

## Dream Photonics Inc.

067- 2366 Main Mall  
Vancouver, BC, Canada, V6T 1Z4  
bbergman@dreamphotonics.com



Dream Photonics Facet-attached Microlens (DP-FaML) Test Station

### DESCRIPTION:

- **Subscription:** Dream Photonics will supply writing of up to 10 chips with 16 lenses per chip (total of 160 lenses) per year on customer supplied chips with compatible edge coupler interfaces. Dream Photonics will perform annual maintenance of the suitcase which will include replacement of any defective parts, replacement of the supplied fiber arrays if needed, and qualification of the test station.
- **Suitcase:** Dream Photonics will supply the following parts with listed specifications for a facet-attached microlens (FaML) test station that enables quick and cost effective edge coupling from fiber arrays to silicon photonic integrated circuits (PICs). The form factor of the test station will fit in a carry-on-sized waterproof hard sided suitcase and will contain the following parts:
  - Passive micropositioners that enable six-degrees of freedom for alignment of a single fiber array to a single PIC chip. Micrometer readable resolution of 10  $\mu\text{m}$ .
  - Overview optical microscope with built-in monitor for aiding with alignment of the fiber array and PIC. Optical zoom 10X, digital zoom 1200X with FOV of 5 mm x 3 mm at maximum optical zoom - sufficient for rough alignment of the fiber array and PIC.
  - 2x8-channel polarization maintaining fiber arrays for 1550 nm. FC/APC connectors. Each fiber will have a beam expanding and collimating facet-attached microlens attached to it.
  - Laptop for the control of components and data recording configured with Linux.
  - 160 Wh battery and battery charger (maximum allowed in carry-on without special approvals) to enable mobile operation of the test station. Runtime of ~5 hours if a TEC is used continuously along with the photodetectors, and laser.
  - PM fiber coupled laser. Fixed wavelength of 1550 nm, 1 mW output power.
  - 2x USB photodetectors to enable low-frequency data logging on the PC/microcontroller.
  - 2x PM fiber and fiber connector to interface between chip and laser/detector.
  - Example silicon photonic chips with printed facet attached microlenses. One chip from Tower Semiconductor, and Applied Nanotools will be provided that contain test structures with FaMLs attached.
  - Sample holder with Peltier heater/cooler and controller and stability of better than 0.05  $^{\circ}\text{C}$ . Programmable control to enable sweeping of the sample holder temperature.
  - Passive anti-vibration damping material in the suitcase to ensure less than 1 dB rms coupling variation due to the demo environment (people talking or walking within 1m of the test station).
  - Software to read data from the photodetectors, and adjust the temperature of the sample holder.

Item	Description	Qty.	Price (USD)
FaML-Test-Station-V1	Test station that enables edge coupling between fibers and photonic integrated circuits with facet-attached microlenses written on the fiber array and PIC. Writing of up to 10 chips with 16 lenses per chip (total of 160 lenses) per year on customer supplied chips with compatible edge coupler interfaces	1	\$25,000

- Prices do not include taxes or shipping fees
- Payment terms: 50% of price up front, Remainder upon delivery of the test station.