

# Spectrolab

Optoelectronic Products

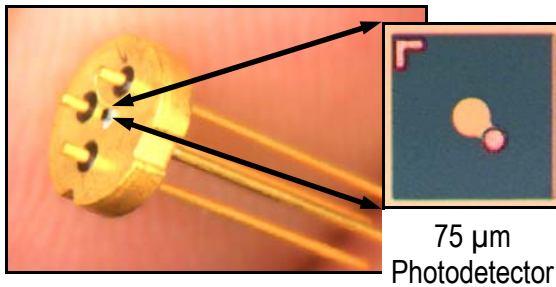
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## Packaging Foundry Services

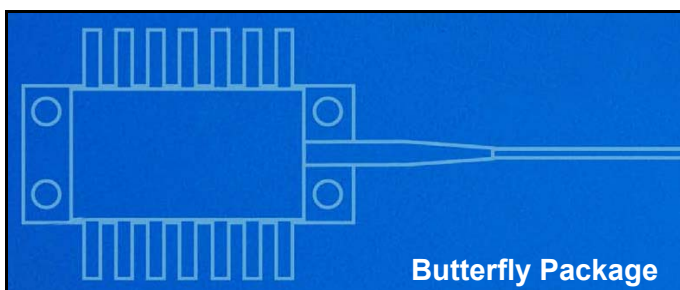
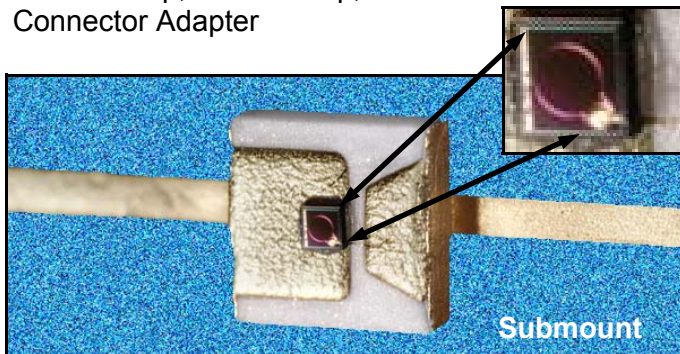
Complete Prototyping & Manufacturing Solutions for Optoelectronic Products

### Design & Characterization

- Package design & material selection
  - CAD design, optical modeling (ray tracing & thin films), thermal modeling, RF modeling
- Material characterization
  - Visual & dimensional
  - Material analysis
- Complete electrical & optical testing

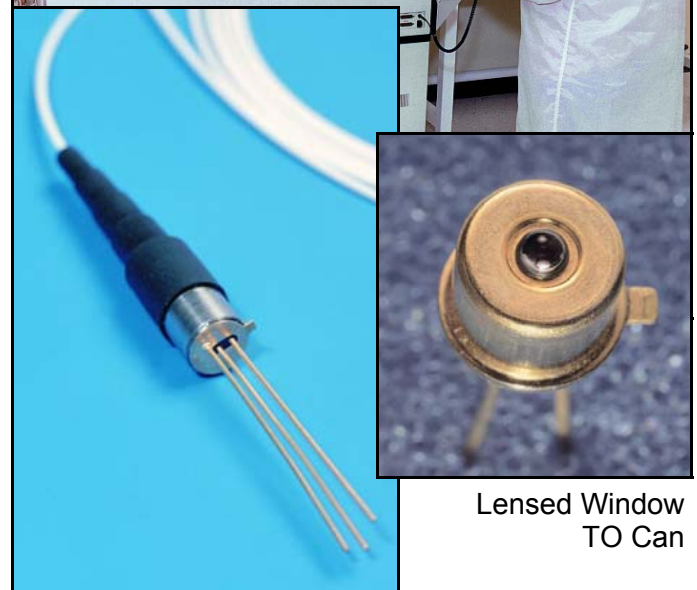


TO Packages:  
Window Cap, Lensed Cap,  
Connector Adapter



### Assembly

- Die singulation
  - Scribe & cleave
  - Die sorting
- Die & substrate attach
  - Epoxy, alloy
  - Epoxy & alloy
- Specialized cleaning
  - Ultrasonic, spray, plasma



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## Assembly

- Wire bonding & ribbon welding
  - Wire wedge (manual & auto), wire ball (manual)
  - Ribbon welding
- Fiber preparation & alignment
  - Cleaving, splicing, alignment
- Hermetic sealing
  - Cap weld, seam seal
  - Alloy seal



Cap Weld & Seam Seal

## Process Characterization & Reliability Per Mil-Standard and Telcordia Standard

- Die shear
- Wire pull testing
- Hermeticity testing
  - Gross leak testing
  - Fine leak testing (He)
- Temperature cycling
- Accelerated aging
- Vibration
- Shock
- Damp heat
- Burn-in



Die Shear & Wire Pull Tester

SPECTROLAB

A BOEING COMPANY

ISO9001:2000  
REGISTERED

The information contained on this sheet is for reference only. Actual specifications for delivered products may vary. 2/21/02

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