

EB Power Generator [HPS-N Series]

The HPS-N Series is a series of power generator that support electron beam evaporation sources and feature improvements in circuit stability and performance based on technologies we have accumulated over many years and our proven track record. When used in combination with the EGC-10GS EB Gun Controller, both EG guns for optical films and EB guns for metal films can be supported.



HPS-1000N



EGC-10GS

Features

- **Requires no cooling water**
Forced air-cooling, requires no cooling water
- **High reliability**
Our accumulated knowledge as an equipment manufacturer has been reflected in the design
- **Easy to use**
The LCD touch panel used for the control panel improves ease of use
- **Sweep waveform variations**
Many beam scan forms can be created on the operating screen
- **High-speed arc shutoff function**
Configured with a circuit that minimizes decreases in deposition rate by high-speed arc shutoff
- **Low level arc control function (option for optical applications)**
Controls minute arcs that occur in optical applications to allow stable deposition

Applications

- Vacuum evaporation for metal films
- Vacuum evaporation for optical films

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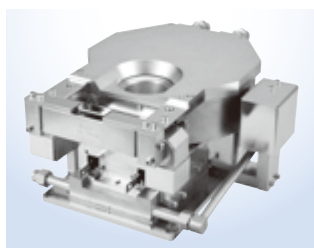
► HPS-N Series-compatible EB gun selection guide

ULVAC evaporation sources (EB guns) all use magnetic deflection and are made to prevent contamination from evaporation materials. We offer a lineup featuring the EKG Series with small capacities for experiments, the EGL and EGN Series with medium to large capacities for production, and the EGO and EGP Series for optical applications. The EGN Series features models with improved maintainability through the flat-top construction.

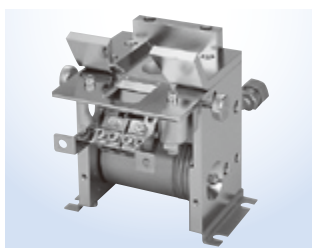
► EB guns for metals

Selection table

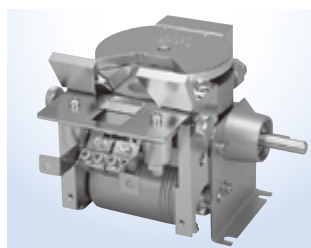
		Crucible capacity				
		3cc	10cc	20cc	40cc	110cc
Number of crucibles	1	EKG-3	—	—	EGL-35	EGL-110
	3	—	EGL-103S	—	—	—
	4	EKG-3M	EGL-35M (10cc × 2, 40cc × 2)	—	EGL-35M (10cc × 2, 40cc × 2)	—
	6	—	—	EGN-206M	EGN-406M	—
Maximum input		5kW	6kW	8kW	10kW	16kW



