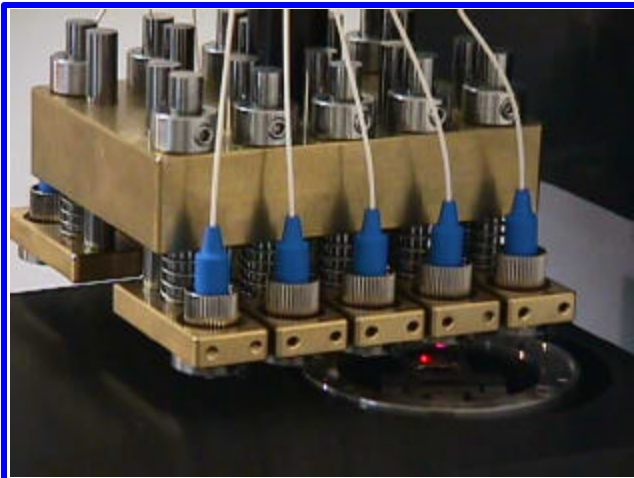
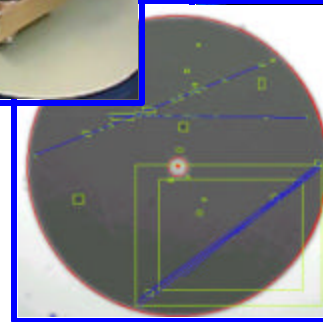
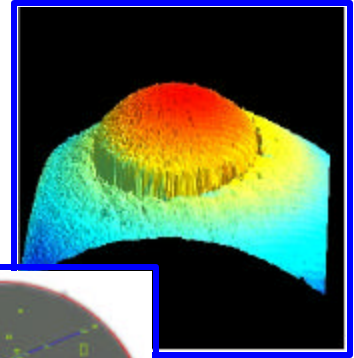
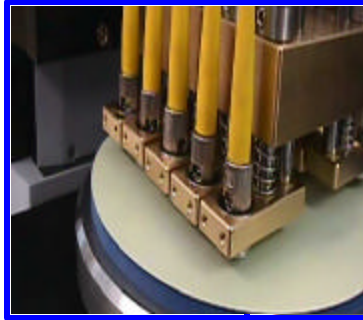




**icon™**

## Integrated Polishing and Inspection Workcell

**MULTI-STAGE OPTICAL POLISHING**  
**IN-PROCESS INTERFEROMETRY**  
**SURFACE ANALYSIS SOFTWARE**  
**INDEPENDENT SUSPENSION**  
**WORKHOLDERS**  
**PROCESSES ONE SINGLEMODE**  
**CONNECTOR PER MINUTE**  
**LOWEST CONSUMABLES COST**



*icon<sup>®</sup> automatically aligns the workholder above the inspection module for visual and interferometric testing.*



*icon<sup>®</sup> is a completely integrated system operated via PC for process control, flexibility and repeatability.*

*icon™* represents a breakthrough in fiber optic polishing technology. It is the first system that integrates complete connector inspection with polishing. *icon™* can process and inspect a connector from air-polish through final finish in less than one minute. Both interferometric measurements and surface defect analysis are performed in-line. *icon™* creates a highly efficient workcell that maximizes connector through-put while assuring quality product.

### REVOLUTIONARY

*icon™*'s interferometric module verifies critical geometries while the connectors are still loaded in the polishing workholder fixture. Surface defects such as scratches, cracks and pits can also be identified before any connector is removed from the unit. The system software automatically accepts or fails connectors based upon pre-programmed user criteria, thereby eliminating subjective interpretation by a technician. Since the connectors are tested in the polisher, there is no material transfer to separate test stations, during which potential damage and contamination can occur.

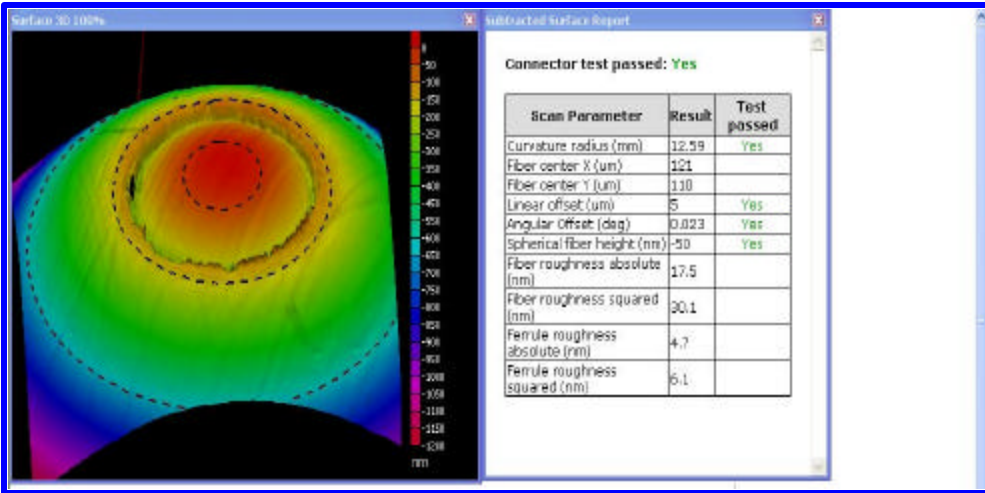
### UNIQUE

Unique to *icon™* is its workholder design. Each connector position incorporates an Independent Suspension Feature (*ISF*) that permits a controlled z-axis movement. *ISF* guarantees a uniform polish with distributed and equalized pressure across all connectors, regardless of ferrule length and tolerance, and epoxy bead height. This is especially important while polishing small-form-factor connectors and spring-less components such as ferrules and waveguides.

