CORNERSTONE STANDARD COMPONENTS LIBRARY

(On 300 nm Si_3N_4 Platform)

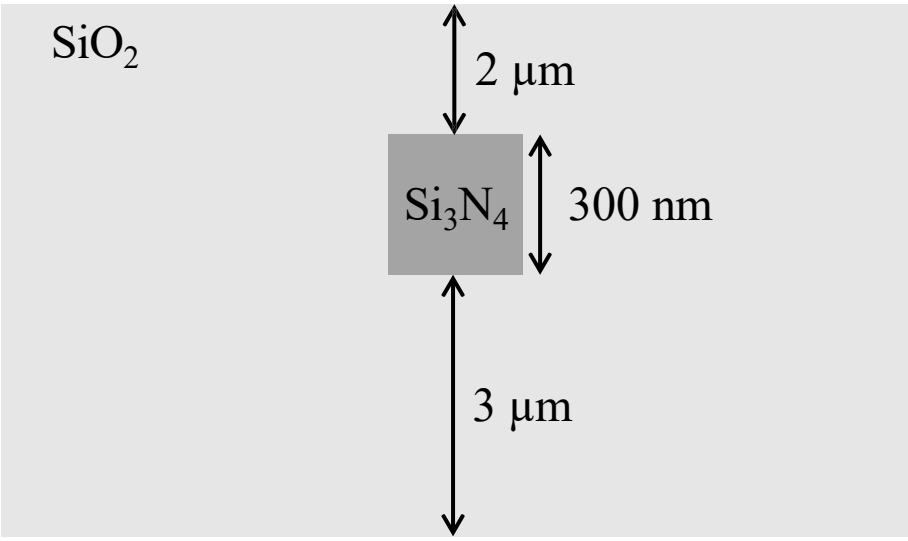
Preface

In this document, we summarise the up-to-date designs and their measurement results of our CORNERSTONE standard components on SiN platforms, at the same time we are optimising the current designs, adding in new designs, and gathering more measurement results.

List of Contents

- **Wavelength: 1550 nm**
- **Platform: 300 nm Si_3N_4**

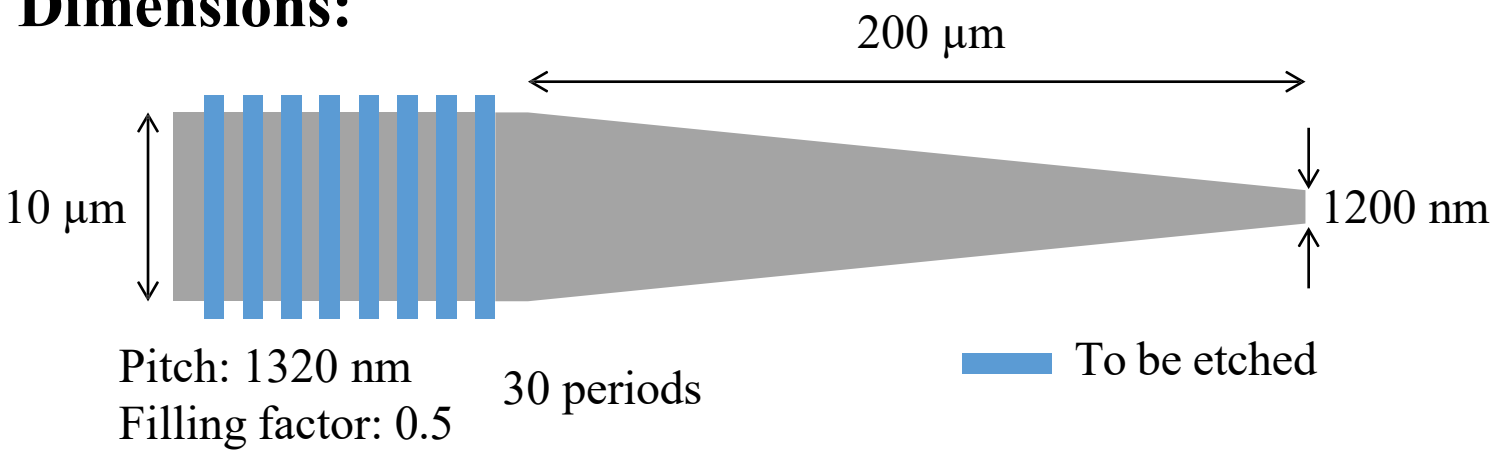
- Wavelength: 1550 nm
- Platform: 300 nm Si_3N_4
- **STRIP**



SiN300nm_1550nm_TE_STRIP_Grating_Coupler

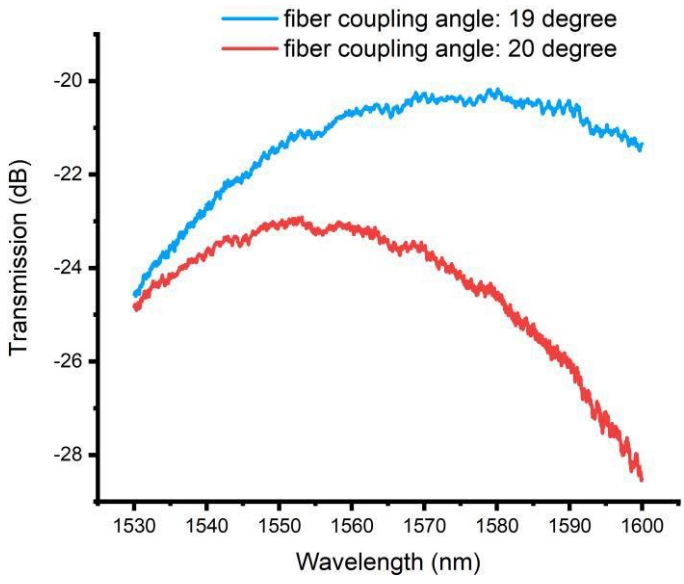
Platform:	300 nm Si_3N_4
Wavelength:	1550 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1550nm_TE_STRIP_Grating_Coupler

