

NIRONE® SENSOR X EVALUATION KIT

With the **NIRONE Sensor X Evaluation Kit**, you can start designing your smart portable material sensing product and evaluate the functionalities of the sensor. NIRONE Sensor X is designed to be easily integrated into consumer and smart handheld material analyzing devices. The NIRONE Sensor X is equipped with an RGB sensor to provide additional information on the measurement target.



START YOUR MATERIAL SENSING REVOLUTION

Key Benefits

- Test product performance
- Evaluate the functionalities of the sensor
- Color detection opens new application possibilities
- The product family includes two evaluation kits and a developer guide which enable quick and cost-effective testing of the sensor applicability
- Easy integration to any design guarantees fast market entry with your application

Easy and fast way to start your application studies

The **NIRONE Sensor X Evaluation Kit X2.0-EVK** provides a good starting point for technology evaluation and application studies. The Evaluation Kit includes a USB board and a PC software for easy and fast application testing.

The NIRONE Sensor X is a spectral sensor measuring the NIR spectrum at 1550 nm to 1950 nm wavelength band. On top of analyzing material compositions, NIRONE Sensor X includes an RGB color sensor. This combination is the first of its kind in the world of spectral sensors and enables far more intelligent applications than ever before. The sensor was made even smaller and more cost-effective without compromising the performance. The design is based on the world's smartest and smallest spectral sensor NIRONE Sensor S. The cost level and manufacturability of the NIRONE Sensor X have been optimized for high-volume production of consumer applications and handheld material analyzing devices.

Integrated microcontroller and single connector makes it easy to integrate the sensor into any design. Sensors are pre-calibrated and you can start to use them right away in your application.

Advanced Technology

The NIRONE Sensors uses the patented Micro Electro Mechanical System (MEMS) Fabry-Perot Interferometer and are the world's smallest NIR spectral sensors. This size has been enabled by MEMS technology. The small size helps especially when designing personalized portable material sensing products.

Example Applications

NIRONE Sensor X Evaluation Kit X2.0-EVK enables you to create new applications for material analysis.

- Pharmaceuticals composition analysis
- Textile and plastics identification
- Narcotics and explosives detection
- Moisture analysis
- Process analytics
- Grain, feed and dairy analysis
- Moisture analysis

Technical Specifications

SPECIFICATIONS	VALUE
Wavelength range	X2.0-EVK: 1.55 - 1.95 μm
Light source	Tungsten Filament
Package size	47 x 85 x 20 mm
Weight	64 g
Communication bus	I2C
Detector active area (NIR)	250 μm (diam.)
Measurement spot (NIR)	ca 1.3 mm
SNR (NIR)	Typically 5000, with averaging of 100, wavelength step of 5 nm and acquisition time of 290 ms
Measurement time (NIR)	Typical 1 s
Color sensor (RGB)	TCS34725 color sensor
Power consumption	100 mW @ idle (5 V / 20 mA) 600 mW @ measurement (5V / 120 mA light source on)
Operation temperature range	+10—+50 °C (non-condensing)
Storage temperature range	-20—+60°C (non-condensing)

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