|  |
| --- |
| **Microendoscope based on 6.4 mm-long GRIN rod** |
| **Uncorrected** | **Corrected** |
| **Radial distance (µm)** | **Axial resolution (µm)** | **Lateral resolution (µm)** | **Radial distance (µm)** | **Axial resolution (µm)** | **Lateral resolution (µm)** |
| 0 | 12.7 | 1.6 | 0 | 7.3 | 0.7 |
| 89 | 39.4 | 2.7 | 65 | 7.3 | 0.7 |
| 127 | 29.5 | 14.4 | 93 | 9.0 | 1.2 |
| 155 | 29.9 | 19.0 | 115 | 11.2 | 1.2 |
| 179 | 31.6 | 23.4 | 135 | 13.7 | 1.3 |
| 200 | 24.5 | 24.9 | 155 | 19.9 | 1.6 |
| **Microendoscope based on 8.8 mm-long GRIN rod** |
| **Uncorrected** | **Corrected** |
| **Radial distance (µm)** | **Axial resolution (µm)** | **Lateral resolution (µm)** | **Radial distance (µm)** | **Axial resolution (µm)** | **Lateral resolution (µm)** |
| 0 | 13.5 | 1.7 | 0 | 7.5 | 1.2 |
| 88 | 24.2 | 3.7 | 63 | 9.0 | 0.8 |
| 125 | 30.8 | 19.9 | 91 | 13.6 | 1.2 |
| 152 | 29.8 | 22.7 | 116 | 24.2 | 1.9 |

**Supplementary File 2. Spatial resolution of simulated uncorrected and corrected microendoscopes.** Axial and lateral resolution of simulated microendoscopes were evaluated measuring the dimensions of simulated 2P PSF for each probe at different radial distances. *x,z* (Axial) and *x,y* (Lateral) intensity profiles of simulated PSFs were fitted with Gaussian curves and their FWHM was used to define the resolution, as done for experimental PSFs (see Materials and Methods).