

# Sputter Ion Pump [PST series]

New type element, which is actor element and optimized magnet filed improves pumping speed in extreme and ultra high vacuum ranges.



Sputter Ion Pump  
PST-200



Controller  
GST-07L-B

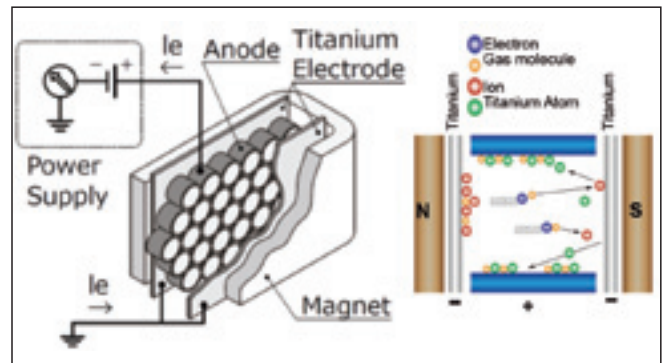
## Features

- ▶ Supporting ultra and extremely-high vacuum  
Ultimate pressure in the  $10^{-10}$ Pa region.  
Achieved with test dome complying with ISO standards
- ▶ Double the pumping performance achieved by the inert gas enhanced pumping model (type AXII)  
(compared with the ULVAC's conventional pumps)
- ▶ High pumping speed attained in the ultra-high vacuum region
- ▶ Pumping down to ultra-high vacuum in a short period of time
- ▶ Top-notch pumping characteristics in ultra and extremely-high vacuum region  
Discharging maintained down to the ultra-high vacuum region

## Application

- ▶ Accelerator
- ▶ Electron microscope
- ▶ Electron beam lithography system
- ▶ The analysis equipment which doesn't like vibration
- ▶ The use of ultra and extremely-high vacuum environments

