Rhopoint Instruments Ltd.

Novo-Gloss Lite Operation Manual

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Accessories

- Novo-Gloss Lite gloss meter
- Traceable calibration tile in protective case
- Traceability certificate for calibration tile
- Quick start guide
- Mini-CD containing Novo-Soft, instrument manuals and registration form
- Registration card
- USB data cable
- USB charger (rechargeable only)
- Cleaning cloth
- Instrument carry case

Options

- Supplementary calibration/checking tiles in integrated holder
- Replacement BAM Traceable calibration tile.
- UKAS (ISO17025) BAM traceable calibration/checking tiles
- Quick start guide
- On-line measurement data-cable

Power

The Novo-Gloss Lite is powered with 5 x AAA dry cell batteries. To install or replace the batteries remove the battery panel by unscrewing the two screws. Insert the new cells in the battery cartridge and place in the battery compartment, replace the lid and replace the screws. The rechargeable version is fitted with a high capacity Lithium Ion battery which requires no user replacement.

The Control Panel

Read/Select Key

The "READ" key

The "READ" key has four functions;
Power- Press this key to turn the instrument on.
Read- In measurement mode press this key to initiate a measurement.
Continuous Read- In measurement mode press and hold this key to take a continuous measurement.
Select- When navigating through the setup menu use this key to select an item or confirms a previous selection.

Scroll Up/Scroll Down

The "UP/DOWN" key

The "UP/DOWN" key has four functions;
View Statistics- In single angle measurement mode press the UP key to view the statistics for the selected angle.
Delete- In single angle measurement mode press the DOWN key to enter the delete mode.
Scroll Up/Down- In the hidden set up menu use the UP/DOWN keys to scroll through the available options.
Set Calibration value- In Set Calibration Mode press the UP/DOWN keys to adjust the calibration value.

Angle Change/Calibrate/Cancel

The "C" key

The "C" key has three functions;
Change Angle- In measurement mode press the "C" key to cycle through the single angle modes 20>60 followed by the 20/60 two angle simultaneous read mode (Dual angle instruments only).
Calibrate- In measurement mode press the "C" key for 2 seconds to initiate the calibration process.
Cancel- During calibration use this key to cancel the process and revert to previously stored calibration constants.

Measuring Gloss

Check the Calibration

Place the instrument in the calibration holder.

If the instrument has not been used for some time it is advisable to check the calibration.
Place the instrument on the high gloss calibration tile. Take a reading by pressing the READ/SELECT key. Compare the measured value with the assigned value for the tile.
If it matches the value on the tile holder, the instrument is within calibration and ready for use.

If the measured value does not match the assigned value, follow the calibration procedure (see page 6).

Positioning the Novo-Gloss Lite

The measurement position is indicated by the arrows.

When the instrument is placed on a sample the aperture is hidden, the centre of the measurement area can be pinpointed by the intersection of the arrows marked on the front of the instrument case with those on the side.

Take a single reading

Press and release the READ/SELECT key in measurement mode to take a single reading.

The value shown in the display is the gloss value for the section of the sample covered by the aperture. This value has been stored in the memory and the number of stored readings increased by one.

Press the "READ" key to take a gloss measurement.

Using the move and read feature

The Novo-Gloss Lite has a unique feature to quickly assess large surfaces for gloss variation.
To use this feature **PRESS** and **HOLD** the READ/SELECT key whilst in read mode. The unit will take a reading.
A value will be shown in the display; this is the gloss value for the part of the sample currently covered by the measurement aperture.
To assess the rest of the sample continue to **HOLD** the READ/SELECT key and carefully slide the Novo-Gloss Trio to the area to be inspected.

Press and HOLD the "READ" key to take a continuous gloss measurement.

The value in the display will update IN REAL TIME to reflect the gloss value of the surface under the aperture at that time.
As soon as the READ/SELECT button is released the last value measured will be displayed. This is also the value stored in the memory.

Calibration inspection and tile care

Inspect the tile and instrument optics before calibration.

It is necessary to inspect the condition of the calibration tile and instrument optics before each calibration.

Inspecting and cleaning the instrument optics

Any dust or debris on the optic should be blown from the lenses using dry clean air- the optics must not be touched without wearing suitable cotton gloves.
If there are any permanent marks or scratches on the lenses, the instrument is no
longer suitable for measuring gloss and should be returned to an authorised Rhopoint service center.

Inspecting and cleaning the calibration tile

The calibration tile must be perfectly clean from smears and scratches before attempting calibration. Fingerprints and dust can be removed with the supplied optic cleaning cloth.

Scratched or damaged tiles

Scratched or damaged tiles are not suitable for gloss calibration. The instrument and tile must be returned to an approved Rhopoint service center for tile replacement and re-calibration.

Calibration

Calibrate a single angle

Place the instrument in the calibration holder. In measurement mode, select the required angle, pressing the “C” button to cycles through the angles 20 > 60.
Once the required angle is displayed, press and hold the “C” key to begin the calibration procedure. Follow the on screen instructions to complete this process. The zero reference is found in the top half of the calibration tile case.

Place the instrument in the calibration holder.

Calibrate all angles

To simultaneously calibrate both angles, use the “C” key to cycle through the read modes until the three angle 20 60 degree read mode is displayed.
The “C” key should then be pressed and held until the calibration procedure starts. The on-screen instructions should be followed to complete the calibration process

Zero Reference

Automatic calibration check

During calibration the instrument automatically checks for changes in the condition of the calibration tile.
If changes to the expected value are detected the instrument will prompt
“Possible Calibration Error- Check Calibration Tile”
The calibration tile and instrument optics should then be carefully checked for marks or scratches.
If there are smears mark or dust on the optics, press the “C” key to abort the calibration, and clean tiles and optics using the above procedure and repeat the calibration process
If the calibration tile is seen to be completely clean, press the read key to store the calibration data.

The “C” key can be pressed at any time to abort the calibration process.

Press and HOLD the “C” key to start calibration.

Analysing Statistics

To examine the statistics for the stored values, whilst in Read mode -press the up arrow.

Standard deviation (SD)

$$s = \frac{S}{\bar{x}} = \sum_{i-1}^{i-x} \frac{n}{x_i} \left(\frac{\bar{x}_i^2 - x^2}{(n-1)} \right)^{1/2}$$

Definitions of terms used in statistical mode

For this purpose the individual readings are defined as values *x*1, *x*2, *xn,* and *xi* is any data point:

-Statistical sample population, *n*- the current number of stored readings on which the statistical analysis is based.

-Maximum (MAX) - the highest reading.

-Minimum (MIN) - the lowest reading.

-Mean (MEAN), - The sum of all readings divided by the total number.

Coefficient of variation (CV)

$$s = \sum_{i-1}^{i-x} \left(\frac{x_i^2 - x^2}{(n-1)} \right)^{1/2}$$

-Standard deviation (SD), *s*- Square root of the sum of squared --deviations from the mean.

-Coefficient of variation (CV), *c*- Standard deviation divided by the mean, a measure of data scatter.

Preferences

Changing the calibration value

The instrument is supplied with the assigned values of the standard tile stored in the instrument memory.
These values are updated when the instrument is recalibrated by an authorised service center.
The stored values can also be changed by the end user if an alternative tile is to be used for calibration

Calibrate at low, medium or high gloss value

It is often desirable to calibrate using a standard that closely matches the gloss of the samples to be tested.
Rhopoint supply a range of gloss, semi-gloss and matt tiles to suit all applications. To calibrate the Novo-Gloss Lite using a purchased tile, the calibration value in the instrument memory must be adjusted to match the assigned value of the new tile.
Rhopoint also supply mirror tiles for verification of measured values at very high gloss levels. The instrument should not be calibrated on a mirror tile.

Change calibration values in the set up menu

In read mode, press the C key to cycle through 20 and 60 angles until the required angle is displayed.
Access the hidden set up menu using the following key press combination;
-First press and hold the DOWN button.
-Press and hold the C button whilst continuing to press the DOWN button.
-Wait until “SYSTEM SET UP” appears in the display.

