Ebeam\_GC\_SiN\_TE\_1310\_8deg

*Last Updated: Aug 2024*

**Description**

A grating coupler is used to couple light straight from a fibre to on-chip photonic components without the need for micro-mechanics etch coupling techniques. The design is a compact focusing grating coupler used for TE polarization at O-band with 8 degree insertion angle on the SiN platform offered by ANT.

**Model Name**

ebeam\_GC\_SiN\_TE\_1310\_8deg

A blue and white graph with text

Description automatically generated

Fig. 1: Compact Model of ebeam\_GC\_SiN\_TE\_1310\_8deg

**Compact Model Information**

* Support for TE polarization
* Operating at 1280 - 1380 wavelength
* Performance (Insertion Loss, 3dB Bandwidth):
  + TE – ~ 5dB of IL, ~40nm of BW

**[Insert SEM Picture & other relevant photos of model]**

**N/A**

Fig. 2: SEM Picture of [Component\_Name]

**Parameters**

A screenshot of a computer

Description automatically generated

**Simulation Results**

From [Source]:

**[Insert  Simulation Results]**

**TBD**

Fig. 3: Simulation Results for [Insert\_Details]

**Experimental Results**

From [Source]:

**A graph with a blue line

Description automatically generated**

Fig. 4: Experimental Results for ebeam\_GC\_SiN\_TE\_1310\_8deg, note: the top spectrum is slightly cropped due to some slight measurement artifact

**Additional Details**

* Design tools & methodology:
  + Lumerical 2.5D and 3D FDTD
  + MATLAB
  + Eigenmode expansion propagator (MODE Solutions)

**Reference**

1. Universal grating coupler design, <https://doi.org/10.1117/12.2042185> PCell implementation by: Yun Wang, Timothy Richards, Adam DeAbreu, Jonas Flueckiger, Charlie Lin, Lukas Chrostowski, Connor Mosquera
2. Silicon Photonics Design: From Devices to Systems. L. Chrostowski and M. Hochberg, Cambridge University Press, 5 2015.