Appendix. Reference range for Zernike coefficients ( $\mu \mathrm{m}$ ) for preschool-age children, school children and adolescents.

| Zernike | preschool-age children 95\% Reference range ( $\mu \mathrm{m}$ ) upper lower |  | school children <br> 95\% Reference range ( $\mu \mathrm{m}$ ) upper lower |  | adolescents <br> 95\% Reference range ( $\mu \mathrm{m}$ ) upper lower |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Third-order |  |  |  |  |  |  |
| $Z_{3}{ }^{-3}$ | 0.248 | -0.356 | 0.275 | -0.273 | 0.374 | -0.246 |
| $\mathrm{Z}_{3}{ }^{-1}$ | 0.316 | -0.452 | 0.234 | -0.476 | 0.262 | -0.494 |
| $Z_{3}{ }^{1}$ | 0.203 | -0.189 | 0.182 | -0.198 | 0.196 | -0.216 |
| $\mathrm{Z}_{3}{ }^{3}$ | 0.237 | -0.213 | 0.225 | -0.221 | 0.243 | -0.235 |
| Fourth-order |  |  |  |  |  |  |
| $\mathrm{Z}_{4}{ }^{-4}$ | 0.092 | -0.100 | 0.100 | -0.110 | 0.107 | -0.121 |
| $\mathrm{Z}_{4}{ }^{-2}$ | 0.083 | -0.097 | 0.070 | -0.090 | 0.097 | -0.103 |
| $\mathrm{Z}_{4}{ }^{0}$ | 0.218 | -0.288 | 0.156 | -0.340 | 0.098 | -0.364 |
| $\mathrm{Z}_{4}{ }^{2}$ | 0.11 | -0.14 | 0.130 | -0.140 | 0.162 | -0.128 |
| $\mathrm{Z}_{4}{ }^{4}$ | 0.098 | -0.122 | 0.106 | -0.150 | 0.127 | -0.140 |
| Fifth-order |  |  |  |  |  |  |
| $\mathrm{Z}_{5}{ }^{-5}$ | 0.083 | -0.055 | 0.080 | -0.050 | 0.087 | -0.060 |
| $\mathrm{Z}_{5}{ }^{-3}$ | 0.078 | -0.060 | 0.060 | -0.070 | 0.080 | -0.087 |
| $\mathrm{Z}_{5}{ }^{-1}$ | 0.060 | -0.110 | 0.070 | -0.130 | 0.097 | -0.140 |
| $\mathrm{Z}_{5}{ }^{1}$ | 0.040 | -0.480 | 0.040 | -0.050 | 0.040 | -0.057 |
| $Z_{5}{ }^{3}$ | 0.040 | -0.040 | 0.040 | -0.040 | 0.040 | -0.047 |
| $Z_{5}{ }^{5}$ | 0.050 | -0.060 | 0.050 | -0.050 | 0.070 | -0.070 |

Data belonged to normal distribution, then (-1.96s, +1.96 s) were used to calculate the $95 \%$ normal reference range, which was shown in bold. Data the not belonged to normal distribution, then the ranks were calculated, which were correspond to the 2.5 and 97.5 percentiles for $95 \%$.

