

**PRECISION OPTICAL POLISHING**

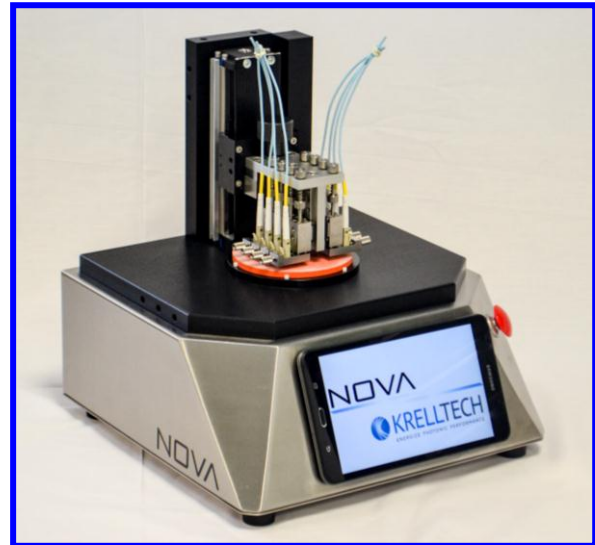
**TABLET CONTROL WITH MICROFEED™**

**SUPPORTS ALL INDUSTRY STANDARD AND CONNECTORS / MIL-TERMINI / FERRULES**

**AIR POLISHING IN MACHINE**

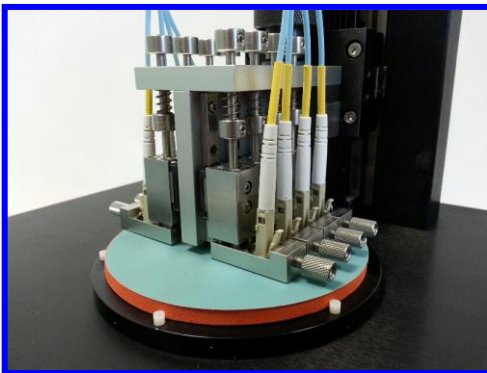
**TELCORDIA COMPLIANT**

**INTERCHANGEABLE FIXTURES FOR WAVEGUIDES, BARE FIBERS AND MORE**



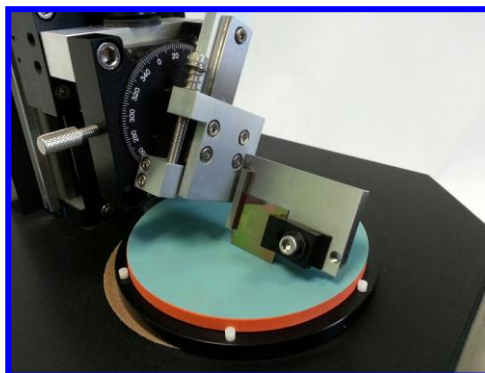
Maximum flexibility for optical surface processing is now available with NOVA™. KrellTech has integrated the proven performance and features of its industry leading Scepter, Trig and FLeX polishers into this configurable and cost-effective system.

NOVA™ supports a variety of polishing applications from connectors to waveguides, and bare fibers to custom components. NOVA™ is scalable for R&D projects, high volume production, and the rigors of harsh environments and field installation.



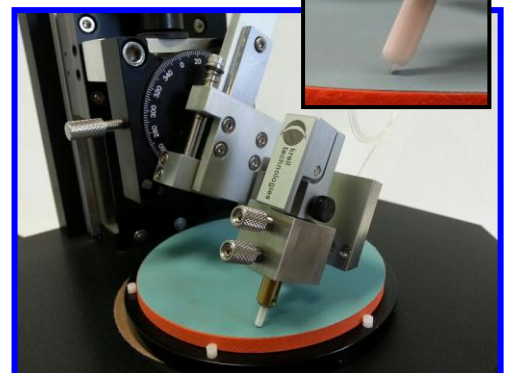
NOVA™ workholders feature KrellTech's patented independent suspension at each connector position for controlled pressure and uniform contact. Combined with NOVA's Microfeed™ fixture advancement, connector "air-polishing" and epoxy removal can be performed directly in the machine.

Each position is optically aligned for optimal polish geometry using KrellTech's patented process and calibration mechanism. Connector types can also be mixed and matched in a single fixture.



NOVA's versatility provides the ability to support the polishing of many photonic components. A quick change-out of workholder fixtures provides processing capability for waveguides, optical chips, PLCs, lenses and fiber arrays.

Workholders utilize a unique holding mechanism that can secure a wide range of component dimensions. The polishing angle is adjustable and custom fixtures can be fabricated for specialized applications.



