



# EBS-530

## Electron Beam Sweep Controller

### CUSTOMIZABLE E-BEAM SWEEP CONTROL

EBS-530 Electron Beam Sweep Controller generates a large number of precision sweep patterns for use with electron beam (e-beam) deposition sources. The user may select from the basic shapes provided (circle, figure-8, line and point), or create user-defined patterns to optimize deposition control of metals and dielectric materials. Variations on the basic shapes can be created by applying the provided pattern modifiers. Pattern modifiers provided include power, sweep frequency, rotational speed and power profile.

Operation and programming is easy through the user-friendly touchscreen LCD display. EBS-530 can store up to 32 different sweep patterns. Sweep patterns can easily be selected from the front panel, through remote input, or through the standard RS-232/RS-485 interface.

Starting with a fixed set of basic sweep patterns that are embedded in the Sweep Control, the user can design e-beam sweep patterns that are ideally suited to the characteristics of the source and deposition materials. The sweep patterns generated by EBS-530 produce dual current outputs which can drive the X and Y sweep coils of most electron beam deposition sources.

EBS-530 features a calibration function to compensate for differences between types and brands of e-beam guns and provides optimum heating of the deposition material.

#### FEATURES AT A GLANCE

- Powerful, easy-to-use calibration function allows compensation for irregularities in gun magnetics
- High output current: 0 to 5 Amps AC with 10 Ohm loads
- Drives grounded or floating coils
- High frequency response: 500 Hz for coils <8 mH, 200 Hz for coils = 33 mH
- Pattern types: circle, figure-8, line, point and user-defined
- Handheld controller for manual beam control and calibration
- RS-232 / RS-485 communications inputs
- Input power: 85 to 265 V (ac), 50/60 Hz
- Power factor = 0.99 at maximum coil current

## SPECIFICATIONS

### Output

Coil output current	-5.0 to 5.0 Amps peak per coil (3.5 A rms)
Coil configurations	Two coils with one side grounded Two coils with each side floating
Output frequency response (X and Y)	500 Hz for coils <8 mH 200 Hz for coils = 33 mH
Maximum coil impedance @ 5 Amps Peak	10 Ohms
Nominal cable length	6.1 m (20 ft.)

### Patterns

Predefined patterns	Circle, figure-8, line, point
User patterns	32
X/Y points per user pattern	255

### Pattern Parameters

Gain	0 to 110%
Power profile	Vary current density according to $1/R^x$
Shape	Circle, figure-8, line, point, user-defined
Spin speed (rate of shape rotation)	0 to 1000 RPM
Shape speed (time to draw one shape)	0 to 1000 ms

### General

User interface	240 x 64 backlit LCD touchscreen Dedicated system keys
Mouse/remote input	PS2
Digital inputs	Nine
Digital input type	Contact closure
Digital input functions	Interlock Remote mode Pattern select (1 to 32) Sweep On/Off
Relay outputs	Three
Relay rating	SPST, 30 V (dc) or RMS, 2 Amp
Relay output functions	Sweep Ready Sweep On Beam in pocket
Communications	RS-232/RS-485
Cooling	Forced air, one internal fan
Size (H x W x D)	8.9 x 42.9 x 29.2 cm (3.5 x 16.9 x 11.5 in.)
Weight	4.5 kg (10 lb.)
Input power	85 to 265 V (ac), 50/60 Hz 460 VA (10 Ohm coil R, 5 A peak current in each coil)
Power factor	0.99 at maximum coil current
Regulatory compliance	CE, RoHS

## ORDERING INFORMATION

EBS-530

EBS-530 Electron Beam Sweep Controller



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Due to our continuing program of product improvements, specifications are subject to change without notice.

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