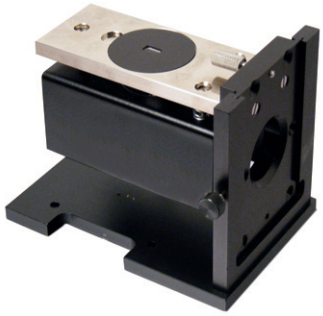
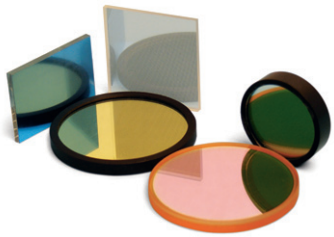
The Thermo Scientific Fixed Angle Specular Reflectance Accessories offer high performance and accuracy for the measurement of glossy or mirrored surfaces at fixed angles.

Product Specifications

Fixed Angle Specular Reflectance Accessories

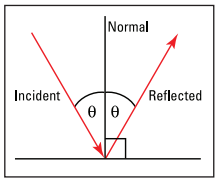
For Evolution and Helios series spectrophotometers





† *Available only for the Evolution 300 and 600 spectrophotometers.*
†† *Thermo Fisher Scientific also offers a VN 10° Absolute Specular Reflectance accessory, Part No. 222-216500 for the Evolution 300.*

The Fixed Angle Specular Reflectance line of accessories for the Evolution™ and Helios™ UV-Visible spectrophotometers measure specular reflectance at 8°†, 15°, 20°, 30°, 45°, 60° and 85°. Specular reflectance is "mirror like" reflectance off a surface, i.e. the angle of reflectance is the same as the angle of the incident beam.



The specular reflectance properties of coatings on transparent and opaque surfaces help define accuracy of the coating procedure and the performance of coated materials. Whether your coating is:

- an antireflective coating on eyeglasses or binocular lenses
- a UV mirror on a cockpit window
- a solar reflective window for skyscrapers
- a metal first surface mirror for research laser tables
- a gloss paint
- the rear reflector for a spot-lamp
- an antireflective coating for stacks of stepper lenses for photolithography
- a military pilot's helmet visor
- or any other research, military or production reflector

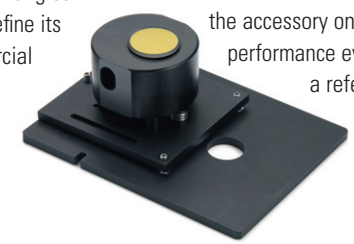
...the reflectivity at critical angles and wavelengths helps define its performance and commercial success.

Sophisticated Design for Measuring Advanced Coating Performance

With these accessories, you can measure advanced coating performance at the angles that matter to you. Plate and automotive glass may be treated with coatings to enhance reflection of UV or IR wavelengths for interior safety and climate control. Optical elements are often anti-reflective (AR) coated to enhance performance. Laser mirrors must be highly reflective at the laser wavelength to prevent beam energy loss and substrate heating. How well do your specialty glasses and coatings perform at the angles that matter to you or your customer?

Near-normal Measurements for Demanding Applications

Whether you're developing new products or performing QA/QC measurements on reflective surfaces as they leave or enter your facility, *near-normal* reflectivity measurements tell you how your surface performs under direct observation. Use a reference piece or calibrated mirror to get absolute reflectance data in your laboratory.†† The 8° *near-normal* specular reflectance accessory (SRA) comes mounted on an Evolution baseplate and installs directly into the sample compartment for a secure and reproducible fit. Align the accessory once and enjoy optimized performance every time you install it. Use a reference piece or calibrated mirror to get absolute reflectance data in your laboratory.



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Product Specifications

Specific Angles for Special Applications

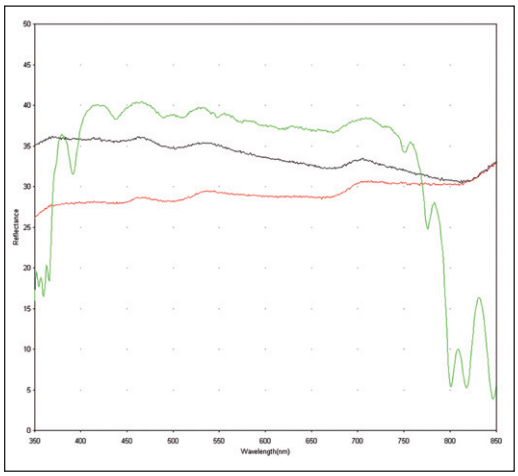
- Surface specular gloss is measured at 20°, 60° and 85° according to ISO 2813:1994.
- Mirrors operating at 45° on laser tables are required to direct the beam through experiments in research applications.
- Hot mirrors and cold mirrors have different cut-on and cut-off wavelengths depending on the angle of incidence. How does a shift from 30° to 45° affect your product?
- For chemists and surface scientists, grazing angle (85°) measurements give the longest possible path through adsorbed or chemically fixed thin films on a surface.
- Film thickness measurements can be performed at any known angle.

Slide-in Mounting in the Solid Sample Holder

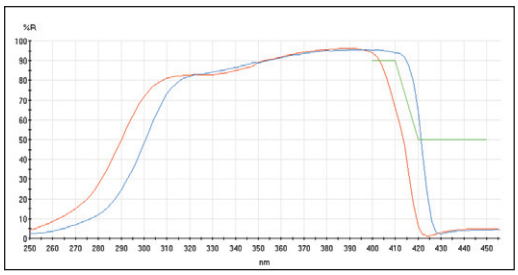
SRAs with fixed angles of 15°, 20°, 30°, 45°, 60° and 85° mount in the Solid Sample Holder and are quickly and easily interchanged for measurements at different angles. An optional second slide mount allows you to condition the light by placing a filter or polarizer before or after your sample. The Thermo Scientific line of fixed angle SRAs gives you access to the fixed angles you need with less storage space and lower initial cost.

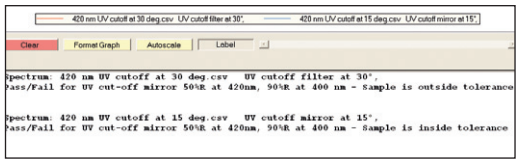
Feature Packed Software for Control and Calculation

VISION*pro*™ software packaged with the PC-control instrument gives the user complete control of the instrument for alignment and method development. Optional VISION*lite*™ MaterialsCalc software presents a simplified scanning interface and access to a suite of calculations for materials applications.



VISION*pro* shows measurements taken on a 30° Specular Reflectance accessory that support a manufacturer's claim that its new mirror (green) is 40% more reflective than a conventional rhodium mirror (red). An aluminum first-surface mirror (black) of known reflectivity is included as a reference.





VISION*lite* MaterialsCalc performs QA/QC for UV cutoff mirrors

Specifications

Mask apertures	8°	12 mm diameter circle
	15°, 20°, 30°	4 mm x 7 mm
	45°, 60°	4 mm x 13 mm
	85°	4 mm x 20 mm
Optics	MgF_2-coated, UV-enhanced aluminum mirrors	

Wavelength Measurement Range

Evolution 100	190 – 1100 nm
Evolution 300	190 – 1100 nm
Evolution 600	190 – 900 nm
Helios Alpha	190 – 1100 nm
UV1	190 – 1100 nm

Product Information	Part Number
Evolution 600 PC-controlled spectrophotometer	10600XXX
Evolution 300 PC-controlled spectrophotometer	10300XXX
Solid Sample Holder (to mount fixed angle SRAs 15° - 85°)	222-217200
8° Near-normal Specular Reflectance accessory	222-244800
15° Specular Reflectance accessory (requires 222-217200)	222-233500
20° Specular Reflectance accessory (requires 222-217200)	222-233600
30° Specular Reflectance accessory (requires 222-217200)	222-219500
45° Specular Reflectance accessory (requires 222-217200)	222-219600
60° Specular Reflectance accessory (requires 222-217200)	222-233700
85° Specular Reflectance accessory (requires 222-217200)	222-233800
Specular Reflectance Standard (near normal measurements)	222-219900
VN 10° Absolute Specular Reflectance accessory (requires Evolution 300)	222-216500

Software Packages	Part Number
VISION*pro* software	10040101
VISION*lite* MaterialsCalc software	869-124500
REPORTER SPX software	869-127400

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