Dimensions:

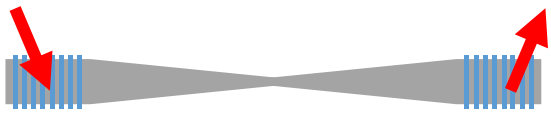


Fiber coupling angle: 19-20 degree

Measured transmission spectrum



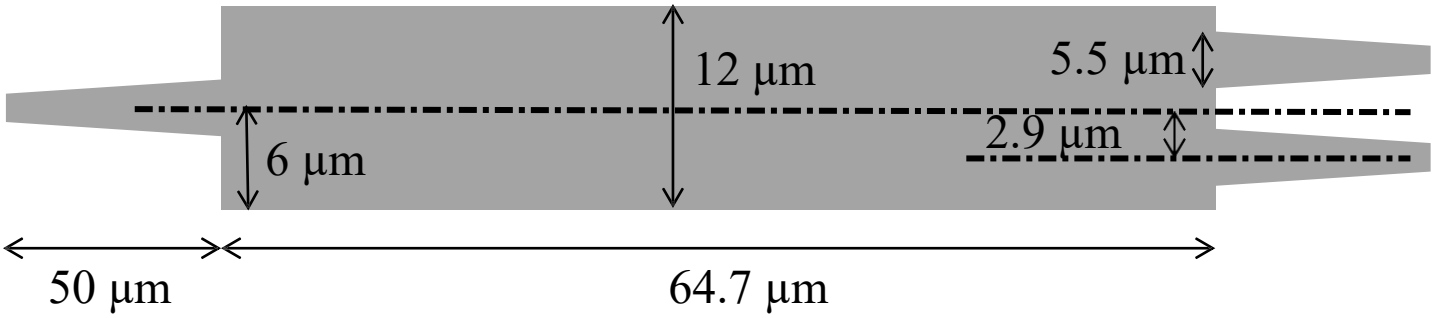
Transmission measured on a test structure as below, which includes two gratings.



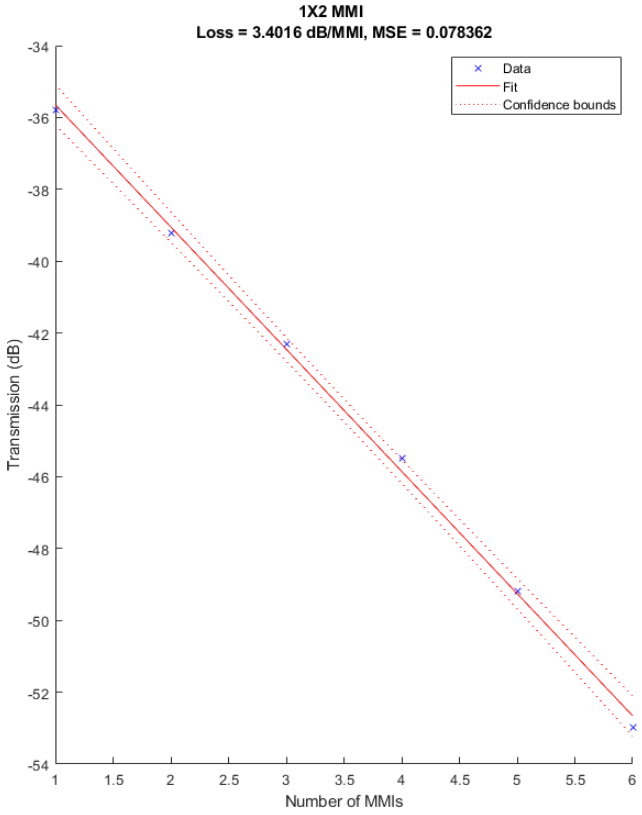
SiN300nm_1550nm_TE_STRIP_2x1_MMI

Platform:	300 nm Si_3N_4
Wavelength:	1550 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1550nm_TE_STRIP_2x1_MMI

Dimensions:



Measurement results:

