Operating Instructions

NANOCALC_XR-NIR

Revision 082012

Read this manual before you attempt to use this instrument

Table of Contents

1 Safety Instructions

Instructions: All the safety and operating instructions should be read before the unit is operated. Before using the power supply for the first time check for transport damage.

Warning: All warnings on the unit and in the operating instructions should be adhered to.

Caution: UV LIGHT ! DO NOT LOOK INTO THE LIGHT BEAM. THIS CAN CAUSE PERMANENT EYE DAMAGE - WEAR PROTECTIVE EYE WEAR - CALL YOUR LOCAL LAB SUPPLY HOUSE FOR GLASSES OR GOGGLES.

Operating Environment:

Moisture
The unit is designed for operation in dry rooms only.

Ventilation
The unit should be situated so that its location or position does not interfere with its proper ventilation.

Heat
The unit should be situated away from radiators, hot bodies, ovens or other heat sources.

Object and Liquid Entry
Care should be taken that objects do not fall, or liquids spilled into the enclosure through openings.

Contents:

Your package should contain

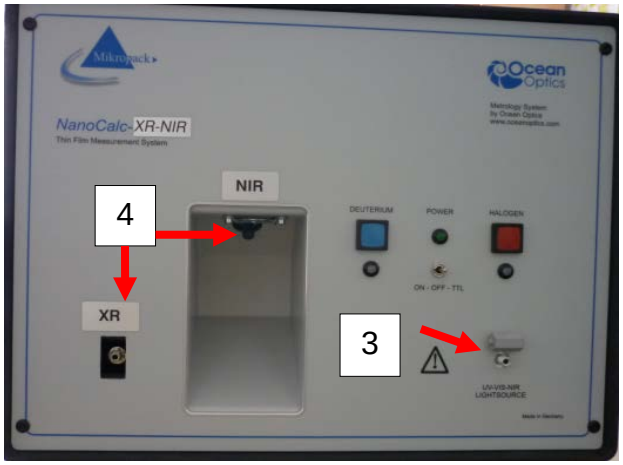
1x NanoCalc system
1x Power cable EU, US, AUS, UK
1x USB Interface cable
1x Fiber probe
1x NanoCalc Software Manual
1x NanoCalc Operating Instructions
1x Software CD

Unpacking:

1. Unpack your new assembly carefully. Dropping this instrument can cause permanent damage
2. Inspect the outside of the instrument and make sure that there is no damage to your unit. In case of damage contact the dealer immediately and DO NOT USE THE INSTRUMENT!
3. Use this instrument in a clean laboratory environment

2 Designations and Functions of Panel Controls

FRONT PANEL



(1) Shutter ON/OFF
Open (ON) or close (OFF) the Shutter.

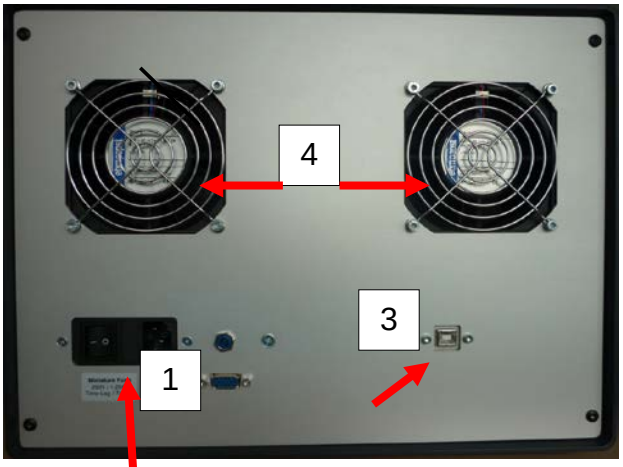
(2) Halogen ON/OFF
Turns the halogen light on and off.

