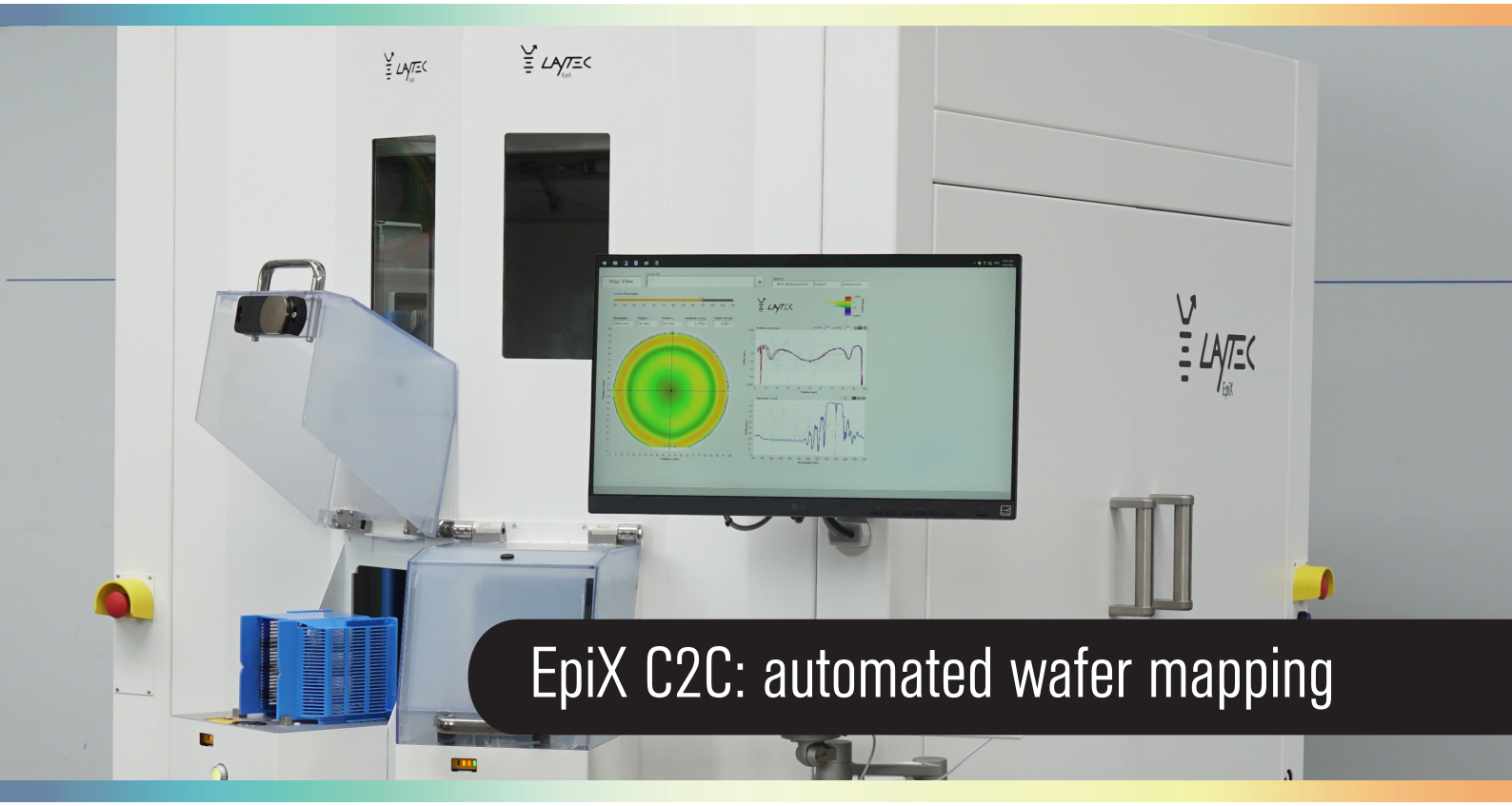


EpiX C2C: automated wafer mapping

Combining white light reflectance and photoluminescence, the EpiX C2C system ensures a comprehensive 2D analysis of critical wafer properties by non-contact optical measurements. The cassette-to-cassette configuration of EpiX C2C allows to achieve the high throughput required in industrial applications.

