

# Lovibond® Colour Measurement Tintometer® Group



## TRA 520 Spectrophotometer

Measure Liquids, Gels and Powders with the TRA (Adaptor) Series



- Not Everything is Flat, Not Everything is Solid
- Awkward Objects Can Be Difficult to Measure
- The TRA (Accessory) is a Precision Engineered Portable Docking Station for the TR Range of Handheld, Sphere, Versatile Spectrophotometers
- Provides a Light Controlled Environment for the Measurement of Liquids, Gels and Powders

Artigo No: 403225

### Precision Engineering

Designed specifically for the Lovibond® Spectrophotometers, the instruments fit tightly into the housing to avoid any ambient lighting entering the sample.

### Accurate Measurements Every Time

Each TRA kit is supplied with a white background plate to ensure consistency of readings. Background colour is critical when measuring translucent or transparent samples.

### Flexibility of Application

Supplied with 3 different optical glass cells (10mm, 20 and 30 mm path length), the TRAs support a wide variety of samples. Thicker and more viscous materials are easier to handle if the largest 30 mm cell is used. In other cases, a smaller volume of sample may only be available, hence the 10 mm cell.

### TRA 520 Spectrophotometer

The TRA series have been designed according to precision engineering as the ideal adaptor for the Lovibond® range of spectrophotometers. The robust shape makes them ideal for use in any laboratory. The angled viewing panel makes measurements easy-to-read. The integral lid blocks any ambient light since no external light interferes with the measurements.

### Dados Técnicos

<b>Tipo de Cor</b>	Opaque
<b>Geometria Óptica</b>	Reflect: di: 8°, de: 8° (diffused illumination, 8 degree viewing angle)
<b>Tamanho da Esfera de Integração</b>	48 mm
<b>Modo Espectrofotométrico</b>	Concave Grating
<b>Sensor</b>	256 image Element Double Array CMOS Image Sensor
<b>Display</b>	3.5 inch TFT colour LCD, Capacitive Touch Screen
<b>Interfaces</b>	USB
<b>Intervalo Espectral</b>	10 nm
<b>Armazenamento Externo</b>	2000 Standards : 20000 Samples
<b>Modo de Medição</b>	Single Measurement, Average Measurement
<b>Fonte de Alimentação</b>	Li-ion Battery
<b>Tempo de Vida da Bateria</b>	5000 measurements with 8 hours
<b>Método de Localização</b>	Camera View Finder Locating

<b>Faixa de Reflectância Medida</b>	0 - 200 %
<b>Tempo de Medição</b>	2.6 s
<b>Abertura de Medição</b>	Dual Aperture: 10mm/8mm & 5mm/4mm
<b>Componente Espectral</b>	SCI & SCE
<b>Fórmula de Diferença de Cor</b>	$\Delta E^*_{ab}$ , $\Delta E^*_{uv}$ , $\Delta E^*_{94}$ , $\Delta E^*_{cmc}$ (2:1), $\Delta E^*_{cmc}$ (1:1), $\Delta E^*_{00v}$ , $\Delta E$ (Hunter)
<b>Outro Índice Colorimétrico</b>	WI (ASTM E313, CIE/ISO, AATCC, Hunter) YI (ASTM D1925, ASTM 313, TI (ASTM E313, CIE/ISO) Metamerism Index MI, Staining Fastness, Colour Fastness, Colour Strength, Opacity
<b>Dados Exibidos</b>	Spectrogram/Values, Samples Chromaticity Values, Colour Difference Values/Graph, PASS/FAIL Result, Colour Offset
<b>Acordo Entre Instrumentos</b>	MAV/SCI: $\Delta E^* \leq 0.15$
<b>Faixa Espectral</b>	400 - 700 nm
<b>Largura de Banda</b>	10 nm
<b>Iluminantes</b>	CIE Illuminant D65 CIE Illuminant A CIE Illuminant C CIE Illuminant D50 CIE Illuminant D55 CIE Illuminant D75 CIE Illuminant F1 CIE Illuminant F2 CIE Illuminant F3 CIE Illuminant F4 CIE Illuminant F5 CIE Illuminant F6 CIE Illuminant F7 CIE Illuminant F8 CIE Illuminant F9 CIE Illuminant F10 CIE Illuminant F11 CIE Illuminant F12
<b>Portabilidade</b>	Portátil
<b>Vida Útil do Iluminante</b>	5 years, more than 3 million measurements