## Pumping principle



- ▶ A ultra high vacuum pump which uses the getter function by sputtered active titanium.
- ▶ There is not any rotation part.

# Sputter Ion Pump PST-030CU/AU

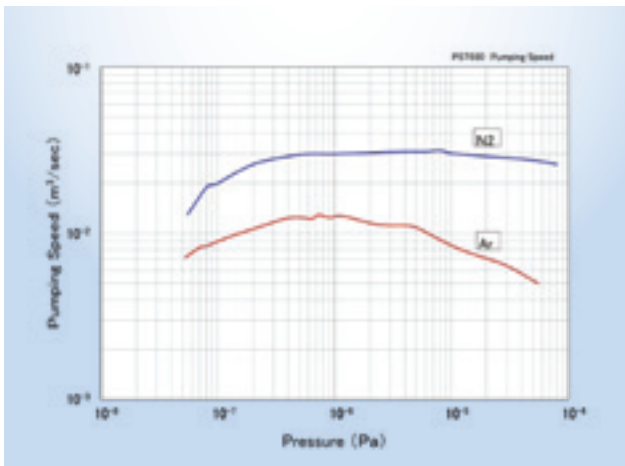


## Specification

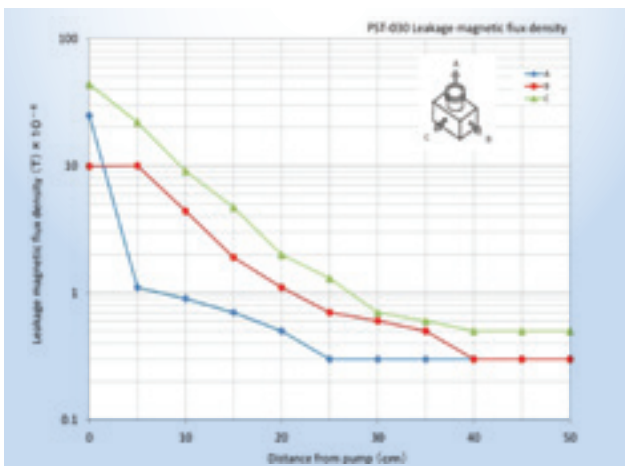
Model		PST-030 CU/AU
Regenerating pumping speed (At $1.0 \times 10^{-7}$ Pa)	N2	0.02m <sup>3</sup> /sec ※Max 0.03m <sup>3</sup> /sec
	Ar	0.013m <sup>3</sup> /sec
Ultimate pressure		$10^{-9}$ Pa
Operating pressure (*1)	Recommended value	$< 8.0 \times 10^{-3}$ Pa
Inner volume		$0.67 \times 10^{-3}$ m <sup>3</sup>
Element number		1 set ※anticommutative
Applied voltage		DC+7.5kv
Discharge intensity characteristic value		3A/Pa
Connection flange type		UFC070
Bake-out temperature		250°C
Power for Heater Unit		No setting
Weight		9.5kg
Dimensions W×D×H		103×183×187mm
Operating environment	Temperature range	5~40°C
	Humidity range	Less than 85% (not condensing)
Pump fixing bolt hole		M5 × 4pcs , Depth10mm
Recommended controller		GST-07L-B

