

Small
Business
Innovation
Research

Advanced, Diode-Pumped, Cavity-Dumped Laser for Space-Based Altimetry

Fibertek, Inc.
Herndon, VA



INNOVATION

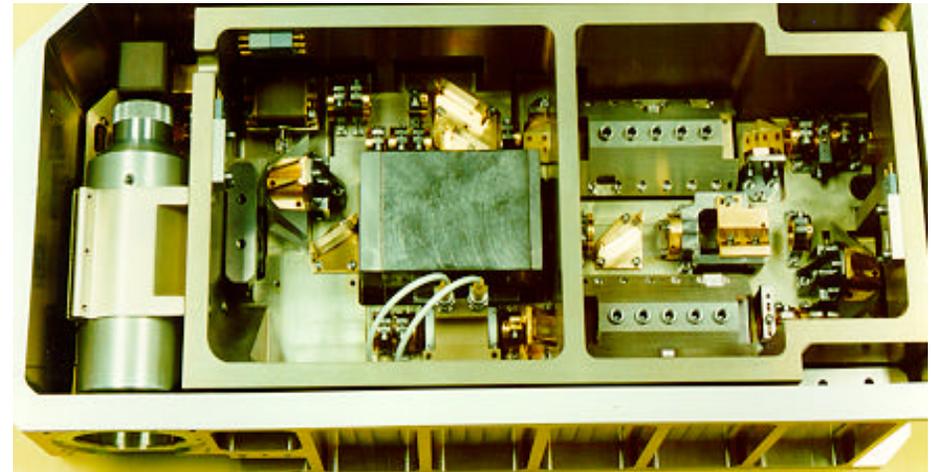
Diode-pumped short pulse laser transmitter for space-based lidar measurements of earth topography, weather and biomass

ACCOMPLISHMENTS

- ◆ Conductively cooled diode-pumped slab oscillator provides short pulse width (6 ns) and high beam quality.
- ◆ Two-pass amplifier provides power gain to 40 mJ output at 100 pps repetition rate.
- ◆ Robust mechanical configuration and packaging provides stability under launch environment and long operating life in space.

COMMERCIALIZATION

- ◆ Technology developed forms basis for commercial WindSat and WeatherSat Instruments.
- ◆ Department of Geography, University of Maryland, NASA Goddard Space Flight Center's Laboratory for Terrestrial Physics, Fibertek, Inc., CTA Space Systems, and Omitron, Inc. have formed a team to propose the Vegetation Canopy Lidar mission. A major Phase III contract is eminent.



Space-Based Laser Transmitter

GOVERNMENT/SCIENCE APPLICATIONS

- ◆ Short-Pulse laser forms the basis for the Vegetation Canopy Lidar (VCL) Instrument transmitter selected for Earth Systems Science Pathfinder Program.
- ◆ Provides technology base for short pulse terminal guidance lidar on BMDO Ground Based Interceptor Program.

Goddard Space Flight Center
1992 Phase 2, SS5-001, 4/22/97

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