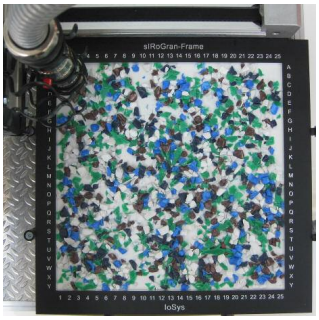
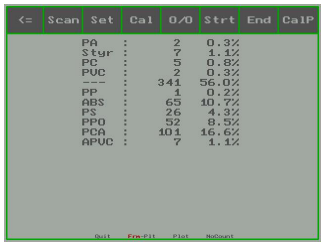
slRoGran – scanning NIR-Spectrometer for Granulates/Flakes

With the near infrared spectrometry of the **IoSys units** now it is possible to identify non-dark plastic parts directly **as flakes, pellets, ground material or granulates** in a random sampling way in order to be able to determine the quality, purity and the composition of the material very fast.

The basic principle of the method is the diffuse near infrared reflection spectroscopy whereby characteristic absorption behaviors of different polymer types are used in that spectral region. The polymer sample is radiated with a infrared light and the reflected light of the measuring focus is analyzed using a near infrared detector array.

For the **scanning plastic identification** depending on the measuring method the material is either dispersed on a so-called **MicroPlate** with 625 holes (25x25, e.g. for pellets, granulates) or directly distributed on the so-called **OpenFrame** reference reflection plate (e.g. for flakes, ground materials). The measuring head fixed in a X/Y-sledge scans the pre-set measuring area line for line. Depending on user settings and measuring mode, the identified plastics are shown in different colours at the display continuously for each given position (1..25, A.Y), together with the percentage composition. Unknown materials or non-identifications (e.g. due to dark samples) alternatively can be counted or not. The stationary device includes the optical NIR-system and the computer, which controls and evaluates the identification process as well as the power supply unit. Software operation can be made by means of an external keyboard or by the **integrated VGA touchscreen**. Thus pressing simply a X/Y-position on the display the measuring head is automatically driving to this certain place e.g. for a single confirming post-control measurement.

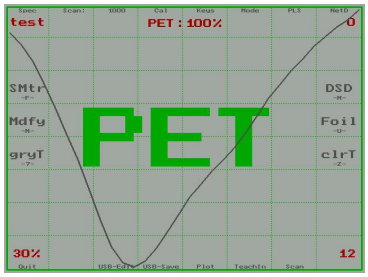




With the USB-Stick data exchanges can be made. A **Mini-Plotter** printing out the results is also integrated (dimension in mm: 480 x 290 x 390, weight: 8 kg, power supply: 100-230 VAC, 50/60 Hz).

For **manual plastic identification** the measuring rod simply is pressed on to the analysis sample. The measurement begins by pressing the start button on the rod. Within a second the VGA-touchscreen shows the recognized polymer.

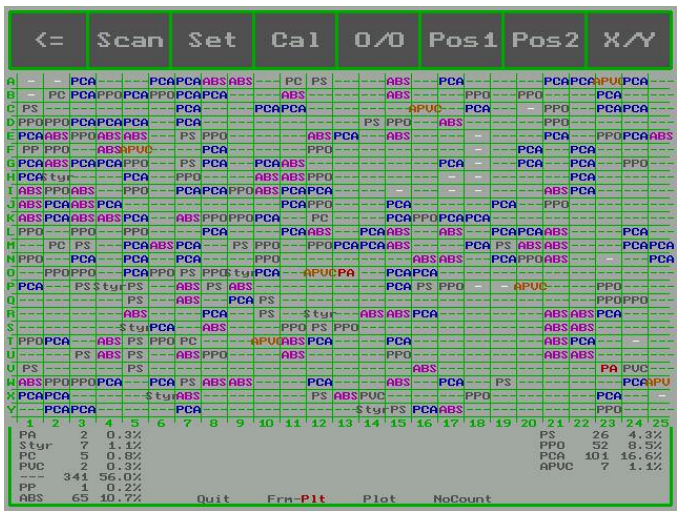
The software enables detailed spectra viewing, loading, saving and editing. This possibility helps to develop own applications.



With the **slRoGran** it is possible to recognize the identification of the following relevant plastic types **independent of surface texture** and **humidity content** in their mixing proportions or purity qualities:

PA6/PA66, PA12, PE, PP, ABS, PS, PPO, SAN, PC, PC+ABS, PC+PBT, PBT, PET, PMMA, POM, ABS+PVC, PVC, PE+PA, PE+PET, PP+PET, PLA and Cellulose.

- ✓ **Operational Area: Plastics from the household, packing and electric/electronics range**
- ✓ **Purity control of bulk materials like e.g. granulates, grinded materials, flakes and pellets**
- ✓ **Contact-free and non destructive measurement**
- ✓ **Measuring field size adjustable, grain sizes as low as less than 1 mm are measurable**
- ✓ **Measuring steps of 0.15 mm – 1.5 mm**
- ✓ **Detection and documentation of mixing ratios**
- ✓ **Individual manual measurements possible**



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