

AccuCoat inc.

Coatings for Optics

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Coatings for Optics

Introduction:

AccuCoat is a custom coating provider of optical thin films for glass and polymer optics. Over twenty years of experience in designing and developing coating processes for a wide range of applications enable us to meet or exceed our customers' expectations. Our coating systems, equipped with ion and E-gun sources, allow us to make a wide variety of coatings required by the optical community.

We are experienced in cleaning and coating a broad range of glass substrates, from high index glass to ULE. For polymer optics, we clean and coat a variety of materials including Xeonex, PMMA and styrene. Whether working on quantities from a few diamond turned prototypes, to large production volumes, our attention to detail is the same.

While we offer a variety of standard products, AccuCoat can design, produce and certify a custom coating solution to meet a customer's application. In addition, we provide thin film consultation services in product design or evaluation stages to optimize coating costs and benefits.

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Polymer Optics Coating Catalog:

AccuCoat offers several standard low temperature AR coatings that can be applied to a variety of polymer substrates.

AC100 Multilayer AR Coating

Broadband AR coating for the visible region.

0.5% R avg (450 nm –650nm) 0.3% Photopic Reflection.

AC110 Multilayer AR Coating

Simpler design results in a lower cost option for the visible region in less critical applications.

Avg 1 % Reflection (450 nm- 650 nm)

AC120 Single Layer AR Coating

Single layer of SiO₂ or MgF₂. Offers limited scratch resistance and AR function.

Typically R avg 2 % (450 nm- 650 nm)

AC130 AR Coating (V-coat)

Optimized for single wavelength (i.e. 633nm, 1064nm, 1550nm).

Typically R<0.25% at the customer's specified wavelength.

AC140 High Efficiency AR Coating

Lowest possible reflection and wide bandwidth AR.

Typically 0.5% Absolute Reflection from 425nm-675 nm

AccuCoat has an ultrasonic cleaning process developed specifically for polymer substrates, if cleaning is required.

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Glass Optics Coating Catalog:

Note that all of the above coatings are available for glass substrates as well. They meet most MIL-spec requirements for durability and environmental testing.

AC130G AR Coating (V-coat)

Optimized for single wavelength (i.e. 633nm, 1064nm, 1550nm).
Typically $R < 0.10\%$ at the customer's specified wavelength
(Non-absorbing, high efficiency for high laser damage threshold)

AC150 1310-1550 AR Coating

Broadband AR coating. Abs R $< 0.3\%$ between 1250-1650 nm
Less than 0.1% R at 1310 and 1550.

AC155 AR Coating on Silicon Wafer

Abs R $\leq 0.25\%$ @ 1550nm
Ravg $\leq 0.5\%$ 1480nm-1650nm

AC160 Plate Beamsplitter

50/50 @ 45°

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Mirror Coating Catalog:

AccuCoat can provide the following standard metal mirror coatings:

AC200 Protected Aluminum Coating

Aluminum overcoated with SiO₂.

Average reflection from 450-650 nm R>88%

AC201 Enhanced Aluminum Coating

Aluminum overcoated with dielectrics.

Typical reflectivity to 95% R avg in the visible region of 450-650 nm.

AC210 Protected Silver Coating

Silver coating over coated with dielectric

AC220 Protected Gold Coating

Gold coating overcoated with dielectric.

AC230 Protected Gold Coating IR > 3μ

Gold coating overcoated with dielectric.

Typical R ≥ 95 % @ >1μ

AC240 Dielectric Mirror

R ≥ 99.9% @ 1550nm – 1650nm

These coatings can be supplied as second surface mirror designs or adjusted for specified wavelength, and angle of incidence ranges.

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Other Coatings:

In addition to standard products, we can provide the following:

- Double wavelength AR coatings
- Beamsplitters/Beamcombiners
- Dichroic mirrors
- Blocking filters
- Neutral Density coatings
- Partial reflectors

Testing:

Some of our in-house test methods include:

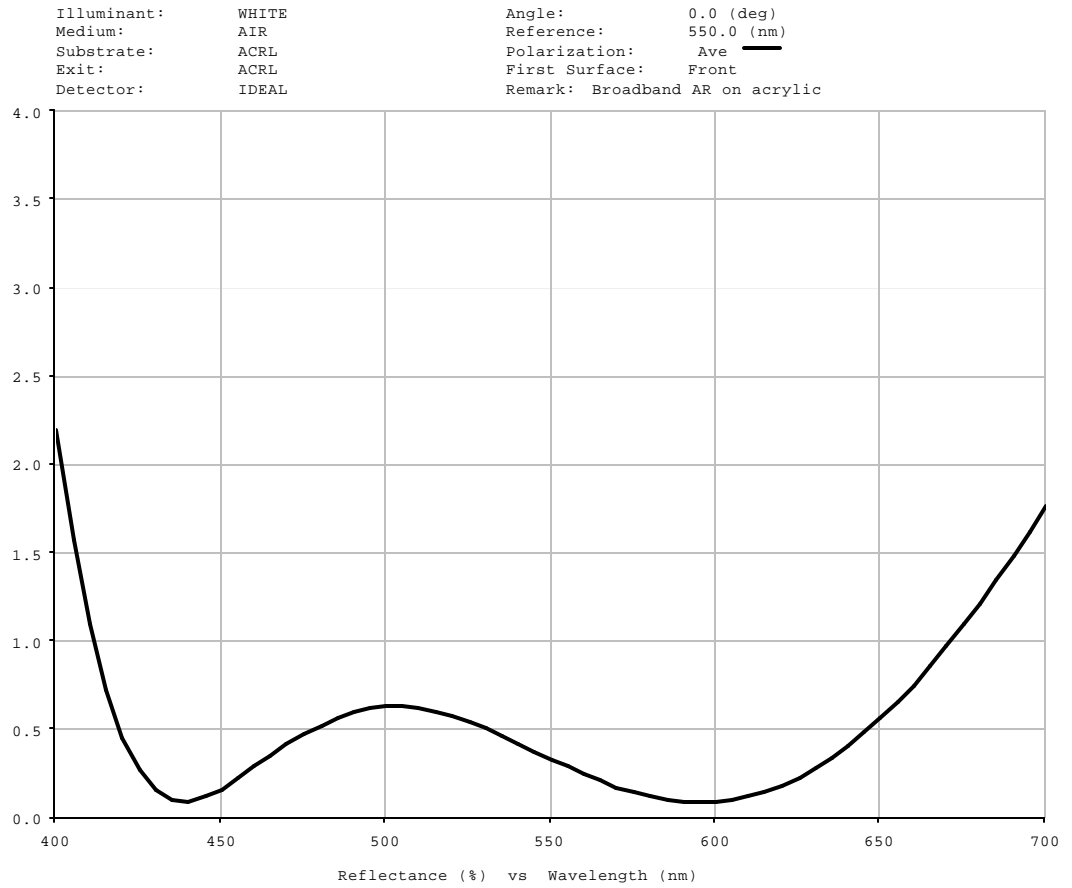
- Reflection & transmission measurements range:
150nm - 2800nm
- QPanel UV & humidity testing
- Mil-Spec abrasion testing
- Mil-Spec adhesion test

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AC100 Multilayer AR Coating

Broadband AR coating for the visible region
0.5% Reflection average in the visible region (450nm - 650nm)
0.3% Photopic Reflection