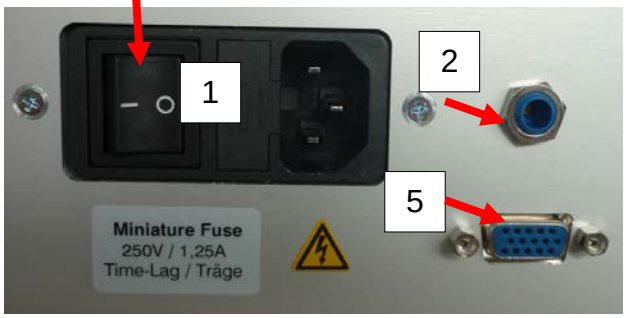
(5) Deuterium ON/OFF
Turns the deuterium light on and off.

(3) Light source
Light output - SMA connector
SMA-Connector / Protection Cap is only to avoid that the user could not unintentional look direct into the fiber optic connector. The connector is for use with SMA-Fiber connectors.

(4) Spectrometer
Signal input - SMA connector

REAR PANEL





(1) Main power switch ON/OFF
When the main power switch is turned ON, power is supplied to the unit. The unit automatically switches to the basic operating mode. The LED indicator is lighted up at this time.

(2) Variable output of the halogen lamp
To adjust the intensity of the halogen lamp.
Adjustable with a small screwdriver.

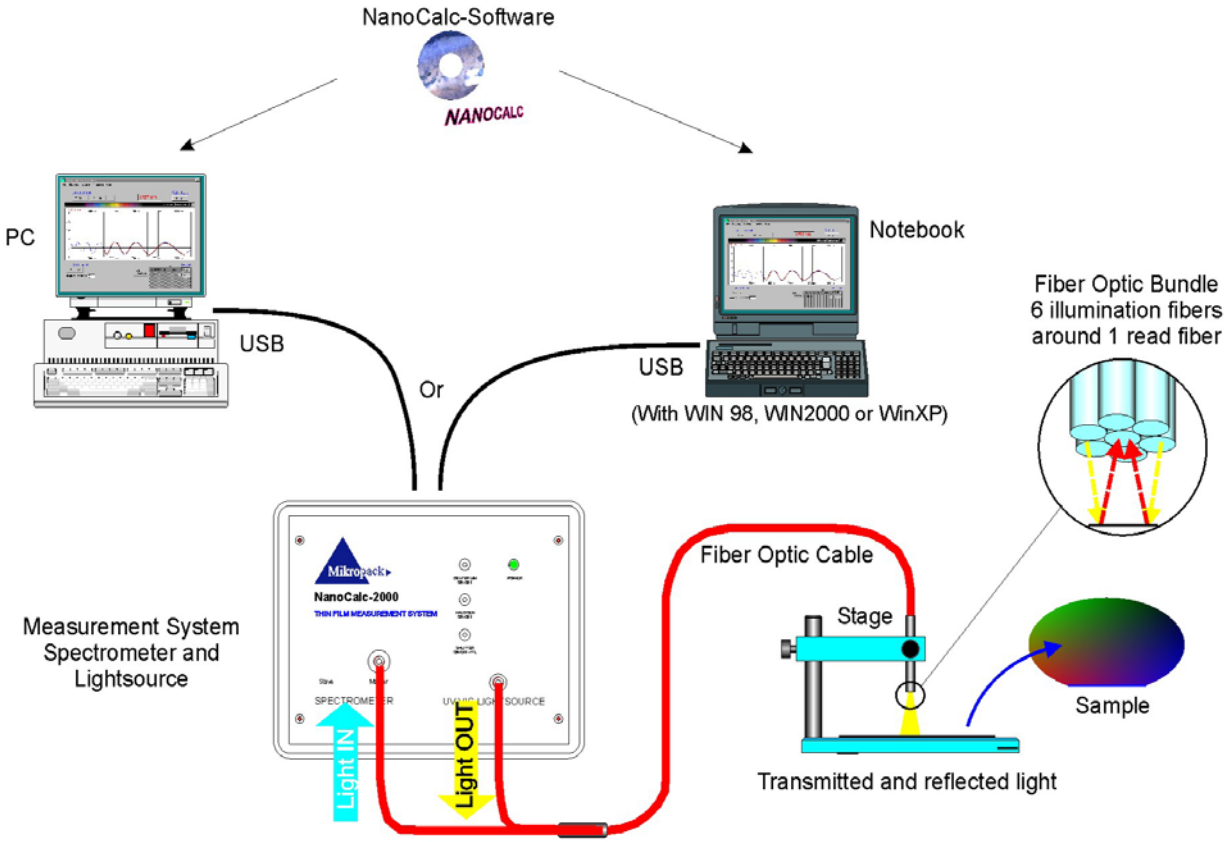
(5) SUB-D15 remote connector
For automatic TTL-shutter control and TTL lamp controls
PIN 1= Deuterium ON/OFF
PIN 5= Halogen ON/OFF
PIN 10= GND
PIN 13= Shutter Open/Close