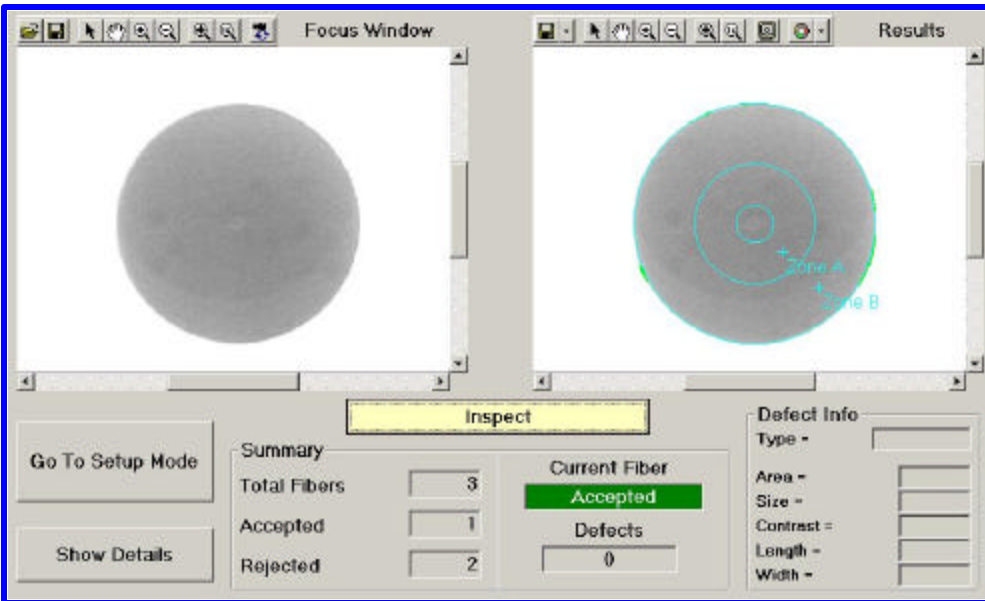
*ISF*, combined with sub-micron linear displacement for pressure application, provides *icon™* the ability to air-polish connectors. Preparatory epoxy bead removal stations are not required. Additionally, since *ISF* eliminates excessive polishing pressure, film wear is drastically reduced. Cost savings are dramatically realized through consumable life extension.

### VERSATILE

*icon™*'s multi-axis precision stages provide the capability of polishing a variety of optical components. In addition to connectors, *icon™* supports components such as ferrules, waveguides, arrays, capillaries and lenses. System operation is controlled and monitored via PC. Standard and customized polishing procedures and inspection routines prompt the technician through each process step, yielding uncompromising product performance.



Interferometric measurements and reports include all critical geometry parameters such as offset, radius of curvature and fiber height.



Automated surface analysis detects defects and accepts or rejects connectors based upon user defined pass/fail criteria.

**icon *o*IC300 System**

- Multi-stage workcell with 8 axes of motion
- Interferometric/visual inspection module
- Interferometric software
- Surface analysis software
- PC controller, system software and monitor
- Specify connector workholder fixtures.

Contact Krell for custom fixtures and process applications.

Specifications are subject to change without notice. Rev. 2, 4/03

**Polishing Performance<sup>1</sup>**

**Apex Offset**

<50 microns, maximum  
<15 microns, typical

**Radius of Curvature**

10-25 mm, 2.5 mm ferrules  
7-20 mm, 1.25 mm ferrules  
5-12 mm, APC ferrules

**Undercut/Protrusion<sup>2</sup>**

0 to -50 nm

<sup>1</sup>Polishing performance meets and exceeds Telcordia specifications, and can be optimized for specific applications.

<sup>2</sup>Dependent upon radius of curvature.

**Optical Performance<sup>3</sup>**

**Back Reflection**

< -60 dB, UPC  
< -65 dB, APC

**Insertion Loss**

<0.25 dB, typical

<sup>3</sup>optical performance may vary between connector manufacturers

**Operational**

**Connector Capacity**

Up to 12 connectors

**Connector Support**

All industry standard and custom connectors

**Process Time with Inspection<sup>4</sup>**

> one connector per min.

**Polishing Pressure**

Sub-micron, automated, linear displacement

**Polishing Speed**

Program selectable

**Cycle Timing**

Program selectable

**Polishing Motion**

Random orbital

<sup>4</sup>Singlemode UPC/APC finish.



icon *o*'s multi-stage system processes connectors from air-polish through final UPC/APC finish.