

## E-Beam Power Supplies

### Solid State

- All Solid State switch mode design
- Rugged overrated IGBT inverter for superior reliability
- Extensive arc management for outstanding performance, fastest arc recovery, arc counter and arc duration sensor
- Adjustable voltage 0 to -10kV (0 to -8kV for ST-4) with precise regulation (<math>\pm 0.25\%</math>) for stable beam position, ultra low ripple for minimum beam size
- Constant emission current regulation <math>\pm 0.5\%</math>
- Simultaneous or sequential operation of two sources
- Full remote operation from PLC or optional Handheld for both High Voltage and Source
- 19 Inch rack mountable, ultra compact  
Chassis : 8.75" (5U)  
Controller: 1.75" (1U)
- Digital Sweep or Programmable Sweep optional
- Air cooled



### ST-4/6/8

Maximum power 4/6/8kW



### SX-10/12

Maximum power 10/12kW



Optional ST configuration with display and controls integrated into the high voltage module (limited I/O)

### Tetrode Tube

- Robust overrated tetrode tube for superior instantaneous arc-down recovery
- Precise Voltage regulation (<math>\pm 0.25\%</math>) for stable beam position, very low ripple for minimum beam size
- Constant emission current regulation <math>\pm 0.5\%</math>
- Full remote operation from PLC or optional Handheld for both High Voltage and Source
- Air cooled



### TT-10/15/20

- Maximum power 10/15/20kW
- Simultaneous operation of up to 3 e-beam sources
- Adjustable voltage (TT-10/15 -6 to -10kV, TT-20 -6 to -12kV)



### TT-6

- Maximum power 6kW
- Adjustable voltage -6 to -8kV

## Specifications – Tetrode Tube Power Supplies

	TT-6	TT-10	TT-15	TT-20
Maximum Power	6kW	10kW	15kW	20kW
Number of Sources	One Source	Up to three Sources		
	750mA @ 8kV	1.0A @ 8kV	1.5A @ 10kV	1.7A @ 12kV
HV (adjustable)	-6 to -8kV	-6 to -10kV	-6 to -10kV	-6 to -12kV
Response time	<100 microseconds			
Source Filament	40A max @8VAC			50A max @8VAC
Process Control Voltage	0 to +10VDC			



### ST/SX/TT Remote Control

Optional remote control and display of high voltage and emission current

## Specifications – ST Solid State Power Supplies

	ST-4	ST-6		ST-8
Maximum Power	4kW	6kW		8kW
Number of Sources	One Source			
	500mA @ 8kV	Option A 600mA @ 10kV	Option B 750mA @ 8kV	800mA @ 10kV
HV (adjustable)	0 to -8kV	0 to -8kV	0 to -10kV	0 to -10kV
Response time	<50 microseconds			
Source Filament	40A max @10VAC			
Process Control Voltage	0 to +10VDC			

## Specifications – SX Solid State Power Supplies

	SX-4	SX-6	SX-8	SX-10	SX-12
Maximum Power	4kW	6kW	8kW	10kW	12kW
Number of Sources	Two Sources			One or Two Sources	
	500mA @ 8kV	?A @ ?kV	800mA @ 10kV	1A @ 10kV	1.2A @ 10kV
HV (adjustable)	0 to -10kV	0 to -10kV	0 to -10kV	0 to -10kV	0 to -10kV
Response time	<50 microseconds				
Source Filament	40A max @10VAC				
Process Control Voltage	0 to +10VDC				

# TELEMARK

## Digital Sweep and Programmable Sweep

Powerful, yet Economical and User-friendly

### FEATURES

- High repeatability for consistent yields and material usage
- Remote pattern selection and feedback by binary code or individual selection
- Intuitive – short learning curve for operators and engineers

### APPLICATION

- Tight beam control and uniform energy distribution for dielectric and subliming materials
- Stable single spot for evaporation of metals
- Excellent for processes requiring repeatable vapor cloud distribution
- Replace older style analog sweeps

