AC Method Thermal Diffusivity Measurement System LaserPIT



Measures the in-plane thermal diffusivity and derived thermal conductivity of thin films and the thermal diffusivity of thin bulk material samples.

The LaserPIT series uses the Angstrom method of AC periodic scanning laser heating to measure the in plane thermal diffusivity of thin materials and deposited films. The derived thermal conductivity of high thermal conductivity sub-micron deposited thin films can also be measured with this instrument.

Applications

- Measurements of thermal diffusivity and thermal conductivity of high-thermal conductivity sheet materials (thickness < 500 µm) such as CVD diamond and aluminum nitride
- Measurements of thermal diffusivity and thermal conductivity of various metal sheet materials (thickness > 5 μ m) such as copper, nickel, and stainless steel

- Measurements of thermal diffusivity and thermal conductivity of low-thermal conductivity sheet materials (thickness < 500 µm) such as glass and resin materials
- Measurements of thermal diffusivity and thermal conductivity of polymer films such as PET and polyimide (thickness > 5 μ m) and anisotropic high-thermal conductivity graphite sheets (thickness < 100 μ m)
- Measurements of thermal conductivity of aluminum nitride thin films and aluminum oxide thin films (thickness 100 to 300 nm) formed on glass substrates (thickness 30 µm)
- Measurements of thermal conductivity of DLC thin films (thickness > 1 μ m) formed on glass substrates (thickness 0.03 mm)
- Measurements of thermal conductivity of organic dye thin films (thickness 100 to 300 nm) formed on PET substrates (thickness 0.1 mm)
- Evaluations of target materials for sputtering

Features

- In-plane direction thermal diffusivity measurements of a broad range of sheet materials from diamond to polymers
- Suited to materials with a broad range of shapes including 3 to 500 µm thick independent sheets, films, wires, and fibers.
- Capable of measuring thermal conductivity of thin films 100 nm to 1000 nm thick formed on a substrate with the differential method * Room temperature only

Specifications

AC Method Thermal Diffusivity Measurement System		
Туре	LaserPIT-R	LaserPIT-M2
Measurement	Thermal diffusivity	
Properties		
Temperature	RT	RT to 200 °C
Range		
Sample Size	Independent sheet material : 2.5 mm to 5 mm width x 30 mm	
	length x 3µm to 500 µm thickness	
	Thin film on substrate : 2.5 mm to 5 mm width x 30 mm length x	
	100 nm to 1000 nm thickness	
Measurement	Vacuum (< 0.02 Pa)	
Atomosphere		