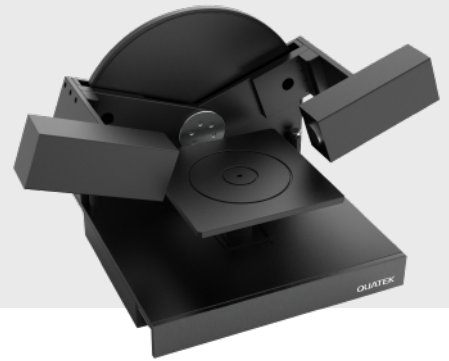


## Qphoton-L

### Laser spectral ellipsometry



**Qphoton-L** is a precise and cost-effective system for measuring the thickness of thin films, specifically designed for customers in the solar cell industry. Its design and algorithm are tailored to meet the testing requirements of Texture, and it allows for quick, highly precise, and accurate measurement of the thickness, refractive index ( $n$ ), and extinction coefficient ( $k$ ) of nano films. Qphoton-L is particularly suitable for industrial products, mass production detection in scientific research, and new product development. It can also be used to characterize the thickness of single-layer and multilayer nano films. Its applications span across almost all fields of nanothin film, such as microelectronics, semiconductors, integrated circuits, display technology, and solar cells.

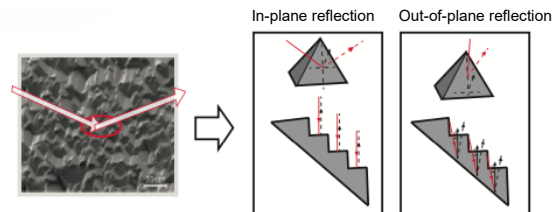
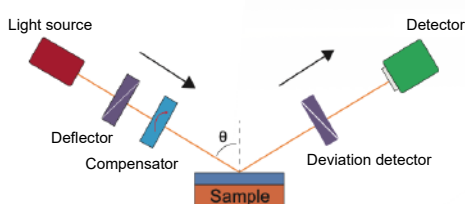
Qphoton-L can simultaneously measure:

- Multilayer film thickness
- Refractive index  $n$
- Extinction coefficient  $k$

### Advantage

- High stability light source and low noise detection, ensuring accurate measurements
- Support 220mm square or up to 12 inches wafer stage(182mm square compatible)
- Multi-incidence angle adjustment, which offers high flexibility
- One-click software testing and customized recipes that can be tailored to meet the user's needs

### Test antireflection film on the surface of sudee monocrystalline silicon/polysilicon cell in photovoltaic industry



### Typical sample

- a-Si
- a-C:H
- ITO
- Polysilicon
- SiOx
- SiNx
- AlOx

### Substrate sample

- Silicon
- SOI
- SOS
- GaAs
- InP
- Aluminum
- Copper
- Glass

Technical specification	
Film thickness range	1~2000nm
Film thickness accuracy	<b>SiO<sub>2</sub>-100nm</b> Sample film thickness accuracy:0.5nm; Repeatability:±0.2nm;
	Refractive index accuracy:0.005; Repeatability:±0.002
	<b>Si/Si<sub>3</sub>N<sub>4</sub>/Al<sub>2</sub>O<sub>3</sub></b> Sample film thickness accuracy:0.5nm; Repeatability:±0.2nm;
	Refractive index accuracy:0.005; Repeatability:±0.002
Laser wavelength	635nm (Other wavelengths are optional)
Spot size	2~4mm(option:100/200um)
Incidence angle range	45°~90°(Manual 5° step)
Loading platform	Compatible with 220mm * 220mm and smaller size samples
Output	Qview software can concisely display test results and report to customer system
Test speed	1~3 s/point
Computer	A multi-core processor of Windows 10
Size	670mmL * 390mmD * 370mmH
Weight	22Kg

Qview-SE software	
Language	The Qview-SE software is available in Simplified Chinese, English, and Traditional Chinese
Authority	The software offers administrator and operator authority, making it easy to manage the instruments
Operation mode	It supports one-key test, engineer debugging, recipe creation, and analysis
Test results	The software provides batch and test time, thickness value, and refractive index measurements
	(Optional modules are also available for analyzing and fitting waveform data)
File management	Qview-SE has storage and reading functions based on Windows
	It also supports data upload and automatic mail sending (network support)

Optional parts	
Hardware	Customers have the option to include a laser light source with a specified wavelength,
	a Texture loading Stage, a wafer Stage (4/6/8/12 inch) or special Stage,
	and an automatic mapping X/Y Stage
Software	Additional software options include waveform modules for analysis and fitting,
	as well as the ability to customize special material recipes