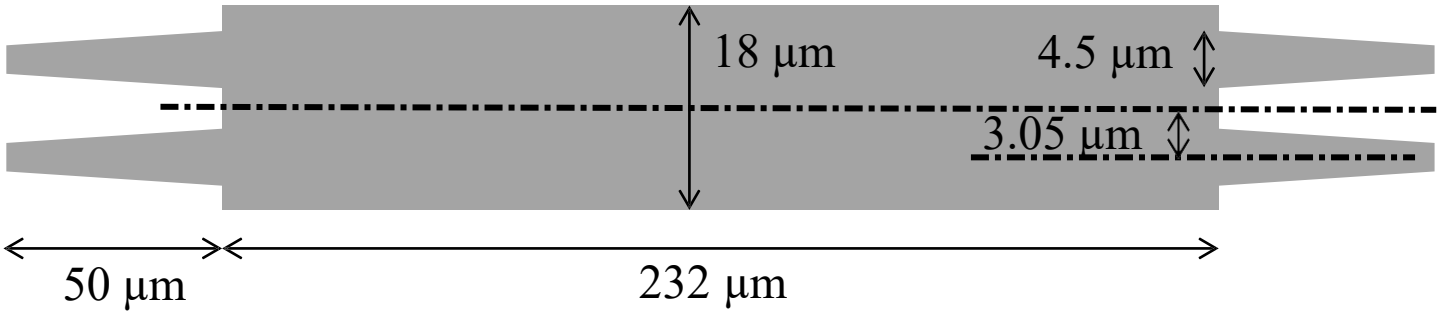


Transmission includes the measurement system loss, grating coupler loss and waveguide loss, as well as the measured device loss

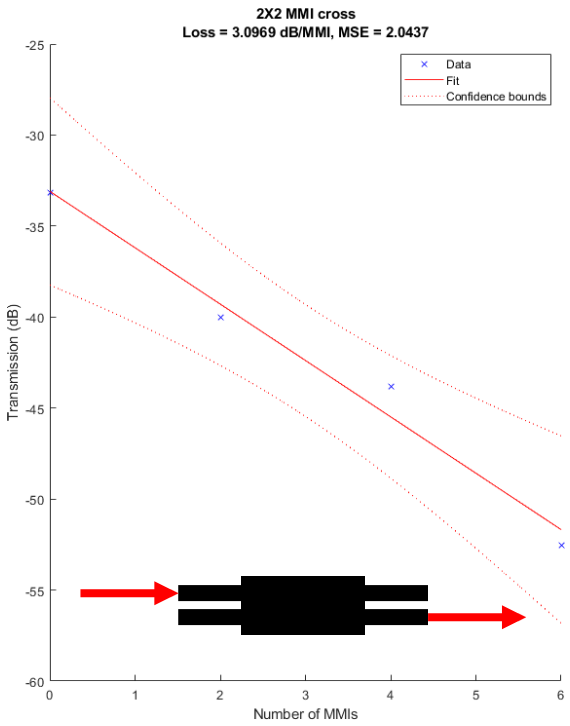
SiN300nm_1550nm_TE_STRIP_2x2_MMI

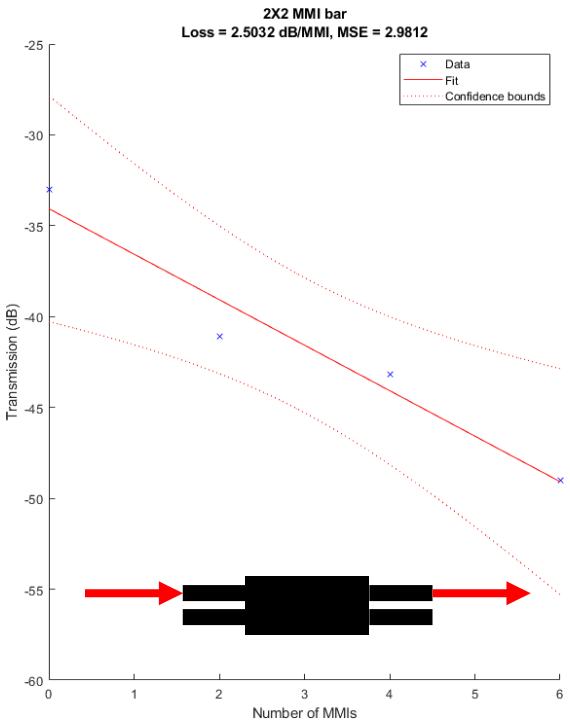
Platform:	300 nm Si_3N_4
Wavelength:	1550 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1550nm_TE_STRIP_2x2_MMI

Dimensions:



Measurement results:





Transmission includes the measurement system loss, grating coupler loss and waveguide loss, as well as the measured device loss

