

INTEGRALEED

MODEL BDL800IR AND BDL600IR
WITH INTEGRAL SHUTTER

CONVENTIONAL BACK-DISPLAY LEED-AES SPECTROMETER
FEATURING UNIQUE DESIGN AND PERFORMANCE:



HIGH ENERGY & IMAGE RESOLUTION
FOR LEED AND AES

MINIATURE ELECTRON GUN
WITH DOUBLE FOCUSING

SUITABLE FOR "IN SITU"
GROWTH MONITORING

INTEGRAL LINEAR MOTION
AND SHUTTER

LOW OUTGASSING RATE



Surface - Vacuum Analytical Instruments & Technology

TEL. (519) 457-0878, FAX (519) 457-0837
E-mail: info@ocivm.com
Website: www.ocivm.com
200 Stronach Cres.
London, Ontario, Canada N5V 3A1

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SPECIFICATIONS

LEED-AUGER OPTICS (Models BDL600IR and BDL800IR)

| | |
|-----------------------------|---|
| Glass-Display | Fused silica glass coated with indium-tin oxide conductive layer and P31 phosphor (ZnS:Ag:Cu-green, 525 nm wavelength) |
| BDL600IR..... | 90° angle of acceptance from sample at a distance of 50 mm |
| BDL800IR..... | 100° angle of acceptance from sample at a distance of 75 mm |
| Retarding Field Analyzer | Concentric assembly of hemispherical grids |
| BDL600IR..... | Working distance from sample 15 mm |
| BDL800IR..... | Working distance from sample 18 mm |
| Grid Material..... | Gold coated tungsten wire mesh (100 mesh, 81% transparency) |
| Energy Resolution..... | 0.2% - 0.5% at low modulation volt. |
| Monitoring | 6" or 8" standard viewport |
| Linear Motion | Up to 150 mm retraction from sample (100mm standard); linear ball bearing and acme thread with all spring electr. connections |
| Integral Shutter | Open and close at any position of the linear motion |
| Magnetic Shielding Assembly | Mu-metal cylinder with front cover for maximum attenuation Extreme-high-vacuum compatibility with stainless steel, high alumina and Au-plated copper alloy materials |
| Mounting | 6" (CF100) or 8" (CF150) double sided conflat flange with sample distance 145 mm - 500 mm |
| Bakeability | Under vacuum, 250° C maximum |

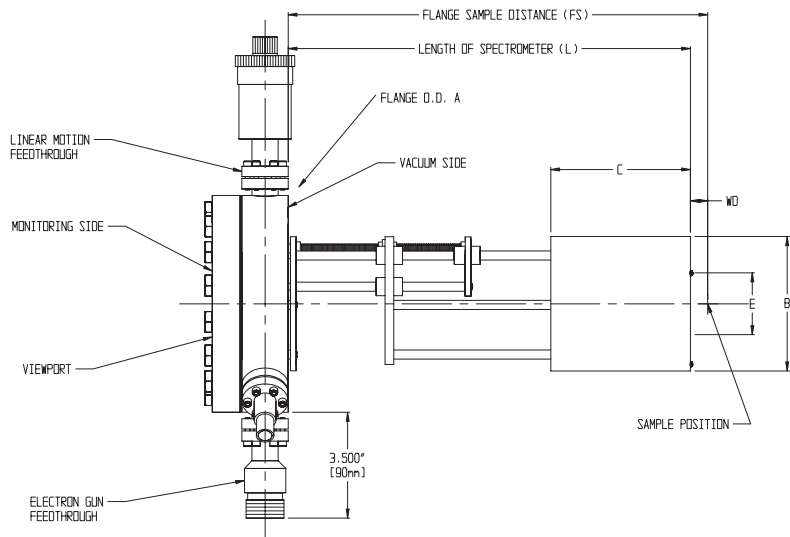
INTEGRAL MINIATURE ELECTRON GUN

| | |
|-----------------|---|
| Beam Energy | LEED - 5 eV to 750 eV AES to 3000 eV |
| Beam Current | LEED - 2 µA at 100 eV and 0.5 mm beam size AES - up to 100 µA at 3 keV |
| Beam Size | from 1 mm to 250 µm - adjusted by wehnelt potential, limited by exchangeable aperture down to 50 µm |
| Electron Source | Tungsten-2%Thoriated filament standard, single crystal LaB6 filament optional |
| Energy Spread | 0.45 eV (thoriated-tungsten filament) |
| Overall Size | 10 mm lens diameter and 80 mm length |

ORDERING GUIDE

| | |
|-------------|---|
| BDL800IR-CP | Complete LEED-Auger package with 8" flange(incl. LMX, ISH, V800, LPS300, LOA10-AES, LIM08) |
| BDL600IR-CP | Complete LEED-Auger package with 6" flange (incl. LMX, ISH, V600, LPS300, LOA10-AES, LIM08) |
| BDL800IR | LEED optics with integral electron gun on 8" flange (Specify 3 or 4 grid) |
| BDL600IR | LEED optics with integral electron gun on 6" flange (Specify 3 or 4 grid) |
| LMX | Linear motion (X=retraction distance) |
| ISH | Integral shutter |
| V800 | 8" viewport |
| V600 | 6" 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 |
| LOA100 | External Lock-in Amplifier |
| RVO | Ramp Voltage and oscillator |

OUTLINE DRAWING
MODEL BDL800IR & BDL600IR



| STANDARD LENGTH - RETRACTION DISTANCE | | | |
|---------------------------------------|-------------|------------------|--------|
| MODEL | RETR. DIST. | FL. SAMPLE DIST. | LENGTH |
| BDL800 | 30 mm | 237 mm | 217 mm |
| | 50 mm | 277 mm | 257 mm |
| | 100 mm | 377 mm | 357 mm |
| BDL600 | 30 mm | 215 mm | 200 mm |
| | 50 mm | 255 mm | 240 mm |
| | 100 mm | 355 mm | 340 mm |

| CALCULATION OF (FS) AND (L) BASED ON THE RETRACTION DISTANCE (RD) | |
|--|--|
| A. BDL800 | |
| FS = 177 mm + 2RD | |
| L = 157 mm + 2RD | |
| B. BDL600 | |
| FS = 155mm + 2RD | |
| L = 140 mm + 2RD | |

| MODEL | DIMENSIONS inches[mm] | | | | |
|--------|-----------------------|-------|-------|-------------|--------|
| | A | B | C | WD | E |
| BDL800 | 8" | 5.55" | 5.0" | 0.78" | 2.250" |
| | [200] | [141] | [130] | [18]-4 Grid | [57] |
| | | | | [18]-3 Grid | |
| BDL600 | 6" | 3.70" | 4.0" | 0.59" | 1.5" |
| | [150] | [94] | [100] | [15]-4 Grid | [38] |
| | | | | [15]-3 Grid | |