DAVINOR LayerGauge® 32

SIGNIFICANT SAVINGS THROUGH IMPROVED THICKNESS MEASUREMENT OF MULTILAYER FILMS

Efficient Quality Control on high performance multilayered plastic films requires an instrument that sees a film's multilayer structure. Developed, manufactured and marketed by Davinor, the *LayerGauge 32* measures thickness of each individual layer in a film sample. Based on optical interferometric principle, *LayerGauge* produces accurate results quickly and the instrument can be operated easily with minimum user training.

Davinor *LayerGauge*® 32 Measuring Unit

As plastic films become increasingly specialized they also are growing more complex. Seven layer films are now common in food packaging and new film products with even more layers has already appeared. This trend represents a challenge in terms of quality control.

Measuring total thickness of the film or the thickness of a single layer is a relatively straightforward task. This can be accomplished in number of different ways; current methods include mechanical, gravimetric, capacitive and absorption techniques. However, none of these methods provide information about thickness of each individual layer. Multiple layers composed of the same material cannot be measured individually by these methods.

How does *LayerGauge* work?

Davinor LayerGauge operates by directing a narrow light beam to the sample and measuring weak reflections from surfaces and interfaces between the layers. This technique - interferometry - uses ordinary white light and it can measure extremely small distances.

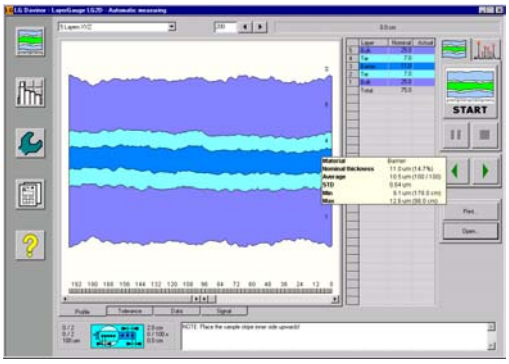
Quick and precise

Davinor ***LayerGauge*** comes with a sophisticated user interface software that runs on a modern industrial PC. Predefined "recipes" for each film type enable operators to use the instrument to perform fast and reliable measurements easily, without tedious sample preparation. Very thin layers, down to 2 µm (0.08 mil), can be measured automatically.

LayerGauge provides results from each measurement point in seconds. This is a major improvement over conventional method of measuring layer thicknesses with a microscope that can take several hours to complete a single sample. In addition there is no longer need to measure samples in laboratory; ***LayerGauge*** can be installed and used on production floor by plant personnel.

Significant savings in raw materials

In addition to just control that film quality is within tolerances, Davinor ***LayerGauge*** is commonly used to tighten layer thickness margins. For example one percent reduction in target barrier layer thickness means one percent direct savings in consumption of expensive raw material. This generates significant savings in high volume film manufacturing where raw material expenses represent a relatively high percentage of an operation's variable costs. Typical total raw material savings reported by Davinor's customers range from three to five percent.



A report display: Layer Thickness Profile

A report from a five layer film above shows thickness profile of each layer. Measurement of a sample at 100 points along its length takes about 10 minutes only!

Leading manufacturers of multilayer films, such as *Amcor, Bemis*, *Cryovac, Mitsubishi, Dai Nippon, TetraPak, Wipak, etc.* use Davinor ***LayerGauge*** in optimizing their quality control and process control practices. LayerGauge is an ideal tool for measuring individual layers in high performance food packaging films and coatings on a liquid packaging board.

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Davinor LayerGauge® 32

GENERAL DESCRIPTION

Thickness gauge for multilayer materials. Optical measurement method, safe to use. Fully automatic system for high volume Quality Control measurement and process monitoring use.

HARDWARE

Sample Handling

Fully automatic. Programmable number of measuring points and distance between points. Up to 5 cm (2 inch) wide sample with no limit in length. Movement guided by software controlled brake.

Thickness Range

Maximum sample thickness 650 µm (25 mil) with automatic movement
Maximum total thickness 1500 µm (60 mil) by manual sample relocation.

Size & Weight

41(w) x 26(d) x 23(h) cm, 17 kg. (16(w) x 10(d) x 9(h) inch, 37 lbs)

Connections

Power 90…260 Vac, 50/60 Hz (AutoSense). Maximum power consumption 80 VA.
PC connection via USB connection.

Computer Package

PC, display, touch screen and printer available as option.

SOFTWARE

General Description

M-Flex32 software for PC computers using Windows 2000/XP/Vista operating system.

Layer Detection

Unlimited number of layers. Wide range of signal analysis and peak search functions for fully automated measuring.

Reporting

Thickness Profile Graph, Numerical Data Report and Tolerance Graph. Custom reports available as option.

Calibration

Software-driven calibration procedure.

OTHER

A Turnkey Package available, including all hardware and software, shipping, installation and on–site user training services.

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