(3) USB interface
Connect the spectrometer to the computer

(4) Cooling Fan
Spectrometer and Light source cooling fan.
Do not obstruct cooling fan openings.

3 System Setup

3.1 Connecting to PC or Notebook



3.2 Connecting the Fiberprobe

NIR Spectrometer

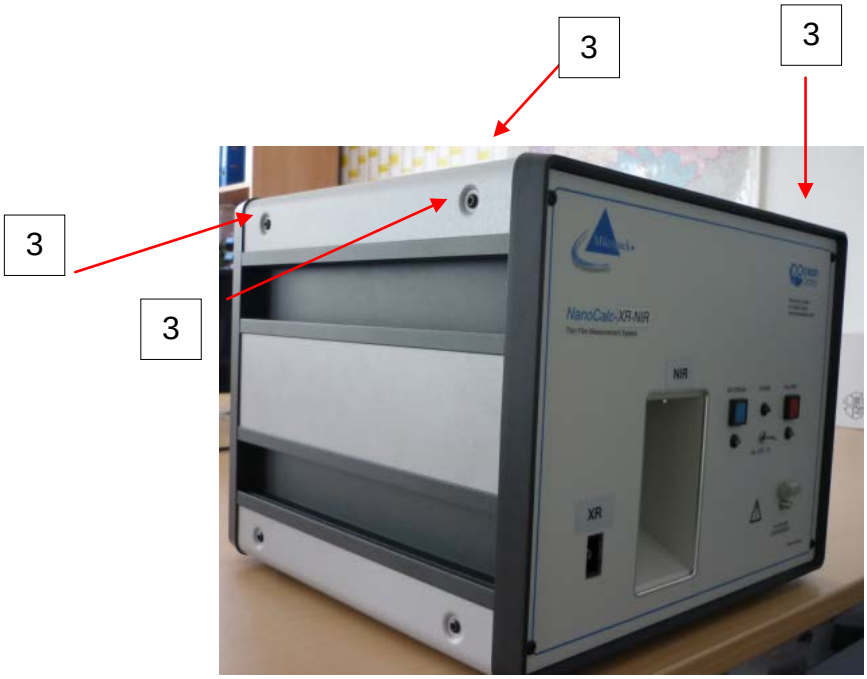
Connect the detection fiber to the SMA-adapter of the spectrometer