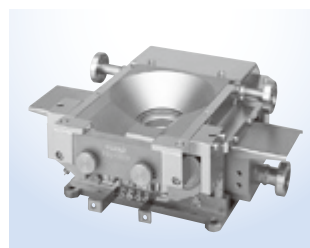
EGN-206M/406M



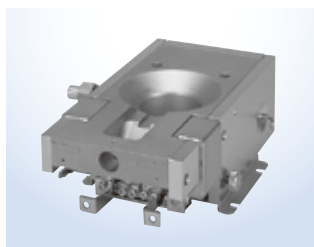
EKG-3



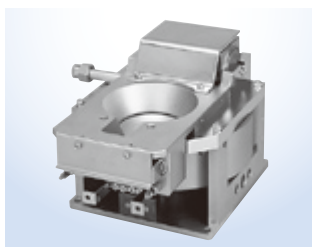
EKG-3M



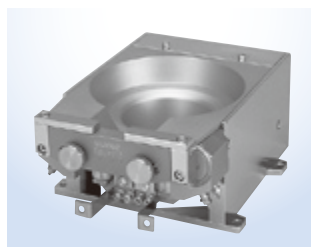
EGL-103S



EGL-35



EGL-35M

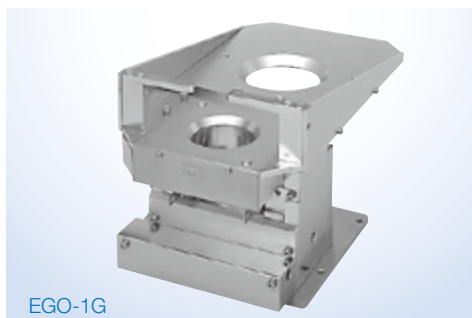


EGL-110

Specifications

	EGN-206M	EGN-406M	EKG-3	EKG-3M	EGL-103S	EGL-35	EGL-35M	EGL-110
Beam deflection angle	270°	270°	225°	225°	270°	270°	270°	270°
Number of crucibles	6	6	1	4	3	1	10cc × 2	1
Crucible capacity	20cc	40cc	2.6cc	2.9cc	10cc	40cc	40cc × 2	110cc
Cooling water rate	10L/min	10L/min	8L/min	8L/min	10L/min	10L/min	10L/min	19L/min
Dimension (W×D×H) excluding protrusions	267×343×150mm	267×343×150mm	110×240×126mm	140×240×126mm	313×250×108mm	110×206×79mm	170×240×156mm	136×220×90mm
Weight	28kg	28kg	4kg	5kg	16kg	10kg	18kg	15kg
Accelerating voltage	-4 to -10kV	-4 to -10kV	-4 to -10kV	-4 to -10kV	-4 to -10kV	-4 to -10kV	-4 to -10kV	-4 to -10kV
Emission current	800mA	1000mA	500mA	500mA	600mA	1000mA	1000mA	1600mA
Maximum input	8kW	10kW	5kW	5kW	6kW	10kW	10kW	16kW
Sweep frequency	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less	X-direction: 5Hz or less Y-direction: 22Hz or less
X-axis coil current	0.4 to 3.5A	0.4 to 3.5A	0.4 to 3.5A	0.4 to 3.5A	0.4 to 3.5A	0.4 to 3.5A	0.4 to 3.5A	0.4 to 3.5A
Y-axis coil current	0 to ±1.2A	0 to ±1.2A	0 to ±1.2A	0 to ±1.2A	0 to ±1.2A	0 to ±1.2A	0 to ±1.2A	0 to ±1.2A
Filament	45A (0 to 12VAC)	45A (0 to 12VAC)	40A (0 to 6VAC)	40A (0 to 6VAC)	40A (0 to 6VAC)	40A (0 to 6VAC)	45A (0 to 6VAC)	50A (0 to 6VAC)

EB guns for optical applications



EGO-1G

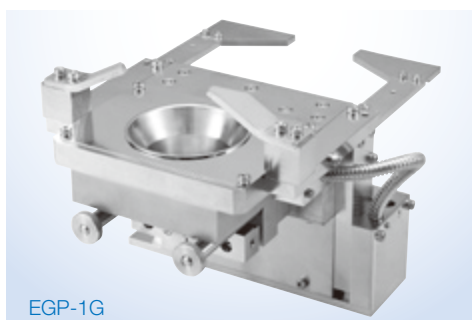
EGO-1G:

Uses a 270° deflection angle for low filament contamination.

EGP-1G :

Uses a 180° deflection angle for high beam stability and a flat-top construction for ease of maintenance.

* EB guns for optical applications do not include a crucible, but we can manufacture and sell crucibles at your request.



EGP-1G

Specifications

	EGO-1G	EGP-1G
Beam deflection angle	270°	180°
Cooling water rate	10L/min	10L/min
Dimension (W × D × H) excluding protrusions	168 × 285 × 174mm	185 × 239 × 179mm
Weight	10kg	11kg
Accelerating voltage	-4 to -10kV	-4 to -10kV
Emitting current	1000mA	1000mA
Maximum input	10kW	10kW
Sweep frequency	X-direction: 800Hz or less Y-direction: 800Hz or less	X-direction: 800Hz or less Y-direction: 800Hz or less

HPS-N Series accessories selection guide



Specifications

Part name	Model	Type	Model								
			EGN-206M/406M	EGK-3	EGK-3M	EGL-103S	EGL-35	EGL-35M	EGL-110	EGO-1G	EGP-1G
High-voltage terminal	BERH311A	Chamber-side feed-through type	2	2	2	—	2	2	2	2	2
Current terminal	PTS-004	For coil wire	1	1	1	—	1	1	1	1	1
Ground terminal	ERZ-003		1	1	1	—	1	1	1	1	1
Vacuum checker	DTA-002		1	1	1	—	1	1	1	1	1
Cooling water terminal	DK5203-045		B: 4	A: 2, B: 2	A: 2, B: 2	—	B: 2	B: 2	C: 2	B: 2	B: 2
Rotation terminal (manual)	FDR-015	For hearth	—	—	1	—	—	1	—	—	—
	PDH-003		—	—	1	—	—	1	—	—	—
Hearth positioner		Crucible detection unit	★	—	—	—	—	1	—	—	—
Current terminal	PTS-004	Requires hearth positioner	1	—	—	—	—	1	—	—	—

* Terminals require a 30φ service port. A: 6φ, B: 10φ, C: 12φ ★Standard equipment

