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TFT LAUNDRY TEST EQUIPMENT

About TFT

TFT is an independent test house that provides UKAS accredited testing of fabrics. The laboratories in Skipton provide a comprehensive range of flammability, physical and fibre microscopy testing and certification. Established more than 20 years ago, TFT offers testing, certification, and investigation services across traditional and specialist textile industries.

TFT also design and manufacture two types of laundry test meter. These have been developed over time and have become the standard meters in use across the industry in the UK. We also supply to users across the world. The meters are typically used for quality control purposes in laundry and laundry supply industries.

Overview of the meters

The meters are designed to be a cost-effective and convenient solution for anyone measuring and assessing the quality of a laundry process.

TFT manufacture, calibrate and support two types of meter. Used together, the two meters give a comprehensive measure of the quality of laundry and other fabric processing.

We support all earlier versions of our meters where parts are still available.

The meters are simple to use. The meter calibration is set against the reference that we provide, the meter is placed on the fabric sample and the display shows the reading.

Both types of meter are built into the same style and size of casing with a single digital display and simple controls. The meters are small enough to be hand held, making them convenient for use in labs or laundries. The meter and its charger are supplied in a padded 'attache-style' carry case which protects the meter in transit. Instructions are supplied which also indicate how the meter may be used in practice to produce reliable readings.

General features of TFT meters

- The readings are displayed on a clear digital panel on the top face.
- The meters are calibrated to a fixed standard. This ensures that the readings from different meters are comparable. Calibration of the meter should be carried out annually by TFT to ensure that the calibration is maintained.
- Calibrated tiles or papers are supplied with the meter to ensure that the correct calibration is set for day-to-day use.
- The meters are built with integral rechargeable batteries so that they can be used without connection to a power supply.
- The meter face has two LED lights. The green LED shows that the meter is turned on via the slide switch at the end of the meter. The red LED shows low battery, indicating that the meter must be recharged.
- A fast charger (600mA) is included in the kit. This will recharge a meter in about 3 hours. The charger is connected via a small socket on the end of the meter.
- The light aperture of the meter is covered with a glass slide. This prevents dirt or steam from entering the meter and affecting the reading. Also, the glass slide will flatten fabrics with pile and this gives a more representative reading of the reflectance or fluorescence of the fabric.



Image 1 – A Reflectometer and Fast Charger in the Protective Carry Case.

TFT Reflectometer

The Type 3 TFT Digital Reflectometer is a portable meter for measuring the reflectance (“whiteness”) of textiles and other flat materials or surfaces. The meter is designed to exclude any infra-red or ultra-violet light, giving a true reading of the visible light brightness of the material under test.

The meter can be used to give a measurement of the loss of brightness following laundry processes. Laundry performance can be accurately and consistently tracked over time. The readings can be used to devise criteria for the level of greying considered to be acceptable.

Key features of the Reflectometer

- ◆ The Type 3 Reflectometer uses a white LED light source. These are made to a high tolerance so that the readings of different meters are comparable.
- ◆ The meters are calibrated by TFT to a standard peak white made from compressed barium sulphate.
- ◆ The maximum reading is 100 which represents peak white. Readings can be expressed in terms of percentage of peak white. For general laundry use readings are normally in the range from 70 to 100%. In some cases, for example assessing the cleaning of heavily soiled fabrics, the meters are used down to 30% reflectance.
- ◆ The meter reads in units of 0.1% of reflectance allowing for very precise values to be recorded.
- ◆ A certified white reference ceramic tile is provided for routine user calibration. This will have a reflectance of about 80%. This will ensure that the peak white value remains set at 100%.



Image 2 - Reflectometer and Ceramic Calibration Tile.

Applications of the Reflectometer

- Precise measurement of the reflectance of white textiles for quality control purposes in laundry, finishing, detergent manufacture and related industries.
- Designed for use in monitoring reflectance to NHS contract standards.
- Used in the dry-cleaning and laundry industry to indicate the different levels of greying produced under various process conditions.
- Used to measure soil removal levels from EMPA soiled test fabrics.
- Used in conjunction with the TFT OBA Meter, it is possible to differentiate between loss of brightness and deposition of particulate soil during cleansing and to quantify these changes.