Lightsource

Connect the illumination fiber to the SMA-adapter of the light source

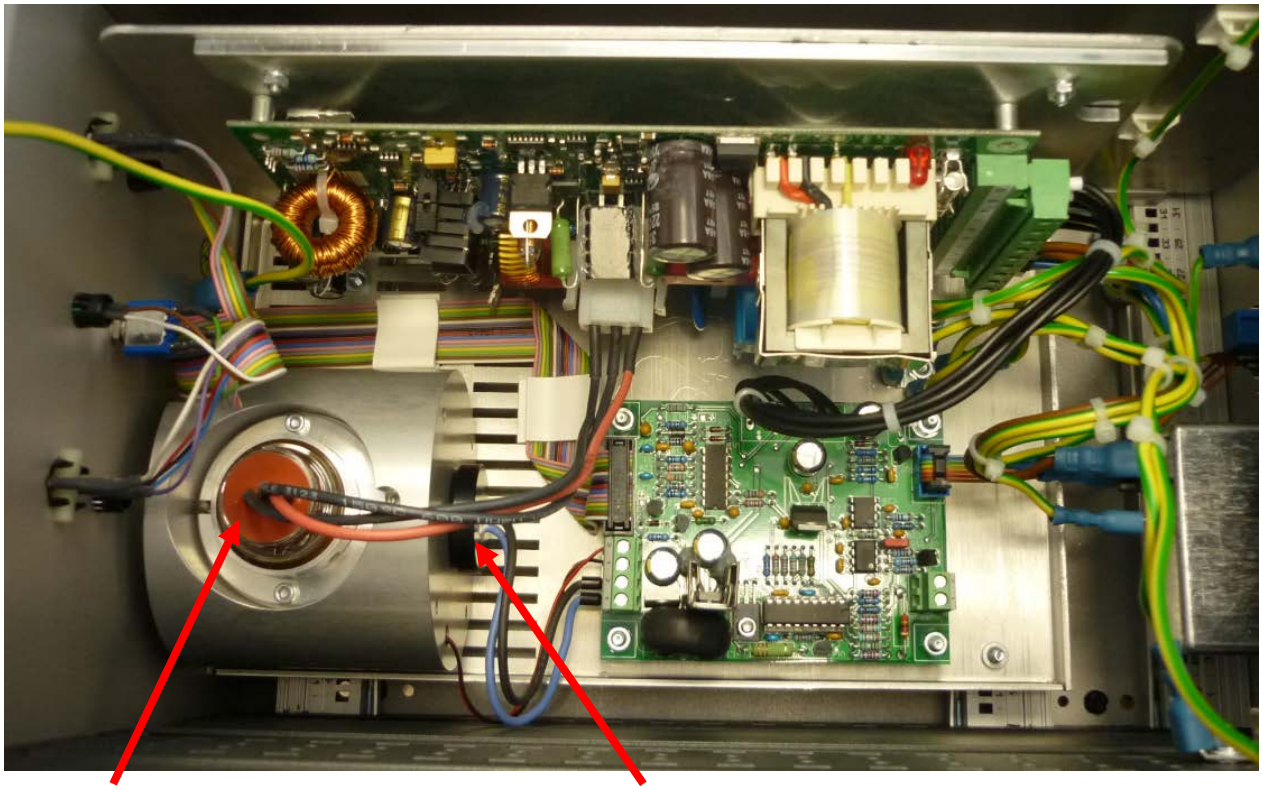
XR Spectrometer

4 Halogen and Deuterium Bulb Replacement

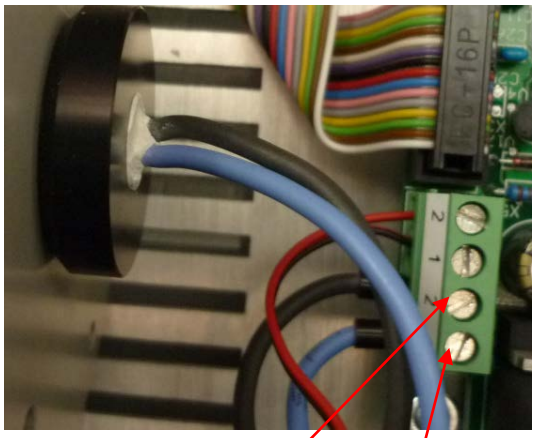


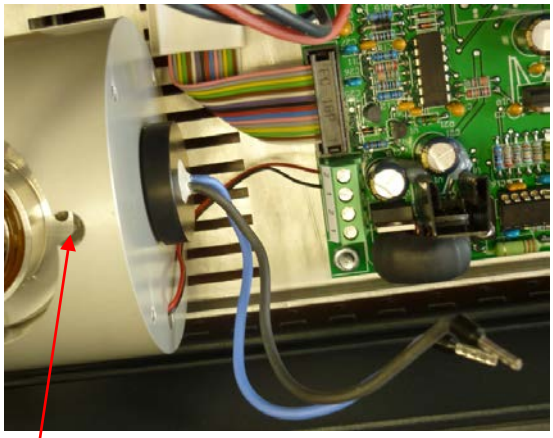
1. Disconnect the Power Plug to avoid electrical shock !
2. Disconnect the fibers from the spectrometer and lightsource
3. Open the four slotted screws and take off the top cover.

