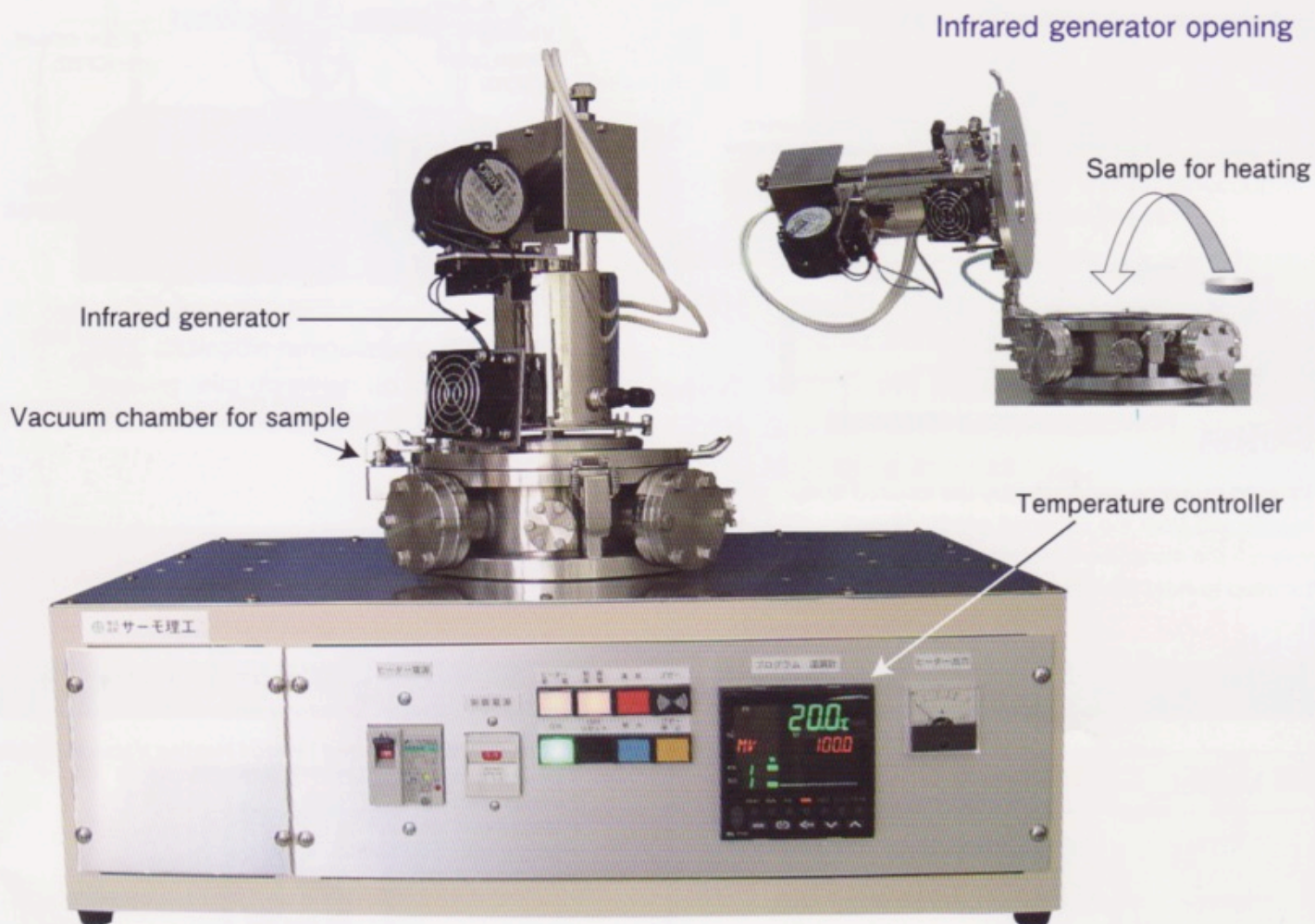


## Focused Infrared Heating Vacuum Furnace

# IVF298W

Clean heating  
of samples in  
vacuum or gas  
atmosphere



### Features

- (1) High-speed, clean, non-contact heating
- (2) Heat source generates no gases or noise
- (3) Sample can be easily operated
- (4) Heating in a vacuum or gas flow
- (5) Many service ports in vacuum chamber