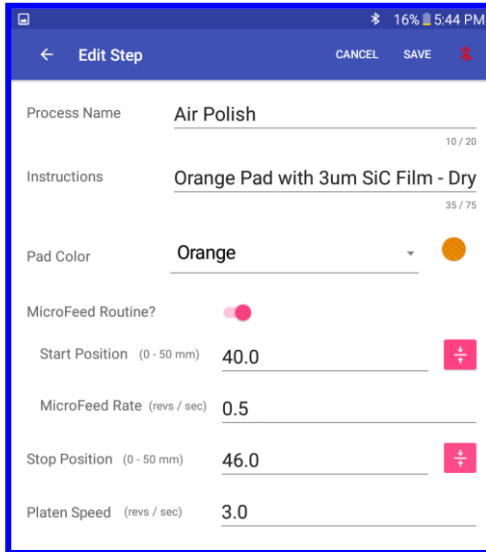
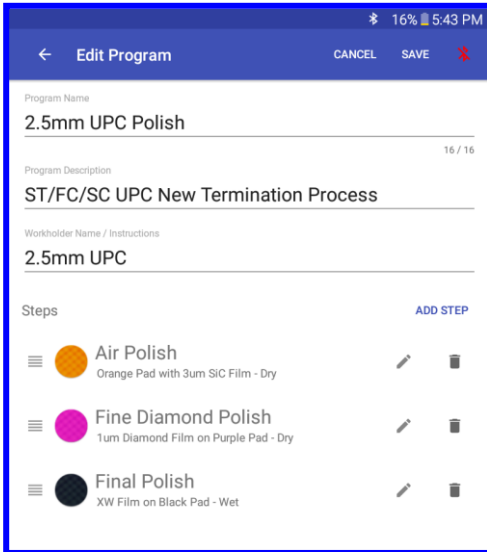
Bare fiber can be polished at variable angles using specialized workholders and adapters.=

A variety of fiber types from standard singlemode to PM, and sapphire to PCF can be processed into wedge and chisel tip shapes.

A quick swap-out of adapters allow the polishing of fiber diameters from 80um to >3mm.

Optional video inspection systems monitor the polishing process and inspect the polished surface directly in NOVA.

# SPECIFICATIONS AND FEATURES



## Operational

**NOVA™ features an intuitive user interface for creating polishing programs. All parameters including cycle time, pressure and speed settings are easily inputted for all component types and desired surface geometries.**

**A unique “manual mode” allows the adjustment of polishing parameters in real-time during NOVA™ operation. This feature streamlines process development efforts and facilitates easy and quick program creation and refinement.**

## **Controller<sup>1</sup>**

Wireless tablet with Android operating system

## **Polishing Pressure**

Programmable & automated. Linear displacement with micron positioning control.

## **Polishing Speed**

Program selectable

## **Cycling Timing**

Program selectable

## **Polishing Motion**

Random orbital

## **Polishing Routines**

- (1) Programmable, step by step prompts
- (2) Microfeed™ controlled advancement
- (3) Manual mode with full process control

## **Film Size**

4 inch diameter.

## **Equipment Footprint & Weight**

12" x 12" (305 x 305mm)  
25lbs

<sup>1</sup>Wired version available

## Connector Performance

### **Connector Support<sup>2</sup>**

All industry standard connectors  
Mil-spec termini and ferrules  
UPC & APC geometries

### **Capacity**

Up to 8 components. Selections be mixed & matched in same workholder fixture.

### **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

### **Protrusion/Undercut<sup>3</sup>**

50nm to -120 n

### **Back Reflection<sup>4</sup>**

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

### **Insertion Loss<sup>4</sup>**

< 0.25 dB, typical

### **Process Time<sup>5</sup>**

Approximately 15 sec/connector

<sup>2</sup> Polishing performance meets and exceeds Telcordia/IEC specifications, and can be optimized for specific applications.

<sup>3</sup> Dependent upon radius of curvature.

<sup>4</sup> Optical performance may vary between connector manufacturers

<sup>5</sup> Singlemode UPC/APC finish.

## Waveguide Performance

### **Component Support**

Waveguides, planar lightwave circuits, optical chips, fiber arrays

### **Component Dimension Range<sup>6</sup>**

Width: 5mm to 30mm  
Thickness: 0.5mm to 5mm  
Length: >5mm

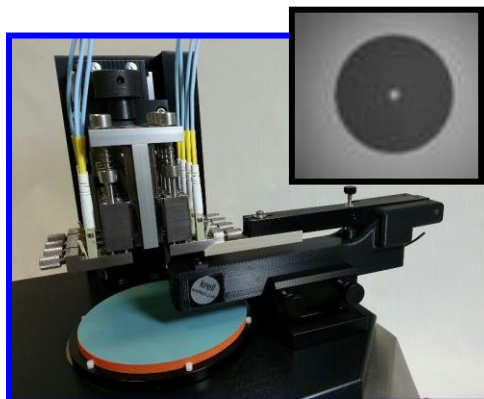
### **Angle Repeatability**

+/-0.3 degrees (X/Y axis along edge)

### **Adjustable Polish Angle Range<sup>6</sup>**

0 deg. (flat) to 45 degrees

<sup>6</sup> Custom dimensions and angles available.



## Bare Fiber Performance

### **Fiber Types**

Singlemode, multimode, PM, plastic, PCF, chalcogenide, sapphire and specialty fibers

### **Fiber Diameter**

80um to >3mm

### **Angle Range<sup>7</sup>**

0 deg. (flat) to 50 degrees

### **Angle Repeatability**

± 0.5 degrees, typical

<sup>7</sup> Referenced off fiber diameter (i.e. 8° for APC style connector polish). Custom angles available.

## Inspection Options

### **Real-Time Polishing Inspection**

80x Magnification

### **In-Line Surface Inspection**

400x Magnification (standard)  
Coaxial Illumination

### **Video Signal**

EIA/NTSC Compatible  
Switchable Source

### **Geometry Measurements**

Software for angle, length and point-to-point measurements.

Specifications subject to change without notice

Rev.1, 4/17