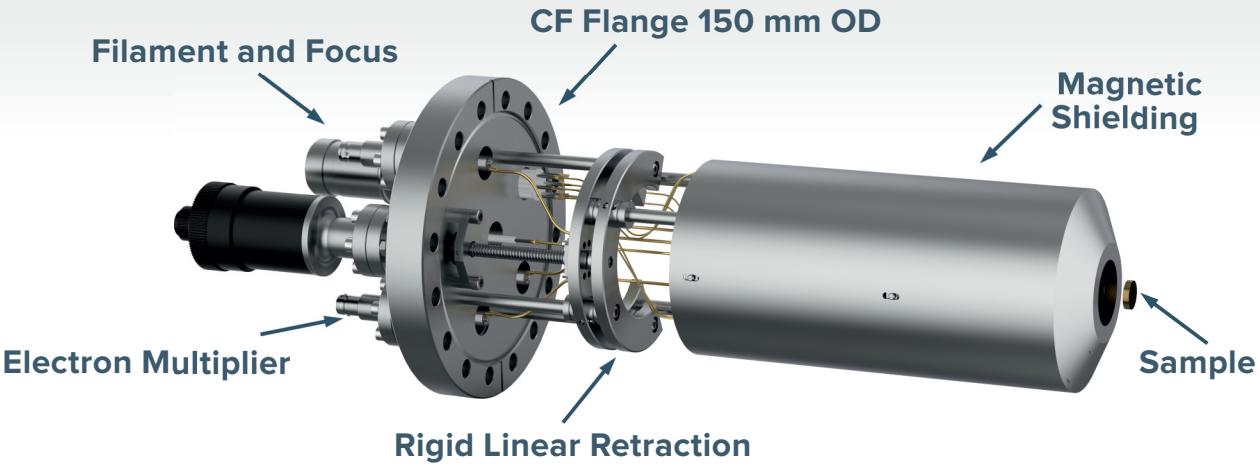
# Nano-Depth Composition Analyzer

## based on Auger Electron Spectroscopy (AES)
## Model NDC600





**Features:**

- High Surface Elemental Sensitivity
- Small Beam Size
- Suitable for Depth Profiling
- Adjustment for Sample Positioning and Retraction
- Compact Design

**Description:**

Model NDC600 analyzer is the single stage cylindrical mirror analyzer (CMA) comprising of an axial miniature electron gun with robust tungsten filament. The energy resolution of the analyzer is 0.5 %. The signal detector is based on cylindrical slit followed by channel electron multiplier with gain greater than $3x10^{-7}$.

The high elemental sensitivity is achieved by combination of high gain - low noise Channeltron ™ operated with sophisticated external bandpass filter for Auger signal processing. The Auger's signal detection is from 0.1 nm to 5 nm depth at the substrate surface.

**Applications:**

Nano-depth composition analyzer, model NDC600 is a simple and convenient surface chemical compositions analysis tool to be used for characterization of a wide range of materials such metals, alloys, oxides, nitrides, and thin films.

Processes such as depth profiling with separate ion sputtering gun model IG70 can be performed. In addition, the diffusion, intercalation and segregation processes can be monitored under the sample cooling and annealing treatments.

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# Model NDC600

## Specifications

| | |
|---|---|
| **Analyzer Type** | Single stage cylindrical-mirror analyzer with coaxial electron gun |
| **Energy Resolution:** | < 0.5% |
| **Working Distance:** | 9 mm |
| **Detector:** | Channel Electron Multiplier with 1 x $10^7$ -$10^8$ gain range |
| **Mounting Flange:** | 6" O.D. standard CF flange (NW150CF) |

### Electron Gun

| | |
|---|---|
| **Type:** | Double electrostatic lenses with adjustable focal length and beam diameter |
| **Beam Voltage:** | 0 - 3 kV |
| **Beam Current:** | 1 µA - 5 µA |
| **Beam Diameter:** | 100 µ - 250 µm |
| **Filament:** | Tungsten hairpin wire or LaB6 crystal |
| **Beam Deflection:** | Electrostatic X-Y axis |
| **Magnetic Shielding:** | Mu-metal tube with front cover |
| **Analyzer Length:** | Adjustable 250 mm - 350 mm to fit custom chambers |
| **Vacuum Compatibility:** | All UHV materials; bake-able to 250°C |
| **Weight:** | 10 kg |