Features

- Automated white light reflectance (WLR) and photoluminescence (PL) wafer mapping
- Post-process quality control of entire wafer area with EpiX
- Extended spectral range 250–2400 nm
- Spectral resolution down to 0.1 nm
- XY mapping stage with automated wafer thickness compensation
- Up to 4 configurable laser wavelengths
- Adjustable laser power
- Predefined and customized algorithms
- Up to two load ports for 100 & 150 mm or 150 & 200 mm cassettes
- Prealigner (optional)
- Wafer-ID Reader (optional)
- Fan-Filter-Units (optional)

Benefits

- Industry-compatible clean room design
- High throughput due to cassette-to-cassette extension
- Automated normalization of measurement data
- Wide set of standard analysis methods
- Automated yield analysis
- Combination of complementary in-situ and ex-situ metrology for in-depth and areal wafer analysis through LayTec connected metrology

Parameters Mapping Stage	
XY Scan area	≤ 200 mm diameter
Normalization (WLR & PL)	Automatic using reference sample
Wafer detection	Automatic size and center
Sample holder	Continuous vacuum chuck
Wafer thickness compensation	Distance sensor & z-stage
Mapping Speed 100mm wafer@ 0.1mm pitch	< 4h
Mapping Speed 100mm wafer @ 1.0mm pitch	< 4min 30s*
Mapping Speed 150mm wafer @ 2.0mm pitch	< 4min* * even higher throughput rates currently under development

Spectroscopic Reflectance Measurements	
Optical head	Combined optical head for WLR and PL measurements
Spectral Range	250–2400 nm, UV option upon request
WLR light source	Tungsten lamp 2915K
Spectral resolution	≥ 0.1 nm, depending on grating
Number of gratings	Up to 4
Alternative spectrometer configuration	Multiple fixed spectrometers measure in parallel
Accuracy WLR measurement (entire wafer)	< ±1%
Noise WLR measurement (single spectrum)	< ±1%

Photoluminescence Measurements	
Up to 4 laser sources configurable	Default: 405nm, 532nm, 785nm, other wavelengths upon request
Laser power on sample for default setup	405 nm: > 25 mW | 532 nm, 785 nm: > 80 mW
SNR PL measurement (entire wafer)	< ±2%
SNR PL measurement (single spectrum)	< ±1%

Analysis Features

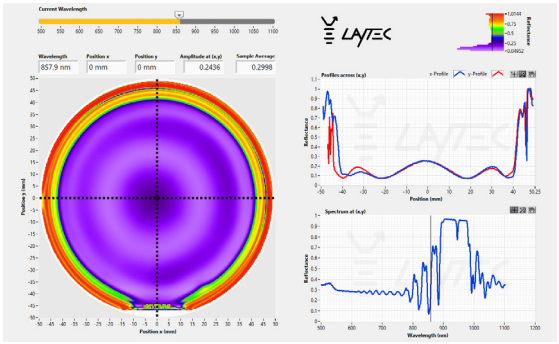
Software Modifiers
- Edge exclusion
- Virtual rotation

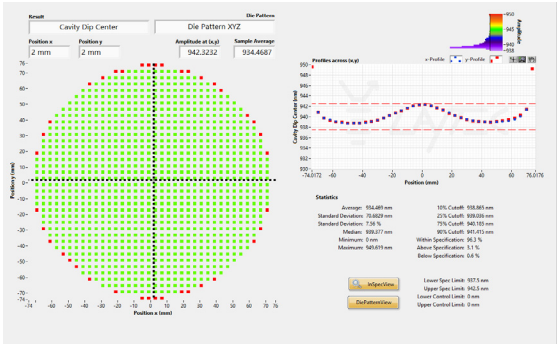
Algorithms
- Predefined and customized
- VCSEL analysis
- Single film thickness/composition
- Multi peak analysis (analytic/numeric)
- Wafer thickness
- Full spectral fitting (+connected metrology option)

