

Temperature controller

Input	Input voltage	100–240 V
Output	Maximum output voltage	15 V
	Maximum output current	7 A (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 ME-104CT, 103CST, and 103CSFT)
	K-type thermocouple	(for organic molecular evaporation models ME-204CT, 203CST, and 203CSFT)
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. 430 mm (width) × 350 mm (depth) × 100 mm (height)	



1. High-temperature metal evaporator (ME-103C/104C series)

Model number :ME-	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. Organic molecular evaporator (ME-203C/204C series)

Model number :ME-	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 subject to change without prior notice for improvement in performance.

Ultra High Vacuum Multi-element Miniature Evaporators (for High-temperature Evaporation and Organic Molecular Evaporation)

ME Series



Main unit of high-temperature metal evaporator
(ME-103C/104C series)

Main unit of organic molecular evaporator
(ME-203C/204C series)

Main body of 4-element evaporator without shutter function



Temperature controller

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.

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

Main body of 3-element evaporator with shutter function

Main unit of high-temperature metal evaporator (ME-103C/104C series)

Structure

Evaporator	Crucible-type evaporator
Heating method	Direct resistance heating by filament
Inner volume of crucible	3 mm (dia.) × 6 mm (depth) (material: alumina)
Number of elements(crucibles)	Four for an evaporator with no shutter function; Three for an evaporator with the shutter function * The main body needs to be returned to Unisoku for the crucible exchange. Additional expenses are also needed.
Mounting flange	ICF70
Connector	10-pin current lead terminal
Cooling mechanism	A water-cooling jacket is provided as standard (amount of water: 1 L/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 100 mm 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 100 mm 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. 7.5 A–14 V
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 the volume of the crucible or smaller (depending on the mounting angle).
Evaporation material that can be used	Elements that can be evaporated 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: 34 mm dia.; Rotation diameter: 30 mm

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 (XTM/2) is provided as standard.



Main unit of organic molecular evaporator (ME-203C/204C series)

Structure

Evaporator	Crucible-type evaporator
Heating method	Direct resistance heating by filament
Inner volume of crucible	2.6 mm (dia.) × 6 mm (depth) (material: tantalum)
Number of elements (crucibles)	Four for an evaporator with no shutter function; Three for an evaporator with the shutter function * The main body needs to be returned to Unisoku for the crucible exchange. Additional expenses are also needed.
Mounting flange	ICF70
Connector	10-pin current lead terminal
Cooling mechanism	A water-cooling jacket is provided as standard (amount of water: 1 L/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 100 mm 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 100 mm 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. 7.5 A–14 V
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 the volume of the crucible or smaller (depending on the mounting angle).
Evaporation material that can be used	Elements that can be evaporated at 800°C or lower. Elements that don't react to 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: 34 mm dia.; Rotation diameter: 30 mm

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 (XTM/2) is provided as standard.

