

# NIRONE® SPECTRAL REFERENCE

Spectral reflectance standards with Polycarbonate disc above Zenith Polymer®.

**NIRONE Spectral Reference** is a highly reflective PTFE-based material and a Polycarbonate disc with superior performance fully comparable to the best laboratory instruments, making it ideal for use as spectral reflection standards.

The NIRONE Spectral Reference is easy to use, for verifying the wavelength measurement accuracy of the NIRONE Sensor, NIRONE Device or NIRONE Scanner.



HIGH-PERFORMANCE AND COMPACT SPECTRAL REFERENCE

## Key Benefits

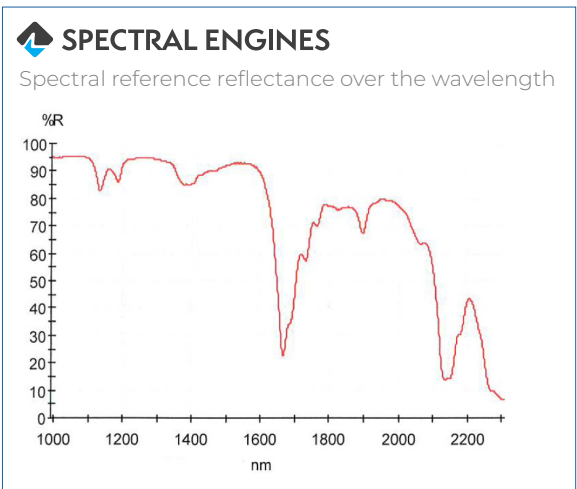
- High-tech spectral reflection standard integrated into a small package
- High reflectance over a wide wavelength range
- Resistant to UV light, high temperature and humidity
- Unique spectral features (peaks and valleys) in the range of 1000nm to 2300nm
- The durability and robustness makes it ideal to be used in challenging environments

## Advanced Technology

The spectral reference target has a protective plastic enclosure. The top side has a protective cap that needs to be removed before the measurement, to reveal the spectral reference. The bottom part holds the spectral reference material, providing a spectra with a reflectance of 10% to 95%. The spectral reference material is PTFE-based material with a Polycarbonate disc on the top side, that is resistant to heat and humidity. The spectral reference target is periodically measured to verify the wavelength measurement accuracy of the MEMS based NIRONE sensors.

The result of the spectral reference measurement is used to monitor that the NIRONE Sensor is operating correctly.

If the spectral reference target becomes dirty or damaged, the spectral reference measurements are corrupted, and the device measurement results are unreliable. Although the material is very durable, care should be taken to prevent contaminants such as finger oils from contacting the materials surface. Best way to prevent contamination is to wear clean gloves when handling the spectral



## Example Applications

- Spectral reflectance standards for verifying the wavelength measurement accuracy
- Verifying the wavelength measurement accuracy of MEMS based spectral sensors and spectrometers
- Environment test targets
- Spectral sensor characteristic and behavior

## Technical Specifications

SPECIFICATIONS	VALUE
Product	Spectral Reference
Material	Polycarbonate disc (top layer) PTFE-based material (bottom layer) (Zenith Polymer)
Operation and storage temperature range	-10°C to 60°C
Operation and storage humidity range	5% to 95% (hydrophobic)
Spectral range	1000 nm - 2300 nm
Reflectance	In the range of 10 % to 95 %
Tolerance of the features (peaks and valleys) in the spectra	+/- 1nm
Features (peaks and valleys)	Unique spectral features in the range of 1000nm to 2300nm (see chart and optional table)

## Handling recommendations

Zenith Polymer is a hydrophobic material, which means it repels water, Polycarbonate is a clear transparent material with a very smooth surface and it is sensitive to scratches and contamination from organic based substances, such as oils (fingerprints). Reference material plain surface should not be touched while using the target. Always insert the protective cover back in place immediately after measurement. Tissues and other paper products should not be used to contact the material as they may leave behind residual particles that can scratch the surface of the material. The only liquids that may safely contact the material are clean water (distilled water recommended) and optical grade Isopropyl alcohol.

For correct disposal of the old, contaminated materials either send them back to your supplier or dispose them according to the respective government regulations for organic polymer.