Reflection Stage
Stage-RTL-T

Installation and Operation Manual
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WARNING

Protective Eye Wear Must Be Worn
When Using This Instrument -
Intense Ultraviolet Radiation Present

See Important Safety Notices inside.

A HALMA GROUP COMPANY

Important Safety Notices

1. Read all safety notices and operating instructions before operating this unit.
2. Inspect the item for transport damage before using it for the first time.
3. Adhere to all warning stickers on the unit and all warnings contained in this manual.

Warranty

Mikropack GmbH warrants to the original user of this instrument that it shall be free of any defects resulting from faulty manufacture of this instrument for a period of 12 months from the original data of shipment. There is no warranty for the bulb.

This instrument should not be used for any Clinical or Diagnostic purposes. Data generated in these areas is not warranted in any way by Mikropack GmbH. Any defects covered by this Warranty shall be corrected either by repair or by replacement, as determined by Mikropack GmbH.

There are no warranties that extend beyond the description herein.

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About This Manual

Document Purpose and Intended Audience

This document provides you with an installation section to get your system up and running.

Document Summary

Chapter	Description
Chapter 1: *Introduction*	Contains a list of package contents and unpacking instructions.
Chapter 2: *Set-up*	Contains instructions for setting up the Stage-RTL-T for measuring reflection and transmission.
Appendix A: *Specifications*	Provides physical specifications for the Stage-RTL-T.

Product-Related Documentation

You can access documentation for Ocean Optics products by visiting our website at **http://www.oceanoptics.com**. Select *Technical → Operating Instructions*, then choose the appropriate document from the available drop-down lists. Or, use the **Search by Model Number** field at the bottom of the web page.

You can also access operating instructions for Ocean Optics products on the *Software and Technical Resources* CD included with the system.

Engineering-level documentation is located on our website at *Technical → Engineering Docs.*

Upgrades

Occasionally, you may find that you need Ocean Optics to make a change or an upgrade to your system. To facilitate these changes, you must first contact Customer Support and obtain a Return Merchandise Authorization (RMA) number. Please contact an Ocean Optics Application Scientist for specific instructions when returning a product.

Chapter 1

Introduction

Overview

The Stage-RTL-T is a novel sampling system for analysis of substrate materials such as silicon, metals, glass and plastics. This stage system couples to our spectrometers and light sources, and can be configured in a variety of setups for transmission and reflection measurements.

The STAGE-RTL-T is remarkably versatile: perform reflection measurements with the probe positioned above or below the sample (measuring from below maintains a constant distance between probe and sample); make reflection measurements with the light trap in place; or measure transmission of samples using two fibers.

The Stage-RTL-T consists of a variable rail attached to a base plate, with three devices that attach to the rail with a thumbscrew. From bottom to top, these devices are a fiber holder with UV-VIS collimating lens; a sample holder for reflection or transmission; and a light trap to mitigate the effects of back reflection and ambient light. (Remove the light trap to access a second collimating lens.)

Unpacking the Stage-RTL-T

► ***Procedure***

1. Unpack your lamp assembly carefully. Dropping this instrument can cause permanent damage.
2. Inspect the outside of the instrument and make sure that there is no damage. Do not use the instrument if damage is present.

3. Use this instrument in a clean laboratory environment (see **Error! Reference source not found.**).

Contents

Your Stage-RTL-T package should contain the following:

- One (1) Base plate
- One (1) Rail
- One (1) Light trap
- One (1) Sample holder
- Two (2) Fiber holders
- Two (2) 74-UV collimating lenses
- Two (2) socket wrenches

Chapter 2

Set-up

Overview

The Stage-RTL-T is very versatile and can be set up to measure the following:

- Reflection
- Reflection (upside down)
- Transmission

Reflection Set-up

Use the Stage-RTL-T to measure reflection and reflection of a transparent sample.

