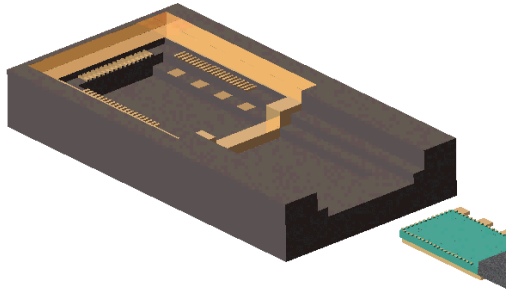
Little Optics Inc.
Second Round Financing

Little Optics is approaching photonics like semiconductors

We are delivering integrated optical components and sub-systems with order-of-magnitude improvements in size, integration density, functionality, performance, and cost. This is accomplished by our proprietary Very-Large-Scale-Integrated Photonics (VLSI) Photonics platform.







Experienced Team - 120+ years in Integrated Optics

- Bill Willson, CEO:
  - 22 years of photonic components experience
  - Founding member of two significant photonic businesses; Gould Fiber Optics and Corning's Photonics Division
  - Multiple leadership roles (Commercial to P&L)
- Dr. Brent Little, Founder and CTO:
  - Post-doc and research at MIT
  - 16 years in integrated optics theory, modeling and practice. 10 years in micro-ring resonators. Expert in device physics and optical propagation.
  - Technical visionary with 20+ patents
- Dr. Sai Chu, Founder and VP of Advanced Components:
  - Post-doc and research at Kanagawa Academy of Sciences;
  - 16 years in integrated optics theory and dielectric fabrication. 10 years in micro-ring resonators. Expert in compound glasses.
- Dr. John Hryniewicz, Founder and VP of Advanced Processes:
  - Post-doc and research at University of Maryland
  - 16 years in integrated optics theory and fabrication (III-V and polymer based devices). 7 years in micro-ring resonators. Expert in III-V materials and polymers.
- Gordon Whyte, VP of Front-end and Manufacturing:
  - 13 years in IC manufacturing (NEC Semi-conductor), 7 years in integrated optics fabrication and manufacturing
  - Manufacturing leader with IOC, subsequently purchased by SDLI/JDSU) and MPI
- Andrew Spector, Sr. Director of Marketing:
  - Original Marketing leader with PIRI purchased by SDLI/JDSU
  - 10 years of marketing experience in integrated optics
- Robert Gardner, (pending), VP of Engineering:
  - 16 years with Hewlett-Packard/Agilent
  - VP of Engineering with Semrock and Optical Switch Corp

Accomplishments

VLSI Photonics:

- Unique Materials - Invented fundamental glass material system Hydex™, allowing Integrated Circuit (IC) like integration
- Innovative Designs:
  - Invented efficient chip-to-fiber transformer
  - Developed unique Micro-ring resonator filters
  - Developed ultra-low-cost packaging
- Demonstrated ability to leverage standard IC Industry processes

Accomplishments

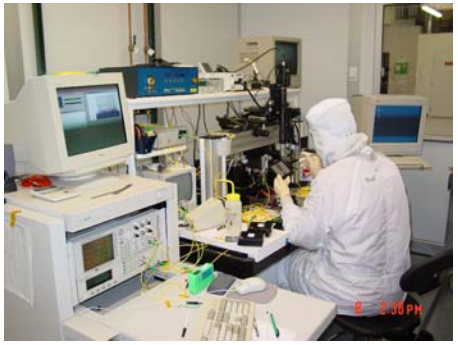
Execution:

- Incorporated in July of 2000; funded by Matrix Partners and North Bridge Venture Partners - $14 million
- Built experienced leadership team (22 people)
- 18 patents
- Implemented productive, low burn rate business model
- Demonstrated differential technology in high value-in-use applications ($thousands per chip, $millions per wafer)
- Early customer traction with leaders:
  - Company A – purchase order for 2 port tunable filter
  - Company B – purchase order for 25 Ghz universal filter
  - Company C – interest in two product areas; under discussion
  - Company D – want access to all of our products
  - Company E – in discussion on conventional devices