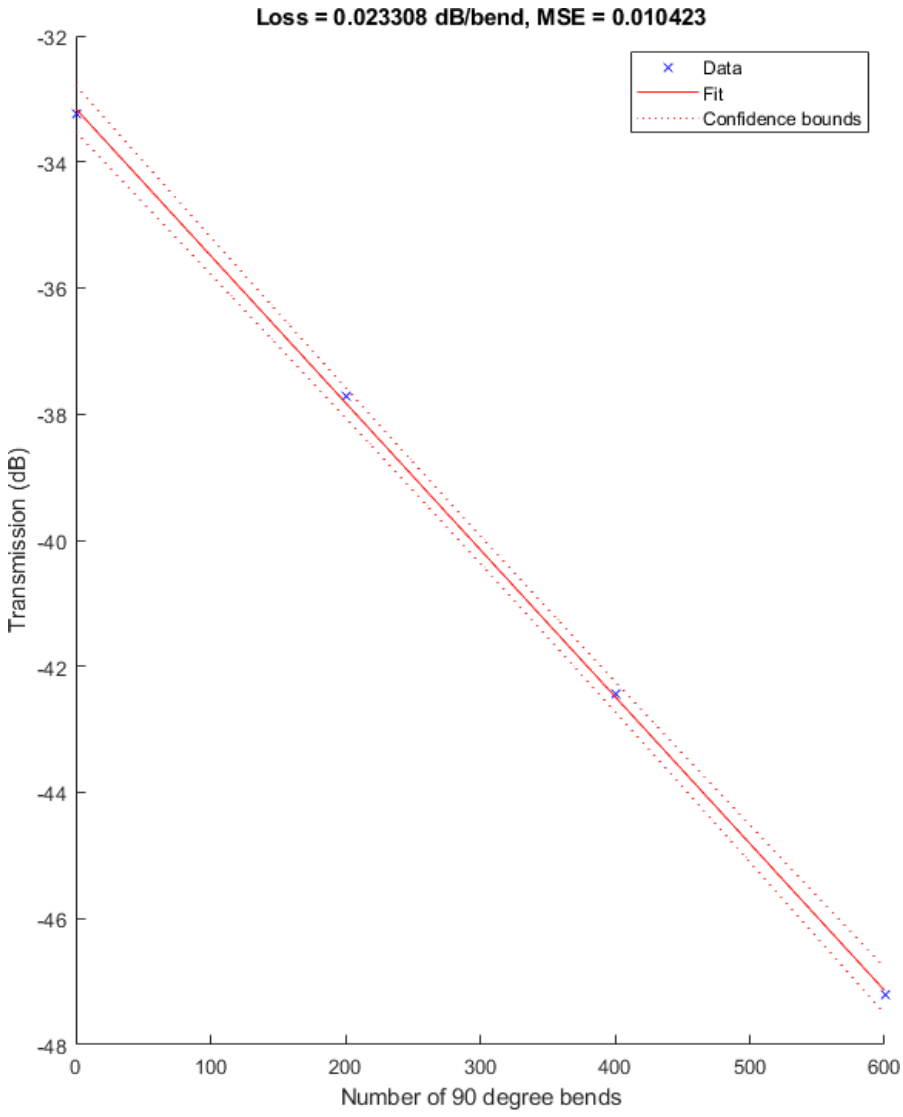
SiN300nm_1550nm_TE_STRIP_90_Degree_Bend

Platform:	300 nm Si_3N_4
Wavelength:	1550 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1550nm_TE_STRIP_90_Degree_Bend

(Suggested bend radius: 80 um)

Measurement results:

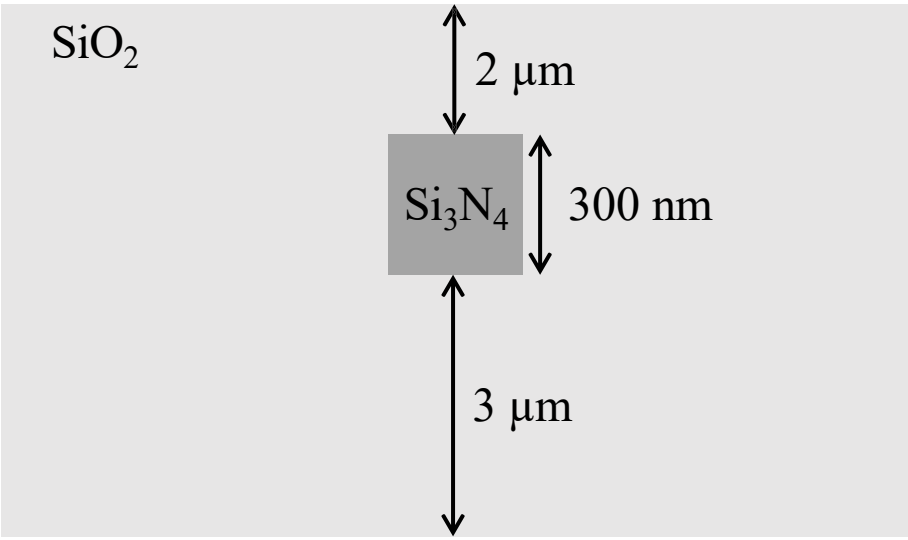
(per 90° bend)



Transmission includes the measurement system loss, grating coupler loss and waveguide loss, as well as the measured device loss

- **Wavelength: 1310 nm**
- **Platform: 300 nm Si_3N_4**

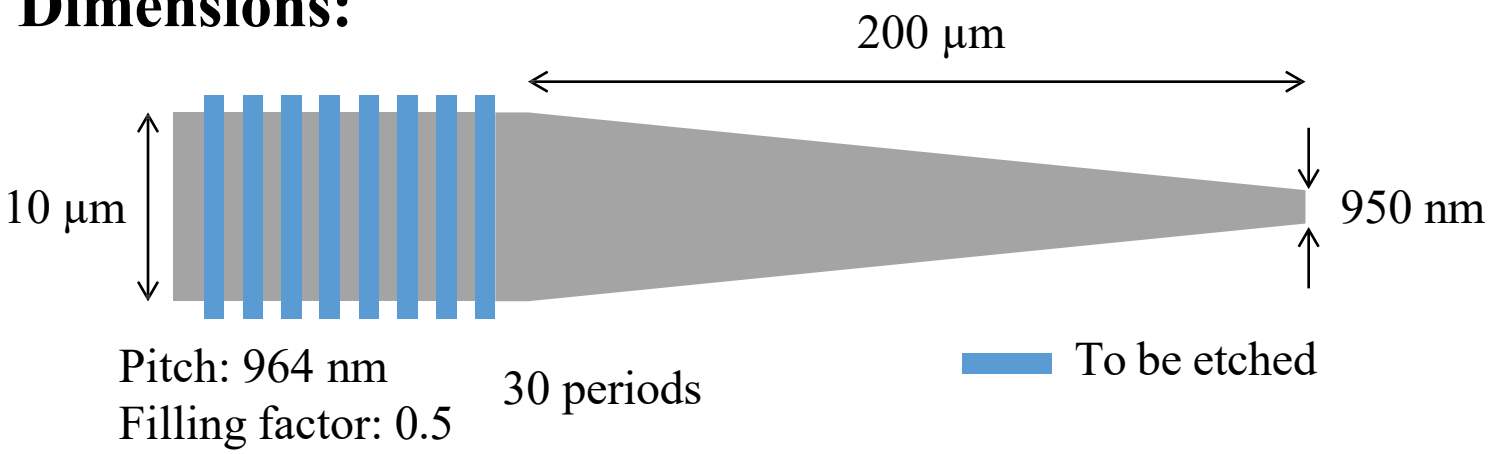
- Wavelength: 1310 nm
- Platform: 300 nm Si_3N_4
- **STRIP**