### SPECIFICATIONS

- Coil output current:  
Dual channel (Longitudinal and Lateral):  
+/- 1.5 A max. into a <15 Ohm load
- Rotational resolution 360 steps (1° angular resolution)
- Remote inputs/outputs:  
Dry contact closures (N.O.)
- Input voltage:  
90-264 VAC, 47-63 Hz

### CONTROL

- Touch Screen LCD display
- Hand Held Joystick
- Remote Pattern Selection



### DIGITAL SWEEP

- 5 Preset shapes (triangular, sinusoidal, collapsible circle, rotatable line, point)
- User definable oscillation frequency, amplitude, rotational speed, collapse circle
- Memory for eight user definable patterns



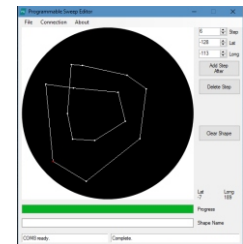
The Programmable Sweep controls the pinpoint location of the EB Source beam spot. Patterns are viewable from the LCD screen and can be edited to change size, frequency, rotation, profile and location.

### ADDITIONAL FEATURES OF THE PROGRAMMABLE SWEEP

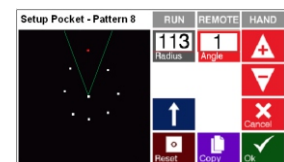
- Stores 32 user shapes and 32 patterns that are remotely selectable
- Seven built in shapes: triangular, sinusoidal, collapsible circle, rotatable line, figure 8, spiral and point
- User may edit any step in a shape without rewriting the program
- Unit adjusts output to match deflection characteristics and magnetic distortion of each source, so displayed shape mirrors actual shape in the chamber
- Compatible with all transverse beam sources, featuring offset and an interlock for sources requiring coil bias for pocket center
- Optional 3 amp longitudinal and lateral output



Avatar Hand-held Remote Included



Windows Shape Edit Software Included



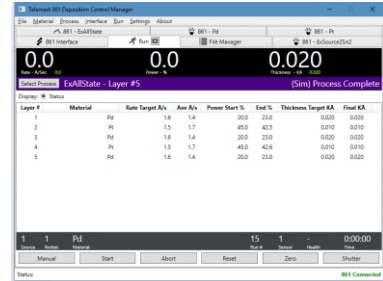
Pocket Distortion Adjust

## Deposition Monitors and Controllers

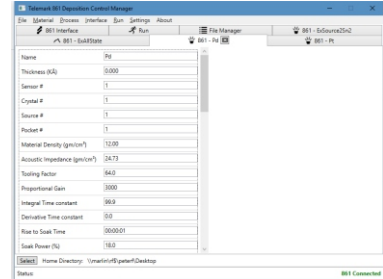


### Model 861 Deposition Controller Part Number 861-9910-1

- Includes one oscillator, 6 inch BNC cable and 25 foot shielded RJ45 cable for connecting the oscillator to the instrument and RS-232.
- High frequency internal reference oscillator provides <math><0.01\text{\AA}</math> resolution for aluminum
- Operates with 5 MHz or 6 MHz crystals
- Extensive materials library, also allowing for user definable materials
- Color LCD touch screen for graphical and numerical display of primary real-time process data, providing an intuitive and user friendly operator interface
- All system, film and setup files may be saved via a front panel USB port, as well as uploaded to instrument
- Can accommodate up to 99 processes of 999 layers each
- Standard unit has 2 crystal sensor inputs and 2 isolated rate control analog output drivers, expandable to 4 each.
- Standard 8 relay isolated outputs and 8 optically isolated inputs (for both active and passive mode) Optional up to 32 ea.



Included Windows Software for RS-232 or Ethernet



### Model 862 Deposition Controller Part Number 862-9910-1

Same features as the 861 but in a chassis with 7-inch touchscreen and capabilities to control co-deposition, average up to 4 sensors simultaneously

### Model 851 Thickness Monitor Part Number 851-9911-1

The 851 is capable of supporting two sensors sequentially, includes I/O and RS-232, oscillator and 25 foot cable for connecting the oscillator to the instrument. Come with both ears for half rack mounting and table top legs that tilt screen upwards.