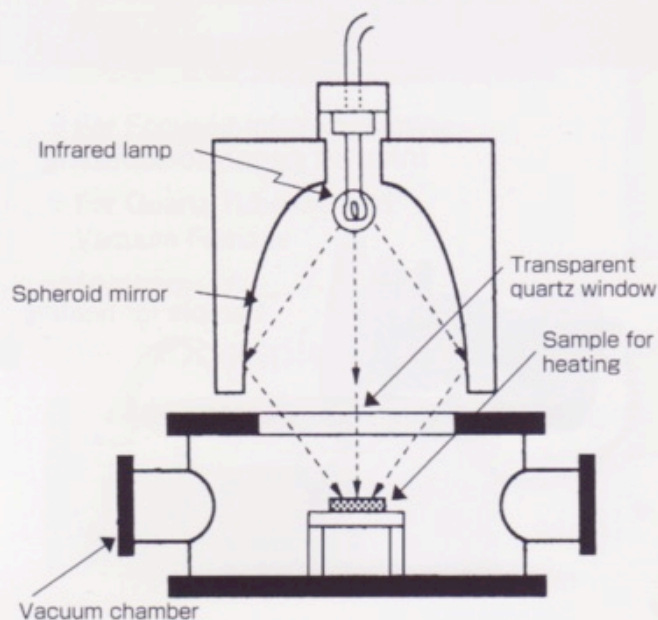
 **THERMO RIKO CO., LTD.**



# IVF298W Focused Infrared Heating Vacuum Furnace

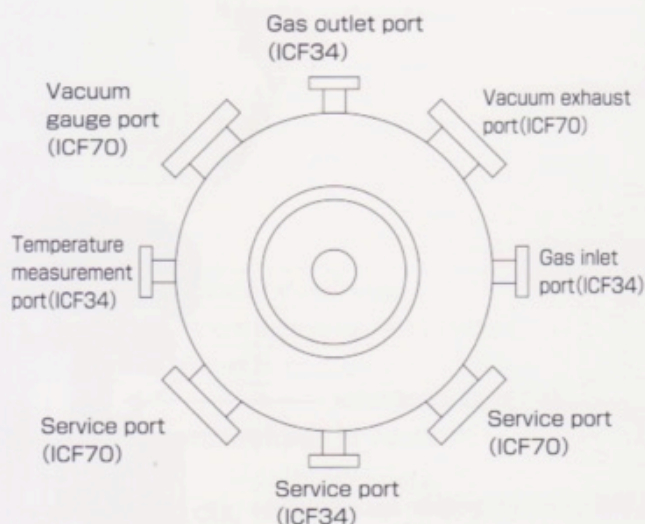
## Principle Diagram

### Focused Infrared Heating Vacuum Furnace



Infrared radiation generated by the infrared lamp is reflected from the spheroid mirror, passes through the transparent quartz window, and is focused to heat the sample in the vacuum chamber.

## Vacuum Ports Arrangement (from above)

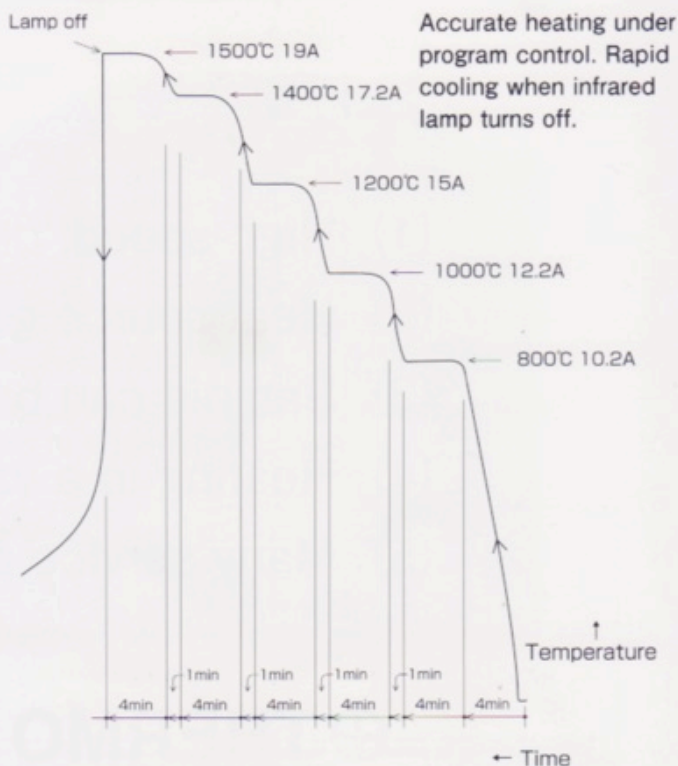


## Specifications

Model	IVF298W	IVF198W
Type	High Temperature	Standard
Mirror	Spheroid mirror, water-cooled	
Heating method	Focused infrared radiation	
Heating area diameter	10 to 20 mm dia.	10 mm dia.
Max. attainable temperature	1500°C	1300°C
Max. heating rate	100°C/sec.	50°C/sec.
Sample holder	Quartz	
Temperature sensor	R type thermocouple	
Max. attainable vacuum degree	$5 \times 10^{-4}$ Pa	$5 \times 10^{-4}$ Pa
Atmosphere	Supports inert gas flow	
Power supply	100 V, 20 A	100 V, 10 A
Cooling water flowrate	2 L/min.	
Typical applications	High-temperature heating of silicon and ceramics, etc.	