Improvements from earlier versions of the TFT Reflectometer

The Type 3 Reflectometer uses an LED light source. This has several benefits over the previous bulb lit versions.

- No infra-red contribution to the reflectance reading.
- Improved reading stability.
- Fewer failures due to ageing of the bulb and mechanical instability in the filament and bulb holder.
- Lower current consumption giving a significant increase in the time that the meter can be used before battery charging is needed.

TFT Optical Brightening Agent Meter (OBA)

The TFT digital OBA meter is a portable meter for measuring the fluorescence of textiles and other flat materials or surfaces when lit by ultraviolet light.

The meter is designed to give off only a small amount of visible light, ensuring that the reading is primarily derived from the fluorescence.

Key features of the OBA meter

- ◆ The Type 3 OBA meter uses an ultraviolet LED light source. These are made to a high tolerance so that the readings of different meters are comparable.
- ◆ The meter is calibrated to give a reading of 100 when placed on a standard Ciba-Geigy ultraviolet reference material No. 12. This ensures that all meters are set to the same reference point.
- ◆ Readings of typical 'white' laundered materials are between 70 and 140. These readings can be expressed in terms of percentage of the standard reference.
- ◆ The meter reads in units of 1% of fluorescence allowing for precise values to be recorded.
- ◆ A set of certified white reference papers is provided for routine user calibration. These will give a reading of about 115. This maintains the meter calibration point of 100 for the standard reference.

Applications of the OBA meter

- Precise measurement of the fluorescence of textiles for quality control purposes in laundry and related industries.
- Designed for use in monitoring fluorescence to NHS contract standards.
- Used in the dry-cleaning and laundry industry to indicate the different levels of fluorescence produced under various process conditions.
- Used in conjunction with the TFT Reflectometer, it is possible to differentiate between loss of brightness and deposition of particulate soil during cleansing and to quantify these changes.

Improvements from earlier versions of the TFT OBA meter

The Type 3 OBA meter uses an LED light source. This has several benefits over the previous tube lit versions.

- Reduced and constant visible light contribution to the fluorescence reading.
- Improved reading stability.
- Fewer failures due to wear in the tube and high voltage circuit.
- Lower current consumption giving a very significant increase in the time that the meter can be used before battery charging is needed.
- Easier handling as the meter is housed in a smaller box and carry case.

Specifications (both meters)

Dimensions (mm)	150 x 80 x 80
Weight (grams)	550
Specimen area (sq cm)	6.4
Specimen location	Centre of base plate
LCD display height (mm)	12.5
LCD display range	0 to 100.0 (peak white) for Reflectometer 0 to 140 for OBA meter
Power consumption	30 mA
Battery pack	8 AA 2600 mAh NiMH cells
Battery life	> 500 cycles, dependent on charge/discharge profile
Battery life per cycle	> 80 hours
LED light source life	> 1000 hours
Battery charger	
- input	220V, 50-60 Hz
- output	600mA, DC pulsed charge, automatic switching to trickle charge when charge is complete
- full charge time	3 to 4 hours at fast charge
- battery overcharge	Supplied fast charger automatically switches to trickle charge to prevent fast overcharging

International Customs Tariff No: HSS 90272000

Guarantee

The unit is fully guaranteed against faulty workmanship or component malfunction for one year for both parts and labour. In order to ensure that you are not inconvenienced by any breakdown, we also undertake to correct any fault as a priority, generally within 48 hours of receipt of your unit. Carriage is payable for dispatch outside the European Community.

Caveat to the guarantee

The unit CANNOT BE GUARANTEED against PHYSICAL MISUSE such as being dropped or immersed in liquids or if the rechargeable batteries are over-drained to the extent that they are in short circuit or reverse polarity and cannot be recharged. This will happen by leaving the machine switched on beyond the point that the red LED is illuminated brightly. Please check that the machine is switched off when testing is complete or packing it away.