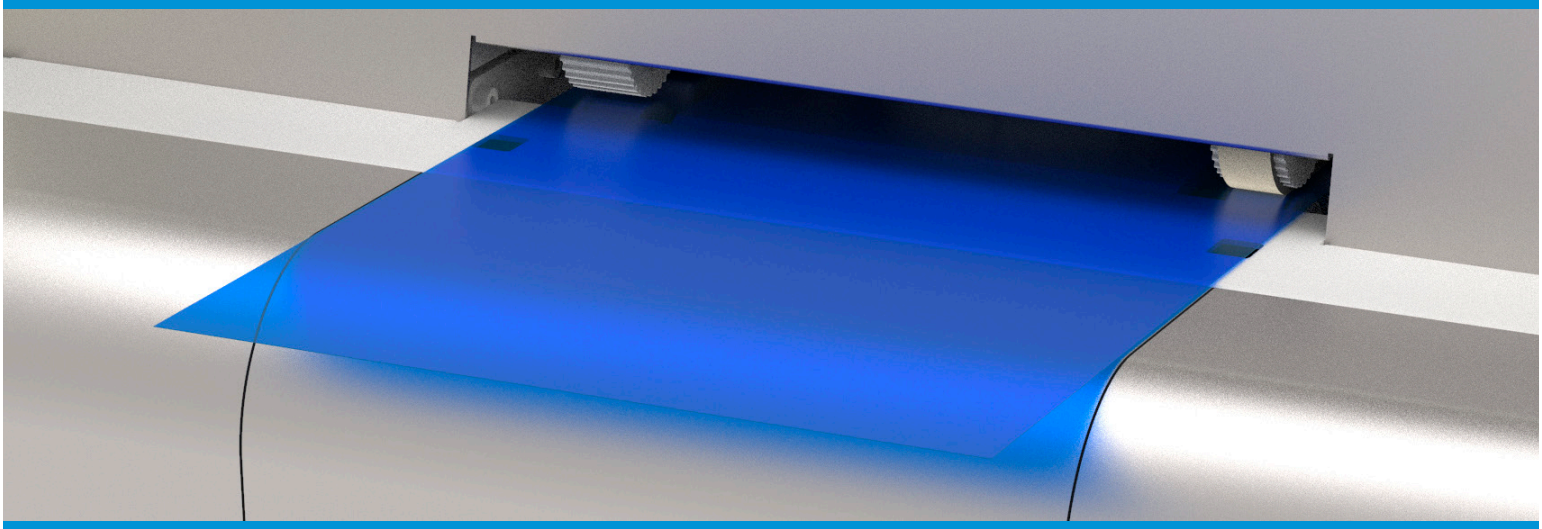
KÜNDIG CONTROL SYSTEMS
The Gauge Manufacturer for Film Extrusion SWISS MADE

Filmtest 3G



Offline Thickness Gauge for Process Optimization and Quality Control

Filmtest 3G

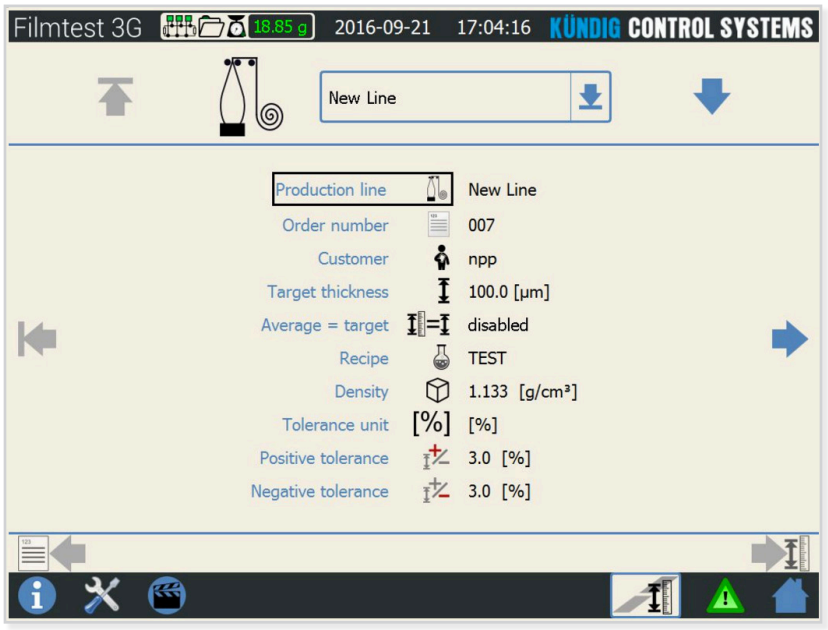
The Filmtest is an offline measuring system for extruded films, used for process optimization and quality control labs. The combination of several measuring functions in an offline system makes the Filmtest a valuable tool for a professional quality control.