SiN300nm_1310nm_TE_STRIP_Grating_Coupler

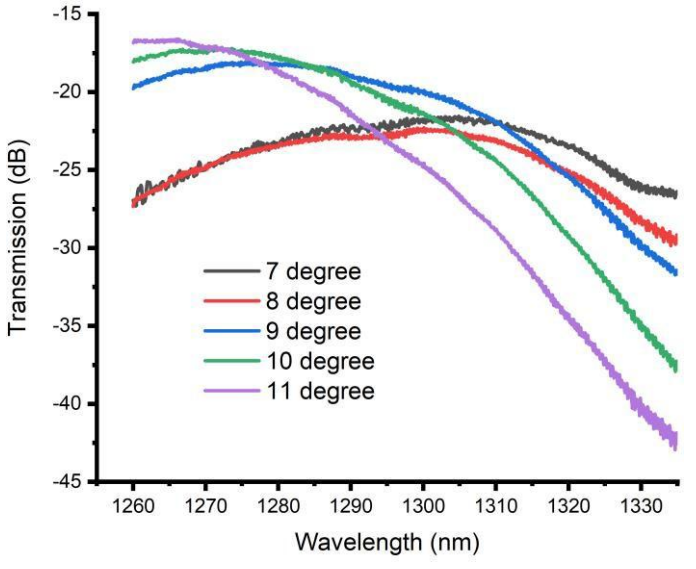
Platform:	300 nm Si_3N_4
Wavelength:	1310 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1310nm_TE_STRIP_Grating_Coupler

Dimensions:



Fiber coupling angle: 7-11 degree

Measured transmission spectrum

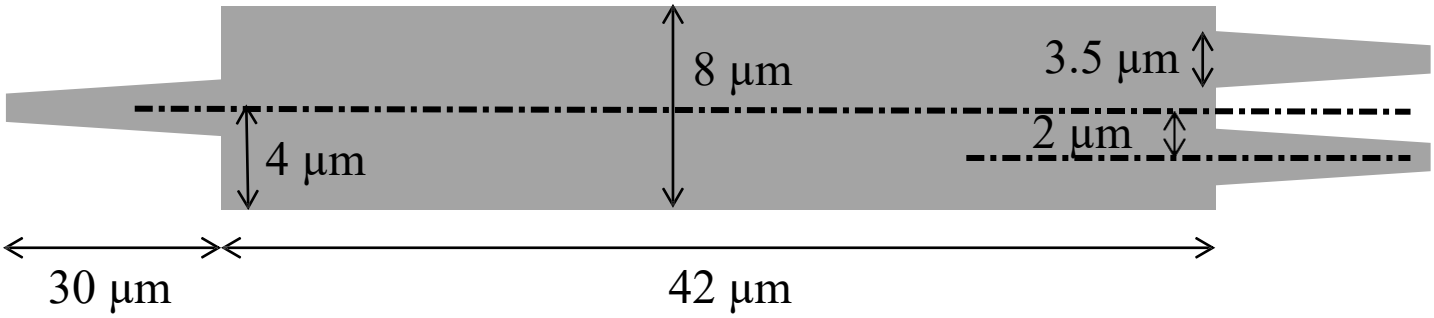


Transmission measured on a test structure as below, which includes two gratings.

