TERRA II
X-Ray Diffraction Analyzer
Getting Started Guide

Intended Use

The TERRA II X-ray diffraction analyzer is a portable system designed primarily for analyzing a variety of powder sample types. Phase identification is obtained by comparing the diffraction signature of a sample with a database of XRD mineral patterns.

Do not use the TERRA II analyzer for any purpose other than its intended use.

Instruction Manual

Before using the TERRA II analyzer, thoroughly review the *TERRA II User's Manual* (P/N: 10-015488-01EN). Use the product as instructed. The *User's Manual* contains essential information on how to use this Olympus product safely and effectively. Keep the *User's Manual* in a safe, accessible location.

Safety Signal Word

CAUTION

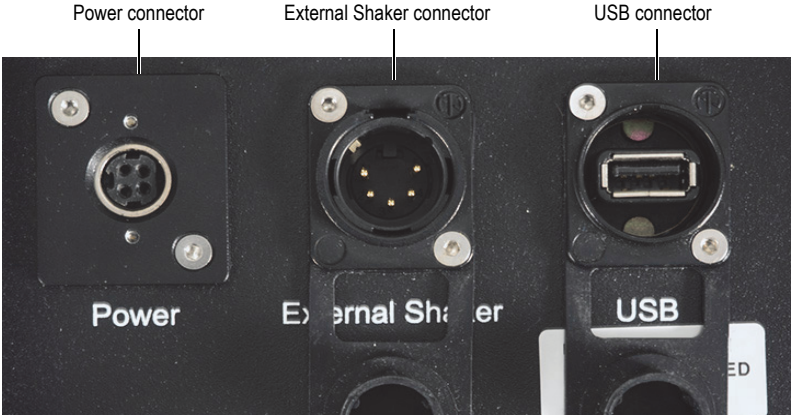
Indicates a potentially hazardous situation and calls attention to an operating procedure, practice, or the like that if not correctly performed or adhered to may result in minor or moderate personal injury, material damage, particularly to the product, destruction of part or all of the product, or loss of data.

Contents of the Case

- TERRA II analyzer
- AC power adaptor
- Li Ion batteries (4)
- External sample-shaker assembly
- Sample cells (1 Kapton and 1 Mylar)
- Sample cell screws (8)
- USB flash drive (loaded with software, database, and documentation)
- Power keys (2)
- Microspatula
- Ball driver
- Sample crusher
- Sample sieve

Connections

All connectors are on the front panel of the analyzer.



To Connect AC Power to the TERRA II

CAUTION

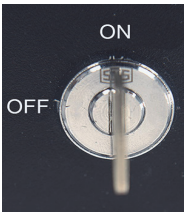
If an unauthorized power supply cord is used to power the instrument, Olympus cannot guarantee the electrical safety of the equipment.

1. Hold the power supply output plug with the flat edge in the orientation shown, and then insert it into the Power connector.

2. Plug one end of the AC power cord firmly into the power supply.
3. Plug the other end of the power cord into a live AC (mains) power outlet.

To Turn On the Analyzer

◆ Turn the power key clockwise to the ON position.



The system briefly displays the message:

Welcome to TERRA

Please wait

After a few minutes, the display reads:

Cooling to: –45

Current temp: (temperature)

After the detector cools to –45 °C, the main menu appears.

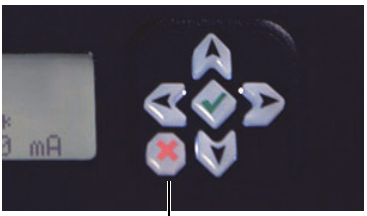
To Turn Off the Analyzer

◆ In case of an emergency:

Turn the power key to the OFF position.

OR

Quickly press twice the Stop/Emergency Shutoff button.



Stop/Emergency Shutoff button

OR

◆ Under normal conditions:

a) Select **Shut Down** from the main menu to power down the TERRA II analyzer.

The display reads:

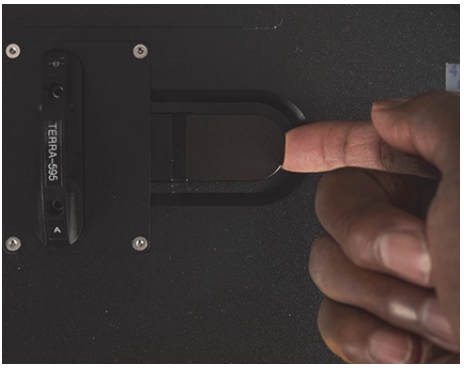
Shutting down...

