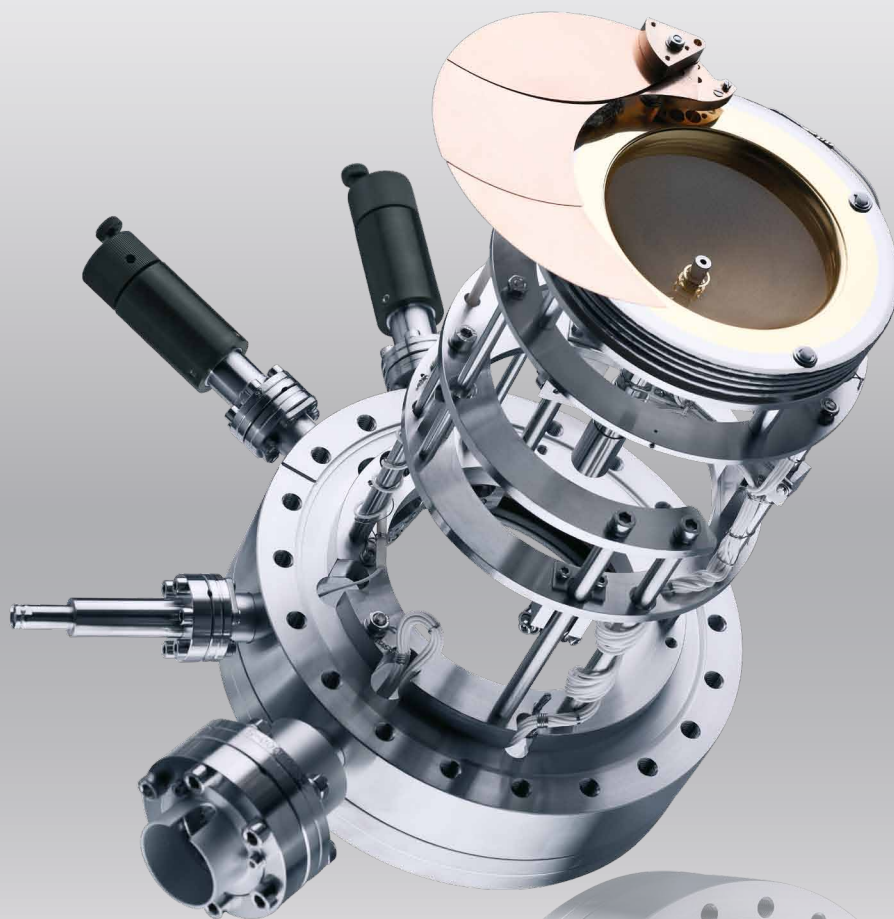


Components for Surface Analysis

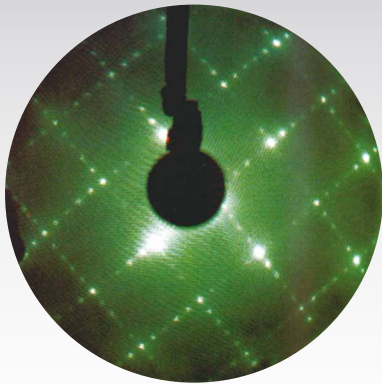
ErLEED 100/150

Reverse View LEED Optics

- High performance optics for LEED and AES
- Mounted on DN100CF (6"OD) or DN150CF (8"OD) flange
- Light shielded miniature electron gun
- 50 or 100 mm z-retraction (optional)
- Integral multi-segment shutter (optional)
- Digitally or analog controlled power supplies with independent HV modules
- Software for Auger spectroscopy and quantitative LEED studies (optional)



ErLEED 100/150



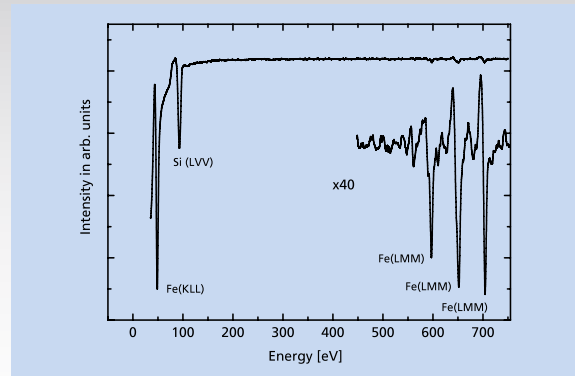
High brightness daylight display

Optics

The SPECS reverse view ErLEED optics was designed at the University of Erlangen-Nürnberg (Lehrstuhl für Festkörperphysik) and has been developed over a period of some 20 years to its current high performance specifications. It is manufactured exclusively by SPECS.

