



**Manufacturer:**  
Arden Photonics

**Product Name:**  
Arden nPA-600 Optical Fiber Refractive Index Profiler

**Manufacturer Part Number:**  
NPA-600

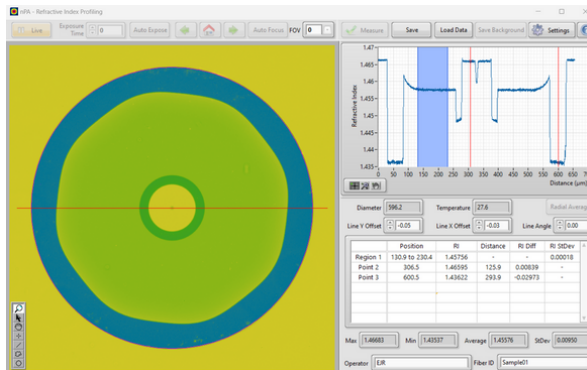
▶ [Click here for more details on the Arden nPA-600 Optical Fiber Refractive Index Profiler](#)



The nPA-600 Refractive Index Profiler uses a modified refracted near-field technique to analyse a fiber end-face to determine the full 2D refractive index distribution. The nPA-600 is the quick and easy way to get the Refractive Index data you need to verify your specialty fiber design and manufacturing processes. The nPA-600 comes with the nPA v3.0 software which boosts system performance, improves user experience, and the API allows the nPA-600 to integrate to other systems seamlessly. Optional plug-ins enable new functionalities such as measuring the geometry of single-mode and PM fibers.

**Features & Benefits**

- Measure fibers up to 600 μm in diameter
- Prepare and measure a fiber sample in under 2 minutes (2D measurement in seconds)
- Measure non-circularly symmetric fibers – good for PM, octagonal, multi-core fibers
- Preinstalled with production-ready nPA v3.0 software
  - Region cursor markers give an average of the refractive index of the marked region
  - Option to display target refractive index template alongside with actual fiber profile
  - API facilitates users customisation and integration with other systems
  - Various measurement and output options for better system performance and user experience
  - Optional plug-ins enabling new functionalities
- Traceable calibration and new calibration tools



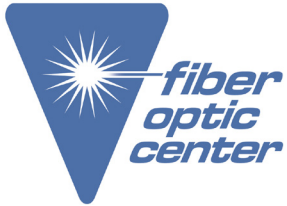
The nPA-600 with nPA v3.0 software measures fibers (including octagonal fiber) up to 600 μm in diameter with customised measurement points and regions.

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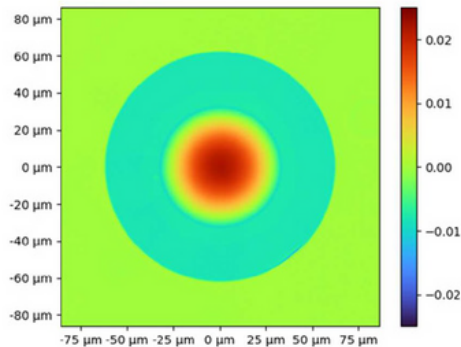
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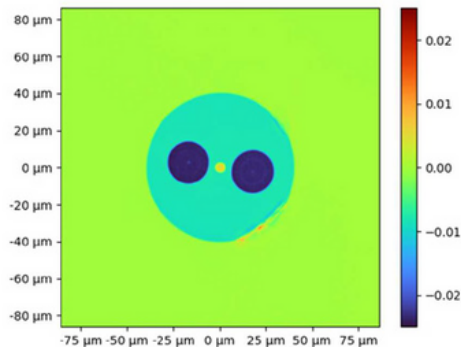
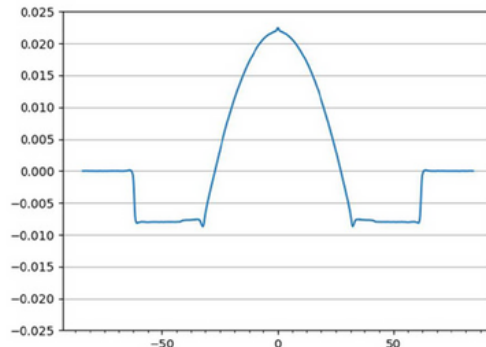
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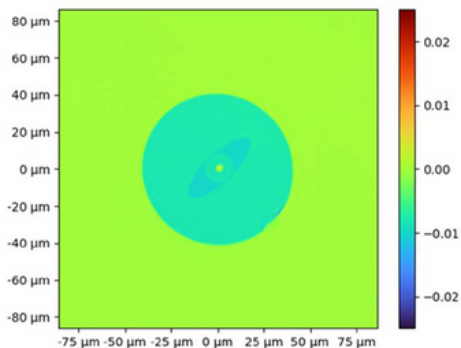
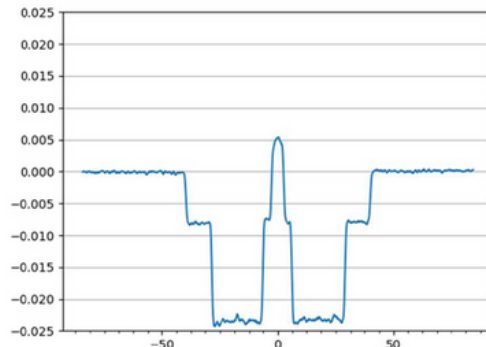
The nPA-600 measures most fiber types:



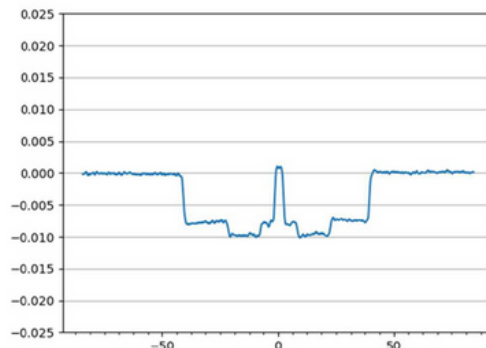
Graded index multimode fiber



PANDA PM fiber



PM fiber with elliptical stress rods



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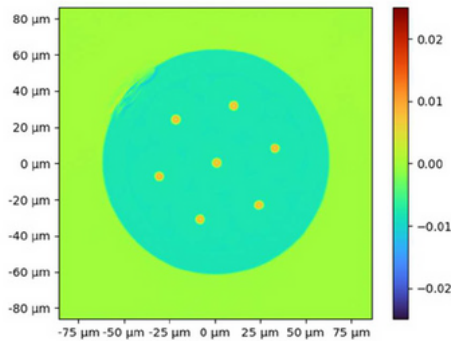
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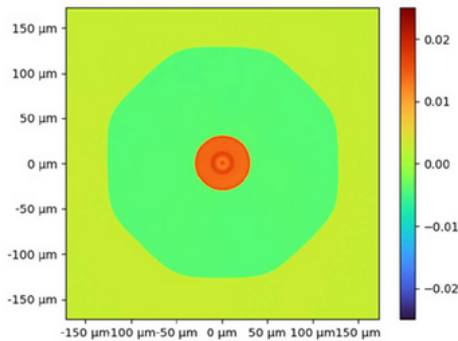
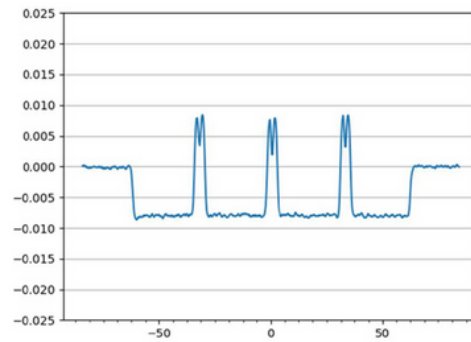
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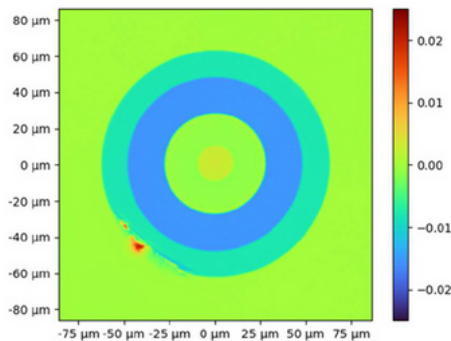
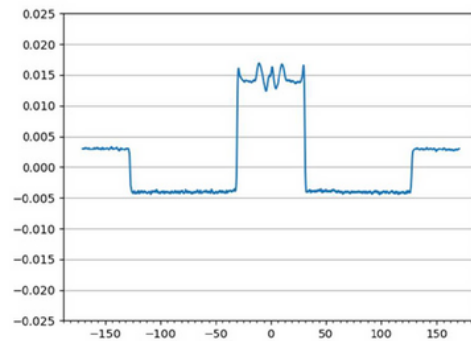
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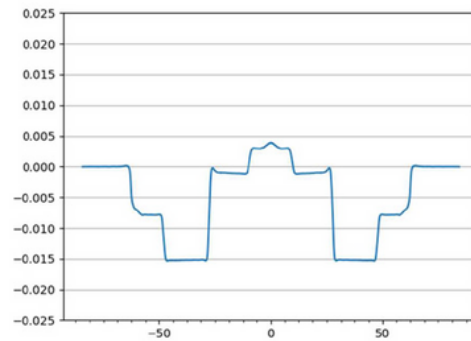
7-core multicore fiber