Please wait...

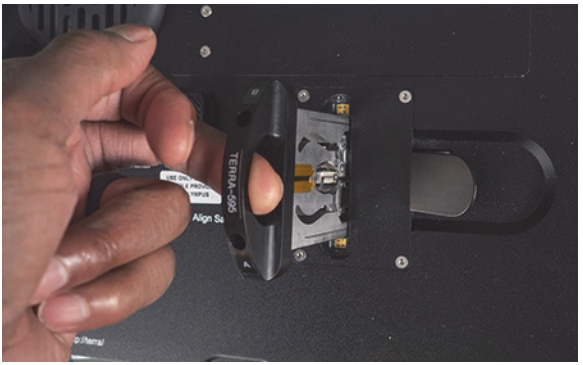
b) After the analyzer has shut down, turn the power key to the OFF position.

To Load a Sample

1. Unlock the sample carrier by pulling up the lever.

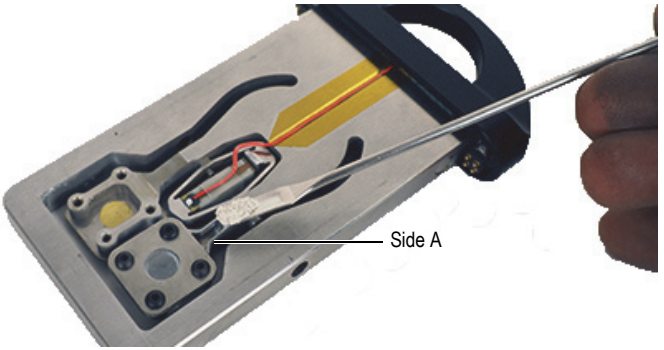


2. Pull up the carrier handle to remove the sample carrier.

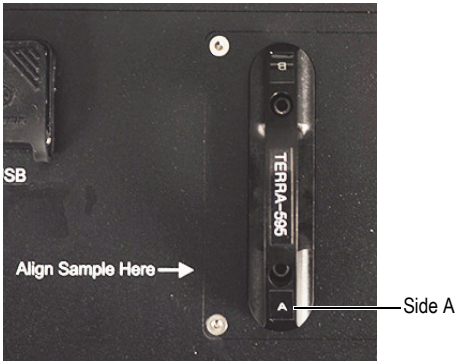


3. Prepare and load a small amount of material (enough to fill the gap created by the spacer) into the sample carrier cell assembly side A.

   For more info on preparing and loading samples, see the *TERRA II User's Manual* (P/N: 10-015488-01EN).



4. Fully insert the sample carrier back into the sample chamber, making sure that side A and the "Align Sample Here" arrow are oriented as shown below.



5. Lock the sample carrier in place by pushing down the lever.
6. In the main display, select **Start Acquisition**.
7. Press the Check button ( ) to start the test.

Equipment Disposal

Before disposing of the TERRA II, check your local laws, rules, and regulations, and follow them accordingly.

General Warnings

CAUTION

Instruments with a damaged detector or tube must be returned to your local distributor or the manufacturer. Care should be taken to limit the release of beryllium from the instrument.

Electrical Warnings

The instrument must only be connected to a power source corresponding to the type indicated on the rating label.

CAUTION

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Trademarks

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Radiation Profiles

Table 1 on page EN-6 represents the typical radiation dose measurements to an operator of the TERRA II analyzer. More specific radiation profiles for each instrument can be found on the included USB flash drive. To convert from µSv/h to mR/h, divide the value by 10.

Table 1 Radiation level measurements

Measurement point	Measured radiation level (mR/h)	Distance from surface (cm)	Comments
A	<0.05	2	Front top panel
B	<0.05	2	Left side of case
C	<0.05	2	Front side of case
D	<0.05	2	Right side of case
E	<0.05	2	Back side of case
F	<0.05	2	Bottom of case

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Printed on Rolland Hitech50, which contains 50 % post-consumer fiber.

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