Little Optics Inc. - Physical Assets

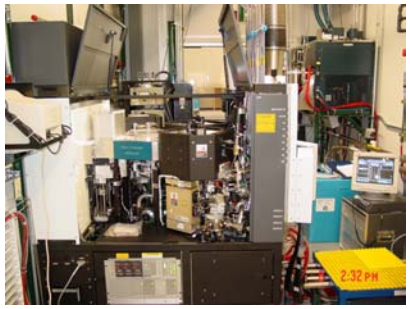


35,000 ft^2, leased - 15 minutes from BWI Airport
Low cost, long-term lease





4,000 ft^2 of clean room, Class 100 to 10,000





Full set of RD&E IC Tools (P 5000, Stepper)





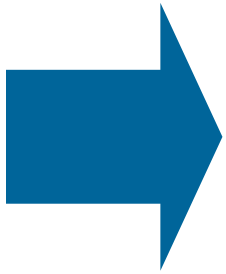
Full set of IC Metrology Tools

Technology and Value Proposition

Little Optics' Value Proposition

Core Competencies

- Unique materials
- Innovative designs
- IC industry processes



Customer Benefits

- Disruptive performance:
  - New functionality
- Absolute lowest cost:
  - << 1/10th
- Speed-to-market
- Rapidly scalable

Historically Photonics ≠ Electronics

Electronics



Tube on Chassis

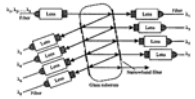


Transistor Board

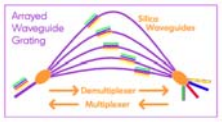


VLSI electronics

Photonics



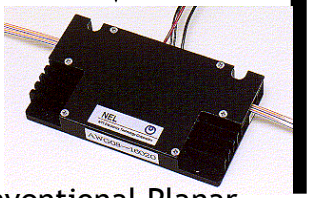
Discrete photonics



Single element integration



Thin Film Filter



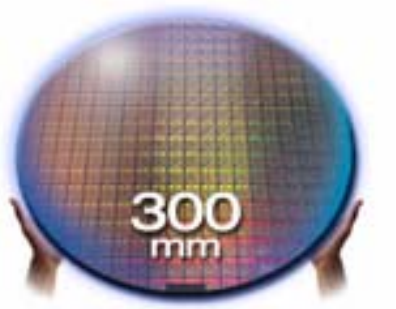
Conventional Planar Lightwave Circuit (PLC)

Barriers to extending photonics:

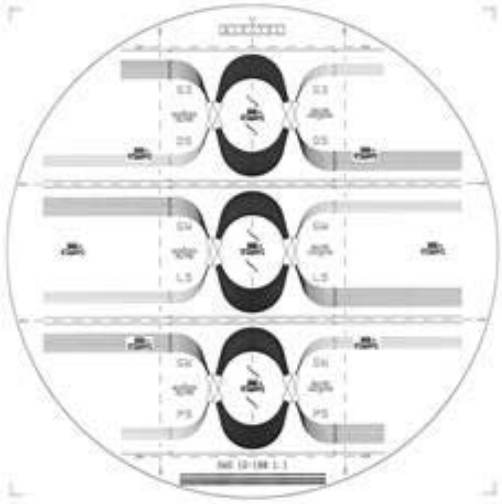
- *Doped silicon equivalent*
- *Transistor equivalent*
- *Low cost interconnect*