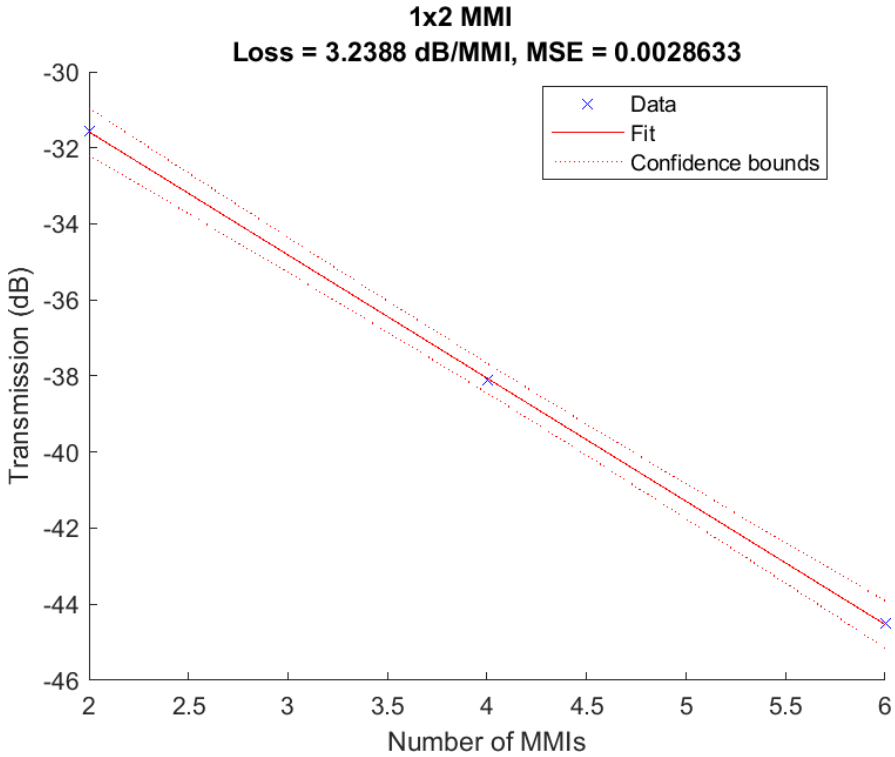
SiN300nm_1310nm_TE_STRIP_2x1_MMI

Platform:	300 nm Si_3N_4
Wavelength:	1310 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1310nm_TE_STRIP_2x1_MMI

Dimensions:



Measurement results:

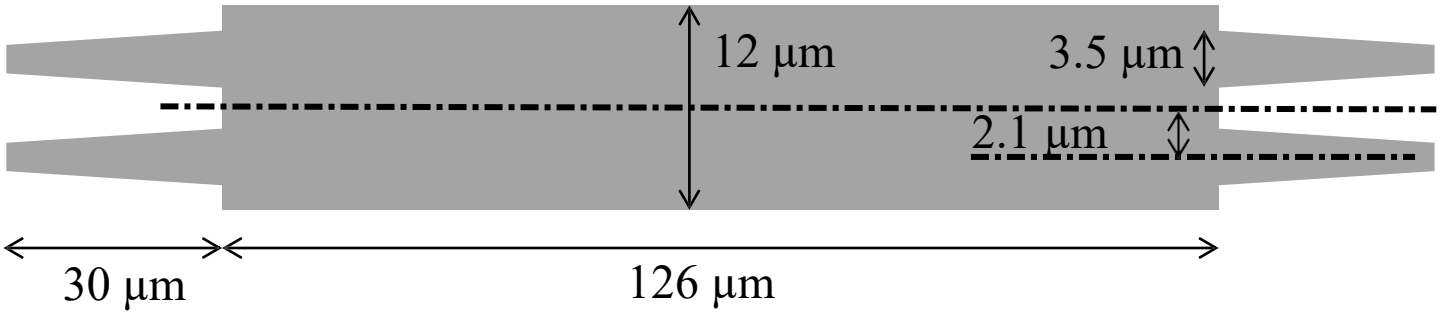


Transmission includes the measurement system loss, grating coupler loss and waveguide loss, as well as the measured device loss

