LuXpector THEA

PRODUCT OVERVIEW

PRECISION MEETS EFFICIENCY



Developed in close cooperation with SENTECH

LuXpector THEA combines ellipsometry and reflectometry in a compact, cost-effective and fast system for accurate thin-film characterization in semiconductor manufacturing. Designed for both R&D and production environments, it delivers reliable and high measurement accuracy of even complex layer systems, with minimal effort in operation and maintenance.

PVA TePla

ELLIPSOMETRY

WE DON´T GUESS.
WE MEASURE.

Reliable thin-film metrology often means slow tools, complex operation, or destructive sampling — none of which fit a modern fab. **LuXpector THEA** changes that by combining ellipsometry and reflectometry in one fast, automated system — precise to 0.2 Å, ready for R&D and high-volume production alike.

High Throughput
Up to 160 wafers per hour with automated handling for maximum productivity.

Flexible Integration
Ideal for R&D or seamless integration into production lines, SECS/GEM automation ready.

User-Friendly Interface
Intuitive operation, automated calibration and analysis functions allow easy operation.

No Backside Reflection (SiC)
Accurate thin-film analysis on SiC wafers, eliminating errors from backside reflections for reliable results.

AlGaN Concentration Resolution via Band Edge
Measurement Precise determination of aluminum content in AlGaN layers using advanced band edge analysis.



TECHNICAL PARAMETERS

Whether you're developing next-generation processes or ensuring production quality, LuXpector THEA offers the precision, efficiency, and adaptability your work demands – today and in the future.

SPECIFICATIONS	
Standard applications	Si (MEMS, SOI), SiC, GaN, advanced packaging, Qromis
Thin-film thickness resolution	20 – 300 Å (σ ≤ 0.2 Å)
Possible measuring parameters	Coating thickness, refractive index, absorption coefficient, reflectivity, deposition rate, etch rate, roughness, composition
Wafer throughput	100 Wph (@13 MP)
WAFER LOADING OPTIONS	
Cassette options	200 mm open cassette, 200 mm SMIF (optional), 300 mm FOUP
Wafer Size	200 mm, 200–300 mm, 300 mm
Number of loading ports	1x 200 mm, 1x 300 mm, 2nd 300 mm port / 300 mm OHT(optional)
Wafer material	Silicon, silicon carbide, gallium arsenide, sapphire, glass, and many more
Max. wafer weight	up to 350 g
Wafer throughput	up to 160 Wph
ANALYTICAL EQUIPMENT	
Ellipsometer wavelength	300–1000 nm
Ellipsometer spot size	50 x 50 µm
Inclination angle	65° (fixed)
Reflectometer wavelength	400–1000 nm
Reflectometer spot size	Ø 15 µm
ADDITIONAL FEATURES	
Measuring device capability	Automated with reference wafer
SECS/GEM communication	Integrated
Clean room classification	ISO 3, Mini-Environment, ISO 2 (optional)
Endeffector changing system	Manual or automatic (optional)
WID Reading front and/or backside	Integrated Wafer ID Reader
Ionizer	CDA or fan
RFID reading	Cassette and FOUP/SMIF
ENVIRONMENT	
Footprint (L x W)	2500 x 1520 mm (incl. FOUPs)
Power	230 V, 50-60 Hz, 2,5 kVA
Connection type compressed dry air	8 mm soft-polyurethane tubing
Operating pressure CDA	70 kPa to 80 kPa
Connection type vacuum	8 mm soft-polyurethane tubing
Operating pressure vacuum	-70 kPa to -80 kPa
Sound emission in operation	< 70 dB(A)

WANT TO FIND OUT MORE?
CONTACT US FOR INFORMATION!

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