



ILMetro - in-line metrology station

ILMetro stations combine up to five LayTec in-line metrology systems for a comprehensive control of industrial thin film production processes by non-contact measurements. Each station can be customized to specific requirements and hence usually comprises a different combination of metrology systems.

Features

Measurement parameters

- Individual layer thickness of complex layer stacks with nm-accuracy
- Sheet resistance
- Transmission spectrum
- Reflectance spectrum
- Photoluminescence spectrum
- Chemical composition
- Haze
- Surface roughness

Full integration into manufacturing line

- Designed for 24 / 7 operation in industrial environments
- Non-contact measurements
- Customization:
 - Mechanical, optical and communication adaptation to all types of production line including conveyors, roll-to-roll, clean room and process chambers
 - Communication with production line via ProfiBus, OPC, EtherCat. Other types of field bus upon request.
 - Transmission of measurement results (including measurement parameters, e.g., module ID, position) into local and remote database and MES
- ILMetro-to-ILMetro communication via TCP:IP

Benefits

- Improved process control by combined evaluation of various metrology techniques
- Uniformity information across the production line by providing multiple measurement heads
- Using results from upstream ILMetro for data evaluation at downstream ILMetro

Description of the parts

Modularity

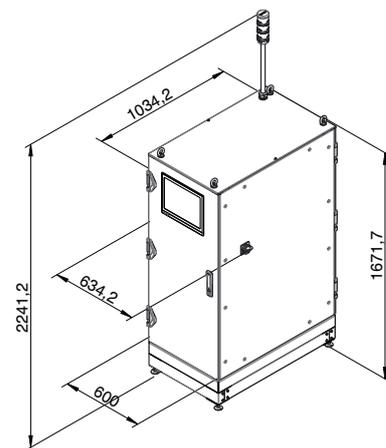
Up to five metrology systems to be selected from the following industry-proven LayTec in-line metrology systems. Each system may yield multiple measurement heads:

Metrology system	In-line metrology method	Parameter to be measured
Flames	Reflectometry and transmission spectroscopy in UV and visible spectral range	Layer thickness L*a*b* values
	Reflectometry and transmission spectroscopy in near infrared spectral range	Layer thickness
PearL	Photoluminescence spectroscopy	Layer composition (derived from peak position)
HazeL	Haze measurement	Surface roughness
Eddy	Eddy current measurements	Sheet resistance

Further details on these metrology systems are provided by their respective data sheets.

Industrial grade cabinet

- Protection class IP55
- Touchscreen (15") for visualisation and operation
- Uninterruptible power supply
- Signal lights
- Emergency-off switch
- Light grey, dark grey, other colours upon request
- Customized size available



Operating conditions	Power supply	220 V AC / 230 V AC / 240 V AC Other voltages upon request
	Supply frequency	50 Hz / 60 Hz \pm 5 Hz
	Maximum power consumption	400 W + 100 W for each metrology system
	Weight	Depending on configuration, approx. 300 kg
	Operation temperature	15°C – 28°C
	Storage temperature	-10°C – 45°C
	Max. operation humidity	50 %
	Max. storage humidity	80 %

Control computer

- CPU: Intel Xeon Processor E5-2603 v3 (6C, 15MB Cache, 1.6GHz)
- HDD min. 500 GB, RAID 1
- DVD-writer, card reader, mouse, keyboard
- Multiple Gbit / s LAN interfaces
- Operating system: Windows 10 pro MUI (multi language version)

(Subject to technical changes)

LayTec Insight metrology software

- Data acquisition
- Customized data evaluation

Sets of reference samples Details depending on configuration and type of application.

Technical documentation

- User manual
- CE declaration of conformity
- Other documentation available upon request

Adaptation to in-line and roll-to-roll production processes

- Mechanical adaptation
- Optical adaptation
- Auxiliary sensors for tracking moving substrates / samples:
 - Ultra-sonic sensors
 - Light barriers
 - Rotary encoder
 - etc.
- Communication interfaces (e.g., DP / DP couplers)

(Subject to customization)

Typical industries

- Glass
 - Display
 - Photovoltaic
 - Printed electronics
 - Carbon fibre
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Typical fields of application

- Incoming inspection
 - Process control
 - QA
 - Pass / fail tests
 - Binning
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Further Details

- Measurement rate of milliseconds
- Remote service and software maintenance
- CE certification



Specifications are subject to further technical development and may differ from those given in the data sheet. In certain cases, performance may be limited by reactor type and/or growth conditions. Please consult our technical sales team to see how LayTec metrology can best serve your specific application.

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Developed,
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