## Precision Power Supply: APS300-D and LOA10-AES

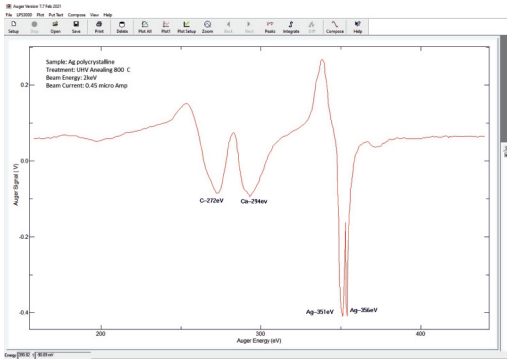
| | |
|---|---|
| **APS300-D** | Digital AES power supply (0 - 3.2 kV) with USB interface and PC control software for Windows 10. True primary beam current and total emission measurements. Automatic start-up and shut down, 10 memory settings including outgassing with timer, constant beam current mode. |
| **LOA10-AES** | Digital AES controller with lock-in amplifier, AES high voltage ramp board 0 - 2.0 kV with precision sinewave oscillator (0.5 - 20 V pk-pk) and AES software for Windows 10. USB communication to PC |

## Ordering Guide

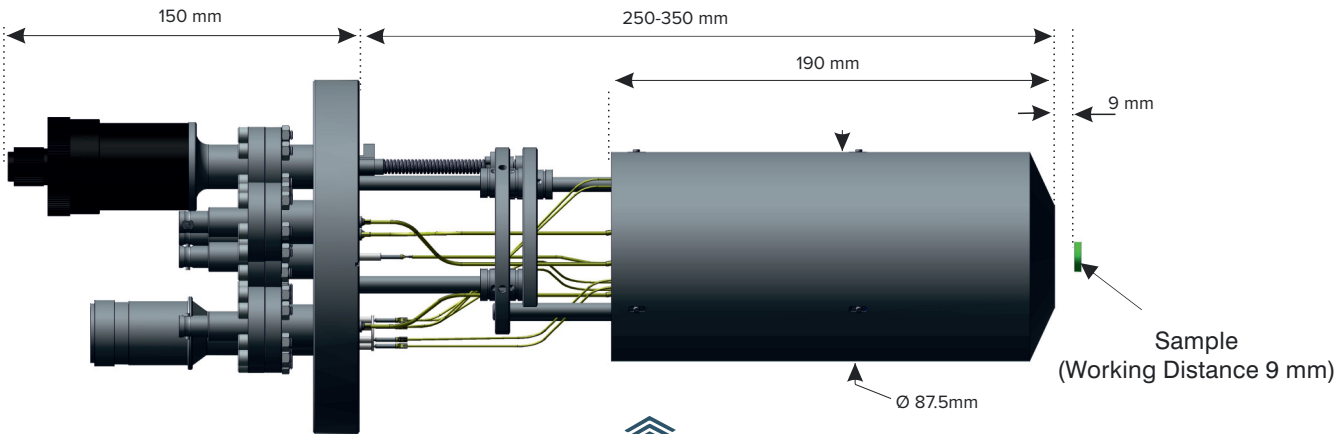
| | |
|---|---|
| **NDC** | Auger electron spectroscopy analyzer, CMA type with axial electron gun on 6" CF (NW150) flange |
| **LMX** | Linear motion drive – 50 mm (optional) |
| **APS300-D** | Digital power supply with voltage range 0 – 3.0 kV |
| **LOA10-AES** | Digital AES controller with ramp voltage, sinewave oscillator, lock-in and AES software |

## Data

AES Spectrum from Ag Sample




## Schematic

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