In order to guarantee the highest possible quality and performance of each optics, great importance is attached to the selection of the materials and components as well as to the quality of the mechanical and electrical manufacturing.

The miniature electron gun allows a full view of the diffraction pattern. It is completely light shielded in order to avoid stray light and thus to be able to measure quantitative LEED I(E) curves or spot profiles. Two types of filaments are available: Thoria coated iridium hairpin and LaB₆ single crystal. The thoria coated iridium filaments allow the operation of the gun at pressures of up to 10⁻⁴ mbar oxygen. All filaments are easily replaceable in the users laboratory.

AES spectrum of Fe₃Si (100)

The high transmission grid assemblies are made of gold coated molybdenum ensuring long term mechanical stability as well as a uniform work function and non-magnetic characteristics. The optics are available in 2, 3 and 4 grid versions.

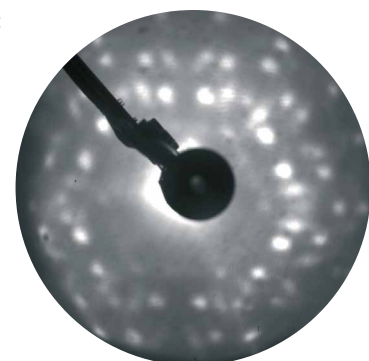
Two different sizes are offered. The ErLEED 100 mounted on a DN100CF flange (6" CF, 152 mm OD), while the ErLEED 150 is mounted on a DN150CF flange (8" CF, 203 mm OD).

A z-retraction mechanism allows the optics to be moved into or withdrawn from a restricted working area. Z-travel of 50 mm or 100 mm is available.

The optics can be protected by an integral multi-segment shutter mounted in front of all grids. All ErLEED optics are fully tested under UHV conditions before delivery. A detailed test certificate is supplied with each optics.

Several layers of organic 4T = Quaterthiophen molecules on Ag(111) surface

COURTESY OF
A. Langner,
M. Schneider,
M. Sokolowski
E. Umbach,
Experimentelle Physik II,
Universität Würzburg,
Germany



LEED pattern at 9 eV electron energy

Controls

ErLEED 3000 D



ErLEED 3000 D power supply for LEED / AES

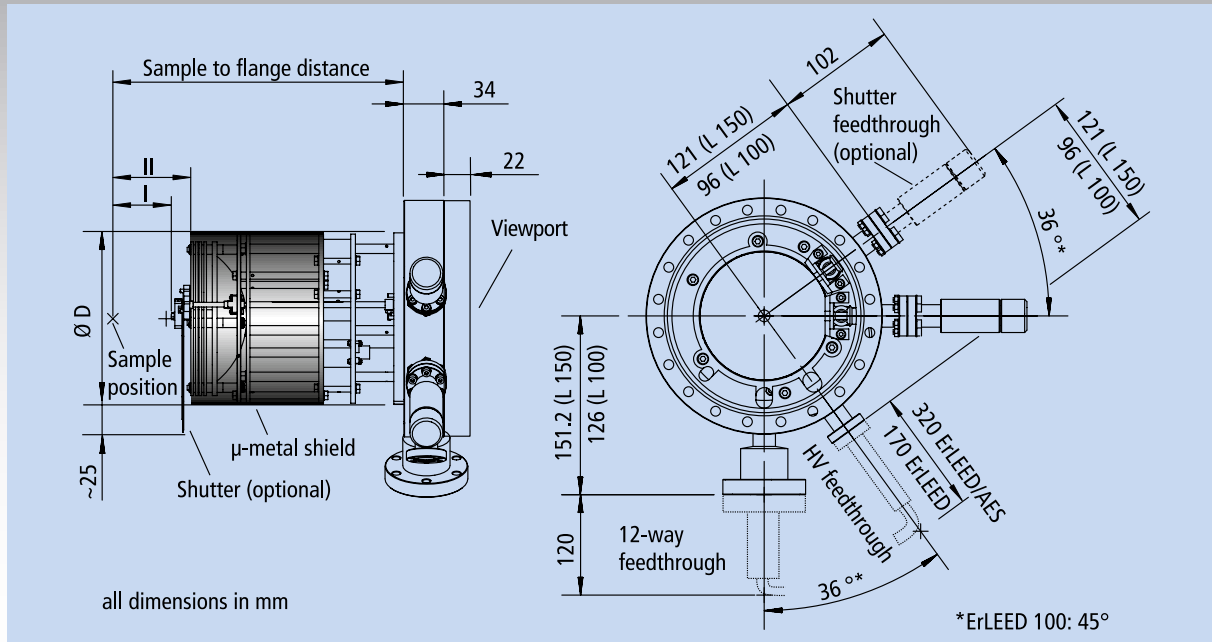
- Fully floating unit measures true beam current
- Up to 9 independent high precision HV-modules (primary energy, Wehnelt, anode, Einzel lens, suppressor, screen, collector, detection energy)
- Primary energy 0-1000 eV (LEED), 0-3000 eV (AES)
- Screen voltage 0-10 kV
- All voltages adjustable with offset and gain
- Internal and external measurement of the beam current
- Internal ramp generator with 0-2000 eV detection energy (AES)
- Variable energy sweep and scan time
- Collector voltage 0-500 V
- Internal sine generator with 750 Hz - 1.25 kHz oscillator frequency, 0-12 V pp amplitude, 1f, 2f and reference output
- External monitoring of the primary energy
- External 0-10 V control of primary and detection energy
- Preamplifier, filter and matching unit
- Integrated lock-in amplifier (optional)
- 18 bit D/A A/D converters for control and read-out of voltages
- Large screen dot-matrix LC display with back-light
- Manual operation by numeric keypad, up-down buttons, and rotary control knob
- Operation by PC via RS232 interface
- Non-volatile memory for store and recall of complete parameter settings
- 19" rack, height 182 mm, weight 11.5 kg
- Wide range mains input: 85-264 V, 47-440 Hz