Due to fast and easy handling it is practical to perform measurements at every roll change. Consistent measurement means you can provide your customer with more assurance that delivered production is within specification.

The operation of the system is easy enough that any operator can do it. The Filmtest helps to reduce the work in the laboratory. For example, in addition to the thickness measurement, the unit weight of the sample is also calculated eliminating the manual step of weighing the film.

The Measuring Procedure

- A sample of the film is cut by means of a cutting plate, that guarantees that the exact width of the sample is 150mm
- Introduce the nominal thickness, density, receipt and tolerance. When the film is measured again, all these settings will be automatically suggested
- The „Variospeed“ sample scanner uses optical sensors to track the film edges; automatically transporting the sample through the capacitive measuring device
- The thickness profile is measured with a high resolution capacitive sensor
- The length and the weight of the sample is measured
- The square meter weight is determined using length, width and weight, then the average thickness is calculated based on the density



The menu can be completed with up to six additional fields, that can be entered according to the production or operator‘s desire.

Advantages

- The sample of the film does not need to be formed into a loop, it will be transported through the capacitive measuring device
- Film samples that are cut into several pieces can be measured one after the other, the software will put the measuring data together and will create the complete profile
- The square meter weight is determined using length, width and weight. Then the average thickness is calculated based on the density. This method allows a much more precise thickness profile measurement than other systems on the market
- All measuring values will be registered during the same measuring operation

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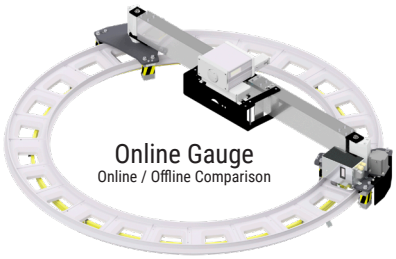
Integration and Network

Filmtest 3G Quality Analysis Software
Windows 7 or later



Online Gauge
Online / Offline Comparison

Gaugecloud
For Training, Software Updates and Troubleshooting

Production Planning System
Connected by Database Interface

Operating Data Acquisition System
Connected by Database Interface

Profile control system
Example: Agricultural Lines with fixed die and fixed take-off