Hydex™ is the doped silicon equivalent

Pentium™ 12 inch wafer, 200 devices per wafer

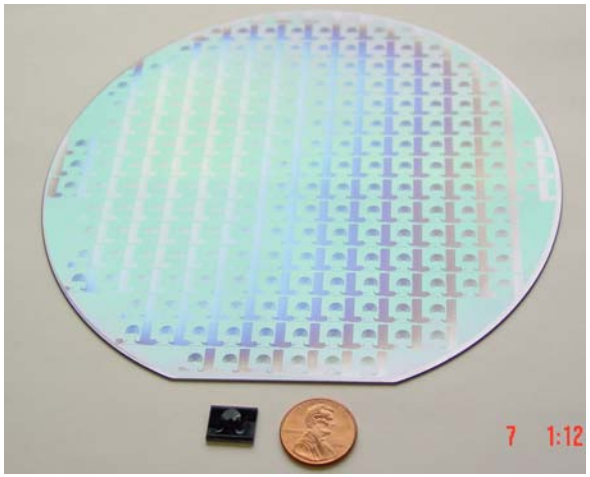


Conventional Planar Lightwave Circuit (PLC)



3-10 devices per 6 inch wafer

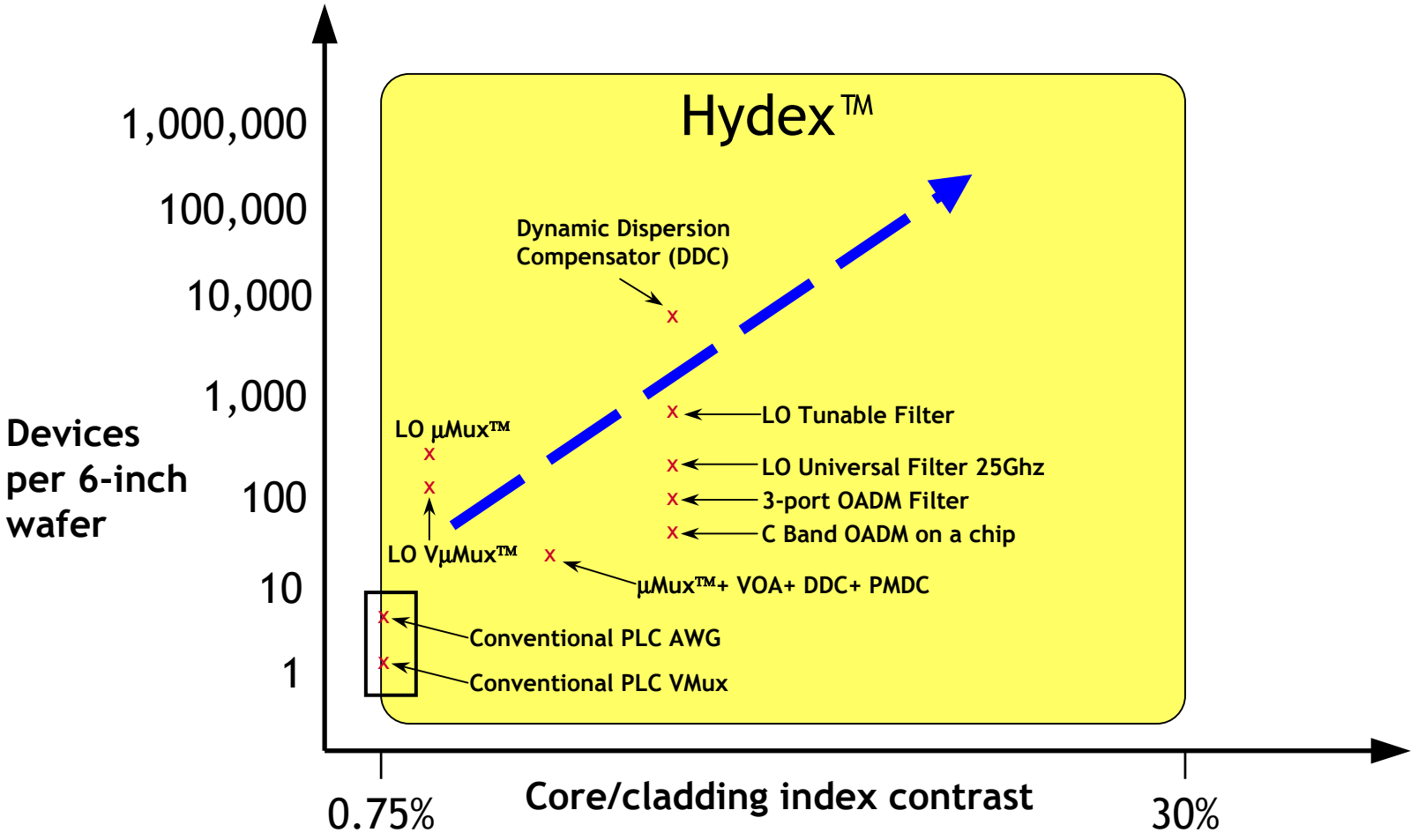
Little Optics Hydex™ and VLSI Photonics



200+ conventional devices per 6 inch wafer
50,000+ micro-ring devices per 6 inch wafer

Hydex™ allows IC like integration

Hydex™ allows more functionality per unit area

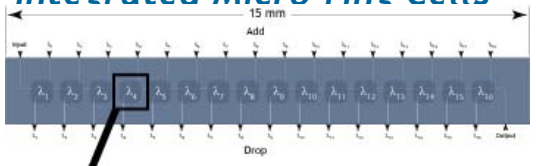


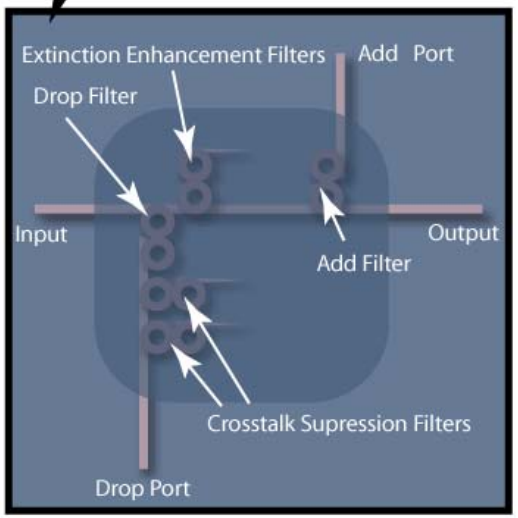
Little Optics is defining the VLSI Photonics Trend Line

Micro-ring Resonators are the transistors

