LIEKKI™ APPLICATION DESIGNER v4.0

LIEKKI™ application designer (LAD) is a versatile design tool for fiber applications providing a strong platform for simulating and optimizing fiber amplifiers, amplify spontaneous emission (ASE) sources, and fiber laser systems. The software is based on precise algorithms that account for all the reflections in the system – especially crucial for accurate laser and ASE light source simulations. The simulation engine also accurately accounts for large mode area and highly doped fibers.

LAD v4.0 includes a full bending effects model for step index fibers (both mode field deformation and bending loss in multimode regime) and variable time steps for transient analysis that allows easier simulation of pulsed systems.

In addition, LAD v4.0 comes with several add-ons: Design wizard, optimization tools, mode field calculator, active ions concentration conversion tools, LIEKKI™ EasySplice integration. The software has a new calculation engine optimized for better convergence of high-reflectivity cavities. This allows faster and more accurate simulation of fiber lasers. Also, LAD v4.0 has an improved mesh algorithm that yields smoother 3D graphs.

These come in addition to the existing features that make the LIEKKI™ Application Designer a very powerful tool for simulating high-power continuous-wave (CW) and pulsed lasers: Transient analysis, SBS and SRS threshold estimations, inversion level calculation, Monte Carlo simulation etc.

LAD supports the full application design and analysis process from early research, prototype and pilot stage to full volume production. The LAD user could be product designer, optical engineer, research scientist or student.

Software environment

- Operating system: Windows Vista/XP/2000/NT/98
- User Interface: GUI
- Language: English

Recommended PC configuration

- Processor: Pentium 1 GHz or faster
- 256 MB of RAM or higher
- 100 MB free hard disk space

Functionality

- Models for all LIEKKI™ fibers
- CW simulation
- Variable time step transient simulation
- SBS and SRS threshold calculation
- Inversion level calculation
- Iterations - automated multiple simulations
- Monte Carlo analysis
- Optimization tool
- Multimode propagation both for straight and bent fibers
- Design wizard
- Concentration conversion tool
- LIEKKI™ EasySplice integration
- 2D and 3D graphics

nLIGHT Corporation • 5408 NE 88th Street • Vancouver, WA 98665 • USA
Tel. +1 360 566 4460 • Fax. +1 360 546 1960 • sales@nlight.net • www.nlight.net

Available components

Active components

Erbium doped fiber
Double cladding erbium doped fiber
Ytterbium doped fiber
Double cladding ytterbium doped fiber

Passive components

Coupler
WDM
Isolator
Filter
Mirror
Fiber grating
Attenuator
Passive SM fibers
Passive DC fibers

Sources

Pump
Pump DC
Signal

Fiber Junctions

Ideal connection
Splice
Connector

User-friendly graphic interface

- Graphical tools for layout design
- Various reporting tools
- Probe tool
- Customizable graphics
- Numerical data
- Export functions (ASCII, bitmap)

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