

**PRECISION OPTICAL POLISHING
WITH 5um AUTOMATED POSITIONING**

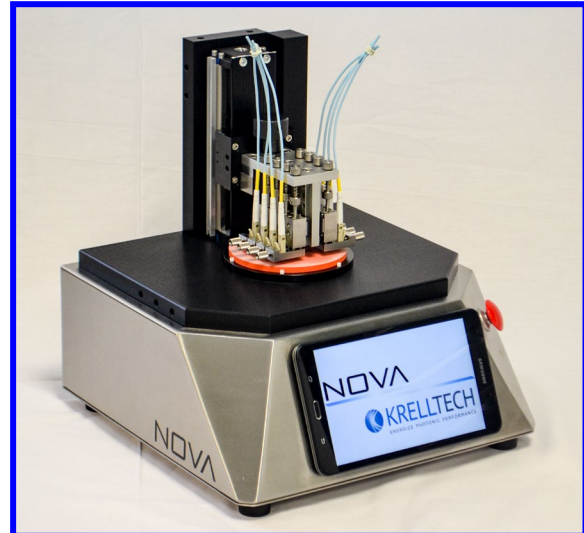
TABLET CONTROL WITH MICROFEED™

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

AIR POLISHING IN MACHINE

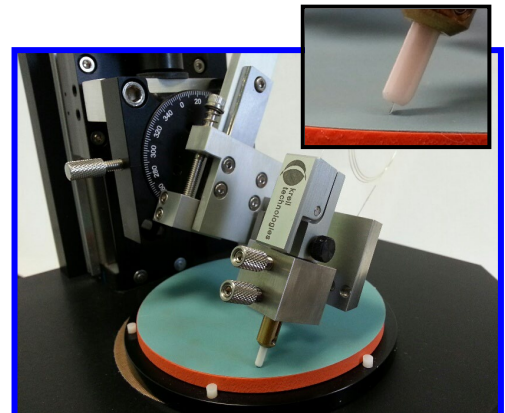
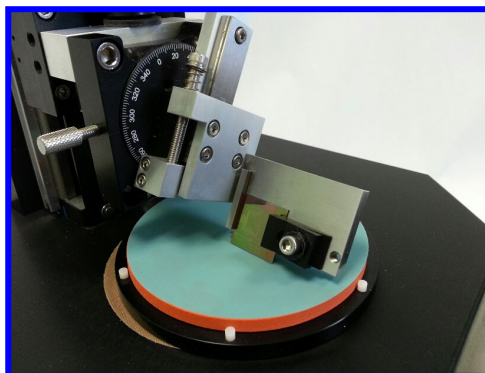
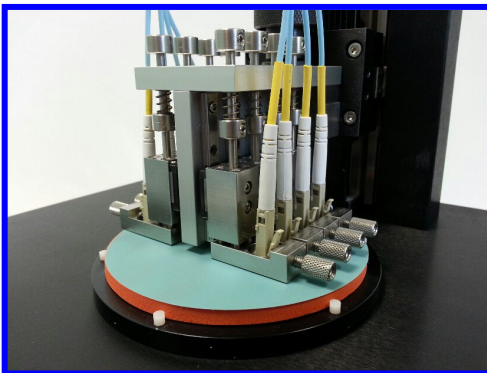
4 OR 5 INCH POLISHING SURFACE

**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 proven Scepter, Trig and FLEx polishers into this configurable and cost-effective system. NOVA is now available with a standard 4” polishing platform, or 5” for 50% more component capacity and higher product throughput.

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, PICs, FAUs, 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.

