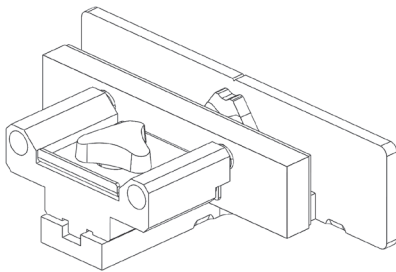


Standard Solid Sample Holder for the Cary 7000 UMS/UMA



Fast, versatile, robust and precise

The Standard Solid Sample Holder is designed to fit inside a Cary 7000 universal measurement spectrophotometer (UMS) or a Cary universal measurement accessory (UMA). One is provided as standard with the UMA accessory.

Multiple Solid Sample Holders are useful when measuring consecutive samples—samples can be pre-loaded into these free standing holders and the whole assembly can then be quickly fitted into the sample compartment.

The bottom clamp of the holder allows mounting of a variety of sample shapes and sizes. The generous maximum sample size allows non-destructive testing to be done on a range of semiconductor wafer sizes before dicing. This saves time, material and money.

Measurements can be done at various angles of incidence, providing insights into the optical behavior of a sample in its end use applications. The following examples demonstrate how the solid sample holder can be used with samples as diverse as silica wafers, thin films, coatings and functional glass.

Safely and securely mounts all samples

- Samples sized from 5.0 x 5.0 mm up to 275 x 191 mm can be measured
- Frameless construction eliminates the risk of beam obstruction, enabling high grazing angle measurements
- High flexibility in sample shapes, thicknesses and sizes permits non-destructive testing of a range of sample types
- Fast change of sample due to the quick release mechanism—no levers or tools required
- Padded back clamp fits snugly against the sample, ensuring precision positioning and accurate results every time

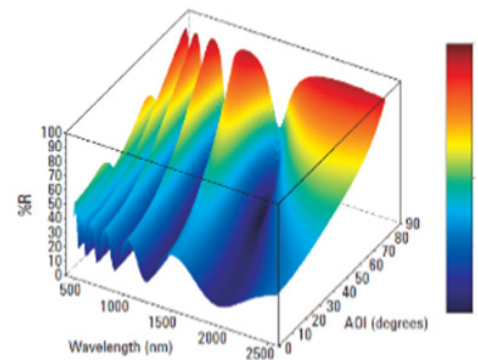
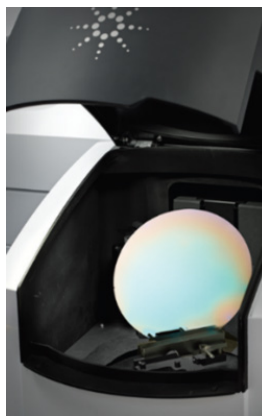


Figure 1. Left: A polished and coated silicon wafer 200 mm (7.8 in) in diameter and 0.8 mm thick, mounted on the Standard Solid Sample Holder inside a Cary 7000 UMS. Right: A 3D plot of the specular reflectance of the silicon wafer reveals a high angle of incidence dependence of the reflective properties.

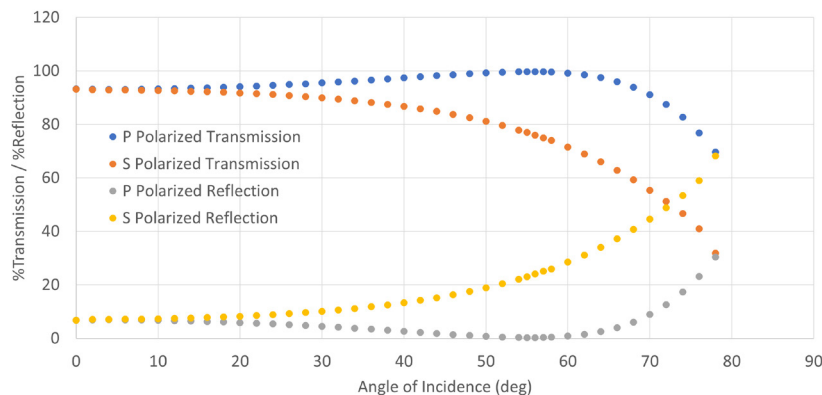


Figure 2. The absolute reflectance and transmittance (at 500 nm) of a 1 mm thick fused silica sample plate (38 mm x 46.5 mm) as a function of angle of incidence. The maximum angle, 78°, was limited only by the physical size of the sample).

The frameless construction of the sample holder allows measurements to be done at any angle of incidence, with high accuracy. Measurements of reflection, transmittance, and absorbance can be taken without adjustment of the sample position.

The sample holder enables you to mount samples of almost any shape. The back clamp is covered with soft padding to secure samples evenly, holding the sample in the correct position. Sensitive, flexible electronics like organic photovoltaics can be mounted frame-and-all in the holder.

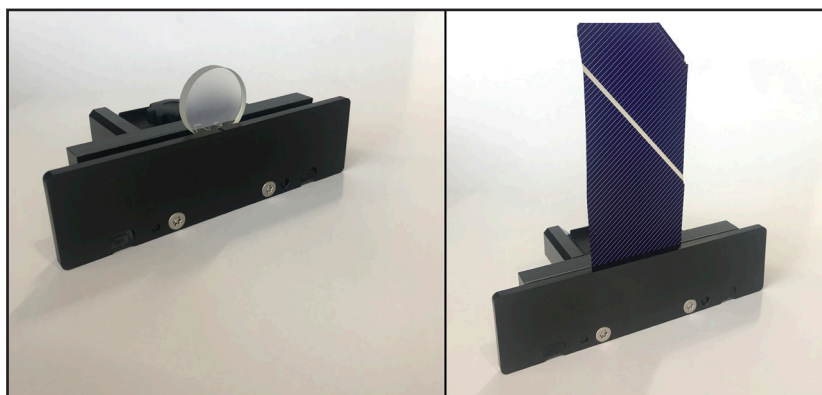
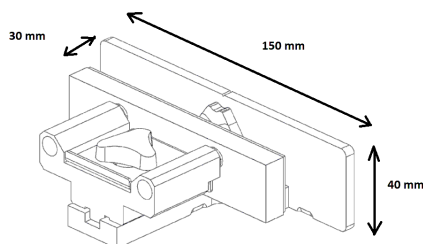


Figure 3. Samples as small as 5.0 x 5.0 mm and as thin as 25 µm can be securely mounted. Left: a 25.4 mm diameter, 10 mm thick 1064 nm laser mirror, Right: 25 µm thick polycrystalline solar cell.

Samples can be mounted outside the instrument and then locked onto the pedestal in the sample compartment. While one sample is being measured, you can mount a new one in another holder; simply remove the first sample and holder and “lock-in” the new one. This is ideal when the sample takes some time to mount correctly and you are measuring multiple samples.

Figure 4. The mounting face of the standard sample holder measures 150 mm wide x 40 mm high, and 30 mm deep (maximum) when fully open. This face locates the sample at focal point of the UMA.



Element	Correlation Coefficient
Mounting Type	3 point kinetic ball and groove.
Largest Sample Dimensions (L x H)	275 x 191 mm (10.8 x 7.5 in) (maximum) 255 x 191 mm (10.0 x 7.5 in) (if detector slide mount is installed) 235 x 191 mm (9.2 x 7.5 in) (if a depolarizer is mounted in detector slide mount)
Smallest Sample Dimension**	5.0 x 5.0 mm (0.2 x 0.2 in)
Max Sample Thickness*	Physical: 30 mm
Max Weight of Sample	Life tested to 6 kg Guaranteed to 3 kg
Angular Limit	No angular limit (limit is given by the sample dimensions)
Mounting Mechanism	Quick release by a clamping slider
Material	Anodized aluminum (front) felt (back)

* maximum optical thickness is determined by the measurement needs, optical constants of the sample and chosen angle of incidence.
** at maximum UMA beam size. Smaller sample sizes may be possible with smaller beam sizes by controlling aperture size and spectral bandwidth.

Ordering information

Description	Part number
Standard Solid Sample Holder	G6874A#100

For information on other specialized sample holders refer to the following publications:

Data Sheet	Part number
Cube Beam Splitter Holder	5994-3122EN
Edge Mount Sample Holder	5994-3121EN
Round Sample Holder	5994-3119EN

www.agilent.com/chem/cary7000

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