- Fundamental building block
- Can perform many photonic functions
- Massive integration – 50,000+ rings/wafer
- Disruptive cost structure

Integrated Micro-ring Cells



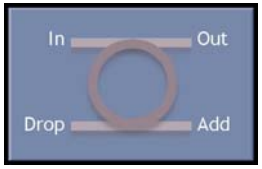


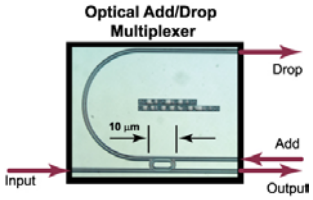
High performance Add/Drop Filter Cell

Transistor



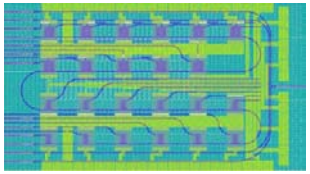
Single Micro-ring





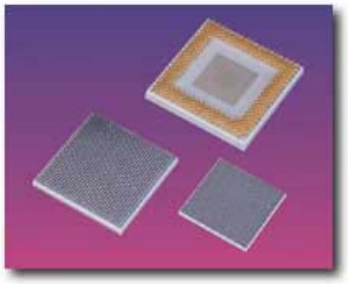
LO revolutionizes low cost interconnect

Large scale integration = dramatically reduced packaging complexity



+

IC Interconnect



Highly efficient Mode Transformer



+

Ultra-low cost Packaging



Single-side and passive alignment, low-cost Feed-through