Enterprise Solutions

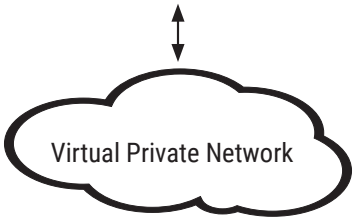
Company X

Filmtest 3G
For Lab and Production

Filmtest 3G Database Server
Windows 7 / Windows Server 2008 or later

Filmtest 3G Quality Analysis Software
Windows 7 or later

Access to Quality Assurance Data
For Customers and Suppliers



Filmtest 3G Database Server
on Windows Cloud Server

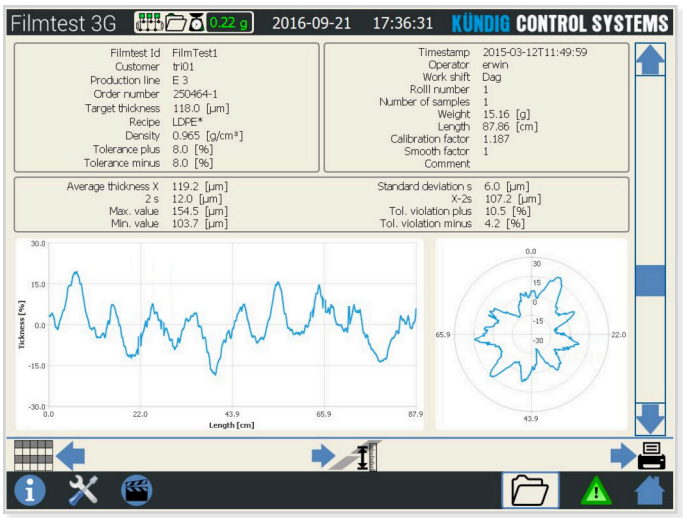
Company Y

Filmtest 3G
For Lab and Production

Electronic Archives
Example: Read-only Database

Filmtest 3G Quality Analysis Software
Windows 7 or later

Filmtest 3G TouchApp

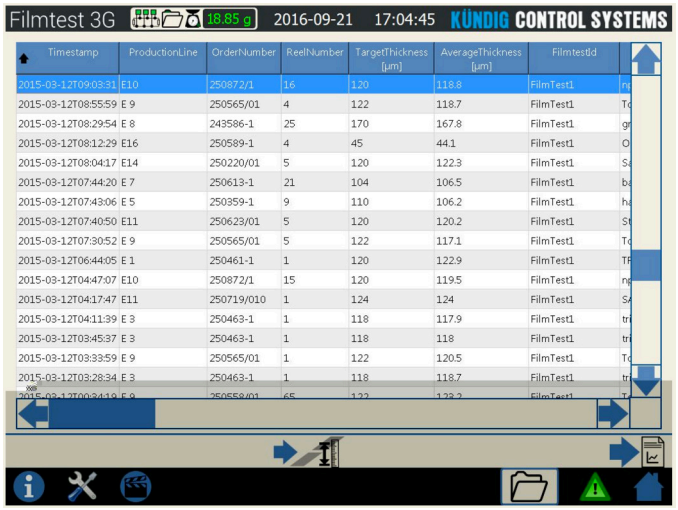


The measured profile is instantaneously displayed as either relative or absolute
thickness. The zoom function allows the operator to analyze even the smallest deviations.

In case that the film sample has a crease, the operator can use a filter to eliminate the crease and then recalculate the profile.

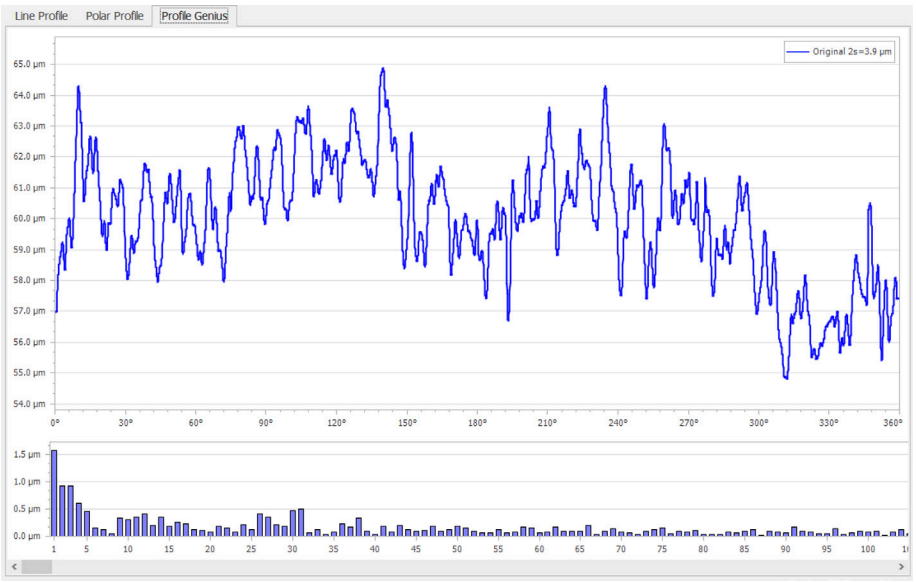
All measurements will be automatically archived. A search function is provided to ensure operators can easily retrieve archived data.

The Filmtest 3G Quality Analysis Software, running on a Windows PC, allows detailed analysis of each measurement. The data can be also exported from the archives. The entire archive with its data is possible to be stored in another network drive.



Profile Genius

This software tool can especially assist in detecting reasons for thickness profile variations in the blown film extrusion process. Using this information enables the operator to focus in on the correct process areas to reduce the profile variation.



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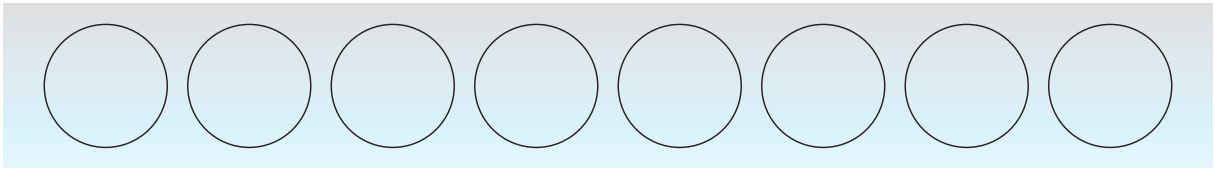
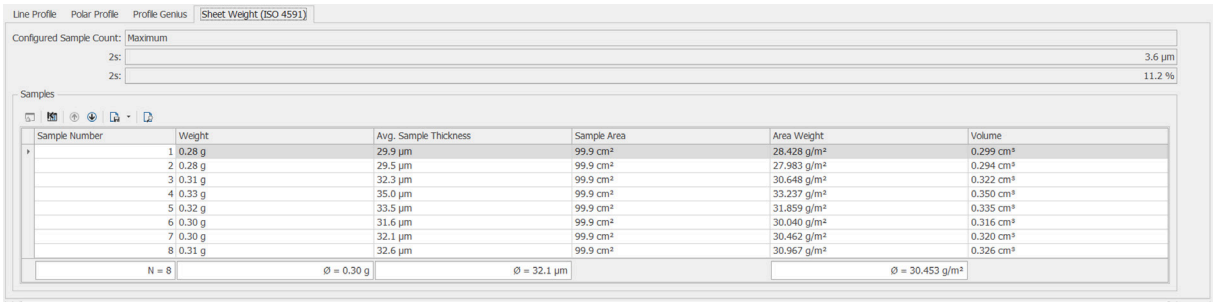
Sheet Weight (ISO 4591)

The Sheet Weight function automatically calculates the measurement values of circular areas. The parameters of the circular areas can be adjusted in the software.