\*1) During the time of use of the GST-07L-B Type controller

## Pumping Speed Curves

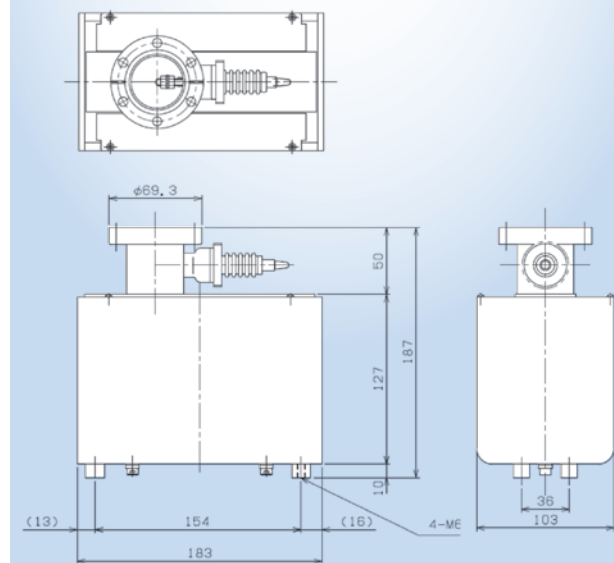


## Magnetic flux density leakage



## Dimensions

Unit : mm



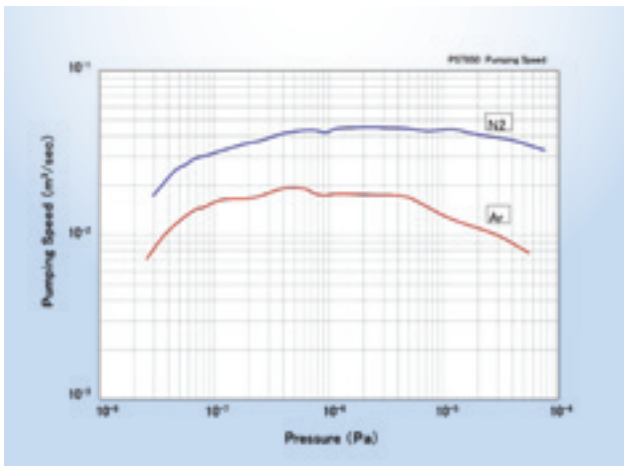
# Sputter Ion Pump PST-050CU/AU



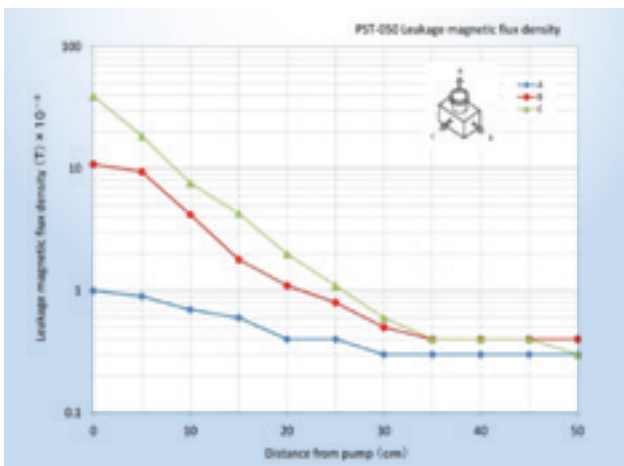
## Specification

Model		PST-050 CU/AU
Regenerating pumping speed (At $1.0 \times 10^{-7}$ Pa)	N2	0.03m <sup>3</sup> /sec ※Max 0.045m <sup>3</sup> /sec
	Ar	0.016m <sup>3</sup> /sec
Ultimate pressure		$10^{-9}$ Pa
Operating pressure (*1)	Recommended value	$< 8.0 \times 10^{-3}$ Pa
Inner volume		$1.3 \times 10^{-3}$ m <sup>3</sup>
Element number		1 set ※anticommutative
Applied voltage		DC+7.5kv
Discharge intensity characteristic value		3A/Pa
Connection flange type		UFC114
Bake-out temperature		250°C
Power for Heater Unit		single phase , AC200V 300W
Weight		12kg
Dimensions W×D×H		153×204×241mm
Operating environment	Temperature range	5~40°C
	Humidity range	Less than 85% (not condensing)
Pump fixing bolt hole		M5 × 4pcs , Depth10mm
Recommended controller		GST-07L-B