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Specifications

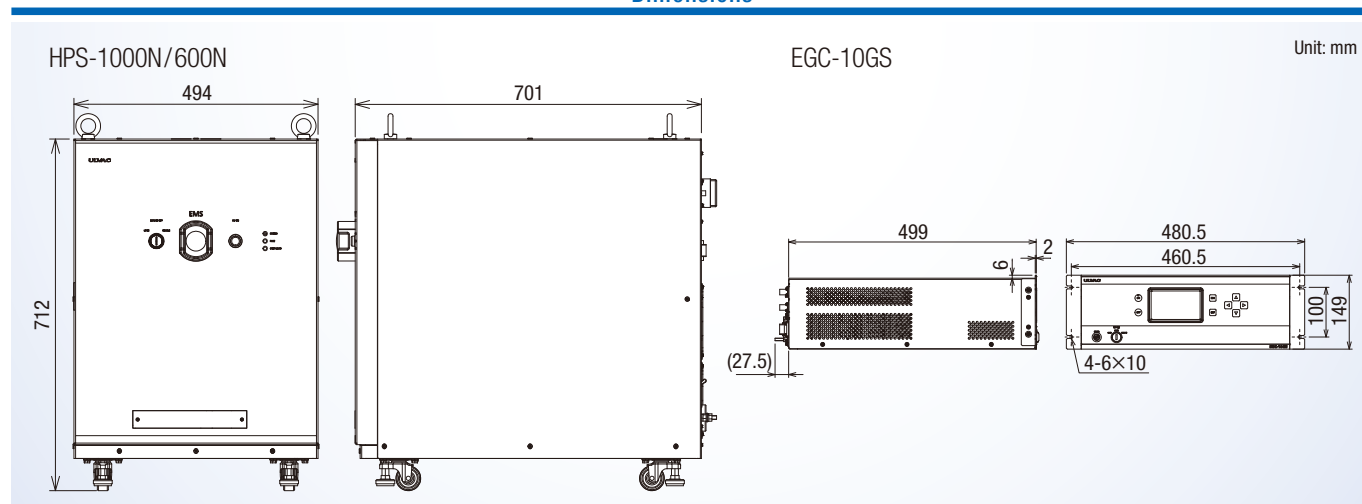
Model		HPS-600N	HPS-1000N
Input specification	Phase, frequency	Three phase, 50/60Hz	
	Input voltage	200 to 220VAC	
	Fluctuation range	190 to 231VAC	
	Input capacity	1 source	9.0kVA or less
		2 sources	10.0kVA or less
	Leakage current	Each phase 5mA or less	
Output specification	Rated output power	1 source	6kW
		2 sources	10kW
	High-voltage output voltage	Variable range	-2 to -6kV
		Stability	±1% or less
		Ripple ratio	±2% p-p or lower (at each rated output)
		Beam current	0 to 1000mA
	Filament output	Voltage	0 to 6V/12VAC
		Current	0A to 45A max
High-voltage flashover protection	Operating method	Switching method by semiconductor device	
	High-voltage shutoff time	1 ms or less (high voltages off in approx. 1 second in mechanical short circuits)	
	Downtime	10ms or less	
	High-voltage rise time	1 ms or less (from 20% to 80% of rating)	
Cooling method		Forced air-cooling	
Dimension W × D × H excluding protrusions		494 × 701 × 712mm	
Weight		Approx. 115kg	Approx. 120kg
Applicable Standard		CE	

Model		EGC-10GS		
TYPE		G-TYPE	S-TYPE	
Input specification	Phase, frequency		Three phase, 50/60Hz	
	Input voltage		200 to 220VAC	
	Fluctuation range		190 to 231VAC	
	Input capacity		382VA or less	
	Leakage current		Each phase 5mA or less	
Output specification	X-axis magnet coil output	Variable range	0 to ±1.5A	0 to -3.5A
		Voltage	±24V max	
		Regulation	±2% or less	
		Frequency	10 to 800Hz Variable in 0.1Hz increments	0.1 to 5Hz Variable in 0.1Hz increments
		Waveform	Desired waveform	
	Y-axis magnet coil output	Variable range	0 to ±1.5A	0 to ±1.2A
		Voltage	±24V	
		Regulation	±2% or less	
		Frequency	10 to 800Hz Variable in 0.1Hz increments	0.1 to 22Hz Variable in 0.1Hz increments
		Waveform	Desired waveform	
	Deflection coil output (G-TYPE gun only)	Variable range	-0.4 to -3.5A	
		Voltage	+24V Max	
Regulation		±2% or less		
Frequency		DC		
Waveform		DC		
Cooling method		Forced air-cooling		
Dimension W × D × H		480.5 × 499 × 149mm		
Weight		11.5kg		
Applicable Standard		CE		

* Ambient operating temperature 10 to 40°C (no condensation)

* Operating environment: Avoid direct sunlight, heat, dust, vibration, and without corrosive gas.

Dimensions



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