<b>Observador</b>	2° / 10°
<b>Idiomas da Interface do Usuário</b>	Inglês, Alemão, Francês, Espanhol, Português, Chines
<b>Dimensões</b>	184 x 105 x 77 mm
<b>Peso</b>	600 g

## Texto do Escopo de Entrega

- Complete TR 520 or 500 kit (including power supply and calibration foot).
- TR Accessory (including sample cover).
- White background plate.
- 10, 20 and 30mm Optical Glass cells.

## Acessórios

Título	Artigo No
W586/OG/10 vidro ótico	605890
W586/OG/10 vidro ótico, 5 pçs.	605895
W586/OG/20 vidro ótico	605900
W586/OG/20 vidro ótico, 5 pçs.	605905
W586/OG/30 vidro ótico	605910
W586/OG/30 vidro ótico, 5 pçs.	605915

**Tintometer GmbH**  
Lovibond® Water Testing  
Schleefstraße 8-12  
44287 Dortmund  
Tel.: +49 (0)231/94510-0  
Fax: +49 (0)231/94510-30  
sales@lovibond.com  
www.lovibond.com  
Germany

**The Tintometer Limited**  
Lovibond House  
Sun Rise Way  
Amesbury, SP4 7GR  
Tel.: +44 (0)1980 664800  
Fax: +44 (0)1980 625412  
sales@lovibond.uk  
www.lovibond.com  
UK

**Tintometer AG**  
Hauptstraße 2  
5212 Hausen AG  
Tel.: +41 (0)56/4422829  
Fax: +41 (0)56/4424121  
info@tintometer.ch  
www.tintometer.ch  
Switzerland

**Tintometer China**  
Room 1001, China Life Tower  
16 Chaoyangmenwai Avenue,  
Beijing, 100020  
Tel.: +86 10 85251111 App. 330  
Fax: +86 10 85251001  
chinaoffice@tintometer.com  
www.lovibond.com  
China

**Tintometer South East Asia**  
Unit B-3-12, BBT One Boulevard,  
Lebu Nilam 2, Bandar Bukit Tinggi,  
Klang, 41200, Selangor D.E  
Tel.: +60 (0)3 3325 2285/6  
Fax: +60 (0)3 3325 2287  
lovibond.asia@tintometer.com  
www.lovibond.com  
Malaysia

**Tintometer Brazil**  
Caixa Postal: 271  
CEP: 13201-970  
Jundiaí – SP  
Tel.: +55 (11) 3230-6410  
sales@tintometer.com.br  
www.lovibond.com.br  
Brazil

**Tintometer Inc.**  
6456 Parkland Drive  
Sarasota, FL 34243  
Tel: 941.756.6410  
Fax: 941.727.9654  
sales@lovibond.us  
www.lovibond.com  
USA

**Tintometer India Pvt. Ltd.**  
Door No: 7-2-C-14, 2<sup>nd</sup>, 3<sup>rd</sup> & 4<sup>th</sup> Floor  
Sanathnagar Industrial Estate,  
Hyderabad, 500018  
Telangana  
Tel: +91 (0) 40 23883300  
Toll Free: 1 800 599 3891/ 3892  
indiaoffice@tintometer.com  
www.lovibondwater.in  
India

**Tintometer Spain**  
Postbox: 24047  
08080 Barcelona  
Tel.: +34 661 606 770  
sales@tintometer.es  
www.lovibond.com  
Spain