Hanatek FT3 Precision Thickness Gauge

Used in accordance with : Measurement standards BS, ISO, TAPPI, DIN, ASTM

The **Hanatek FT3 Precision Thickness Gauge** is specifically designed to quickly and accurately measure the thickness of a variety of substrates including film, paper, board, foil, tissue and textiles.
Best in class repeatability, resolution and accuracy

At a Glance

- Accurate and repeatable thickness measurements
- Compliant to a multiple standards
- Choice of configuration

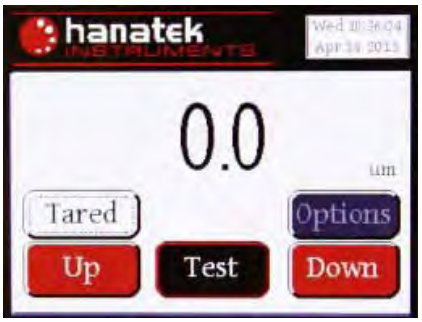
Features

- Repeatability of better than 0.4 µm
- 0.1 µm resolution
- User programmable number of readings, dwell time and down speed
- Metric or imperial units
- Easy to use touch screen / integrated software
- Flatness of measurement head/anvil <0.1µm, typical parallelism <1µm
- Temperature stability circuitry ensures the instrument electronics reach optimum conditions before testing.
- Batch Test: Calculates the thickness difference between two measurement sets, used to assess the thickness of coatings, adhesives or sample batches
- Extended two year warranty
- UKAS traceable calibration certificate, 2000 and 500 µm calibrated check gauges

Defined Parameters

Up Time: This parameter allows the user to manipulate samples between Measurements. 1-10sec
Speed of measurement: The speed of the measurement head is especially important when measuring deformable materials. 1-5mm/sec
Dwell/Down Time: The dwell time determines the settling time of the measuring head on compressible materials. 1-15sec

The instrument is operated via an integral touch screen and features different measurement modes.
Standard Test: Full statistical analysis of up to 500 readings.
Batch Test: Calculates the thickness difference between two measurement sets, used to assess the thickness of coatings, adhesives or sample batches.
Standard Tare Test: Automatically tares the instrument before each test using user defined conditions.
Pass/Fail Test: Enter the target thickness with percentage tolerance. Results are displayed with a PASS or FAIL.



BAMR (Pty) Ltd, PO Box 23973, Claremont, 7735, South Africa
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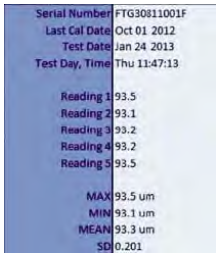
Email : sales@bamr.co.za, Web : www.bamr.co.za

Data Transfer

Measurements made using the FT3 thickness gauge can be exported to Microsoft Excel* via interface software.



Serial Number	FTG30811001F
Last Cal Date	Oct 01 2012
Test Date	Jan 24 2013
Test Day, Time	Thu 11:47:13
Reading 1	93.5
Reading 2	93.1
Reading 3	93.2
Reading 4	93.2
Reading 5	93.5
MAX	93.5 um
MIN	93.1 um
MEAN	93.3 um
SD	0.201

All measured and calculated parameters are transferred along with the date / time stamp, instrument serial number and calibration date.

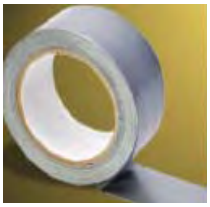
Sample excel sheets available on Request

Applications

Printed carton board

Flexible Packaging

Unprinted carton board



Tape

Tissue

Foils

Paper

Barcode Labels

Plastic Film

Textile

Applications include testing thickness of:
Recycled Paper, Leather, LDPE Film, Coatings, Fibreglass, Carbon Fibre, Non-Woven Materials, Envelopes, Laminated Film, Carton Blanks, Foils, Banknotes, Printed Paper, Pouches, Film Lids, Films, Paper Gaskets, Bags & Sacks, Textiles, Paper, Cartons, Tissues, Synthetic Fabric, Ink, Plastic Film, Printed Cartons, Polyester, Shrink Film, PE Film, Floor Tiles, PVC Floor Coverings, Tobacco Cartons, PE Bags, PP Film, PVC Film, Labels, Metallised Film, LLDPE Film, Coex Film, BOPP Film, Surface Print Non-Woven, OPP Film, Galvanised Steel, Foam, Woven Composite Materials, Varnish, Lacquer, Coated Tinplates.

Why is Film Thickness important?
Plastic films are often used to encapsulate, protect and preserve products that are sold to consumers or industry. The film is used as a two way barrier to stop product leaking out and also external contaminants migrating in.

The effectiveness of the film as a barrier is related to its chemical composition and also its thickness.
Films which are below a specified thickness may fail physically- bursting, splitting or leaking, they will also be less effective at stopping the migration of oxygen and contaminants that can lead to product spoilage.
Packaging developers and product manufacturers measure and specify the thickness of the film to ensure the robustness of the packaging and the functionality of the barrier.