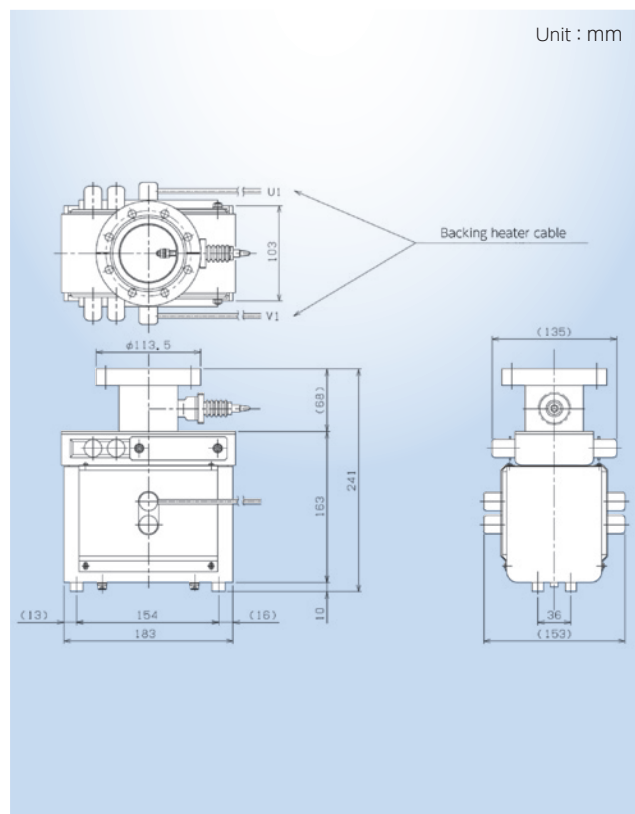
## Pumping Speed Curves



## Magnetic flux density leakage



## Dimensions



\*1) During the time of use of the GST-07L-B Type controller

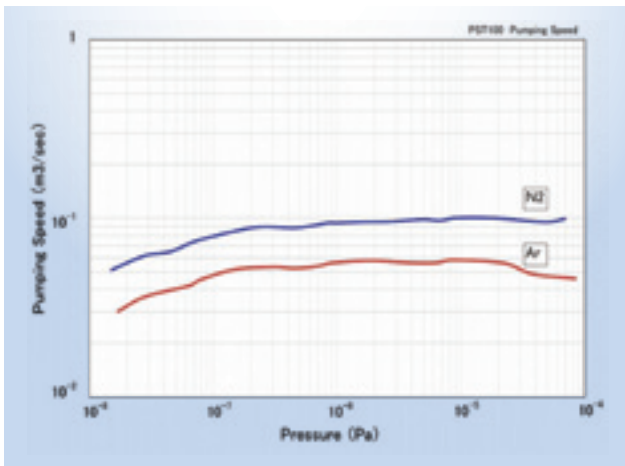
# Sputter Ion Pump PST-100CX/AX



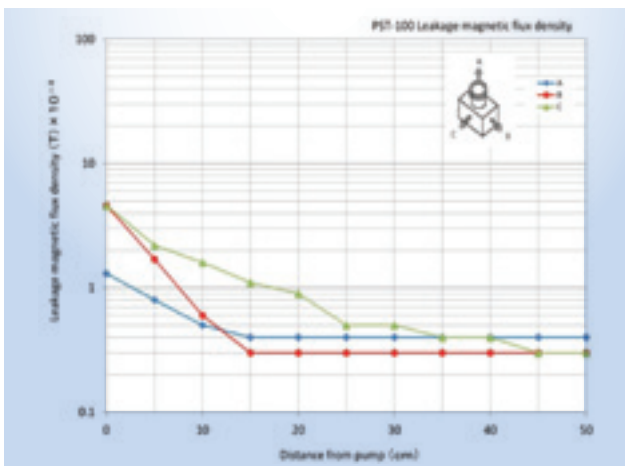
## Specification

Model		PST-100 CX/AX
Regenerating pumping speed (At $1.0 \times 10^{-7}$ Pa)	N2	0.08m <sup>3</sup> /sec ※Max0.10m <sup>3</sup> /sec
	Ar	0.05m <sup>3</sup> /sec
Ultimate pressure		$10^{-9}$ Pa
Operating pressure (*1)	Recommended value	$<5.0 \times 10^{-3}$ Pa
Inner volume		$3.3 \times 10^{-3}$ m <sup>3</sup>
Element number		1 set ※anticommutative
Applied voltage		DC+7.5kv
Discharge intensity characteristic value		6A/Pa
Connection flange type		UFC152
Bake-out temperature		250°C
Power for Heater Unit		single phase , AC200V 320W
Weight		37kg
Dimensions W×D×H		155×336×340mm
Operating environment	Temperature range	5~40°C
	Humidity range	Less than 85% (not condensing)
Pump fixing bolt hole		M8 × 4pcs , Depth6mm
Recommended controller		GST-07L-B

