

# Portable X-Ray Diffraction



## Terra:

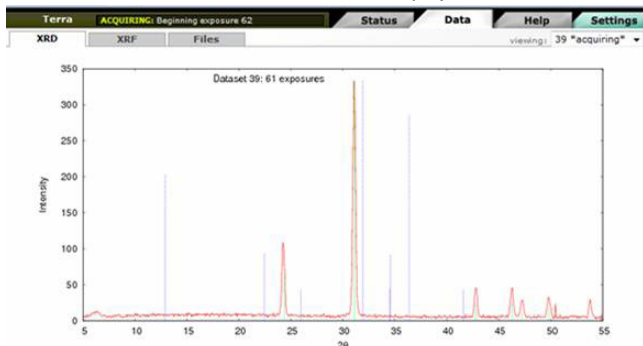
## The First Truly Portable XRD System

The Innov-X Terra is the first truly portable XRD system designed specifically for rock and mineral analysis. Now "field work" can really be done in the field. Terra can be configured with everything you need to acquire and analyze diffraction data in a rugged compact case. With our patented sample handling system, not only is sample preparation time minimized, but accuracy in peak identification previously only available using laboratory based systems can be achieved.

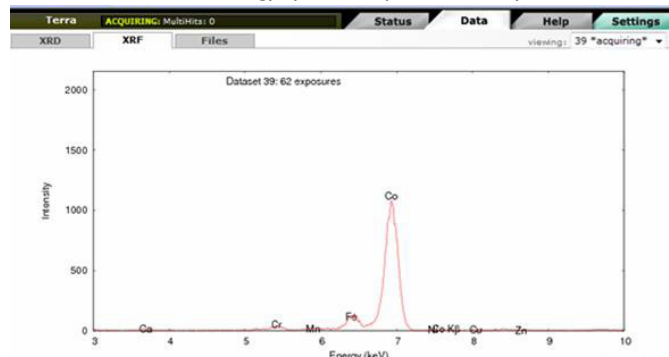


XRD is the technique of choice for accurate identification of minerals. XRD data from Terra can be readily analyzed using the software of a laboratory XRD instrument, or third party applications like Jade (MDI), X Powder, Match! (Crystal Impact), CrystalSleuth (Univ. of Arizona), etc. Identification of phases also requires the use of a library such as the ICDD Powder Diffraction Files or the American Mineralogist Crystal Structure Databases.

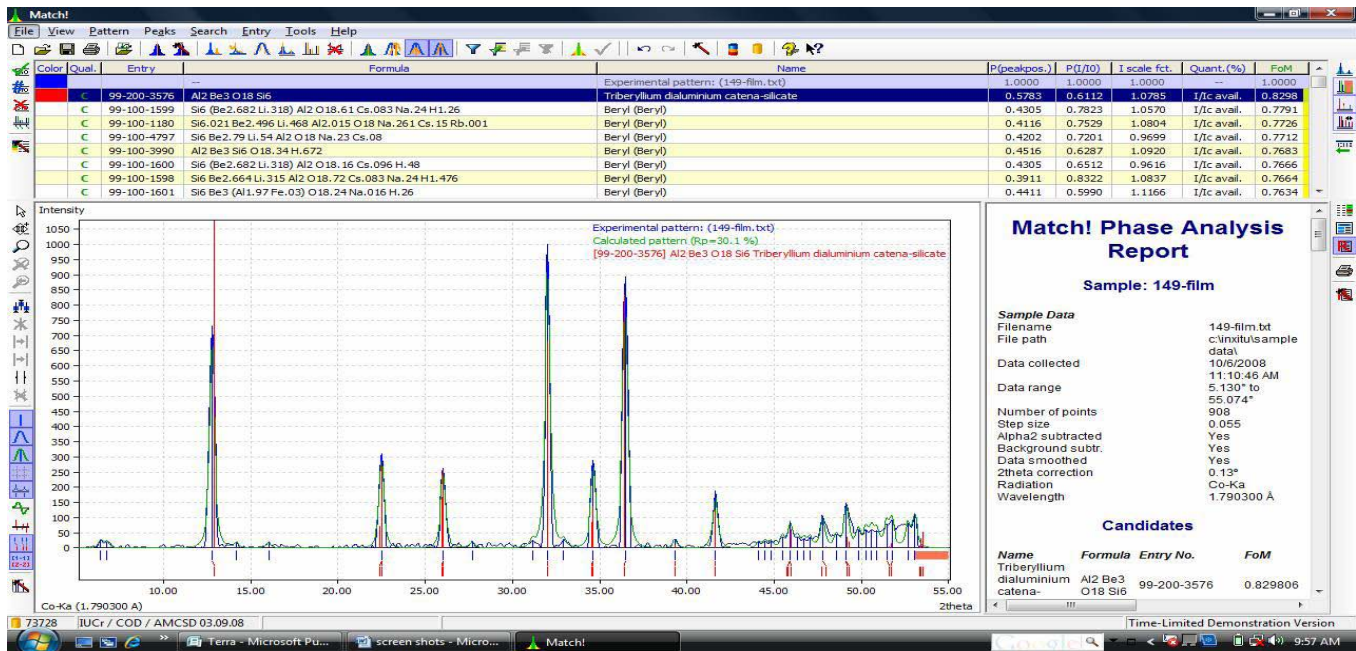
Terra XRD two-theta display



Terra XRF energy spectrum (qualitative analysis)



Terra operates off software embedded in the unit itself. The user accesses the operating system through a wireless connection (802.11 b/g). This unique method of operation allows for a wide degree of flexibility in controlling the instrument and subsequent data handling.



Available phase identification pattern matching software provides a complete analysis using either publicly available diffraction pattern databases or common commercially available databases, such as PDF2/PDF4.

Basic Specifications	
Weight:	14.5 kg with 4 batteries
Size:	48.5 x 39.2 x 19.2 cm / 19.1 x 15.4 x 7.6 in
XRD Resolution:	0.25° 20 FWHM
XRD Range:	5-55° 2θ
Detector Type:	1024 x 256 pixels; 2D Peltier-cooled CCD
XRF Energy Resolution:	230 eV (at 5.9 keV)
XRF Energy Range:	3-25 keV
Sample Grain Size:	<150µ crushed minerals (100 mesh screen, 150 um)
Sample Quantity:	> 15mg; smaller sample holder available on special order
X-Ray Target Material:	Cobalt (others available on request)
X-Ray Tube Voltage:	30kV
X-Ray Tube Wattage:	10W
Field Autonomy:	~4 hours ( can be expanded by hot swapping batteries)
Power Consumption:	85-90W during analysis
Data Storage:	40Gb; Ruggedized internal hard drive
Wireless Connectivity:	802.11 b/g for remote control from web browser
Operating Temperature:	-20° to 35°C
Enclosure:	IP67, MIL C-4150J ; rugged case

Specifications subject to change without notice.