

sIRo – Benchtop NIR Spectrometer for Polymer Identification

Efficient polymer recycling requires reliable methods for sorting plastics by type. The compact benchtop sIRo spectrometer from IoSys/GUT delivers fast, automated identification of waste polymers, earmarking larger quantities for re-use.



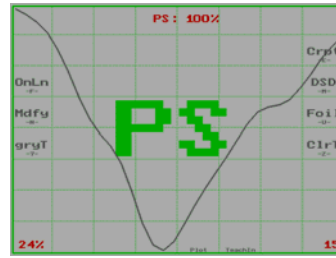
The sIRo analyzes household and industrial plastics including solids, foils, films, granules, hollow objects such as bottles, and virtually any other polymer formulation. Measurements are independent of sample surface texture, color, moisture content and contaminants. No prior sample preparation is required.

The sIRo system uses near infrared (NIR) reflection and transmission spectroscopy to analyze the characteristic absorption patterns of different polymer types in a given spectral region. The sample is irradiated with infrared light, and the light reflected from the sample is analyzed with a near infrared detector array.

Polymer identification is made possible by trained pattern recognition. Data acquired in the test are processed in a neural network. The results of this processing are displayed as percent probabilities of the polymer type contained in the sample.

Tests are performed by holding the sample under the built-in light source and test head. Almost instantly, the polymer detected appears on the integrated LCD display.

The sIRo houses an NIR spectrometer and a computer which controls the test functions. Test parameters and detailed spectral views are selected using an integrated LCD touch screen. Options include an external relay board, a mini-plotter for printing test results, and a carpet analysis feature. An external keyboard and monitor can be connected if desired. The device can be calibrated for particular applications and to the customer's samples.



- Analyzes PA6x, PA12, PE, PP, ABS, PS, PPO, PCA, PBT, PET, PC, PMMA, POM, PVC, APVC, SAN, PEPA, PEPT.
- Applications: waste polymer recycling, including household and industrial plastics
- Measurement time: 1 second
- Measurements are non-contact and non-destructive
- Measurements are unaffected by sample texture, color, moisture content or contamination
- Can be calibrated to as many as 8 user-specified sample types
- Includes 6 signal outputs to facilitate sorting
- Can be operated manually or in automated mode