4.1 Replacement of the halogen lamp



Deuterium lamp Halogen lamp

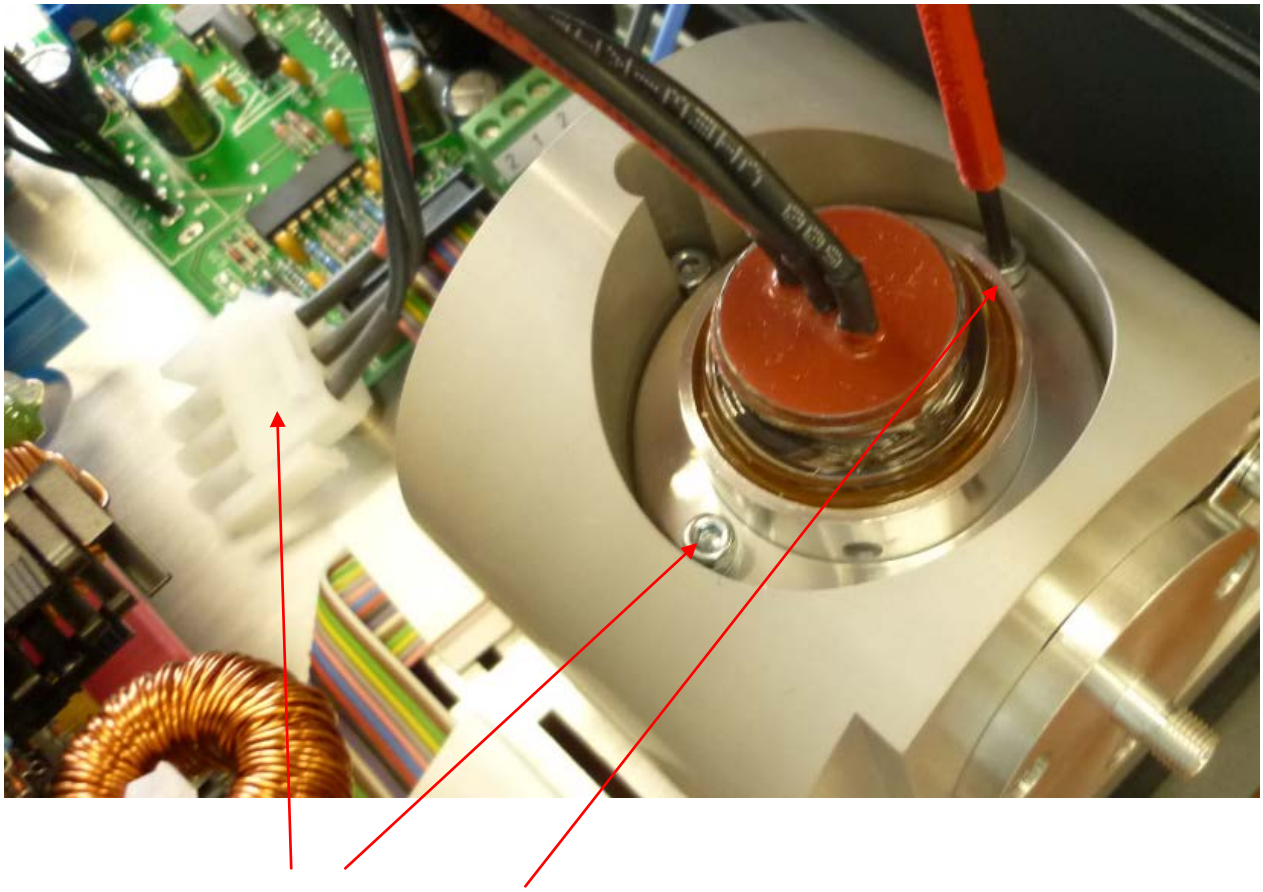




Dark Blue

Open the screw by the tool which is delivered with the spare bulb. Disconnect and connect the Halogen lamp only with the original delivered connection plugs. Open the screws of the cable-clamp on the lamp-side. Remove the defective Halogen bulb. Put in the new Halogen bulb and close the screw fix the blue cable of the Halogen bulb to port 1 and the black cable to port 2 in the cable-clamp connector.