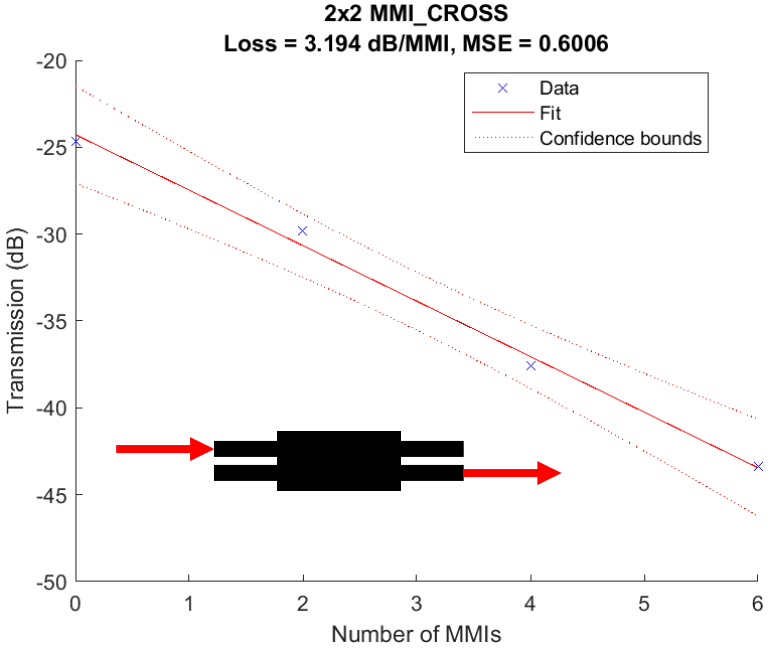
SiN300nm_1310nm_TE_STRIP_2x2_MMI

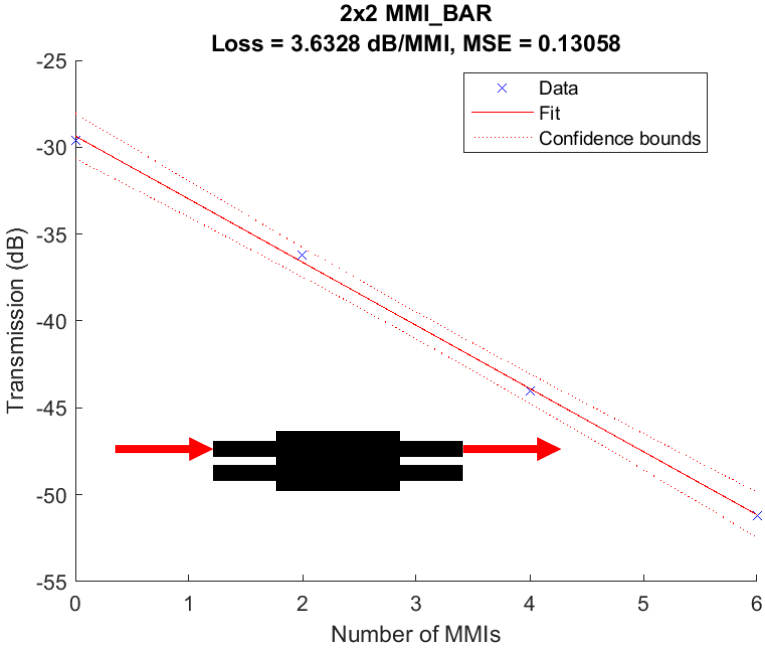
Platform:	300 nm Si_3N_4
Wavelength:	1310 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1310nm_TE_STRIP_2x2_MMI

Dimensions:



Measurement results:





Transmission includes the measurement system loss, grating coupler loss and waveguide loss, as well as the measured device loss

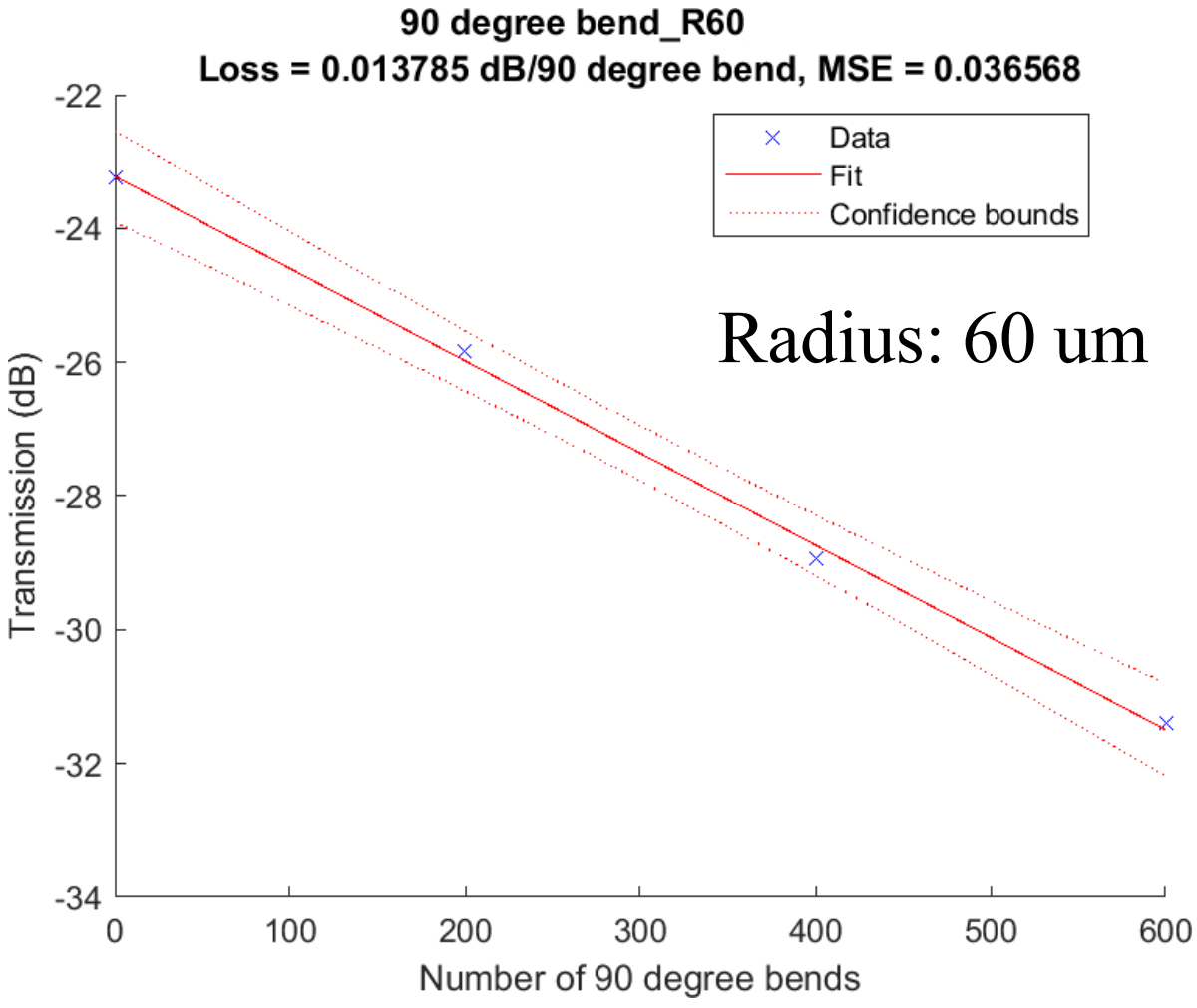
SiN300nm_1310nm_TE_STRIP_90_Degree_Bend

Platform:	300 nm Si_3N_4
Wavelength:	1310 nm
Etching depth:	300 nm
Polarization:	TE
Cell name in GDS lib:	SiN300nm_1310nm_TE_STRIP_90_Degree_Bend