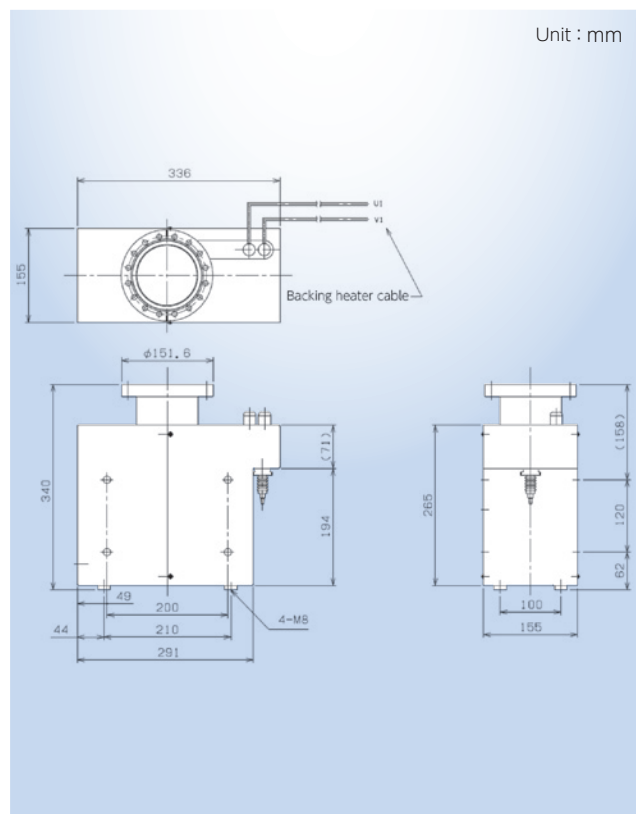
## Pumping Speed Curves



## Magnetic flux density leakage



## Dimensions



\*1) During the time of use of the GST-07L-B Type controller

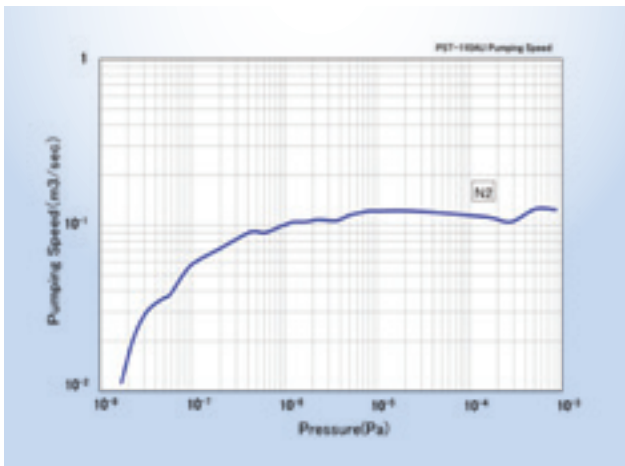
# Sputter Ion Pump PST-110AU



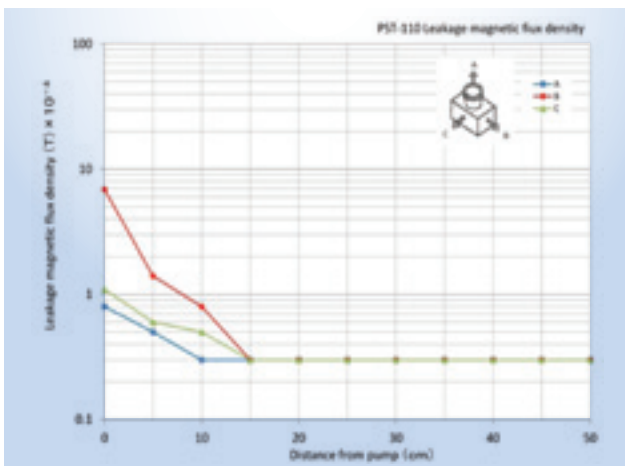
## Specification

Model		PST-110 AU
Regenerating pumping speed (At $1.0 \times 10^{-7}$ Pa)	N2	0.06m <sup>3</sup> /sec ※Max 0.11m <sup>3</sup> /sec
	Ar	—
Ultimate pressure		10 <sup>-9</sup> Pa
Operating pressure (*1)	Recommended value	<4.5×10 <sup>-3</sup> Pa
Inner volume		6.5×10 <sup>-3</sup> m <sup>3</sup>
Element number		2 set ※Replaceable
Applied voltage		DC+7.5kv
Discharge intensity characteristic value		6.6A/Pa
Connection flange type		UFC152
Bake-out temperature		250°C
Power for Heater Unit		No setting
Weight		36.5kg
Dimensions W×D×H		171×387×293mm
Operating environment	Temperature range	5~40°C
	Humidity range	Less than 85% (not condensing)
Pump fixing bolt hole		M6 × 4pcs , Depth15mm
Recommended controller		GST-07L-B