Virtual die patterns
- Die pattern assignment
- Import of customer die layout

Automated yield analysis
- Wafer level
- Die level

Reports
- XML reports, PDF reports, ASCII exports



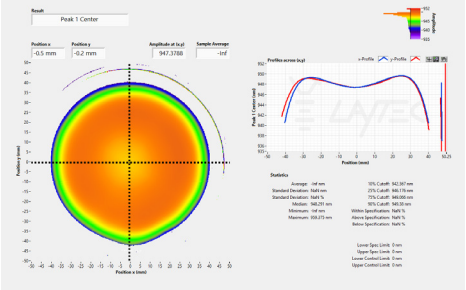


White light reflectance and VCSEL analysis

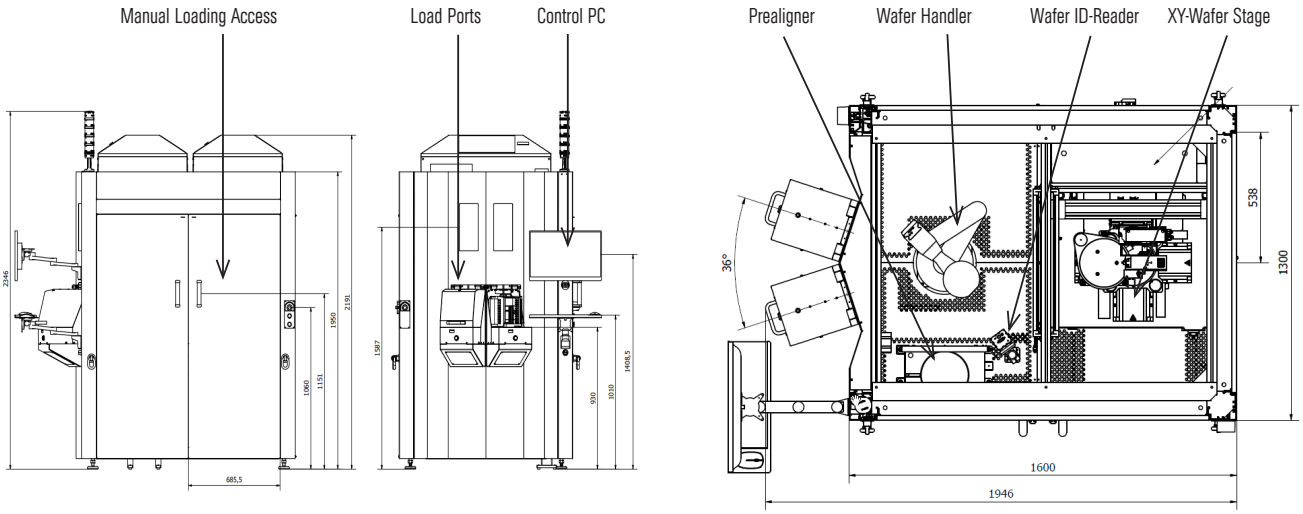
– Stop band: center, width, edges, height
– FP-Dip: center, width, height, area
– Identical to in-situ analysis in EpiNet for EpiTT VCSEL

Photoluminescence & multi peak analysis

– Peak types: Gauss, Lorentz, numeric analysis
– Output results: height, center, width, area, asymmetry



EpiX C2C Layout

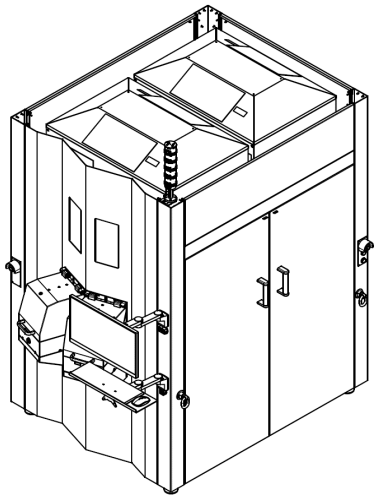


Options

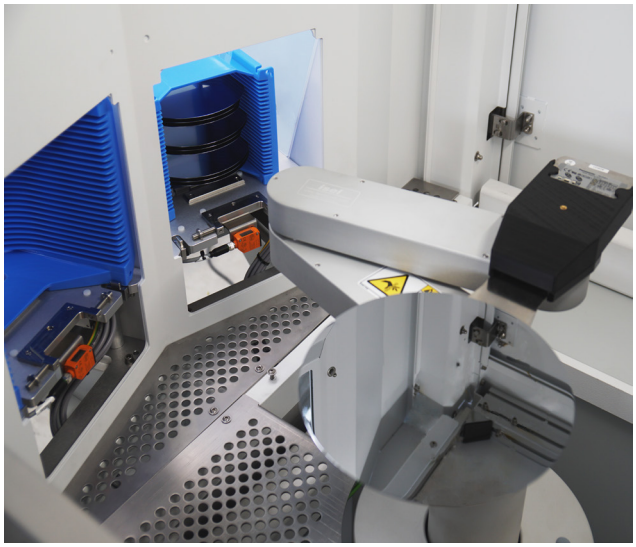
Parameter	Basic	Options
Load Ports	1	Up to 2
Cassette Type	Open cassette	Open cassette, SMIF, FOUP
Wafer Size	150 & 200 mm	100 & 150 nm or 150 & 200 nm (other sizes upon request)
Prealigner	Software alignment	Optional
Wafer ID Reader		Optional, from above and below
Fan-Filter-Unit		Optional

Dimensions & Connections

Footprint (WxDxH)	~ 1300 x 1650 (+300) x 2500 mm
Mass	~ 1400 kg
Power supply	230 V / 16A CEE 7/4
Vacuum	8 mm, if present, else internal vacuum option available
Network	RJ45
Operating conditions	Clean room or comparable laboratory, temperature 22 ± 2°C, humidity < 55%
Laser classification	CLASS 1 LASER PRODUCT according to DIN-EN60825-1:2015-07



EpiX C2C is designed with multiple upgrade options: extended wavelength range, software interfaces (e.g. for user-owned spectral analysis libraries) upon request.



Specifications are subject to further technical development and may differ from those given in the data sheet. Please consult our technical sales team to see how LayTec metrology can best serve your specific application.

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