LayTec’s NEPtune is a multiwavelength reflectometer especially designed to measure in-situ the end point during wet etching in BEOL processes like under bump metallization (UBM) and copper pillar integration.

Features

- Automatic and reproducible end point detection in stacks of metal films
- Modular concept with multiple measurement heads
- Displaying real-time reflectance during etching at multiple positions across the wafer
- Stand-alone control software running on embedded controller in base unit

Benefits

- Assessment of wafer process uniformity in real-time
- Displaying of end point history from run to run for SPC and process optimization
- Enables tighter process specifications
- Improvement of Cost of Ownership through shorter etching cycles, savings on chemicals and process time
Communication / integration
- NEPtune base unit sends SPC data and reflectance values to the etching tool via TCP / IP
- NEPtune base unit receives analog process start trigger from etching tool

Electrical connections
- RJ 45 Ethernet: permanent connection to etching tool computer and temporary connection to service notebook
- TRIAD 5-pin socket: connection to service notebook / computer during setup and maintenance (temporary, requires a special RS-422 / USB interface cable)
- RJ 45 Ethernet connection for daisy chaining (from base unit to measurement head, between measurement heads)
- 9-pin D-sub (F) connector – “etch start” trigger from system to base unit

Power consumption
- Power supply 24 V with adaptor cable to M12 connector
- Typical current consumption 0.4 A
- Max. current consumption 1 A (depending on number of measurement heads connected)

Operating conditions
- 10 °C - 35 °C ambient temperature
- Relative humidity: 0 - 95 % non-condensing

Electronic control unit (base unit)
- Dimensions: 194 mm x 115 mm x 56 mm
- Weight approx. 530 g

Optical head
- Dimensions: (341 - 471) mm x 131 mm x 65 mm
- Weight approx. 1000 g

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.

For further information please contact:

LayTec AG
Seesener Str. 10-13
10709 Berlin, Germany
Tel.: +49 (0)30 89 00 55-0
Fax: +49 (0)30 89 00 55-180
Email: info@laytec.de
Web: laytec.de

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