



TLS850 Translucency Meter



Novel patented method for investigating translucent materials using hand-held probe. Suitable for use with liquids, emulsions or solids such as skin.

General Information

Applications

- Personal and beauty products
- Foods and beverages
- Plastics, diffusers
- Paints, inks and paper



Overview

Many common materials transmit and scatter light but are neither transparent (transmit a clear image), or opaque (transmit no light at all). Such materials are described as translucent and the degree of translucency depends on the absorption and scattering coefficients of the material. Translucency is an important phenomenon in that it contributes to measurement errors using standard colorimeters or spectrophotometers and changes the 'appearance' of materials to the eye.

Measurement Principle

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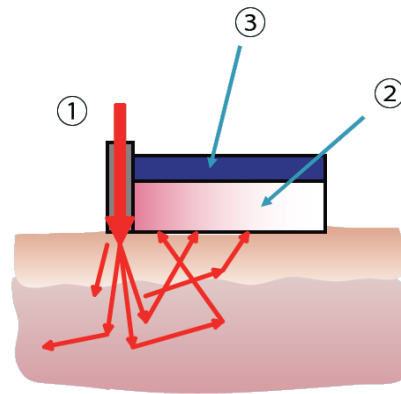
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The TLS850 uses a novel method patented by Dia-Stron. A narrow light beam from a RGB LED source(1) illuminates the test sample. Translucent materials scatter the light within the material, and a proportion of this scattered light is returned to the probe. Using a fibre optic faceplate (FOP)(2), the object can be mapped, and the back-scattered light collected by the probe(3). The collected light can then be displayed, on the PC, as light level as a function of distance from the point of sample illumination.



The key feature is that only internally scattered light is collected – not that reflected from the surface as with conventional instruments. The principle of measurement is shown on the schematic diagram above.

Specifications

Programmable Features

Translucency is quantified by the rate of lateral scatter of light

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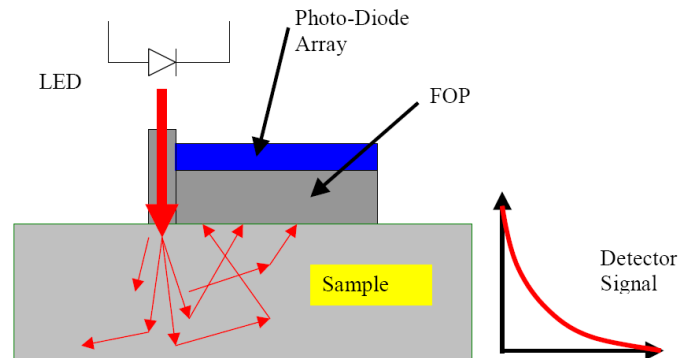
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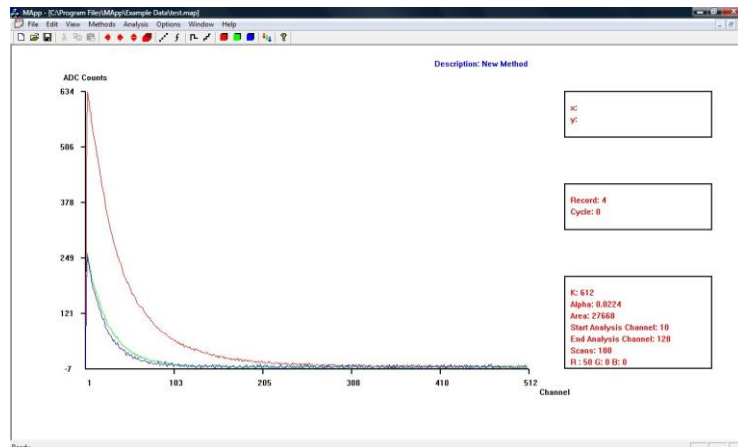


Number of scans	1-10,000
Illumination	% R, G & B
Measurement protocol	RGB Scan R-G-B scans
Measurement specifications	
LED	R, G & B
Diode array channels	512
FOB size	20mm
Physical specifications	
Net weight	800g
Total packed weight	2kg
Control unit:	Width 80mm Height 35mm Depth 200mm
General specifications	
Power	10W
Voltage Universal input	85-265vac 47-63Hz
Sockets	1
Computer connection	USB
Content	
TLS850 Probe USB Interface Cable Power Supply and Mains Cord MApp Software CD (compatible with all Windows versions)	

and the total amount of backscattered light. The measurements can be carried out using single colour mode of red, green or blue from the LED.



The hand-held probe consists of an RGB led light source and a fibre optic faceplate to transit backscattered light to a NMOS photodiode array. The captured signal is digitised by a microprocessor and the data corrected for background lighting conditions.



The results are transferred by a USB link to the MApp software for data collection, display and analysis.

A parallel support arm option can be used with the DTM, Ballistometer or Translucency instruments. It is intended to lower the probe vertically on to the test site with a controlled downward force. A foot pedal is also available to trigger the data acquisition.