

Temperature Controller

Input	Input voltage	100 ~ 240V
Output	Maximum output voltage	15V
	Maximum output current	7A (digital meter indication)
	Number of outputs	4-channel switching system
	Output current adjustment	Manual adjustment of current output
Temperature Monitor		
	Temperature sensor	W-Re thermocouple (for high-temperature evaporation models UE-104CT, 103CST, and 103CSFT)
		K-type thermocouple (for organic molecular evaporation models UE-104CT, 103CST, and 103CSFT)
	Number of channels displayed	1 channel (interlocking with the control channel)
Thermal Control		
	Control circuit	Current output PI control based on the temperature sensor input
	Number of channels controlled	1 channel (4-channel switching system)
	Set temperature input	Input to the 10-turn potentiometer and indicated on the digital meter
Size of Steel Case		
		Approx. 430mm (W) x 350mm (D) x 100mm (H)



1. Multi-Source High Temperature Thermal Evaporator (UE-103C/104C series)

Model number: UE-	Number of elements	Thermo couple (W-RE)	Shutter function	Film thickness gauge function	Temperature controller
L104C	4	×	×	×	×
L103CS	3	×	✓	×	×
L103CSF	3	×	✓	✓	×
104C	4	✓	×	×	×
104CT	4	✓	×	×	✓
103CS	3	✓	✓	×	×
103CST	3	✓	✓	×	✓
103CSF	3	✓	✓	✓	×
103CSFT	3	✓	✓	✓	✓

✓ : Standardized configuration × : Without equipment

2. Multi-Source Thermal Evaporator (UE-203C/204C series)

Model number: UE-	Number of elements	Thermo couple (K-Type)	Shutter function	Film thickness gauge function	Temperature controller
204C	4	✓	×	×	×
204CT	4	✓	×	×	✓
203CS	3	✓	✓	×	×
203CST	3	✓	✓	×	✓
203CSF	3	✓	✓	✓	×
203CSFT	3	✓	✓	✓	✓

✓ : Standardized configuration × : Without equipment

Instrumental components are subject to change without prior notice for improvement in performance.

UNISOKU Co., Ltd. 

E-mail: info@unisoku.co.jp Web site: <http://www.unisoku.com/>

2-4-3 Kasugano, Hirakata, Osaka 573-0131 Japan TEL +81-72(858)6456 FAX +81-72(859)5655

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Thermal Evaporators

UE Series



Multi-Source High Temperature Thermal Evaporator
(UE-103C/104C series)

Multi-Source Thermal Evaporator
(UE-203C/204C series)

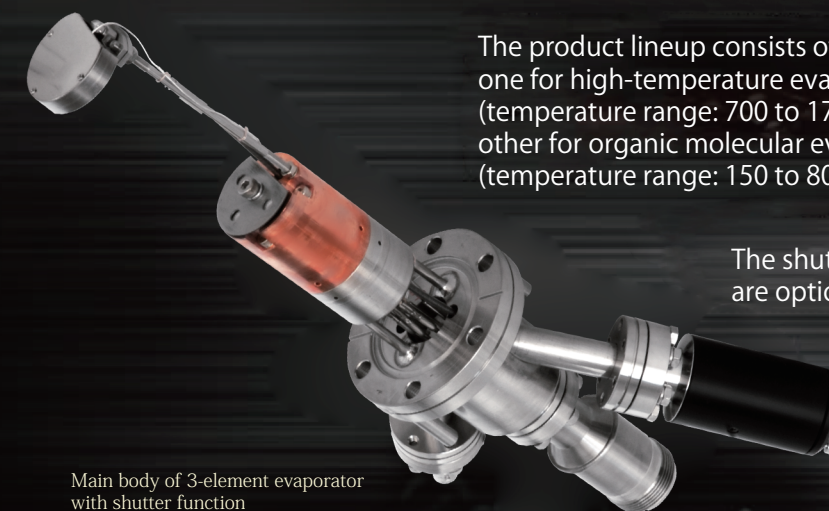


Main body 4-element evaporator
without shutter function

These are compact and cost-effective three or four element crucible type evaporators.

The product lineup consists of two models: one for high-temperature evaporation (temperature range: 700 to 1700°C) and the other for organic molecular evaporation (temperature range: 150 to 800°C).

The shutter and the film thickness gauge are optional attachments.



Main body of 3-element evaporator
with shutter function

An evaporator with no shutter mechanism is consisted of four elements, while that with the shutter function is consisted of three. The temperature can be controlled independently for each element.

Multi-Source High Temperature Thermal Evaporator (UE-103C/104C series)

Structure

Evaporator	Crucible-type evaporator
Heating Method	Direct resistance heating by filament
Inner Volume of Crucible	3mm (dia.) x 6mm (depth) (material: alumina)
Number of Elements (Crucibles)	4 for an evaporator with no shutter function; 3 for an evaporator with shutter function
	*The main body needs to be returned to UNISOKU for the crucible exchange.
	*Additional expenses are also needed.
Mounting Flange	ICF 70
Connector	10-pin current lead terminal
Cooling Mechanism	A water-cooling jacket is provided as standard (amount of water: 1L/min.)
	*Water cooling is indispensable, especially when the evaporator is used at 1000°C or higher.
Distance from the Flange Face to the Crucible Head Tip	At least 100mm from the mounting flange face to the crucible head tip (with no shutter). (The distance can be extended at your request at the time of order.)
Target Distance	At least 100mm from the crucible head tip
Vacuum Chamber Mounting Direction	The vacuum chamber must be mounted at an angle of at least 30° from the horizontal.