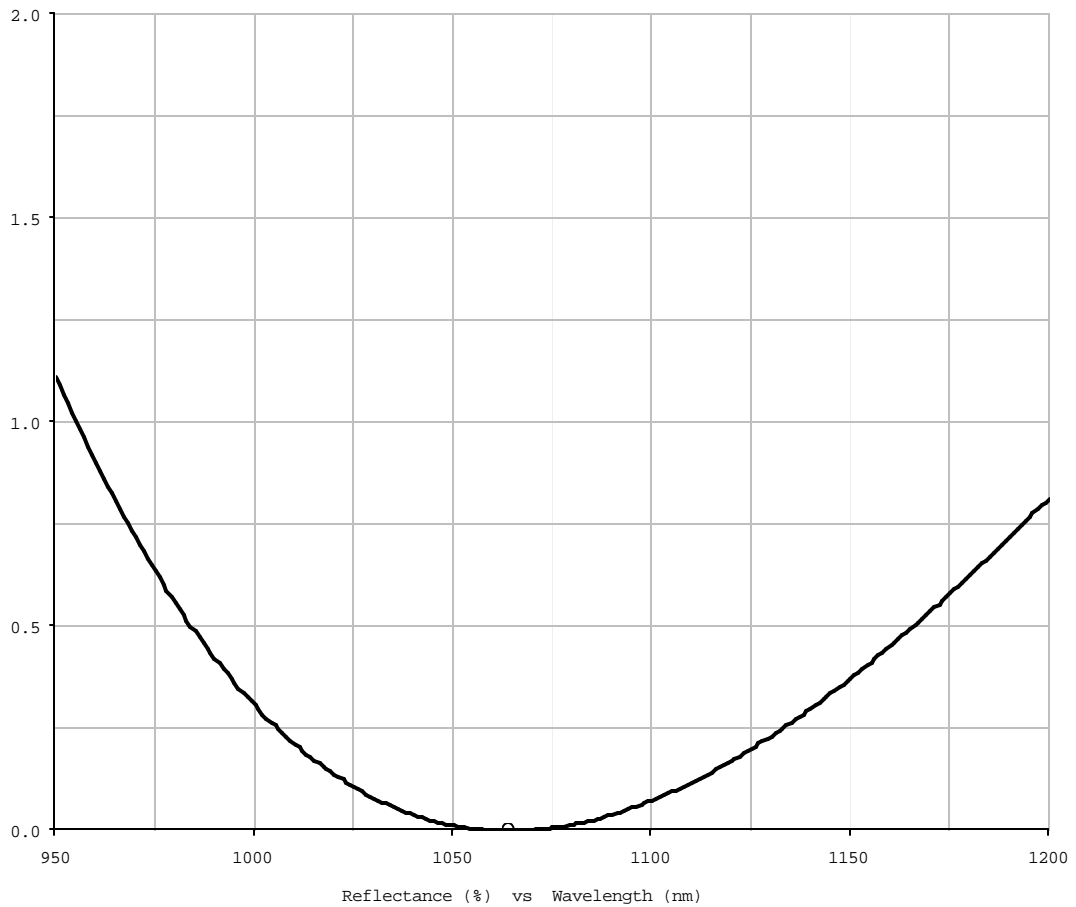
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AC130 AR Coating (V-coat)

Optimized for single wavelength (i.e. 633nm, 1064nm, 1550nm).
Typically $R < 0.25\%$ at the customer's specified wavelength.

Illuminant:	WHITE	Angle:	0.0 (deg)
Medium:	AIR	Reference:	550.0 (nm)
Substrate:	BK7	Polarization:	Ave —
Exit:	BK7	First Surface:	Front
Detector:	IDEAL	Remark:	1064 V-Coat on BK7•



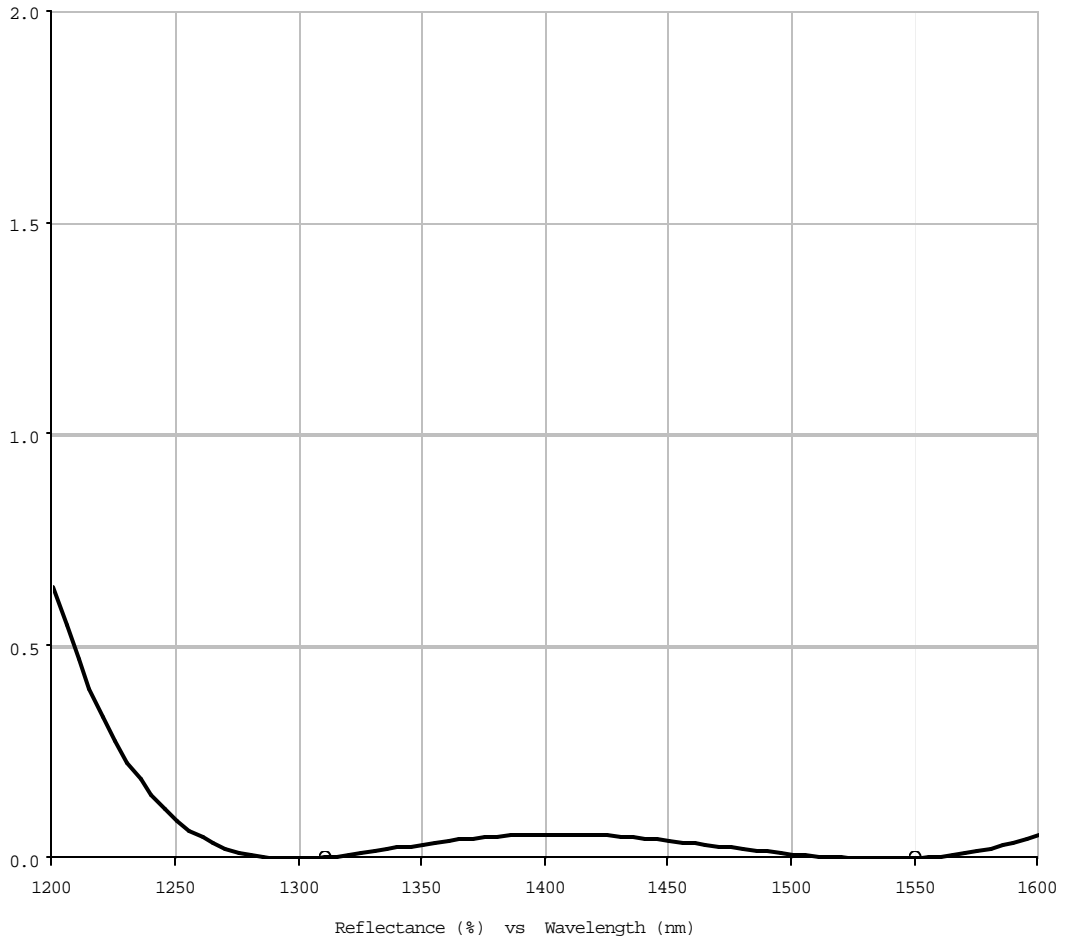
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AC150 1310-1550 AR Coating