4.2 Replacement of the deuterium lamp



Open the screw by the tool which is delivered with the spare bulb. Disconnect and connect the Deuterium lamp only with the original delivered connection plugs. Open the screws of the cable-clamp on the lamp-side. Remove the defective Deuterium bulb. Put in the new Deuterium bulb and close the screw fix of the Deuterium bulb in the cable-clamp connector.

Be careful, the bulbs may be very hot !

Pull the bulbs softly in back direction

DO NOT TURN THE BULBS

Replace bulbs by going back the described steps

5 Bulb ordering information

DH-2000-BH for the halogen bulb

DH-2000-B for the deuterium bulb

5.1 Lamp warm up

Halogen lamp warm-up

The Halogen-Lamp needs 15 minutes to reach a thermal equilibrium. During this time the intensity of the output varies. If applications require extreme intensity stability, the lamp should be warmed-up for a further 15 min. After that the lamp will reach the specified drift values

Deuterium lamp warm up

The Deuterium-Lamp needs 10 - 15 minutes to reach a thermal equilibrium. During this time the intensity of the UV-output varies. If applications require extreme intensity stability, the lamp should be warmed-up for a further 30 - 45 min. After that the lamp will reach the specified drift values.

6 Trouble Shooting

Fault	Possible Cause	Remedy
Power switch on, but no reaction	Power supply is not present Fuse may be blown	Check line voltage and power supply Check fuse
Deuterium Lamp does not ignite.	Deuterium Lamp starts for the first time or was not in use for a longer time, it will take a little while before it will ignite	It goes faster if the halogen-lamp is additional switched on
	Lifetime of Deuterium Lamp is over	Replace Deuterium-Halogen Lamp Spare Part: DH-2000-DUV-B
	Deuterium Lamp internal connection plugs is not closed right	Open Unit and close connector plugs
Halogen Lamp does not work after switching on	Halogen Lamp defective	Replace Deuterium-Halogen Lamp Spare Part: DH-2000-BH

7 Warranty

Ocean Optics Germany 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.

This instrument should not be used for any Clinical or Diagnostic Purposes. Data generated is not warranted in any way by Ocean Optics Germany GmbH. Any defects covered by this warranty shall be corrected either by repair or by replacement, as determined by Ocean Optics Germany GmbH.

There are no warranties which extend beyond the description.

This Warranty is in lieu of, and excludes any and all other warranties or representation, expressed, implied, or statutory, including merchantability and fitness, as well as any and all other obligations or liabilities of Ocean Optics Germany GmbH, including, but not limited to special or consequential damages. No person, firm, or corporation is authorized to assume for Ocean Optics Germany GmbH. Any additional obligation or liability not expressed provided for herein except in writing duly executed by an officer of Ocean Optics Germany GmbH.

Warranty Handling

1. Clear with your local distributor the problem or fault.

2. In case of warranty your local distributor will give you a RMA number.

3. Send your instrument free of charge and insured to your local distributor.

4. Your distributor will inform you on delivery time. If there is repair out of warranty you will be informed about repair cost. The system will be on hold till you have officially ordered the repair.

The system will be send back to you free of transport cost and insured (in case of warranty)

8 Contact

Ocean Optics B.V.
Thin Film Metrology Systems
Maybachstrasse 11
D-73760 Ostfildern, Germany

Phone: +49 (0)711 34 16 96 0
Fax: +49 (0)711 34 16 96 85
E-Mail: thinfilm@oceanoptics.eu