Octagonal active fiber with pedestal surrounding the core



Calibration fiber



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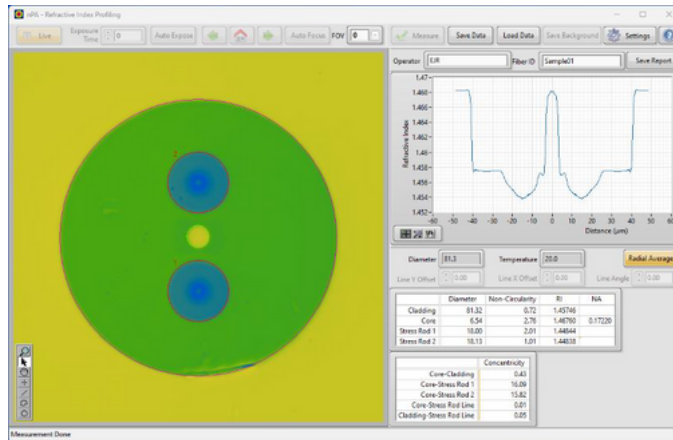
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### Optional Plug-ins (Available for nPA 3.0 software onwards)

The optional plug-ins further extend the functionalities of nPA-600. Two optional plug-ins are available for measuring the fiber geometry of specialty fibers.

- nPA-SPI01 : measures the geometry of Panda-style PM fibers, with cladding diameters 80 - 400  $\mu\text{m}$ .
- nPA-SPI02 : measures the geometry of single-mode fibers, with cladding diameter 80 - 400  $\mu\text{m}$ .

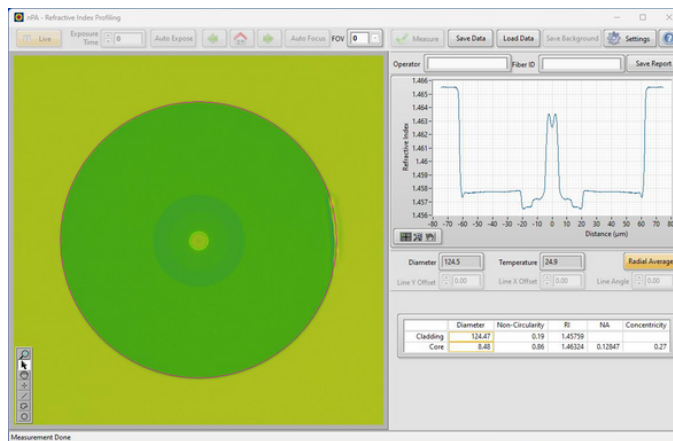
#### PM fiber measurement using SPI-01 plug-in