## Example of Heated Sample Data

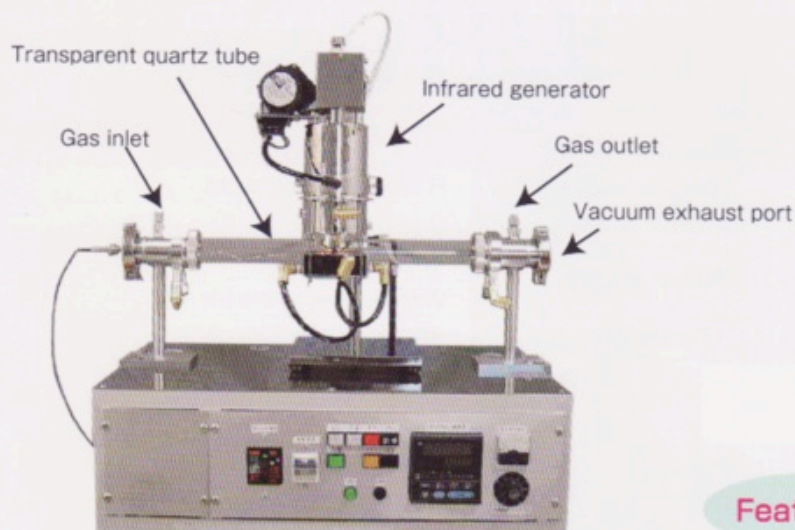
Model: IVF298W Focused Infrared Heating Vacuum Furnace  
 Temperature Controller: TP910RF  
 Sample: platinum ( $12 \times 12 \times 0.3$  t)  
 Atmosphere: vacuum ( $9.8 \times 10^{-4}$  Pa)  
 Heating rate: 200°C/min.  
 Hold time: 4 min.





# Quartz Tube Infrared Vacuum Furnace

## IVF298RV



Max. attainable temperature: 1600°C  
Heating area diameter: up to 20 mm dia.  
Max. attainable vacuum:  $5 \times 10^{-3}$  Pa



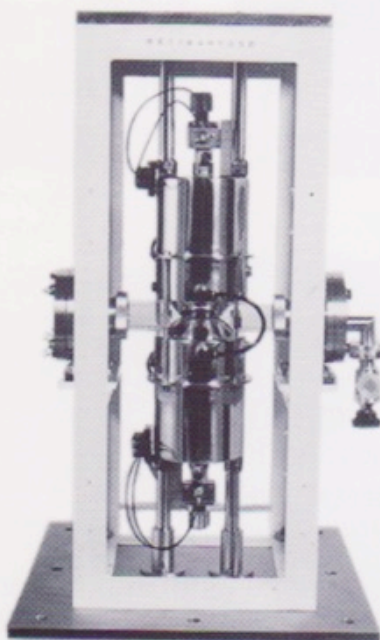
Quartz sample holder with thermocouple for temperature measurement

### Features

- (1) Focused infrared radiation heats sample in transparent quartz tube
- (2) 1600°C at 2 kW power
- (3) Gas inlet and output provided as standard for heating in a gas flow

# Twin irradiation type Infrared Vacuum Furnace

## IVF198CV



Max. attainable temperature: 1500°C  
Heated volume: 10 mm dia.  
Atmosphere: vacuum, gas

### Features

A sample inside a quartz tube is heated from above and below by focused infrared radiation.

# Twin irradiation type Infrared Vacuum Furnace

## IVF298CV



Max. attainable temperature: 1700°C  
Heated volume: 15 mm dia.  
Atmosphere: vacuum, gas

### Features

A sample inside a quartz tube is heated from above and below by focused infrared radiation.



# Power Supply and Thermocouples

## Temperature Controller (TP910RF · TP910FF · TP910VT)



- For Focused Infrared Heating Vacuum Furnace
- For Quartz Tube Infrared Vacuum Furnace

Control method	Automatic programmed control
Settings	99 patterns, 99 segments
Controlled temperature range	1700°C max.
Temperature indication	0.1°C for both PV and SV
Thermocouple	R type thermocouple
Analog output	0 to 5 V DC
Power supply	100 V AC, 20 A
	With analog ammeter
Dimension	480 × 149 × 320 mm (JIS panel)

## Thermocouple for Vacuum



Rating	Temperature range
R05V	Room temperature to 1600°C
K05V	Room temperature to 1200°C

- For measuring sample temperatures in vacuum  
With ICF34 flange  
Sheath diameter: 0.5 mm dia. × L

## Options

### High-vacuum Exhaust Device (HiCube80V)



Max. attainable vacuum degree	$5 \times 10^{-6}$ Pa
Evacuation rate (NW40)	35 L/sec.
Dimension	300 × 300 × 338 mm

Rapidly exhausts air from the vacuum furnace!

### Vacuum Gauge (PK251)



Type	Integral Pirani/cold cathode
Measurement range	Atmospheric pressure to $10^{-7}$ Pa continuous
Connector	NW25/ICF70, universal
Dimension	Sensor unit: 60 mm dia. × 130 mm Measuring unit: 70 × 130 × 300 mm

Offers continuous measurements from atmospheric pressure down to ultra-high vacuum.

Dedicated to Thermal Analysis

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We reserve the right to modify the specifications, appearance, and other features of the products described herein at any time and without prior notice.

(2012.8.1000)