# Errata

## Thesis title: Fiber numerical aperture characterization for the single fiber reflectance technique

## Thesis author: G.B. Loozen

Page 2:

“All results show a $NA$ varying from 0.23 to 0.22 in a spectral range of 400-900 nm…..”

Correction:

All results show $NA$ **values** varying **between** 0.23 to 0.22 in a spectral range of 400-900 nm…..

Page 5:

“Additionally, optical fiber the $NA$ will also vary when a bend is induced on an.”

Correction:

Additionally, the $NA$ will also vary when a bend is induced on an **optical fiber**.

Page 13:

Equation 18: $n\_{c}$ is meant to be $n\_{co}$.

Page 14:

$NA\_{fib}$in the caption of figure 4 is meant to be $NA$.

Page 19

Paragraph number **4.2** is supposed to be **4.1**

After the sentence,

“This chapter is meant to give a basic understanding of effects that occur when inducing a bend on the optical fiber and will be used later on to qualitatively describe results obtained from the bending measurement.”

The following sentence is included for clarity:

Equations introduced will not be used to analytically describe changes in $NA\_{eff}$ caused by bending.

Page 21:

“Morgan et al., for example, have accurately described the observed oscillatory patterns as interference between light that is refracted out of the core, due to the induced bend…..”

Correction:

Morgan et al., for example, have accurately described the observed oscillatory patterns as interference between light that is **decoupled from** the core, due to the induced bend…..

Page 29:

“The profile radius will be determined for both sides of the profile and the values for the radii are summed and averaged to account for minor angular misalignments between…”

Correction:

The profile radius will be determined for both sides of the profile and the values for the radii are summed and averaged to account for **minor angular and lateral** misalignments between…

“An expression for the error in the calculated angle and $NA\_{fib}$ is derived and the errors…”

$NA\_{fib}$ is meant to be $NA$.

Page 37:

Changes made in table 7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| $$\#$$ | $$z\left(10^{-3} m\right)$$$$\pm 10^{-5} m$$ | $$r\_{left }\left(10^{-3} m\right)$$$$\pm 10^{-5} m$$ | $$r\_{right }\left(10^{-3} m\right)$$$$\pm 10^{-5} m$$ | $$r\_{average}\left(10^{-3} m\right)$$$$\pm 10^{-5} m$$ |
| 1 | **0.00** | **3.90** | **3.90** | **3.90** |
| 2 | **0.50** | 4.03 | 4.03 | 4.03 |
| 3 | **1.00** | 4.14 | 4.17 | 4.16 |
| 4 | **1.50** | 4.24 | 4.32 | 4.28 |
| 5 | **2.00** | 4.38 | 4.42 | **4.40** |
| 6 | **2.50** | 4.47 | 4.56 | 4.515 |
| 7 | **3.00** | 4.59 | 4.68 | **4.64** |
| 8 | **3.50** | 4.66 | 4.85 | 4.76 |

Page 38

“The $NA$ is then calculated with equation 51 as follows:”

**Equation 51** is meant to be **equation 18**

“The corresponding error in $NA$ is calculated is follows:”

Correction:

The corresponding error in $NA$ is calculated **with equation 51** **as** follows:

Page 39:

“Circles that correspond to the manufacturer specified $NA$, the $NA $calculated from the fiber profile with pinhole and the $NA$ calculated from the fiber profile without pinhole are drawn CCD the images.”

Correction:

“Circles that correspond to the manufacturer specified $NA$, the $NA $calculated from the fiber profile with pinhole and the $NA$ calculated from the fiber profile without pinhole are **drawn in the CCD images**.”

Page 43:

“The different colored markers in Figures 26A-F indicate the different bend radii induced per fiber.”

Correction:

The different colored markers **in figures 25A-C** indicate the different bend radii induced per fiber.

“Moreover , a comparison of the experimental results shown in figure 25A with results shown in figure 25C show an increase…”

Correction:

“Moreover , a comparison of the experimental results shown in figure 25A with results shown **in figure 25B** show an increase…”

Page 46:

“The overall results for all measurement with pinhole show a slight decrease in the $NA$ of 0.23 to 0.22 in…”

Correction:

“The overall results for all **measurements** with pinhole show a slight decrease **between** $NA$ **values of 0.23 to 0.22** in…”

Page 57:

Figure 28 is meant to be:



Changes in table 9

|  |  |  |
| --- | --- | --- |
| **#** | **Components** | **Specifications** |
| 1 | **Optic mount** | $$-$$ |  $-$ |
| 2 | **Lens tube** | $$-$$ |  $-$ |
| 2a & b | **Retaining ring** | diameter | 18 mm |
| 2c | **Pinhole carrier** | $$-$$ |  $-$ |
| 2d | **Pinhole** | thickness | 0.013 mm |
| 3 | **x-y translational optic mount.** | $$-$$ | $-$ |