ARCspectro NIR

DATA SHEET



Patent pending

Miniature Fourier Transform Spectrometer based on MEMS

ARCspectro patented technology enables to overcome most issues of NIR miniature spectrometers. The ARCspectro NIR series is a scanning Fourier Transform Spectrometer (FTS) using a MEMS actuator and operates with a single photodiode detector. The MEMS actuator ensures a precise, reliable, fast and miniaturized scanning system. The single photodiode detection gives cost-effective exciting features.
The spectrometer is fibre based, USB powered and portable. The modular concept of ARCspectro allows to adapt for specific applications. Our spectrometers have interfaces for implementation in more complex sensing instruments.

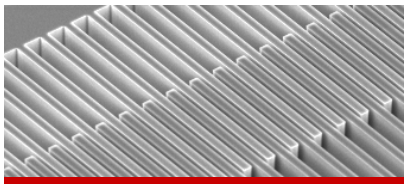
Typical characteristics of the NIR series are

- **Huge wavelength range: 500 nm - 2600 nm**
- **High resolution with a high throughput**
- **Attractive prices**

Applications

- Food, beverage, dairy and agriculture
- Gas detection, Environmental monitoring, Security
- Cosmetics, Textile, Plastics, Material identification
- Process control

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FEATURES & BENEFITS

MEMS technology (Micro Electro Mechanical Systems) allows reliable, high quality, robust, maintenance-free operation at low power consumption.

Extreme wavelength range because of Fourier spectroscopy that has no limitations contrary to grating spectrometers.

High resolution and High throughput are combined in Fourier transform spectroscopy because resolution is limited by the maximum scanning range and not by the aperture.

High speed is achieved by the fast scanning device, special data acquisition and transfer schemes via USB 2.0 for real-time measurements.

Single photodiode instead of a CCD line leads to low noise and cost-effective detection solutions.

Specifications are subject to change without notice © 2007 ARCoptix S.A.

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ARCspectro is currently providing four models of the NIR series

	NIR 0.8-1.7	NIR 0.8-2.6	NIR 0.5-1.7	NIR 0.5-2.6
Spectral range (nm)	800 – 1700	800 – 2600	500 – 1700	500 – 2600
Signal to Noise	>1:15'000	>1:10'000	>1:14'000	>1:10'000
Detector type	InGaAs	InGaAs	Si – InGaAs	Si – InGaAs

General specifications

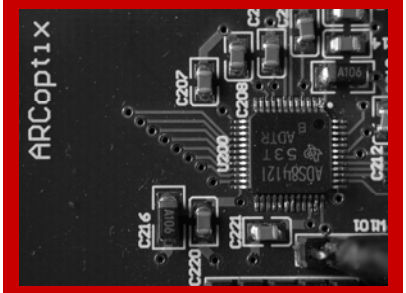
Spectral resolution 500nm 1000 nm 1700 nm 2600 nm	 0.7 nm 4 nm 12 nm 27 nm
Wavelengths accuracy	<0.5 nm
Measurement time	2.5 ms
Fiber optical connector	SMA 905
Optical entrance	100 µm (Fiber core diameter)
Sampling rate	2 MHz
A/D converter	16 bit
Operating voltage	5 V (USB powered)
Operating temperature	10° - 30°
Communication interface	UBS 2.0
Software interface	Windows XP
Product dimensions	160 mm x 110 mm x 110 mm
Weight	630 g

ARCoptix is a company located in Neuchâtel (Switzerland) in the heart of the watch valley.
For more information about ARCoptix, visit www.arcoptix.com

The ARCspectro NIR series is highly modular systems and ready for custom spectroscopy.



Interferometric module
with MEMS scanner



Detection Module

DAC Module

Communication Module

Software Module

Further options
- Silicon photodiode
- Avalanche photodiode (Si or InGaAas)
- TE-cooled detector

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