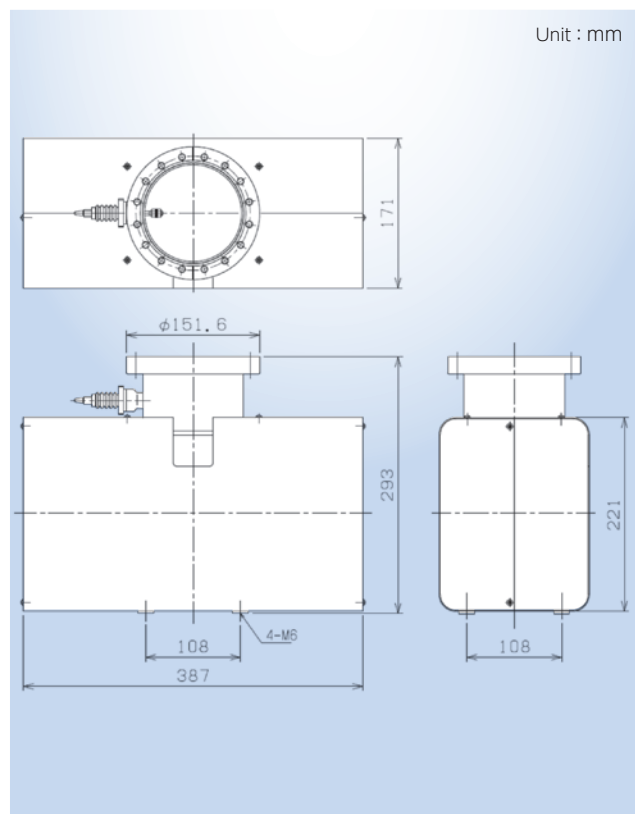
## Pumping Speed Curves



## Magnetic flux density leakage



## Dimensions



\*1) During the time of use of the GST-07L-B Type controller



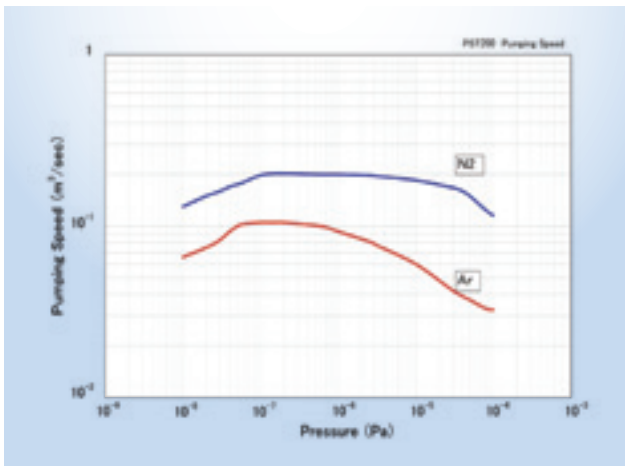
# Sputter Ion Pump PST-200CX II /AX II



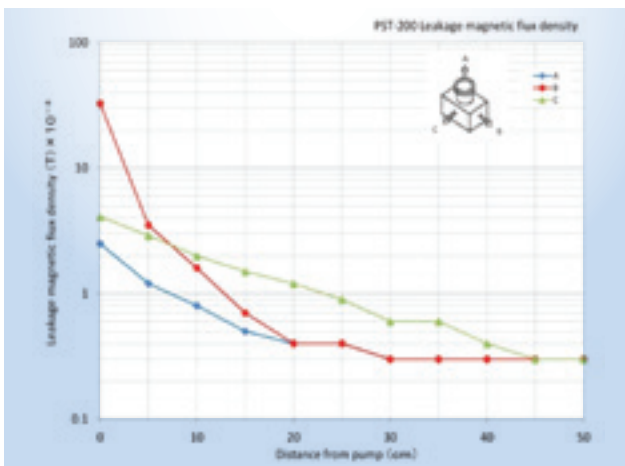
## Specification

Model		PST-200 CXII/AXII
Regenerating pumping speed (At $1.0 \times 10^{-7}$ Pa)	N2	0.20m <sup>3</sup> /sec
	Ar	0.105m <sup>3</sup> /sec(AXII) 0.02m <sup>3</sup> /sec(CXII)
Ultimate pressure		$10^{-10}$ Pa
Operating pressure (*1)	Recommended value	$<3.8 \times 10^{-3}$ Pa
Inner volume		$11 \times 10^{-3}$ m <sup>3</sup>
Element number		2 set ※Replaceable
Applied voltage		DC+7.5kv
Discharge intensity characteristic value		8A/Pa
Connection flange type		UFC203
Bake-out temperature		250°C
Power for Heater Unit		single phase , AC200V 600W
Weight		65kg
Dimensions W×D×H		296×361×376mm
Operating environment	Temperature range	5~40°C
	Humidity range	Less than 85% (not condensing)
Pump fixing bolt hole		M8 × 4pcs , Depth15mm
Recommended controller		GST-07L-B