Film Sample: 32 µm | 920 mm wide



Sample Number	Weight	Avg. Sample Thickness	Sample Area	Area Weight	Volume
1	0.28 g	29.9 µm	99.9 cm²	28.428 g/m²	0.299 cm³
2	0.28 g	29.5 µm	99.9 cm²	27.983 g/m²	0.294 cm³
3	0.31 g	32.3 µm	99.9 cm²	30.648 g/m²	0.322 cm³
4	0.33 g	35.0 µm	99.9 cm²	33.237 g/m²	0.350 cm³
5	0.32 g	33.5 µm	99.9 cm²	31.859 g/m²	0.335 cm³
6	0.30 g	31.6 µm	99.9 cm²	30.040 g/m²	0.316 cm³
7	0.30 g	32.1 µm	99.9 cm²	30.462 g/m²	0.320 cm³
8	0.31 g	32.6 µm	99.9 cm²	30.967 g/m²	0.326 cm³
N = 8	Ø = 0.30 g	Ø = 32.1 µm		Ø = 30.453 g/m²	

For a sample at a length of 920 mm and an area of 100 cm^2 the software determines measured values for a total of 8 circular areas. The number of circular areas can be configured depending on the sample length.

Technichal Data Filmtest 3G

Electrical interface values

Power supply	110 - 240 VAC, 50/60 Hz
Power consumption	max. 100 VA

Measurement

Measuring principle	Capacitive thickness measurement Suitable for all electrically non-conducting material
Sample size	6“ (150 mm) wide
Measuring range	0.4 to 12 mil (10 to 300 µm)
Linearization error	< 0.5 %
Measuring interval	50 ms
Resolution	0.004 mil (0.1 µm)
Accuracy average thickness	0.2 to 0.4 mil (5 to 10 µm) ⇨ 0.008 mil (0.2 µm) > 0.2 mil (10 µm) ⇨ 1 %
Linearity	better than 2%

Ambient conditions

Ambient temperature	73.4 °F (23 °C)
Measured film	LDPE-Film at approx. 50 °C (122 °F)

gauge.ch

Questionnaire application technology

Company

Address

Zip Code **City** **Country**

Contact person **E-mail**

Phone **Fax**

We are interested in

- ❑ Online thickness gauge
- ❑ Online thickness gauge and automatic profile control
- ❑ Offline system for film thickness
- ❑ Width measurement
- ❑ Width measurement and control
- ❑ Meter weight control

Specifications of existing line

Film width:	Min. _____ mm	Max. _____ mm
Film thickness:	Min. _____ µm	Max. _____ µm
Throughput:	Min. _____ kg/h	Max. _____ kg/h
Line speed:	Min. _____ m/min	Max. _____ m/min
Extrusion:	❑ Monoextrusion __ Components	❑ Coextrusion __ Layers __ Components per layer
Processed materials:	_____	
IBC:	❑ Yes	❑ No
Gusseted films:	❑ Yes	❑ No
Die:	❑ fix ❑ oscillating	❑ continuously rotating
Haul-off:	❑ fix ❑ oscillating	❑ continuously rotating
Width of roll at haul-off:	_____ mm	
Power supply:	_____ VAC _____ Hz (single phase)	
Existing measuring and control units:	❑ Thickness gauge ❑ Width measurement ❑ Meter weight control	❑ Profile control system ❑ Width control ❑ Line speed control
Brand of existing line:	_____	

sales@kundig-int.com

Thickness Gauges for Blown Film Lines

K-500 Rotomat KT
Capacitive thickness gauge for a wide range of films

KCF-700 Rotomat KT
Non contact thickness gauge for sticky films

K-XRAY Rotomat KT
Thickness gauge for barrier films based on X ray backscatter

S-100 Twin
Capacitive thickness gauge for barrier films

K-300 CF Gauge
Thickness gauge for quality supervision

KNC-400 Rotomat KT
Non contact thickness gauge for sticky and sensitive films

Thickness Gauge for Cast Film and MDO Lines

KNC-600 Linear Scanner
Non contact thickness gauge for cast film and MDO lines

Width Measuring / Control System for Blown Film Lines

FE-8
Width measurement and control for lines with or without IBC

Quality Control

Profilstar.Net
Visualization for quality supervision and control

Filmtest 3G
Offline measurement for quality control

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