# Lovibond® Colour Measurement

# Tintometer® Group

# TRA 500 Handheld & Benchtop Reflectance Spectrophotometer



- Compact, Lightweight and Easy to use Sphere Spectrophotometer
- Designed for Fast, Accurate and Precise Colour Measurement
- On Screen Target Display Allows Positioning to be Perfect Every Time
- OnShade Software Included for FREE – Perfect for Detailed Data Analysis

Part Number: 403220

## Handheld and Benchtop

With the ability of being both a handheld and a benchtop unit, the TRA 500 offers the best of both worlds. The compact, ergonomic and lightweight design of the handheld unit along with the precision-engineered benchtop stand makes the TRA 500 ideal for users on the go or in the laboratory.

## Applications

The TRA 500 allows the user to measure most applications including powders, liquids, gels, pastes, granules and solid materials. To ensure consistent measurement optical glass cells of 10mm, 20mm and 30mm are included with the unit. The optical cells make it possible for the user to measure a wide range of problematic samples and still maintain a constant measurement.

## Accuracy

Giving accurate and repeatable results is what the TRA 500 does best. The on board camera based locator, enables the user to position the instrument accurately on the chosen sample with minimal contact. This feature dramatically minimize the chances of geometric metamerism.

## Calibration

The calibration board supplied with every TRA 500 incorporates a white tile and black calibration plate. This allows minimum and maximum readings to be checked every 24 hours.

## FREE Software

As standard, the TRA 500 comes with a FREE PC software package. The OnShade software allows for a detailed data analysis which can then be shared or printed via the optional micro printer accessory.

## Suitable for Multiple Applications

The versatility of the TRA 500 means its suitable for multiple applications and has the ability to report CIE Lab, XYZ, Yxy, LCh, CIE LUV, Hunter Lab colour spaces, ΔE*L*a*b*, ΔE*C*h°, ΔE*uv, ΔE*94, ΔE*cmc(2:1), ΔE*cmc(1:1), ΔE*00, ΔE Hunter Colour Difference Formulars; and can be set to D65, A, C, D50, D55, D75, F2, F7 & F11 illuminants. In addition, the TRA 500 can report a wide selection of other Colorimetric Indexes: WI (ASTM E313, CIE/ISO, AATCC, Hunter),YI (ASTM D1925, ASTM 313), TI (ASTM, E313, CIE/ISO), Metamerism Index (MI), Colour stain, Colour Fastness, Colour Strength and Opacity. This data can be seen as either Spectral Value/Graph, Colorimetric Value, Colour Difference Value/ Graph, PASS/FAIL Result, Colour Offset or Samples Chromaticity values.N6

## Industry

Chemical Industry | Food and Beverage Industry | Industries Others | Oil and Gas | Pharmaceutical Industry

## Application

Coatings | Household Products | Plastics | Textiles

## TRA 500 Handheld & Benchtop Reflectance Spectrophotometer

The TRA 500 is a cost effective quality control solution, which can be used as either a handheld or a benchtop spectrophotometer. The lightweight and ergonomic design along with the portable benchtop stand makes it ideal for quality control in the lab, field or in the manufacturing plant.I6

## Technical Data

| | |
|---|---|
| **Applicable Standard** | ASTM 313<br>ASTM D1925<br>ASTM E308 |
| **Colour Type** | Opaque |
| **Optical Geometry** | Reflect: di: 8°, de: 8° (diffused illumination, 8 degree viewing angle) |
| **Integrating Sphere Size** | 48 mm |
| **Spectrophotometric Mode** | Concave Grating |
| **Sensor** | 256 image Element Double Array CMOS Image Sensor |
| **Repeatability** | MAV/SCI: ΔE* ≤0.03 |
| **Display** | 3.5 inch TFT colour LCD, Capacitive Touch Screen |
| **Interfaces** | USB |
| **Spectral Interval** | 10 nm |
| **Measurement Mode** | Single Measurement, Average Measurement |
| **External Storage** | 2000 Standards : 20000 Samples |
| **Location Method** | Camera View Finder Locating |
| **Measured Reflectance Range** | 0 - 200 % |
| **Measurement Time** | 2.6 s |
| **Measuring Aperture** | Dual Aperture: 10mm/8mm & 5mm/4mm |
| **Specular Component** | SCI & SCE |
| **Colour Difference Formular** | ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00v, ΔE (Hunter) |
| **Battery Life Time** | 5000 measurements with 8 hours |
| **Other Colorimetric Index** | WI (ASTM E313, CIE/ISO, AATCC, Hunter)<br>YI (ASTM D1925, ASTM 313, TI (ASTM E313, CIE/ISO)<br>Metamerism Index MI, Staining Fastness, Colour Fastness, Colour Strength, Opacity |
| **Displayed Data** | Spectrogram/Values, Samples Chromaticity Values, Colour Difference Values/Graph, PASS/FAIL Result, Colour Offset |
| **Inter Instrument Agreement** | MAV/SCI: ΔE* ≤0.15 |
| **Spectral Range** | 400 - 700 nm |
| **Bandwidth** | 10 nm |
| **Illuminants** | CIE Illuminant D65<br>CIE Illuminant A<br>CIE Illuminant C<br>CIE Illuminant D50<br>CIE Illuminant D55<br>CIE Illuminant D75<br>CIE Illuminant F1<br>CIE Illuminant F2<br>CIE Illuminant F3<br>CIE Illuminant F4<br>CIE Illuminant F5<br>CIE Illuminant F6<br>CIE Illuminant F7<br>CIE Illuminant F8<br>CIE Illuminant F9<br>CIE Illuminant F10<br>CIE Illuminant F11<br>CIE Illuminant F12 |
| **Portability** | Portable |
| **Illuminant Life Span** | 5 years, more than 3 million measurements |
| **Observer** | 2° / 10° |
| **Environmental Conditions** | 0 - 40 °C, 0 - 85 % Relative Humidity (non condensing), Altitude < 2000 m |
| **Stock Conditions** | -20 - 50 °C, 0 - 85 % Relative Humidity (non condensing) |
| **Languages User Interface** | English, German, French, Spanish, Portuguese, Chinese |
| **Dimensions** | 184 x 105 x 77 mm |

## Delivery Scope

- TR 500 Sphere Spectrophotometer
- TRA Portable benchtop Stand
- OnShade PC Software
- White and Black Calibration Board
- White background plate
- Dust Cover
- USB Cable External DC Power Supply
- USB Stick with User Manuals in English, French, German, Spanish, Portuguese and Chinese
- Sturdy Carrying Case
- 10 mm, 20 mm and 30 mm Optical Glass cells
- Cell Cover

| Title | Part Number |
|---|---|
| W586/OG/10 Optical Glass | 605890 |
| W586/OG/10 Optical Glass (pack of 5) | 605895 |
| W586/OG/20 Optical Glass | 605900 |
| W586/OG/20 Optical Glass (pack of 5) | 605905 |
| W586/OG/30 Optical Glass | 605910 |
| W586/OG/30 Optical Glass (pack of 5) | 605915 |

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