Broadband AR coating. Abs R <0.3% between 1250-1650 nm
Less than 0.1% R at 1310 and 1550.

Illuminant:	WHITE	Angle:	0.0 (deg)
Medium:	AIR	Reference:	545.0 (nm)
Substrate:	QUARTZ	Polarization:	Ave —
Exit:	QUARTZ	First Surface:	Front
Detector:	IDEAL	Remark:	0.3 % Reflection absolute•

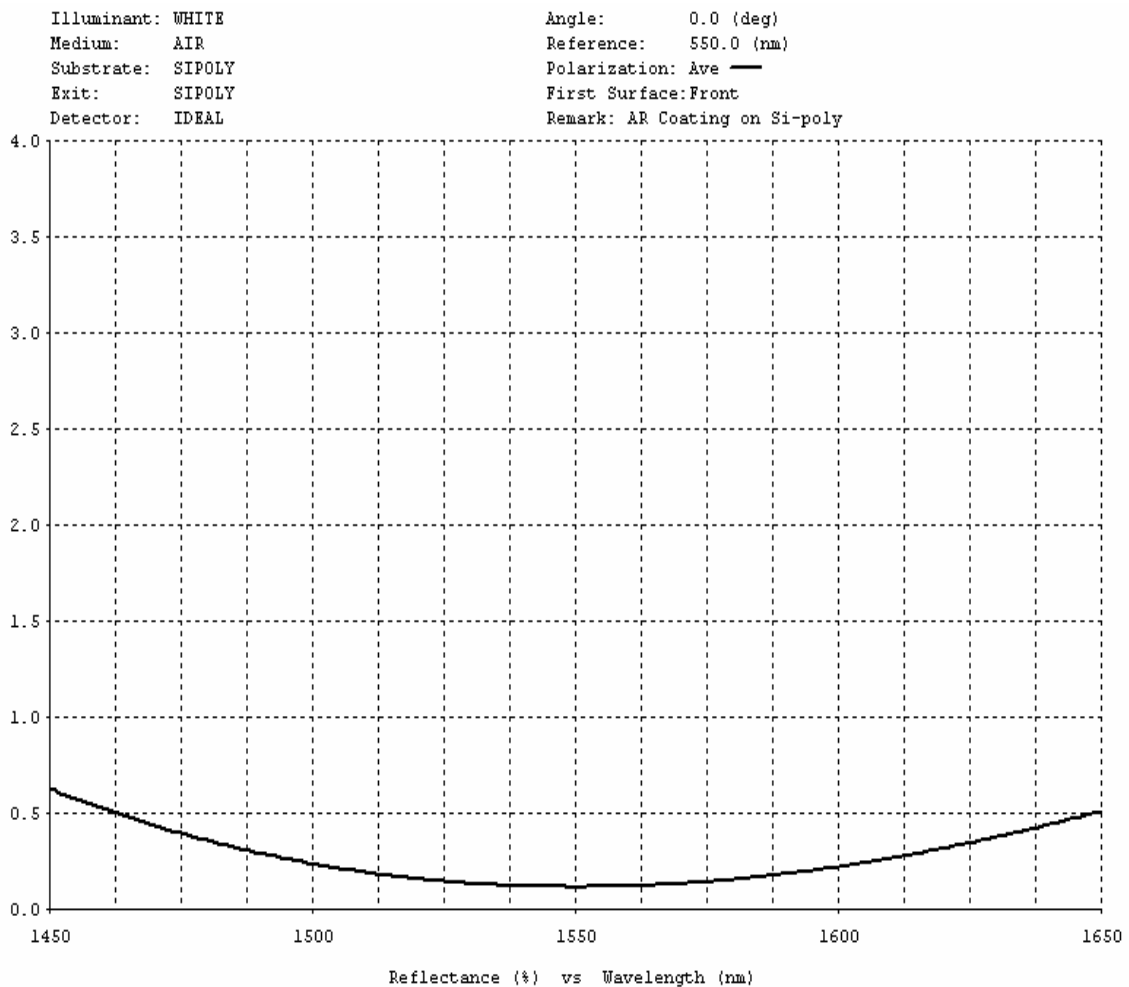


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AC155 AR Coating on Silicon Wafer

