|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Local magnification factor** | | | | | |
| **Microendoscope based on 6.4 mm-long GRIN rod**  *f(x) = ax4 + bx2 + c* | | | **Microendoscope based on 8.8 mm-long GRIN rod**  *f'(x) = a'x4 + b'x2 + c'* | | |
|  | **Uncorrected** | **Corrected** |  | **Uncorrected** | **Corrected** |
| *a* | -0.23∙10-9  (-1.12∙10-9, 0.66∙10-9) | -0.83∙10-9  (-1.09∙10-9,  -0.58∙10-9) | *a'* | 0.52 ∙10-9  (-1.52∙10-9, 2.56∙10-9) | -0.28∙10-9  (-0.56∙10-9, 0.0059∙10-9) |
| *b* | 0.15∙10-5  (-1.07∙10-5, 1.37∙10-5) | 0.10∙10-4  (0.036 ∙10-4, 0.17∙10-4) | *b'* | -0.27∙10-5  (-2.63∙10-5, 2.08∙10-5) | -0.18∙10-4  (-0.26 ∙10-4,  -1.07∙10-4) |
| *c* | 1.03  (1.00, 1.06) | 1.29  (1.25, 1.32) | *c'* | 1.04  (0.99, 1.09) | 1.36  (1.32, 1.40) |
| R-square | 0.12 | 0.93 | R-square | 0.13 | 0.98 |
| **Radial distance calibration** | | | | | |
| **Microendoscope based on 6.4 mm-long GRIN rod**  *g(x) = dx4 + ex2 + fx + h* | | | **Microendoscope based on 8.8 mm-long GRIN rod**  *g'(x) = d'x4 + e'x2 + f'x +h'* | | |
|  | **Uncorrected** | **Corrected** |  | **Uncorrected** | **Corrected** |
| *d* | -0.14∙10-7  (-0.31∙10-7, 0.33∙10-7) | -0.33∙10-7  (-0.40∙10-7,  -0.27∙10-7) | *d'* | 0.30∙10-8  (-2.28∙10-8, 2.88∙10-8) | -0.42∙10-7  (-0.46∙10-7,  -0.38∙10-7) |
| *e* | 0.22∙10-3  (-0.24∙10-3, 0.68∙10-3) | 1.03∙10-3  (0.68∙10-3, 1.37∙10-3) | *e'* | 0.45∙10-4  (-5.25∙10-4, 6.16∙10-4) | -0.16∙10-4  (-2.44∙10-4, 2.11∙10-4) |
| *f* | 1.03  (1.00, 1.06) | 1.24  (1.20, 1.27) | *f'* | 1.04  (1.00, 1.08) | 1.35  (1.32, 1.37) |
| *h* | -0.17  (-0.67, 0.33) | 0.13  (-0.63, 0.89) | *h'* | -0.18  (-0.70, 0.34) | -0.37  (-0.87, 0.14) |
| R-square | 1.00 | 1.00 | R-square | 1.00 | 1.00 |

**Supplementary File 3. Parameters used for the computation of the local pixel size and for distance calibration of images acquired with microendoscopes.** Coefficients of the quartic functions fitting the measurements performed on images acquired on the calibration ruler for uncorrected and corrected microendoscopes based on the 6.4 mm-long GRIN rod (left) and the 8.8 mm-long GRIN rod (right). The numbers in parenthesis indicate the 95% lower and upper confidence bounds (see Figure 3E, F). R-square values are indicated for each fit.