PVA TePla

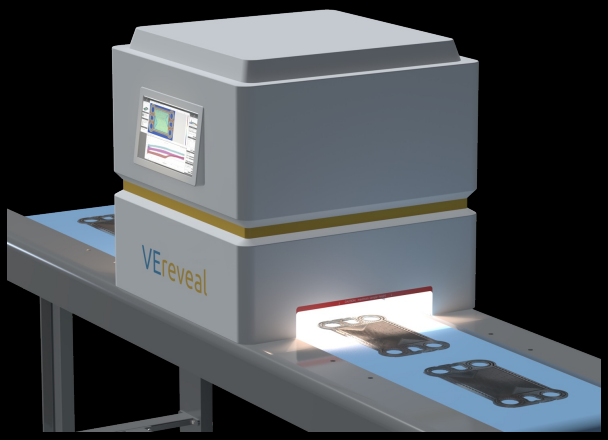
VEreveal®

Hyperspectral Vision Inline Module

Fast, Comprehensive and Non-destructive

VEreveal® features PVA's unique Hyperspectral Vision technology for continuous macroscopic or microscopic inline inspection. It efficiently captures surface properties, detects thin films, and identifies deviations from production specifications.

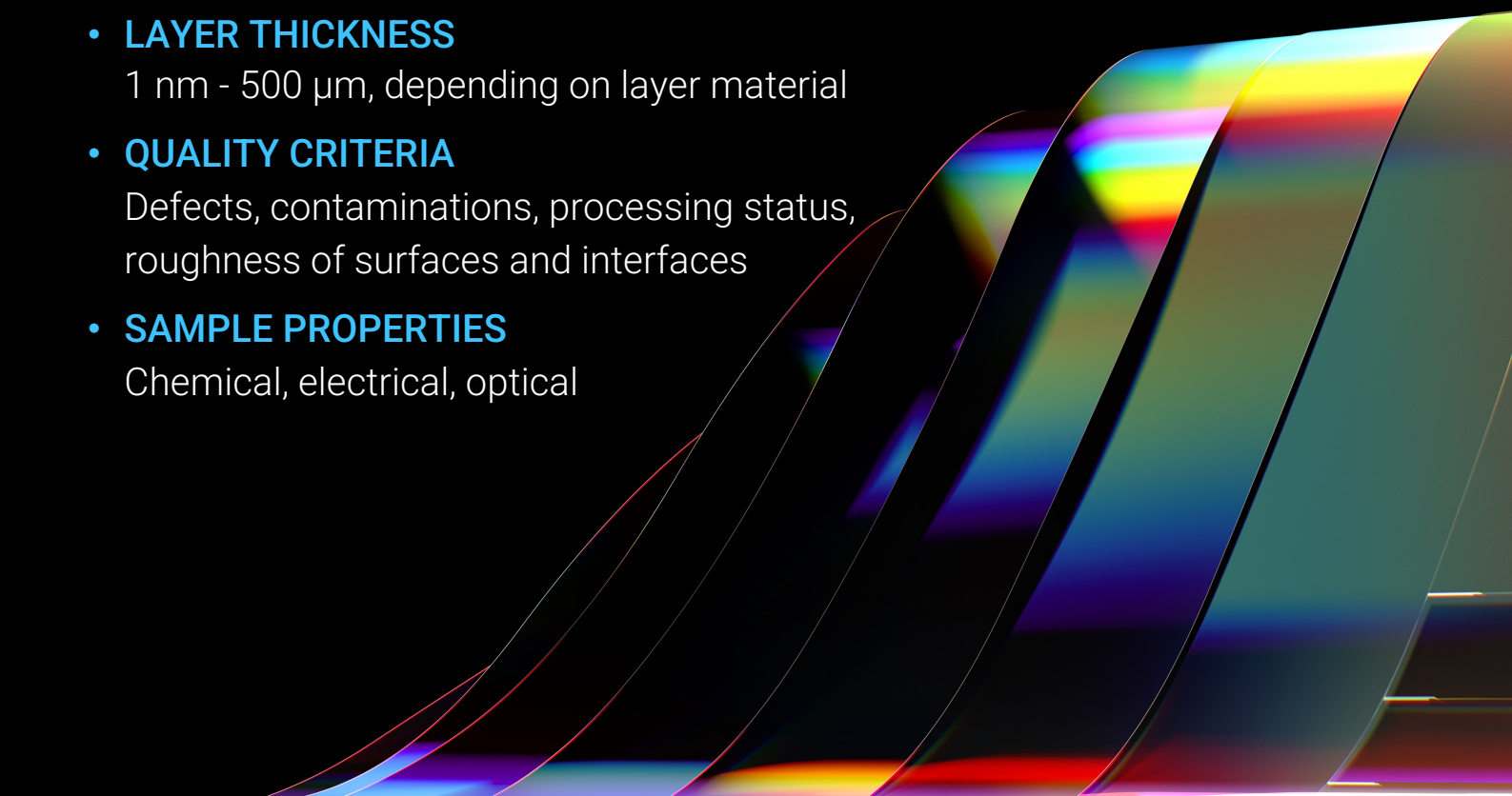
- **FAST**
  Near real-time for acquisition and evaluation
- **COMPREHENSIVE**
  Full surface (100%) product information
- **NON-DESTRUCTIVE**
  Unique combination of optical spectroscopy and imaging



Insights from Inspection

VEreveal® boosts your product and sample knowledge by orders of magnitude with spatially resolved recognition of:

- **LAYER THICKNESS**
  1 nm - 500 µm, depending on layer material
- **QUALITY CRITERIA**
  Defects, contaminations, processing status, roughness of surfaces and interfaces
- **SAMPLE PROPERTIES**
  Chemical, electrical, optical



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Inspected Materials

VEreveal® is designed for simple and fast as well as continuous area measurement of surfaces and thin films on various substrates:

- **SUBSTRATES**
  Semiconductors (Si, SiC, …), metals, polymers, ceramics, glass, …
- **LAYERS**
  Oxides, nitrides, carbides, polymers , …

Specifications

Imaging technique	Pushbroom scanning mode
Acquisition mode	Reflectance | fluorescence optional
Acquisition time per frame	< 4 ms | faster acquisition optional
Wavelength range	VNIR 400–1000 nm | SWIR 900–1700 nm | further wavelength ranges (1–2.5 µm) optional
Spectral bands	VNIR 448 | SWIR 224
Spectral resolution	VNIR 1.34 nm | SWIR 3.5 nm
Field of view (FOV)	VEreveal® MACRO: customisation | cm - m range | according to requirements VEreveal® MICRO: customisation | sub-µm - µm range | according to requirements
Spatial resolution	application, FOV and sensor based | according to requirements
Lighting	VEluminise®: tuneable halogen broadband source for homogeneous light field | broadband LED with spectral range 400–900 nm or UV-LED excitation optional
Sample size	defined by customer requirements
Sample stage	customized, i. e. conveyor belt or specific sample stage
Reference	reference integration into process system | if feasible selection of reference materials according to custom process (i. e. PTFE, protected aluminium)
Data evaluation time	near real time
Data connection	Ethernet (typical) | customisable | defined by customer requirements
Operating conditions	+5 ... +45 °C (non-condensing)
System certification	CE, RoHS, UKCA
Power requirements	rated voltage 230 VAC (115 V or heavy current connection optional) rated frequencye 50–60 Hz
Connectivity	RJ45 (ethernet)
Compute unit	x86 based, with VEsolve® Pro software

Polytec

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