$R < 0.25\%$ @ 1550 nm
 $R < 0.5\%$ @ 1480-1650 nm

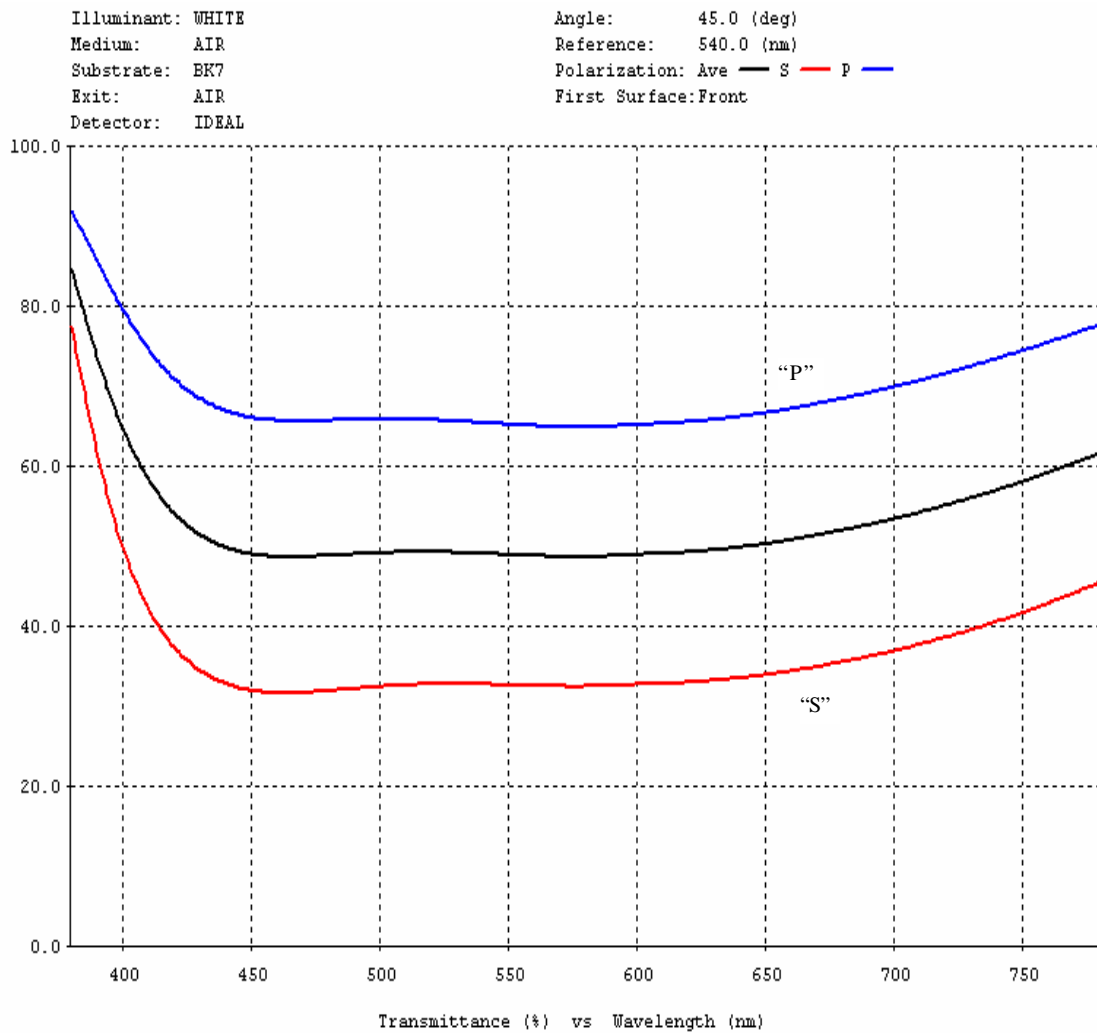


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AC160 Plate Beamsplitter