Performance

Heating Temperature Range	700 ~ 1700°C (Recommended temperature during continuous use is 700 ~ 1600°C.)
	*The maximum temperature is 1600°C (current: 7A) when a UNISOKU controller is used for temperature control.
	*The temperature measurement is not available if the evaporator has no thermometer.
	*There are some differences between the inside temperature of crucible and setting temperature.
Heating Current	Max. 7.5A ~ 14V
Baking Temperature	<200°C

Evaporation Element

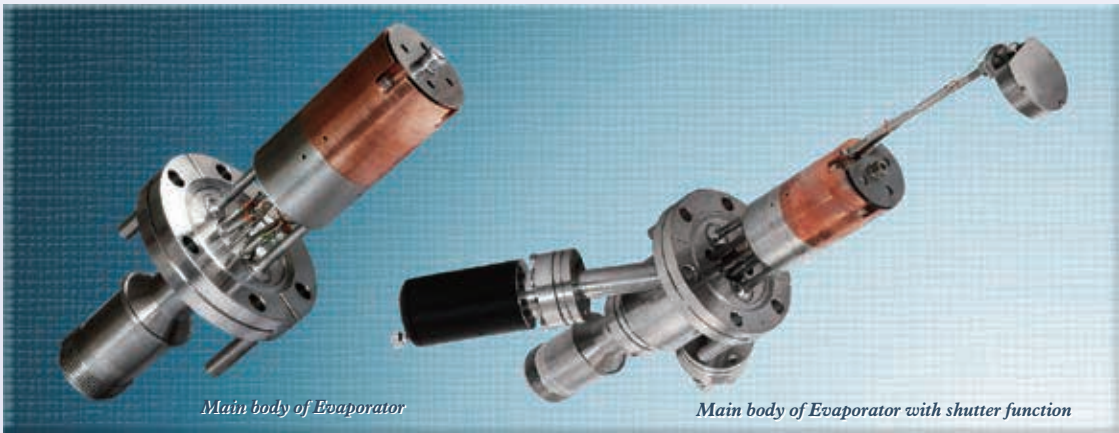
Material Form	Powder, granule, wire, and other forms that can be placed in the crucible.
Material Fill Volume	The recommended amount is 1/2 of the volume of the crucible or smaller (depending on the mounting angle).
Evaporation Material that can be used	Elements that evaporate at 1700°C or lower. Note that elements that evaporate at 700°C or lower are hard to control.
	*Temperature measurement is not available if the evaporator has no thermometer.

Shutter Function

	Provided as standard for the L103CS/103CS series
Switching Mechanism	Manual switching using the rotary motion feedthrough (with a rotation stopper)
Shutter Plate	Size: 34mm dia.; Rotation diameter: 30mm

Film Thickness Gauge Function

	Provided as standard for the L103CSF/103CSF series
Film Thickness Gauge Element Mounting Position	Shutter plate surface
Film Thickness Gauge Element	Crystal oscillator
Film Thickness Monitor	Inficon film thickness gauge element monitor (SQM160-S-2-R) is provided as standard.



Multi-Source Thermal Evaporator (UE-203C/204C series)

Structure

Evaporator	Crucible-type evaporator
Heating Method	Direct resistance heating by filament
Inner Volume of Crucible	2.6mm (dia.) x 6mm (depth) (material: tantalum)
Number of Elements (Crucibles)	4 for an evaporator with no shutter function; 3 for an evaporator with shutter function
	*The main body needs to be returned to Unisoku for the crucible exchange.
	*additional expenses are also needed.
Mounting Flange	ICF 70
Connector	10-pin current lead terminal
Cooling Mechanism	A water-cooling jacket is provided as standard (amount of water: 1L/min.)
	*Water cooling is indispensable, especially when the evaporator is used at 500°C or higher.
Distance from the Flange Face to the Crucible Head Tip	At least 100mm from the mounting flange face to the crucible head tip (with no shutter). (The distance can be extended at your request at the time of order.)
Target Distance	At least 100mm from the crucible head tip
Vacuum chamber mounting direction	The vacuum chamber must be mounted at an angle of at least 30° from the horizontal.

Performance

Heating Temperature Range	150 ~ 800°C
	*There are some differences between the inside temperature of crucible and setting temperature.
Heating Current	Max. 7.5A ~ 14V
Baking Temperature	<200°C

Evaporation Element

Material form	Powder, granule, wire, and other forms that can be placed in the crucible.
Material Fill Volume	The recommended amount is 1/2 of the volume of the crucible or smaller (depending on the mounting angle).
Evaporation material that can be used	Elements that evaporate at 800°C or lower. Elements that do not react with tantalum
Recommended Elements	Various organic molecules (The material that evaporation temperature is lower than decomposition temperature)

Shutter Function

	Provided as standard for the 203CS series
Switching Mechanism	Manual switching using the rotary motion feedthrough (with a rotation stopper)
Shutter Plate	Size: 34mm dia.; Rotation diameter: 30mm

Film Thickness Gauge Function

	Provided as standard for the 203CSF series
Film Thickness Gauge Element Mounting Position	Shutter plate surface
Film Thickness Gauge Element	Crystal oscillator
Film Thickness Monitor	Inficon film thickness gauge element monitor (SQM160-S-2-R) is provided as standard