#### Measured values:

- Cladding – diameter, non-circularity, average refractive index
- Core – diameter, non-circularity, average refractive index
- Stress Rods – diameter, non-circularity, average refractive index
- Concentricity – core-clad, core-stress rod
- Stress Rod Line offset to core and cladding

#### Single mode fiber measured using SPI-02 plug-in



#### Measured values:

- Cladding – diameter, non-circularity, average refractive index
- Core – diameter, non-circularity, average refractive index
- Core-Clad Concentricity

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## Technical Specifications

### Measurement Capabilities

<b>Refractive Index Repeatability*</b>	0.0002
<b>Fiber Diameter</b>	40 to 600 $\mu\text{m}$
<b>Fiber Material</b>	Silica glass
<b>2D Measurement Time**</b>	< 10 sec
<b>Measurement Range***</b>	+/- 0.025

\*Repeatability is measured on a 125  $\mu\text{m}$  MM fiber sample without removing from the measurement cell

\*\* averaging 5 images

\*\*\* around reference fluid index

### Optical

<b>Measurement Wavelength</b>	630 nm
<b>Maximum Field of View</b>	830 $\mu\text{m}$
<b>Image Sensor</b>	APS-C CMOS, 6480 x 4860 pixels resolution

### Physical

<b>Weight</b>	6 kg
<b>Size</b>	0.5 m x 0.16 m x 0.13 m
<b>Operating Temperature</b>	15 - 30°C
<b>Performance Specification</b>	Validated at 22°C
<b>Computer Requirements</b>	All systems are supplied with a computer running up-to-date Windows operating system
<b>Data Interface</b>	1 X USB 3.0 (USB A to USB B: 1m cable supplied)

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## Ordering Information

Part Number	Description
nPA-600	Optical Fiber Refractive Index Profiler for full 2D measurement of optical fibers with diameters between 40 $\mu\text{m}$ and 600 $\mu\text{m}$ . Including optical unit, measurement cell, nPA-SOC oil cell, nPA-IL-1.4680 refractive index liquid kit, nPA-CS100 set of cover slips, nPA-FTK-600 fiber test kit, nPA-CC rigid carrying case, nPA-F0270 and nPA-F0620 ferrule pins, cables, software package, APL-DC desktop computer, keyboard and mouse.

Plug-ins	Description
nPA-SPI01	nPA Software Plugin for measurement of RI and geometry of Panda-style PM Fibers
nPA-SPI02	nPA Software Plugin for measurement of RI and geometry of Single Mode Fibers

Ferrule Pins	Description
nPA-F0125	nPA Fiber guide assembly for optical fiber with outer diameter of up to 125 $\mu\text{m}$
nPA-F0230	nPA Fiber guide assembly for optical fiber with outer diameter of 125 - 230 $\mu\text{m}$
nPA-F0270	nPA Fiber guide assembly for optical fiber with outer diameter of 230 - 270 $\mu\text{m}$
nPA-F0440	nPA Fiber guide assembly for optical fiber with outer diameter of 270 - 440 $\mu\text{m}$
nPA-F0520	nPA Fiber guide assembly for optical fiber with outer diameter of 440 - 520 $\mu\text{m}$
nPA-F0570	nPA Fiber guide assembly for optical fiber with outer diameter of 520 - 570 $\mu\text{m}$
nPA-F0620	nPA Fiber guide assembly for optical fiber with outer diameter of 570 - 620 $\mu\text{m}$

Optional Accessories	Description
nPA-IL-1.4680	Bottle of Immersion liquid, 10 ml, ( Refractive Index = 1.4680, measured at 589 nm and 25°C ) for refilling nPA measurement cell assembly, including syringes and nozzles
nPA-SOC	Replacement oil cell for nPA-600
nPA-CS100	Set of 100 replacement cover slips for use with nPA-600 oil cell
nPA-CC	nPA-600 rigid carrying case

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