



CODE ..... GT2932  
 OVERALL DIMENSION .... 238x283x84 mm  
 POWER..... 4 Watt  
 WEIGHT ..... 1,40 kg

## SPECTROMETER XRF X-50

### DESCRIPTION

It uses a miniature, rugged X-ray tube with a Rh anode (40 kV, 100  $\mu$ A, 4 W) and a 7 mm<sup>2</sup> (active area) silicon drift detector (SDD), with a full-width-of-heavy-duty resolution of 170 eV on the 5.95 Mn K-alpha line for rapid alloy chemistry analysis and grade identification. The X-50 is the smallest and lightest portable XRF system available on the market. It provides accurate analyses in just 1-3 seconds. The standard alloy library includes approximately 500 entries and can be edited or expanded; the user can add additional alloy nomenclature at any time without limits. The analyzer verifies calibration on external 316 stainless steel test material (included). The analyzer also features an advanced high-speed shutter mechanism, so the shutter is only open during X-ray analysis and closes at the end of the test. The analyzer includes two cameras for photographic documentation of tests and for identifying specific test areas on welds or non-homogeneous sample areas. The Google-supported Android operating system offers easy and intuitive operation. Built-in wireless and Bluetooth connectivity for easy connectivity to other devices. The Alloy App offers comprehensive alloy chemistry and grade identification, with the following elements pre-calibrated for all alloy bases: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Y, Se, Zr, Nb, Mo, Pd, Ag, Au, Cd, Pb, Bi, Sn, Sb, W, Ta, Hf, Re. (Additional elements can be added upon request during the feasibility study.) Profile Builder PC software for remote operations, import/export of results, and data management. Included with every system: 2 Li-Ion batteries, charger, carrying case, and 3 spare Kapton windows.

### TECHNICAL SPECIFICATIONS

- Weight: 3.1 lbs 1.40 kg (with battery installed)
- Dimensions: 9.38" (238 mm) x 11.15" (283 mm) x 3.34" (84 mm)
- Excitation Source: 4 W, 40 kV Rh for alloys, 50 kV Au for other applications.
- Detector: 7 mm<sup>2</sup> PIN diode detector (active area), 200 eV FWHM resolution at 5.95 Mn K-alpha line.
- Available Apps: Alloy analysis, precious metals, soil analysis, mining, automotive catalysts.
- X-ray Filtration: Single filter on the primary beam for alloys, mining, and precious metals. Multiple filters for soil analysis, RoHS, automotive catalysts, and other applications.
- Ambient Temperature: 10°F to 130°F (-12.2°C to 54.44°C) at 25% duty cycle.
- Analysis Range: Standard range: 24 elements; dedicated apps for specific elements. Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, W, Ta, Hf, Re, Se, Au, Pb, Bi, Zr, Mo, Pd, Ag, Cd, Sn, and Sb. Additional elements can be added upon request. The standard precious metals app includes 23 elements.
- Microprocessor and Memory: Quad ARM Cortex-A53 1.2 GHz, 64/32-bit; RAM: 2 GB LP-DDR3; Storage: 16 GB eMMC.
- Pulse Processor: 12-bit with 80 MSPS digitization rate, 8K channel multichannel analyzer (MCA), USB 2.0 interface for high-speed data transfer to the host processor. Digital filtering implemented on FPGA for processing. High pulse efficiency (peak time 20 ns - 24 us)
- Power supply: Built-in lithium-ion battery, rechargeable directly inside the analyzer or via a dedicated charger (AC power). Battery hot-swappable.
- Display: 3.5-inch (88.9 mm) color capacitive touchscreen, Qualcomm Adreno 306 2D/3D 400 MHz graphics accelerator.
- Sample visualization: Internal camera for visualizing the sample before and during analysis, facilitating correct alignment. Second macro camera for scanning barcodes and QR codes, acquiring photographic documentation, and generating reports.
- Communication/Data transfer: Wi-Fi, Bluetooth, and USB connectivity to various devices, PC software. Optional cloud data management capabilities.
- Calibration: Key parameters.
- Calibration control: External 316 stainless steel verification standard for calibration and Energy scale validation.
- Security: Analyzer activation is protected by password (user level) and internal settings (admin level).
- Dual camera: High-resolution internal camera for viewing samples, welds, etc. Macro camera for capturing photographic documentation and reading and saving 2D/3D barcodes and QR codes.
- Regulatory compliance: CE, RoHS, USFDA registered, Canadian Radiation Emitting Devices Act.

### EQUIPMENT

- 2 Li-Ion batteries, charger, carrying case, 3 spare Kapton windows, operating manual