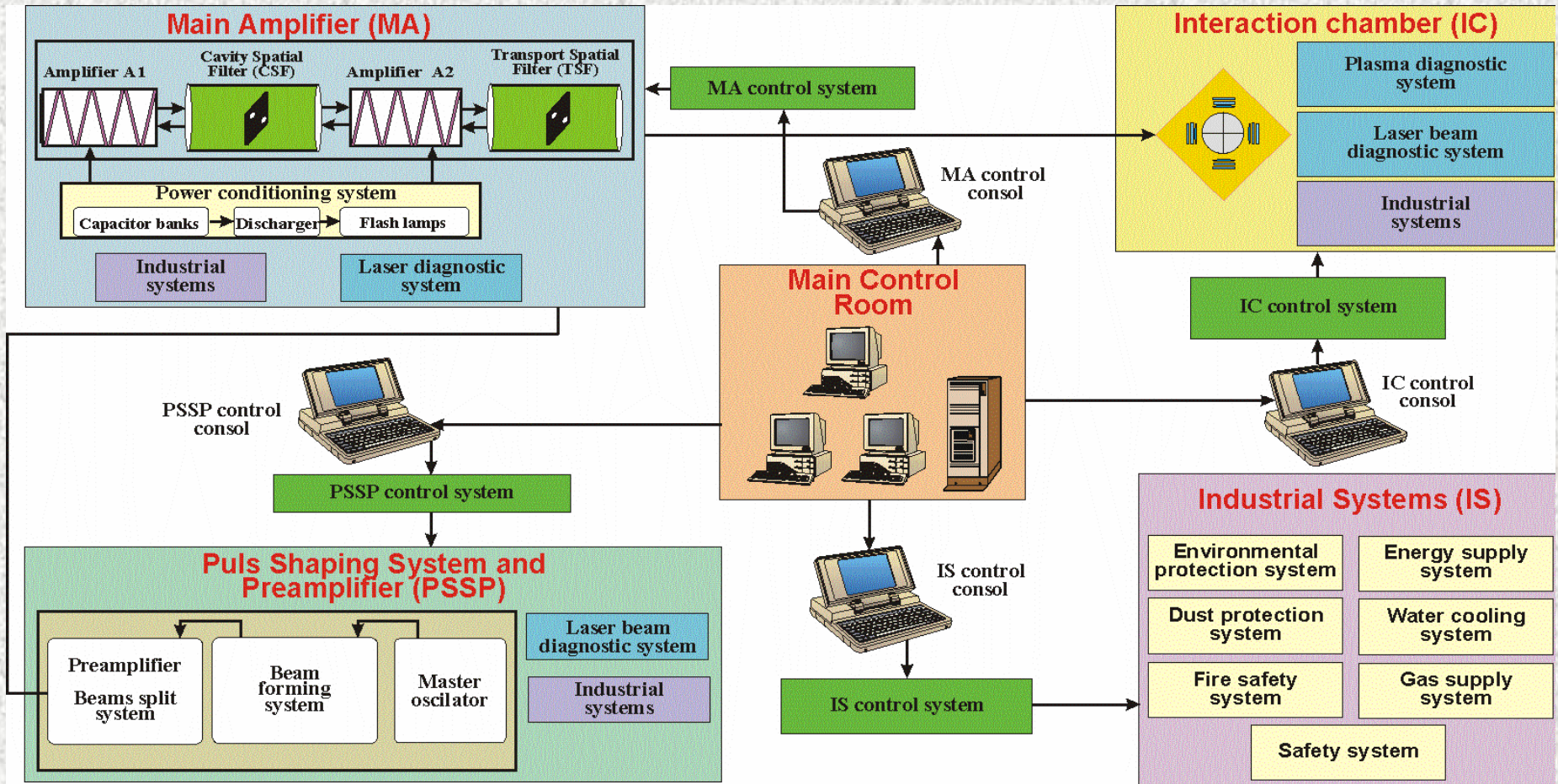
The main function of the spatial filters is to remove small-scale spatial irregularities from the laser beam and to improve beam quality

Wavelength, $\mu\text{m}$ .....	1,053
Aperture of each channel, mm .....	240 x 240
Overall dimensions, m .....	18,1 x 0,8 x 0,9
Weight, kg .....	2400

Beams spatial filters разработан совместно с Russian Federal Nuclear Center (RFNC – VNIIEF)



# Control and Diagnostic System of High Power Solid State Laser





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