Parts Used

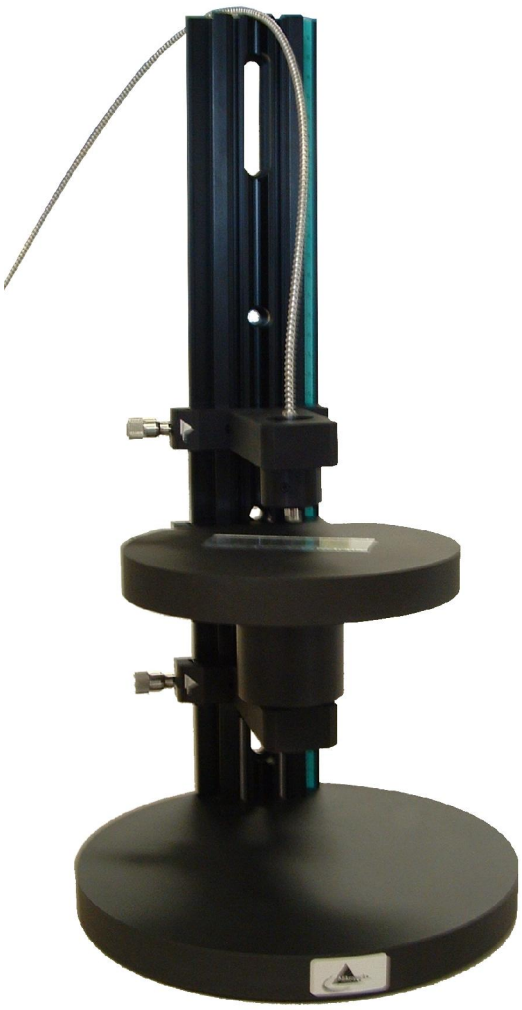
- Fiber holder
- Sample holder (optional)
- Light trap (optional)

Reflection Measurement Set-up Procedure

► ***Procedure***

1. Affix the reflection probe in the fiber holder.
2. Adjust height of the fiber holder.
3. Place your sample on the sample holder or on the base plate.
4. Start acquisition.

5. Readjust height of the fiber holder / reflection probe until you get the maximum signal.
6. Start your measurements.



Reflection Measurement of a Transparent Sample Set-up Procedure

► *Procedure*

1. Attach the light trap to the rail (upside down).
2. Attach the sample holder above the light trap to the rail.

3. Affix the reflection probe in the fiber holder.
4. Adjust height of the fiber holder.
5. Place your sample on the sample holder or on the base plate.
6. Start acquisition.
7. Readjust height of the fiber holder / reflection probe until you get the maximum signal.
8. Start your measurements.

Upside Down Reflection Set-up

Setting up the reflection measurement upside down has the advantage that the distance between the fiber and the surface is constant; sample probe thickness is no longer an issue. Use the Stage-RTL-T to measure reflection and reflection of a transparent sample.

Parts Used

- Fiber holder
- Sample holder
- Light trap

Upside Down Reflection Measurement Set-up Procedure

► *Procedure*

1. Affix the reflection probe in the fiber holder.
2. Adjust height of the fiber holder so that the fiber bend radius is large enough.
3. Attach the sample holder to the rail above the fiber holder.
4. Place your sample upside down on the sample holder.
5. Start acquisition.
6. Readjust height of the reflection probe until you get the maximum signal. Make sure that the reflection probe does not touch the sample.
7. Start your measurements.

Upside Down Reflection Measurement of a Transparent Sample Set-up Procedure

► *Procedure*

1. Affix the reflection probe in the fiber holder.
2. Adjust height of the fiber holder so that the fiber bend radius is large enough.
3. Attach the sample holder to the rail above the fiber holder.
4. Place your sample upside down on the sample holder.

5. Attach the light trap to the rail. Adjust the position of the light trap so that no external light reaches the reflection probe.
6. Start acquisition.
7. Readjust height of the reflection probe until you get the maximum signal. Make sure that the reflection probe does not touch the sample.
8. Start your measurements.

Transmission Set-up

Use the Stage-RTL-T to measure transmission of a sample.

Parts Used

- Two (2) 74UV collimating lenses
- Two (2) fiber holders
- Sample holder

Transmission Measurement Set-up Procedure

► ***Procedure***

1. Unscrew the light trap of fiber holder 1.
2. Unscrew the reflection probe holder of fiber holder 2.
3. Screw the 74UV into the fiber holders.
4. Attach the lower fiber holder to the rail. Adjust height so that the fiber bend radius is sufficient.
5. Attach the sample holder to the rail above fibe rholder 1.
6. Attach fiber holder 2 to the rail above the sample holder.
7. Connect the fibers to the fiber holders.
8. Adjust position of the upper fiber holder so that there is enough room for the sample.
9. Adjust the focus of the 74UV collimating lens.
10. Start measuring.

Appendix A

Specifications

Specification	Value
Dimensions Base Sample Area	 206.3 mm 152.4 mm diameter (sample holder)
Weight	4.5 kg
Height	Rail height adjustable to 400 mm

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