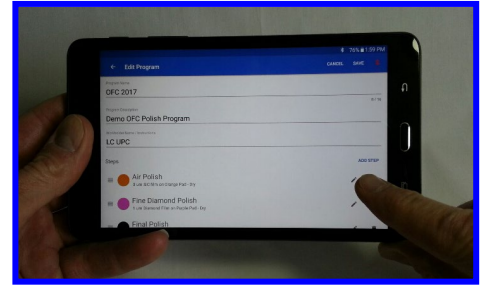
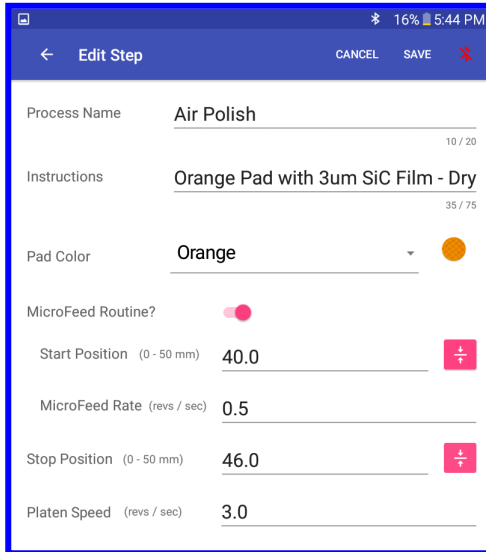
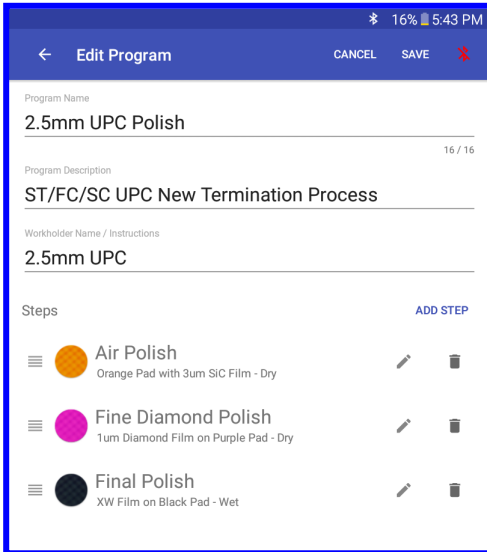
Bare fiber can be polished at variable angles using specialized workholders and adapters.=

A variety of fiber types from standard singlemode to PM, and sapphire to PCF can be processed into wedge, conical 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

Controller¹

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 or 5 inch diameter.

Equipment Footprint & Weight

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

¹Wired version available

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.

Connector Performance

Connector Support²

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/Undercut³

50nm to -120 n

Back Reflection⁴

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

Insertion Loss⁴

< 0.25 dB, typical

Process Time⁵

Approximately 15 sec/connector

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

³ Dependent upon radius of curvature.

⁴ Optical performance may vary between connector manufacturers

⁵ Singlemode UPC/APC finish.

Waveguide Performance

Component Support

Waveguides, planar lightwave circuits, optical chips/PICs, fiber arrays

Component Dimension Range⁶

Width: 3mm to 25mm/50mm
 Thickness: 0.5mm to 5mm
 Length: >5mm

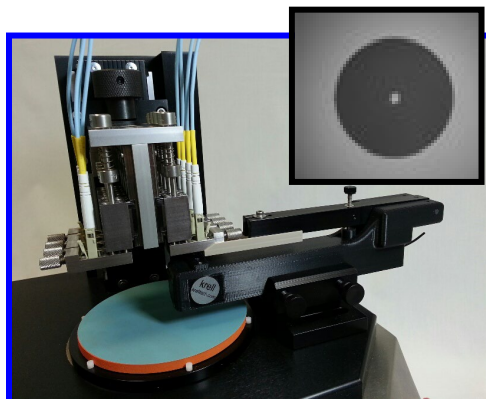
Angle Repeatability

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

Adjustable Polish Angle Range⁶

0 deg. (flat) to 50 degrees

⁶ 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 Range⁷

0 deg. (flat) to 50 degrees

Angle Repeatability

± 0.5 degrees, typical

⁷ 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

Real-Time Polishing Monitoring

X/Y axis profile viewing for geometry measurements and material removal

Geometry Measurements

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

Specifications subject to change without notice

Rev.2, 5/26