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Standards

Plastic Film

- **BS 2782-6** Methods of testing plastics. Dimensional properties. Determination of thickness by mechanical scanning of flexible sheet
- **DIN 53370** Testing of plastic films - Determination of the thickness by mechanical scanning
- **ISO 4593:1993** Plastics - Film and sheeting - Determination of thickness by mechanical scanning
- **ASTM D6988 Part B** Standard Guide for Determination of Thickness of Part A OR B Plastic Film Test Specimens
- **DIN 1942** Self adhesive tapes. Measurement of thickness

Paper & Board

- **ISO 534** Determination of thickness, density and specific volume
- **DIN 53105**
- **BS EN 20534** Determination of thickness and apparent bulk density or apparent sheet density of paper and board
- **TAPPI T 411** Thickness of Paper and Paperboard (Soft Platen Method), Test Method T 551 om-06
- **SCAN P7**
- **SCAN P31**
- **FEFCO No 3**
- **ISO 3034** Corrugated fibreboard. Determination of single sheet thickness

Tissue

- **BS EN 12625-3 : 2005** Tissue paper and tissue products. Determination of thickness, bulking thickness and apparent bulk density
- **SCAN P47**

Textile

- **ISO 5084** Determination of thickness of textiles and textile products
- **ASTM D5199** Determination of thickness of geosynthetics
- **ASTM D1777** Standard test method for thickness of textiles
- **ISO 2589** Leather. Physical and mechanical tests. Determination of thickness

Gaskets

- **ASTM F36-99** Standard test method for compressibility and recovery of gasket materials

Floor Coverings

- **EN428** Resilient floor coverings - Determination of overall thickness

Flexible Packaging

- **ASTM F2251** Standard Test Method for Thickness Measurement of Flexible Packaging Material

Tape

- **DIN EN 1942** Self adhesive tapes - Measurement of Thickness
- ASTM D3652 Standard Test Method for Thickness of Pressure-Sensitive Tapes

Optional Accessories

- Results printer Printer:
  - Time & date stamped labels allow thickness variation to be easily documented
- Data transfer software

Configurations

Each standard of compliance specifies a different pressure which is calculated by the force applied to the sample through a measuring head of a given diameter.

FT3 :	Single standard of compliance. Fixed pressure measurements.
FT3-20 :	As per FT3 but with extended 19mm measuring range.
FT3-V :	1+ standard(s) of compliance. Pressure varied by adding additional weight to the measurement platen.
FT3-V20 :	As per FT3-V but with 19mm measuring range.
FT3V-LAB :	Compliance to multiple standards. Pressure is varied by adding additional weight to the platen and by changing the measuring head - suitable for use in R & D environments or by testing laboratories.
FT3V20-LAB :	As per FT3V-Lab but with 19mm measuring range.
FT3-U :	ISO 4593 standard of compliance. Fixed pressure.

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Precisely Measures the thickness of a variety of materials

Test Parameters	Physical test parameters can be factory configured according to International Standards or customer requirements.
• Momentum and profile of measurement head	
• Measurement pressure	Measurement speed and dwell time are controlled by user defined parameters.
• Measurement dwell time	
Instrument	The instrument is linearised throughout its measurement range using a multi point calibration.
• Accuracy, linearity, calibration	
• Flatness/parallelism of measurement area	Flatness of measurement head/anvil <0.1µm Typical parallelism <1µm
Operator	The Hanatek instrument provides full statistical analysis of data.
• Incorrect recording and analysis of results	The optional printer allows a time/date stamped results label to be attached to job sheet or retained samples.
• Sample handling and measurement technique	User defined routines or the optional footswitch mean hands free operation for easy sample manipulation.
External Effects	Temperature stability circuitry ensures the instrument electronics reach optimum conditions before testing.
• Temperature	

Technical Specifications

Description	**Specification**
Resolution	0.1 µm (0.01 µm on FT3-U)
Repeatability	Better than 0.4 µm*
Reproducibility	Better than 0.8 µm*
Measurement Range	0 – 4000µm 0 – 19000 µm extended range instrument also available
Output	RS232
Power	110V/220V 50Hz/60Hz
Accessories	All Hanatek FT3 gauges are supplied with a UKAS traceable calibration certificate and traceable 2000 µm and 500 µm checking gauges
Options	Results printer, foot switch, additional weights
Weight	10kg (max)
Dimensions	(h) 285 x (w) 302 x (l) 285 mm
Packed weight	15.7kg
Commodity code	90273010

*Dependant on operating conditions

Standard Measurement Heads for FT3, FT3-V & FT3-U

Ball	3mm radius
Domed	25.5mm radius
Flat	6 / 6.35 / 8 / 10 / 11.3 / 16 / 25.3 / 28.7 / 35.7 / 50.5mm diameter**

**Non standard heads between 6 and 50mm diameter are available on request

Test Masses

FT3 Standard	50g – 2000g
FT3-V	100g – 4000g
FT3-U	50g – 500g
FT3V-LAB	100g – 4000g

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