ErLEED 1000A



ErLEED 1000 A analog power supply

- Fully floating unit measures true beam current
- Lens voltages run as function of beam energy
- 5 independent high-precision HV-modules (primary energy, extractor, Einzel lens, suppressor, screen, detection energy)
- 3 digital meters for current and voltage display
- Primary energy (LEED) 0-1000 eV
- Screen voltage 0-7.5 kV
- Gun voltages (lens 1/3, lens 2 and anode) adjustable with offset and gain
- Input for external control of primary energy 0-10 V
- External measurement of beam current
- External monitoring of primary energy
- 19" rack, height 182 mm, weight 10 kg
- 220-240 V, 50 Hz or 100-120 V, 50-60 Hz



Specifications

Magnetic shielding	Mu-metal
Bakeout temperature	250 °C
Type of optics	ErLEED 150/100
Grids	Gold coated molybdenum
Grid transmission	81%
Number of grids	2, 3 or 4 grids
Screen	Hemispherical rear view glass screen coated with ITO conducting layer and P43 cadmium free phosphorus
Viewing angle	100 °/84 °
Gun diameter	15 mm (0.6")
Gun energy range	0-3000 eV
Spot size	< 1 mm @1 μA & 100 eV
Beam current	> 15 μA @1 keV > 45 μA @3 keV (AES)
Filaments	Thoria coated iridium hairpin for operation at pressures up to 10 ⁻⁴ mbar or LaB ₆ single crystal.
Mounting flange	DN150 CF (8" OD) DN100 CF (6" OD)
Inner Diameter Ø D	145 mm (ErLEED 150); 96 mm (ErLEED 100)

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Specifications

Sample Working Distance ErLEED 150	I: 9 mm II: 18 mm
Sample Working Distance ErLEED 100	I: 0 mm II: 13 mm
Working distance (Δ) ErLEED 100 - z50	2 grids shutter: 26 mm, R 38.5 3 grids shutter: 23 mm, R 36 4 grids shutter: 19 mm, R 33.5
Working distance (Δ) ErLEED 150 - z50	2 grids shutter: 30.8 mm 3 grids shutter: 27.8 mm (26.8 built-in) 4 grids shutter: 23.8 mm
Sample to flange distance (for fixed length optics)	165 mm (6.5") 203 mm (8") 254 mm (10") (other lengths available on request)
Sample to flange distance (for retractable optics, fully extended)	254 mm (10"), 50 mm z-retraction 350 mm (13.8"), 100 mm z-retraction
Power supplies	ErLEED 1000A analog for LEED ErLEED 3000D digital for LEED/AES
Software	SAFIRE/RFA-PC
Weight	15 kg/8.2 kg

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SPECS Surface Nano Analysis GmbH
Voltastrasse 5
13355 Berlin
Germany

Tel. +49 30 46 78 24-0
Fax +49 30 46 42 0 83
Email support@specs.com
Web www.specs.com



ISO 9001 Certificate

Your Local Representative: