

# *mini - LEED*

**Low Energy Electron Diffraction / Auger Electron Spectroscopy**

**Model BDL450  
with Integral Shutter**

**Miniature Back-Display LEED-AES Spectrometer  
Featuring Easy Fitting To Complex UHV Systems**

**Large Angle (90°)  
Fluorescent LEED Display**

**Mounting Flange: 4.5" O.D.  
(Cf63)**

**Auger Electron  
Spectroscopy as a  
Secondary Technique**

**Suitable For "In Situ" Film  
Growth Monitoring**

**Integral Shutter**

**External Linear Retraction**

**Convenient LEED Image  
Capture with External CCD  
Camera**

**Simple And Powerful  
Operation with Digital  
Controller**

SPECIAL BDL  
FOR Spline AT ESRF  
G. CASTRO  
01 APRIL 2003



# mini-LEED

## Specifications

### LEED-AUGER OPTICS (Model BDL450)

Glass-Display BDL450.....	Fused silica glass coated with indium-tin oxide conductive layer and P31 phosphor ( ZnS:Ag:Cu-green, 525 nm wavelength) 90° angle of acceptance from sample at a distance of 32 mm
Retarding Field Analyzer BDL450.....	Concentric assembly of hemispherical grids Working distance from sample 10 mm
Grid Material.....	Gold coated tungsten wire mesh ( 100 mesh, 81% transparency)
Energy Resolution.....	0.8% at low modulation voltage
Monitoring	4.5" (CF63) standard viewport
Linear Motion	External nipple with bellow up to 150 mm retraction
Integral Shutter	Open and close at any position of the linear motion
Magnetic Shielding	Mu-metal cylinder with front cover for maximum attenuation
Assembly	Extreme-high-vacuum compatibility with stainless steel, high alumina and Au-plated copper alloy materials
Mounting	4.5" (CF63) double sided conflat flange with sample distance 145 mm - 580 mm
Bakeability	Under vacuum, 250° C maximum

### Integral Miniature Electron Gun

Beam Energy	LEED - 5 eV to 750 eV AES to 3000 eV
Beam Current	LEED - 2 $\mu$ A at 100 eV and 0.5 mm beam size AES - up to 100 $\mu$ A at 3 keV
Beam Size	from 1 mm to 250 $\mu$ m - adjusted by Wehnelt voltage
Electron Source	Tungsten-2%Thoriated filament standard
Energy Spread	0.45 eV (thoriated tungsten filament)
Overall Size	10 mm lens diameter and 80 mm length

## Ordering Guide

BDL450-CP	Complete LEED-Auger package with 4.5" flange( incl. LMX, ISH, V450, LPS300, LOA10-AES, LIM08)
BDL450	LEED optics with integral electron gun on 4.5" flange (Specify 2 or 3 grid)
LMX-EXT	External linear motion( nipple-below) (X=retraction distance)
ISH	Integral shutter
V450	4.5" (CF63) viewport
LPS075	Power supply with voltage range 0 - 750V
LPS300	Power supply with voltage range 0 - 3kV
AES-Ser	AES software for external Lock-in Ampl.
LIM08	LEED imaging software with CCD camera, full version
LIM08B	LEED imaging software with CCD camera, basic version
LOA10-AES	Digital AES controller with ramp voltage, sinewave oscillator, lock-in and AES software
RVO	Ramp Voltage and sinewave oscillator
LOA100	External Lock-in Amplifier