(Suggested bend radius: 60 um)

Measurement results:

(per 90° bend)



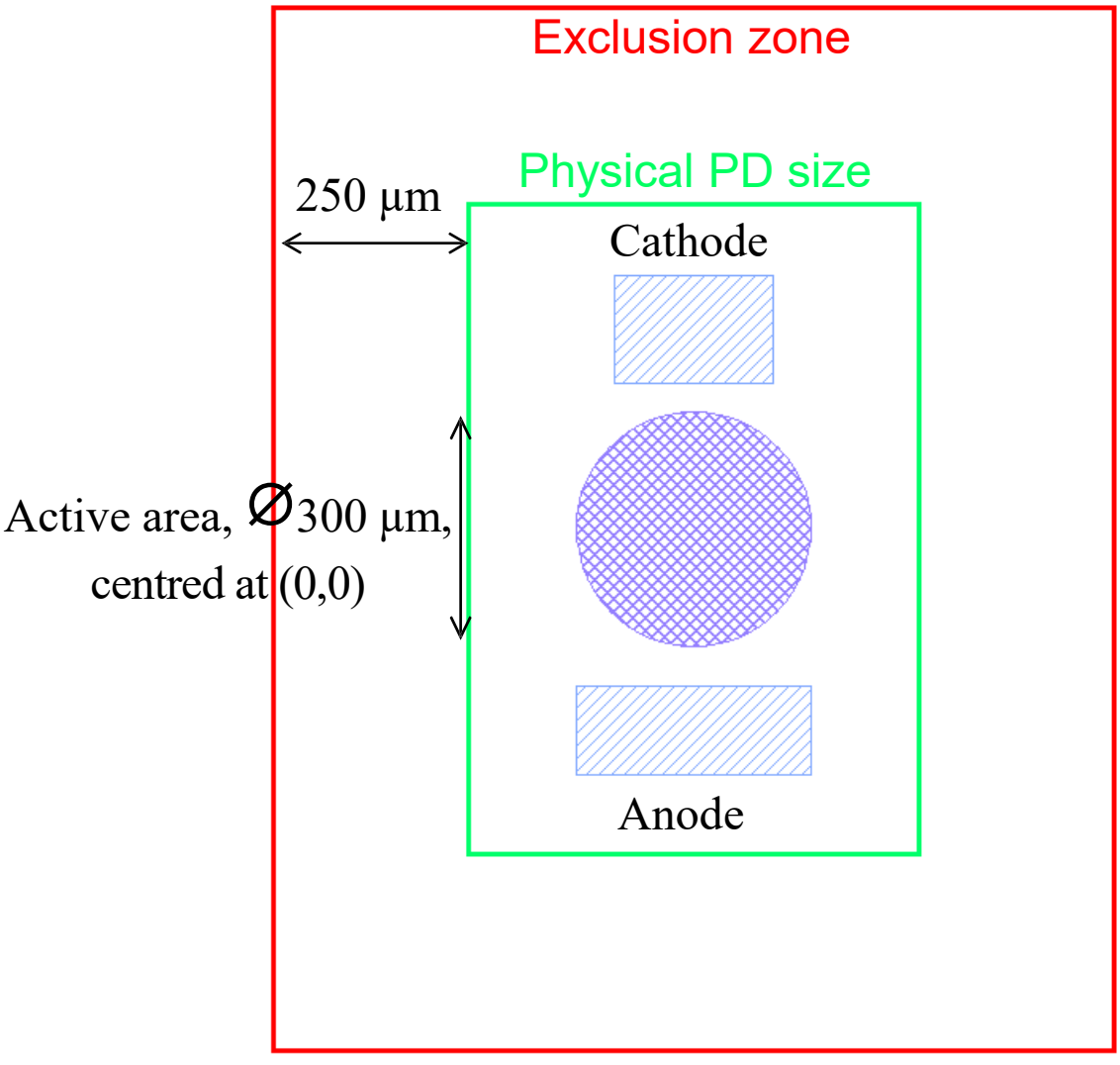
Transmission includes the measurement system loss, grating coupler loss and waveguide loss, as well as the measured device loss

- Wavelength: Broadband
- Platform: 300 nm Si_3N_4
- **SiN_PD**
- OSI Optoelectronics (FCI-InGaAs-300B1)

SiN_PD_FCI300B1_Plain

Platform:	300 nm Si_3N_4
Wavelength	900-1700 nm
Producer	OSI Optoelectronics
Model number	FCI300B1
Cell name in GDS lib:	SiN_PD_FCI300B1_Plain
Responsivity	>0.5 A/W @ λ=1550nm based on GC performance

Dimensions:



SiN_PD_FCI300B1_Integrated

Platform:	300 nm Si_3N_4
Wavelength	900-1700 nm
Producer	OSI Optoelectronics
Model number	FCI300B1
Cell name in GDS lib:	SiN_PD_FCI300B1_Integrated
Responsivity	>0.5 A/W @ λ=1550nm based on GC performance

Dimensions: