Photonics Integrated Circuits

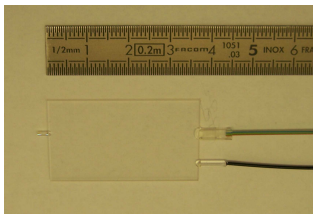
teem photonics™
High functionality, small size

Michelson-Interferometer Displacement-Sensor

Based on its Photonics Integrated Circuits (**PIC**) technology, Teem Photonics can design and realize different types of Michelson (as well as Mach-Zehnder or Sagnac) **interferometer circuits**.
Thanks to our flexible integration technology, we can uniquely combine various optical functions to create **compact, robust and reliable** optical interferometer circuits.

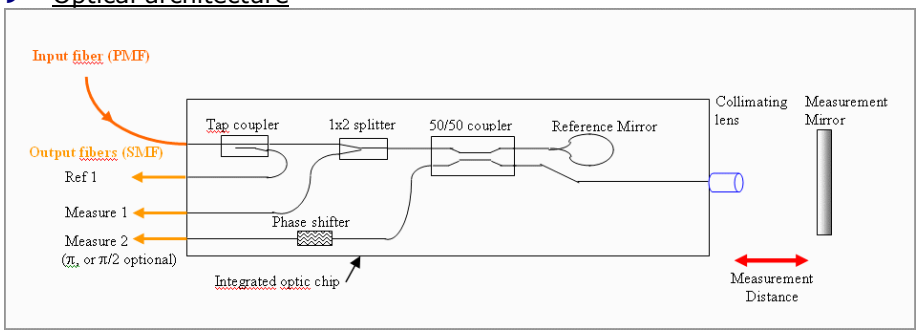
Typical applications:

- Measurement of very small displacement
- High precision position sensor
- High precision vibration sensor
- High precision refractive index measurement



Performance:

- Optical architecture



- Performance

Wavelength (nm) *for current design*	1500 to 1600 nm
Optical loss toward mirror (dB)	9
Optical loss toward detector (dB)	16
Optical path length (mm)	0 to 10mm
Minimum input power (mW)	0,1
Input fibre	PM panda fibre – 1m long
Input connector	FC/APC
Output fibre	SMF ribbon – 1m long
Output connector	MPO
Dimension sensor head (mm)	30 x 40 x 1.5
Operating temperature (°C)	-20 to +60
Storage temperature (°C)	-40 to +85
Detector head with 4 photodiodes and preamplifiers *(5V power supply)*	Optional

Features & benefits

Polarisation maintaining fiber compatibility
Our interferometer circuit is polarisation insensitive (very low PDL)

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High fibre-to-waveguide coupling efficiency
Very low coupling loss with any fibre, integrated mode size converter

Multi wavelength compatibility
Design and technology compatible with 800, 1064, 1310, 1550nm wavelength

Performance adjustment
Fine tuning of optical performance by post diffusion process

Reliable fibre pigtailing
SM or PM fibres. Laser source pigtailing available.

Temperature insensitive
Compact and monolithic integration, very low sensitivity to thermal expansion

Vibration insensitive
Monolithic integration of all functions, insensible to vibration or shock

Robust, stable, and highly reliable.
Intrinsically robust due to diffusion based process, no deposited layers, no etching.

Compatible with biomedical applications
Glass based technology

Compatible with hybrid integration
Direct coupling with laser diode, or with photodetector chips.

Optional features

Plastic packaging

Ruggedized packaging