Press and HOLD the “C” and “DOWN” keys to enter the set up menu.

-Scroll up/down until “SET STD CAL VAL.” is shown on the display.

-Press the read key to change this value.
-Use the UP/DOWN arrow to adjust to the assigned value of the calibration tile.
-Press the READ KEY when the value is correct, if required repeat the process for the remaining angles.

Change calibration values via Novo-Soft

It is possible to change the stored values when the instrument is connected to a PC running Novo-Soft. For more details follow the connection instructions on page 7 of this manual. Full instructions are contained in the software help files.

Customising the Novo-Gloss Trio via the hidden set up menu

Use the following key combination to access the Novo-Gloss Lite set up menu;
Press the DOWN KEY whilst simultaneously pressing the C button.
SYSTEM SET UP will be shown in the instrument display.
Use the UP/DOWN buttons to cycle through the available options.

True zero Calculation

It is possible to perform a two point gloss calibration using both a high gloss tile and a zero gloss standard. Press the read key toggle between “Zero Calibration off” and “Zero Calibration on”.

Language

English, French, German, Spanish, Dutch, Italian, Czech and Turkish are the standard languages available in the Novo-Gloss Trio; more languages will be added as they become available, visit www.rhopointinstruments.com for a full list or to request additional language support.
Press read key to enter this menu, use the up/down arrows to locate the required language. Press the read key to select.

Statistical/Non-statistical mode

The instrument can be used with or without statistical analysis. In non-stat mode all functions except read and calibrate are disabled. Press the read key toggle between STATS ON/STATS OFF modes.

CONNECTING TO A PC

Install the software

Place the Novo-Soft mini-cd in the drive of a compatible PC.
Depending on the settings of your PC the Novo-Soft Installation program should automatically start, alternatively double click on the Novo-Softinstall.exe icon in the relevant CD drive.
Follow the on screen instructions in the install wizard window to install Novo-Soft.
Once installed, double click on the Novo-Soft icon on the desktop to run the software.

Installing the drivers

With the mini-cd in the drive connect the USB cable to a free port on your PC.
Connect the other end of the cable to the instrument.
Turn on the instrument.
The following will be shown:

Click ‘no, not this time’ and then click ‘next’.

Click ‘Install from a list or specific location’ then click ‘next’.

Click ‘search removable media’ then click ‘next’.

The PC should find the driver and install it from the disc.

Click ‘finish’.

The PC will detect another new hardware component, follow the above steps again.

Your Novo-Gloss Lite is now installed and ready to use.

Connect the instrument

Connect the instrument to a USB port on your PC with the supplied data cable.
In the ‘Set-Up’ menu ensure that the ‘high speed coms’ box is ticked.
Click the “CONNECT” icon in the Novo-Soft main menu to open the connection window.
Ensure the instrument is switched on (press the read key).
Press the “CONNECT” button in the connection window to initiate communication.

Downloading results

Use the download buttons to retrieve stored readings from the instrument memory, once downloaded the data can be deleted from the instrument memory using the relevant delete button.

Saving and manipulating data

For help using Novo-Soft, click “HELP” in the menu.

Preferences

Automatic power-down time, language, calibration values and automatic/manual calibration can all be adjusted in the Novo-Soft set up menu, click on help the menu for more details.

CONNECTING

ADVICE

When the instrument has been successfully connected to the PC the auto-power off function is disabled.
Measurements should not be made with the data cable plugged into the instrument as R.F. interference may cause inaccurate readings.

EC Declaration of Conformity

We Rhopoint Instruments Ltd, Beeching Road, Bexhill on Sea, East Sussex, TN39 3LG

Declare under our sole responsibility that the product

Novo-Gloss Lite

To which this decleration relates is in conformity with the following standards

EN61326:1997 A1, A2, A3

Following the provisions of directives

2004/108/EC

Rhopoint Instruments Ltd
30 May 2007

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Further information available on request.

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