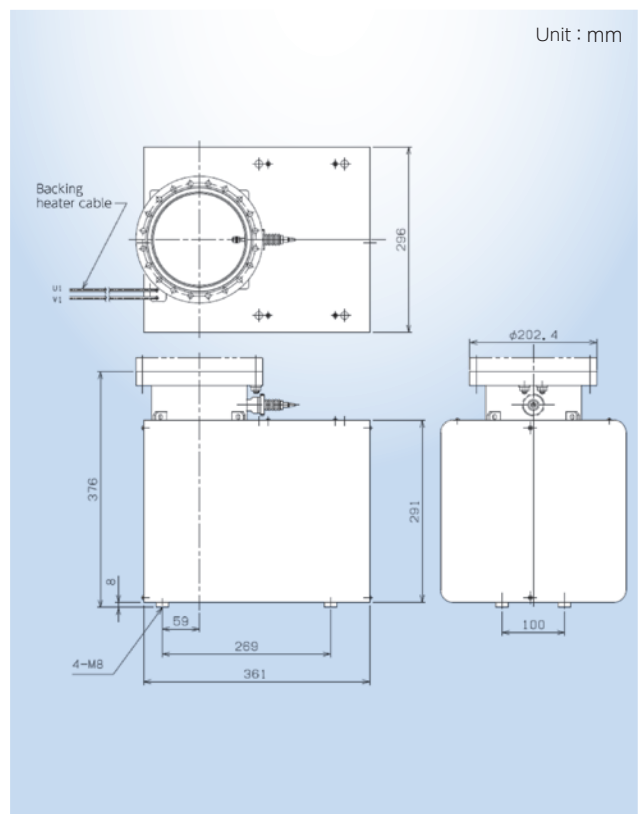
## Pumping Speed Curves



## Magnetic flux density leakage



## Dimensions



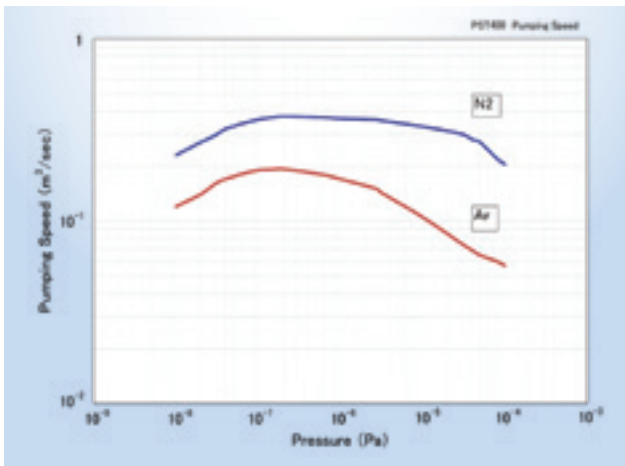
# Sputter Ion Pump PST-400CX II /AX II



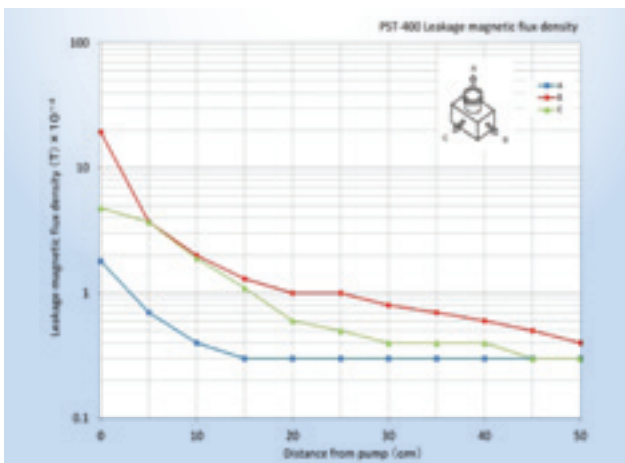
## Specification

Model		PST-400 CXII/AXII
Regenerating pumping speed (At $1.0 \times 10^{-7}$ Pa)	N <sub>2</sub>	0.36m <sup>3</sup> /sec
	Ar	0.19m <sup>3</sup> /sec (AXII) 0.04m <sup>3</sup> /sec (CXII)
Ultimate pressure		$10^{-10}$ Pa
Operating pressure (*1)	Recommended value	$<3.0 \times 10^{-3}$ Pa
Inner volume		$14 \times 10^{-3}$ m <sup>3</sup>
Element number		4 set ※Replaceable
Applied voltage		DC+7.5kv
Discharge intensity characteristic value		10A/Pa
Connection flange type		UFC203
Bake-out temperature		250°C
Power for Heater Unit		single phase , AC200V 800W
Weight		124kg
Dimensions W×D×H		296×544×376mm
Operating environment	Temperature range	5~40°C
	Humidity range	Less than 85% (not condensing)
Pump fixing bolt hole		M8 × 6pcs , Depth15mm
Recommended controller		GST-07L-B

