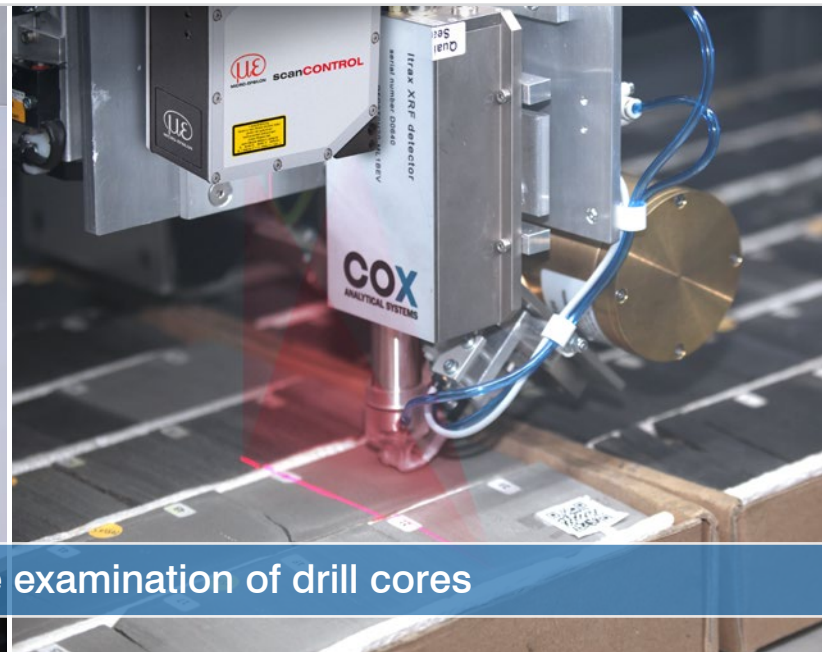




Distance control of detectors for the examination of drill cores

For the geological analysis of drill core and mineral samples Cox Analytical Systems offers special X-ray analysis equipment (XRF scanners). These allow sample analysis for almost all elements of the periodic table in one measurement run. Micro-Epsilon scanCONTROL 2600 laser profile scanners were also integrated so that the systems work as quickly and accurately as possible.

The EDXRF measuring head (Energy Dispersive X-Ray Fluorescence) moves about 1 mm above the sample surface while recording analytical data. In order to scan larger samples in a short time, the head must be moved quickly and safely over the sample surface. The Micro-Epsilon LLT2600-100 laser profile scanners ensure a small and precise distance from the sample surface. For automatic readjustment and control of the measurement head, the measurement data from the laser scanner is transmitted via Ethernet to the control system of the analyzer.

In addition, these high-precision laser scanners not only provide information about the distance from the sample surface, but also about the surface profile (circular or flat) and the unevenness. This information is also processed in the analyser and is particularly useful for scanning samples without prior sample preparation.

Micro-Epsilon scanners therefore contribute to reducing tedious laboratory work from several months to a few minutes of scanning time.

These compact all-in-one sensors provide the best conditions for direct machine integration. A small and lightweight housing with direct Ethernet output and without integral controller allow easy integration even in tight spaces. The high performance exposure control ensures stable measurement values on a wide variety of sample surfaces.

Requirements for the measurement system

- Precise distance control on various materials and surfaces
< 100 μm in XYZ
- Fast measurement at forward speeds of up to 10 mm/s
- High integration into compact machines

Ambient conditions

- Sensor integrated in X-ray analysis device, usually constant ambient conditions (clean environment at room temperature)

System design

- LLT2600-100

Advantages

- Automatic control system for collision avoidance
- Reduction of the analysis time due to exact positioning of the measuring head
- Improvement of sample analysis through information about the surface profile of the samples