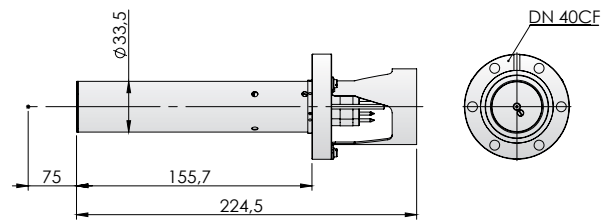


# ES 40C1

## ELECTRON SOURCE



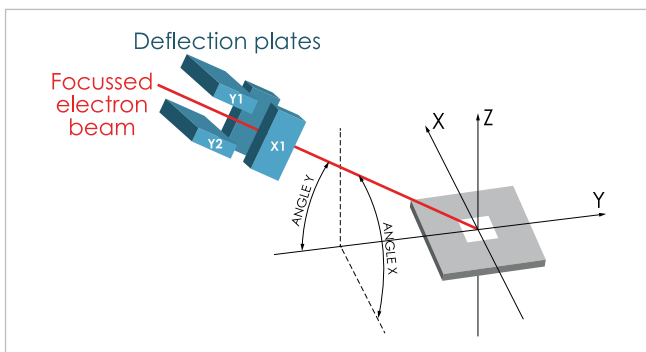
AES | EELS | SCANNING APPLICATIONS | ELECTRON PULSE OR DESORPTION EXPERIMENTS (ESD)

### DESCRIPTION

The ES 40C1 Electron Source is a scanable electron gun with small spot profile. Due to the high transmission of its Einzel-Lens, the ES 40C delivers a high electron beam current over a wide energy range. The ES 40C1 is designed for a stable and reliable operation in e.g. AES, scanning applications, imaging, EELS and electron pulse or desorption experiments (ESD).

### FEATURES

- Fine focus microformed tip cathode
- Scannable electron source with a small spot profile
- Integrated scan and deflection unit
- Correction of incident electron beam angle (provided by ES40-PS power supply)



Correction of incident electron beam angle

### OPTIONS

- Linear shift
- Customised insertion length
- Source shielding material ( $\mu$ -metal or copper)

### TECHNICAL DATA

Mounting flange	DN 40 CF (rotatable)
Energy range	0 - 5 keV
Sample current	up to 100 $\mu$ A
Scan area	10 mm $\times$ 10 mm
Shield	Cu (for $\mu$ -metal chambers) or $\mu$ -metal (for stainless steel chambers)
Cathode type	thoriated tungsten
Insertion length	min. 155.7 mm, other on request OD: 33.5 mm ( $\mu$ -metal), 35 mm (Cu)
FWHM	dependent on working distance, min. 120 $\mu$ m (for distance 56 mm),
Working distance	23 mm - 150 mm (typical 75 mm)
Bakeout temperature	up to 250 $^{\circ}$ C
Working pressure	$< 5 \times 10^{-6}$ mbar



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ES40C1

# ES40-PS

## ELECTRON SOURCE POWER SUPPLY



### DESCRIPTION

The ES40-PS power supply allows fine adjustment of electron beam energy, density, position on the sample and also beam profile. Scanning features allows for independently controlled scanning speed and range. All settings can be manually adjusted or can be stored and recalled automatically after unit switch on. The unit also features a built in timer and automatic standby mode. The ES40-PS can be supplied as a full width 19" rack mounting unit (3U height) or free standing. Easy firmware update via USB port. Unit can be remotely controlled via RS232/485 or Ethernet interfaces. The unit is equipped with autosave function (the device save your parameters, preset and apply them automatically after restart).

### APPLICATION

The ES40-PS power supply is intended to use with the ES40C1 Low Energy Electron Source or Double Pass Mini Cylindrical Mirror Analyzer CMA 40CF. The power supply allows fine adjustment of the electron beam profile to achieve a small spot at high energy and emission currents.

### OPTIONS

- Analog I/O card for vacuum measurement (1 gauge)

### ELECTRON SOURCE CONTROL APPLICATION



### TECHNICAL DATA

Supply voltage	100 - 240 V, 50-60 Hz (power consumption max 250 W)
Beam energy	0 - 5000 eV, resolution 0.1 eV, ripple < 200 mV
Emission current	0.1 - 300 $\mu$ A, res. 0.01 $\mu$ A [ES mode] 1 - 3000 nA, res. 1 nA [CMA mode]
Focus voltage	60 - 100 % related to energy voltage, resolution 0.1 %
Wehnelt voltage	0 - 150 V, res. 0.1 V [ES mode] -12 - 12 V, res. 0.1 V [CMA mode]
Beam position (Px,Py)	resolution 0.01 mm, middle pos $\pm$ 5 mm
Scanning area ( $\Delta$ x, $\Delta$ y)	10 mm $\times$ 10 mm, resolution 0.01 mm
Scanning speed (time/dot)	20 $\mu$ s - 30 ms
Timer	dual mode timer 0 s - 99 h 59 m
Vacuum measurement (optional)	CTR90, TTR91, TTR211, PTR225, PTR90, ITR90, ITR100, Baratron, ANALOG IN, MKS937A, PG105, MG13/14, PKR251/360/361, PCR280, ATMION
Communication interface	RS232/485, Ethernet
Communication protocol	MODBUS-TCP
User Interface	7" TFT display with touchscreen, digital encoder
Interface languages	English, German, Polish
Dimensions	483 $\times$ 133 $\times$ 435 mm (W $\times$ H $\times$ D), 19" rack mountable
Weight (approx.)	9.2 kg



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