Lovibond® Colour Measurement

Tintometer® Group

Lovibond® RCMSi

Remote Calibration & Maintenance Service via internet

- √ On-site Calibration without the need to return instrument to service centre
  - reduced cost
  - reduced carbon footprint
- √ Ensures correct operation and compliance to international standards
- √ Guarantees instrument is fully calibrated to ISO 17025 certified standards
- √ Results compared to Master Data at UKAS accredited, ISO 9001:2008 qualified centre
- √ Certificate of Calibration supplied on successful completion
- √ Utilizes secure communication procedures

www.lovibondcolour.com

An Introduction to RCMSi

Two primary approaches exist historically to check the accuracy of automatic instruments.

1) Liquid Reference Standards: High quality liquid samples with known values are used to check that an instrument is reporting the correct figures. The range of Lovibond® colour reference standards includes AOCS-Tintometer®, ASTM, Gardner, Lovibond® RYBN, Pt Co/Hazen/APHA and Saybolt Colour. Each standard is shipped with a 12-month guarantee of colour stability.

2) Glass Filters: Conformance filter sets allow quick and simple conformance checks on Lovibond® instruments. Each filter set is supplied with a Certificate of Conformity that confirms that they have been manufactured under the control of an ISO 9001 : 2008 Quality Management System.

With the launch of the automatic PFXi range of instruments, a new 3rd option came into existence.

3) The PFXi series of instruments is installed with a new technology from Lovibond Tintometer: RCMSi (Remote Calibration & Maintenance Service via internet). RCMSi is the process by which a number of tightly controlled calibration liquids are measured in a 50 mm cell via the Calibration function of a PFXi. The data is communicated via the internet to a secure server and compared to Master Data. No other data is sent, only calibration data. If the data passes within tolerance, then a Certificate of Calibration can be downloaded by the user by logging on to the Lovibond® website.

This allows Lovibond Tintometer to ensure a PFXi instrument is operating correctly and is traceable to ISO 17025 standards. In this way, users can be 100% confident that all PFXi readings are reliable. Certificates of Calibration are provided post process.

RCMSi is not mandatory. It is simply an additional, purely optional, level of performance guarantee. There are a number of PFXi users world-wide who, for security or infrastructure reasons, do not use RCMSi. This does not have any negative effect on their day-to-day operations. They simply use the Glass Filter that ships as standard with the instrument or purchase additional Liquid Reference Standards or Glass Filters.

Components

There are four key components:
a) PFXi instrument with LAN connection
b) an internet connection
c) servers & calibration data at the Lovibond secure server in Amesbury and
d) a valid Calibration Pack

Calibration Packs

There are three types of Calibration Packs

Starter Pack
1 x Full Pack
1 x 50 mm Cell
1 x Instruction CD
1 x Calibration Chart

Full Pack
1 x Instruction Document
Seven Standards, Each in Two Bottles

Conformance Pack
1 x Instruction Document
Four Standards, Each in Two Bottles

Examples: the Following Timetables are Recommended for Running RCMSi

a) The calibration process for a busy laboratory.
(Example period January to December)

1 January:	Full Pack
1 April:	Conformance Pack
1 July:	Full Pack
1 October:	Conformance Pack
1 January:	Start Process over again (ie: Full Pack)

b) The calibration process for a not-so-busy laboratory.
(Example period January to December)

1 January:	Full Pack
1 July:	Full Pack
1 January:	Start Process over again (ie: Full Pack)

Notes on RCMSi Procedure

The calibration packs are best used within 1 month of receipt although they have a validity period of 13 months from the date of production. Before running RCMSi for the first time, the user must register their PFXi instrument. A valid e-mail address should be provided.

Written Explanation of How the Remote Calibration Operates

From the menu system of the PFXi, select "Remote Calibration". The instrument with now open a communication channel with the Calibration Server located at the Lovibond facilities via the internet. Once the channel has been opened, the Calibration Server will request the Calibration Pack code. The user enters the Calibration Pack code.

The code is then sent to the Calibration Server. The Calibration Server validates that the pack has not been used before and that it is within its shelf life. If this is OK, the Calibration Server sends back the Solution IDs for all the solutions within the Calibration Pack. The user is requested to place the Calibration solutions into the sample chamber (after initially measuring a clear air path baseline) and to press read.

This process is repeated for all the solutions. Once all the solutions have been measured, the data is sent back to the Calibration Server. The data is compared to the ISO 17025 Calibration data for the solutions.

If the data passes within tolerance, then a Certificate of Calibration is available for the user to download. If even one of the measurements is out of the tolerance, the operator is informed of a fail at the end of the process. The user should then immediately contact their local Service Centre or the Lovibond® facilities directly.

Further action can be taken under the guidance of the experienced Lovibond® technical team to guarantee the instrument operates within tolerance. If these additional steps are taken, the measurements of the solutions are repeated. If the data then passes within tolerance, then a new Certificate of Calibration is available for the user to download.

SYSTEM CERTIFICATION ISO 9001 SGS

UKAS CALIBRATION 0630

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