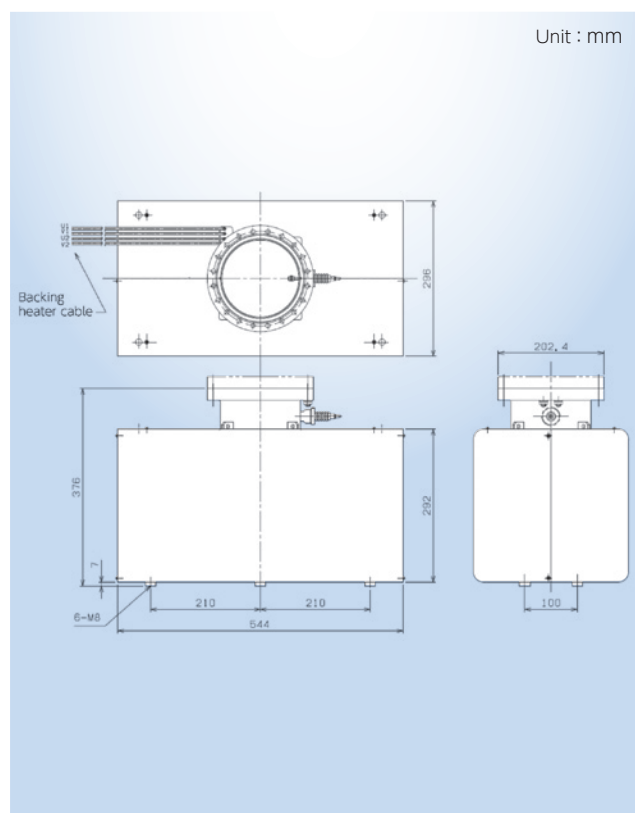
## Pumping Speed Curves



## Magnetic flux density leakage



## Dimensions



\*1) During the time of use of the GST-07L-B Type controller

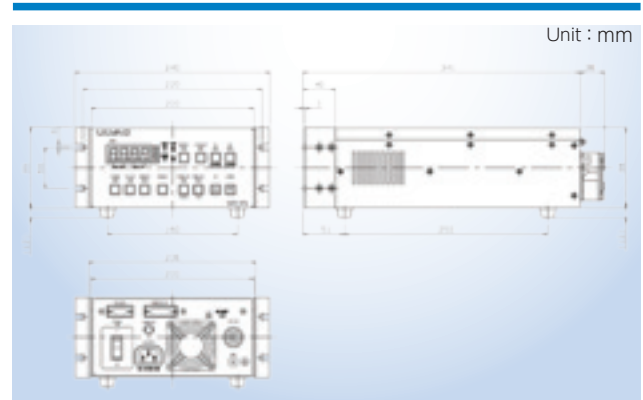
# Controller for PST series [GST-07L Ver.B]

The GST-07L-B is a sputter ion pump controller with the high functionality and reliability through the plenty of technology and long time experience in ultra-high vacuum area that ULVAC has engaged.



GST-07L-B

## Dimensions



## Specification

Model		GST-07L-B	
Input specifications	Input rated voltage	AC100 to 115V±10%, 50/60Hz, 3.0A or lower	
	Input capacity	AC200 to 240V±10%, 50/60Hz, 1.5A or lower	
	Leakage current	6mA or lower	
	Input voltage reshuffling	Manual (Operation with the power supply inside DIP switch)	
Output specifications	Rated voltage	DC +7.5kV (Volume variable from about 1.0 to 7.5kV )	
	Rated current	DC30mA or lower	
	Output polarity	Positive polarity	
	Output properties	Constant voltage characteristic	
Display system		Digital display (7-segment LEDs)	
Indication contents	Output current indication range	1μA to 30mA(Automatic selection of two ranges: mA , μA)	
	Output voltage indication range	0.0 to 7.5 kV DC	
	Pressure indication range	Pa 1E-2 to 1E-8 Pa,mbar 1E-4 to 1E-10 mbar	
Pressure set point		2 points	
Protective function		Error display/ various protective functions are provided. High voltage (HV) output shuts down Err 0 to 8 light.	
Restoration after power failure		Automatic restoration after power failure is available when the HV-ON switch is ON.	
External control function		Equipped with various input/output functions. (REMOTE connector is provided)(Remote control and RS-232C communication control provided).	
Monitor terminal		Output of signals proportionate to 7-segment panel display. 0 to 10 V DC full scale for each range. Allowable load impedance 100 kΩ or more.	
REMOTE/LOCAL		Switchable on the front control panel	
Cooling method		Forced air cooling	
Weight		4.0kg	
Dimensions		W200xH99xD370mm (excluding rack mounting fixtures)	
Operating environment	Temperature range	10 to 40°C	
	Humidity range	Less than 85% (not condensing)	
Applicable standard		CE, cTUVus	

ULVAC, Inc. Components Division

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