50/50 @ 45 degrees

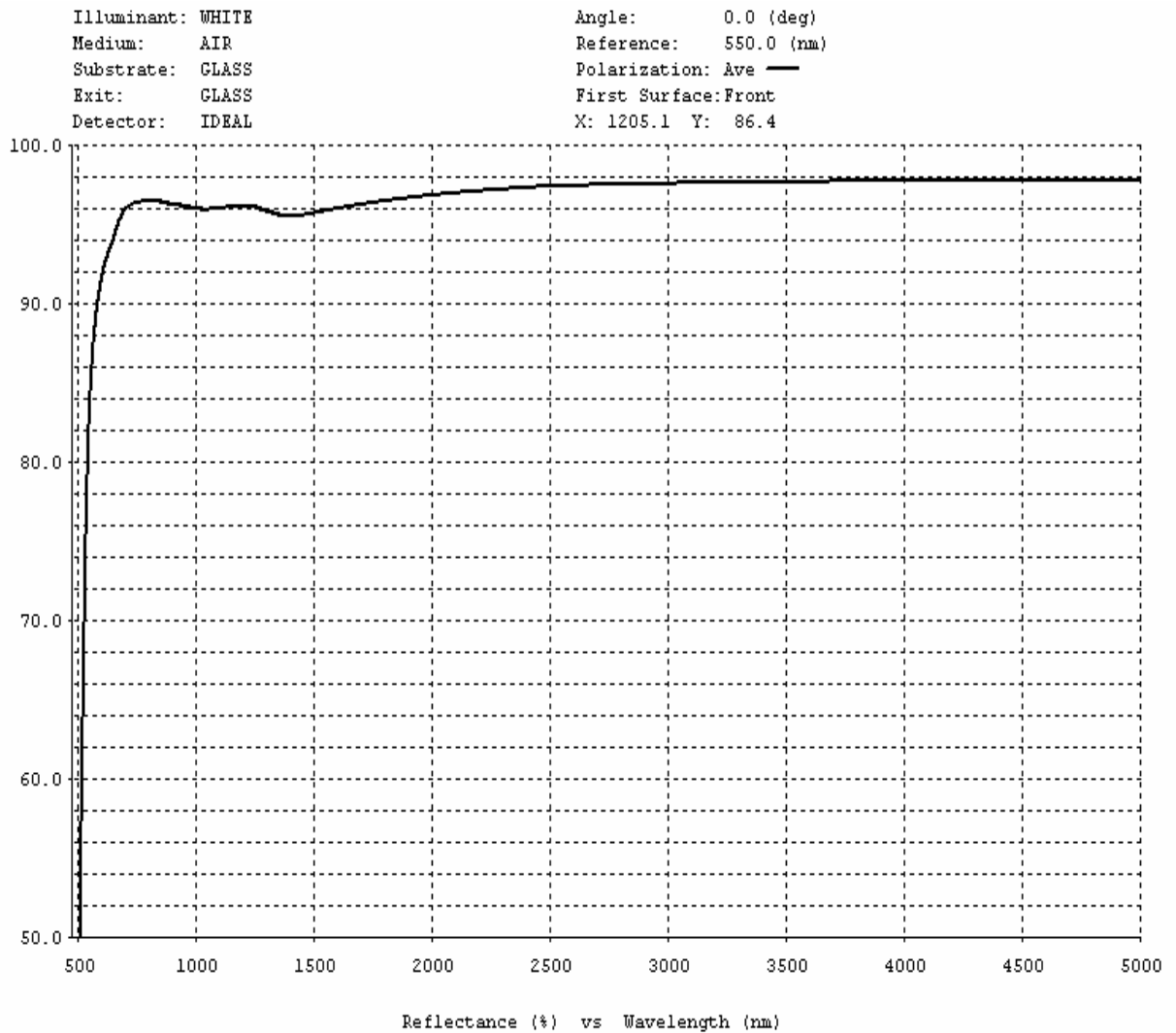


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AC230 Mirror - IR

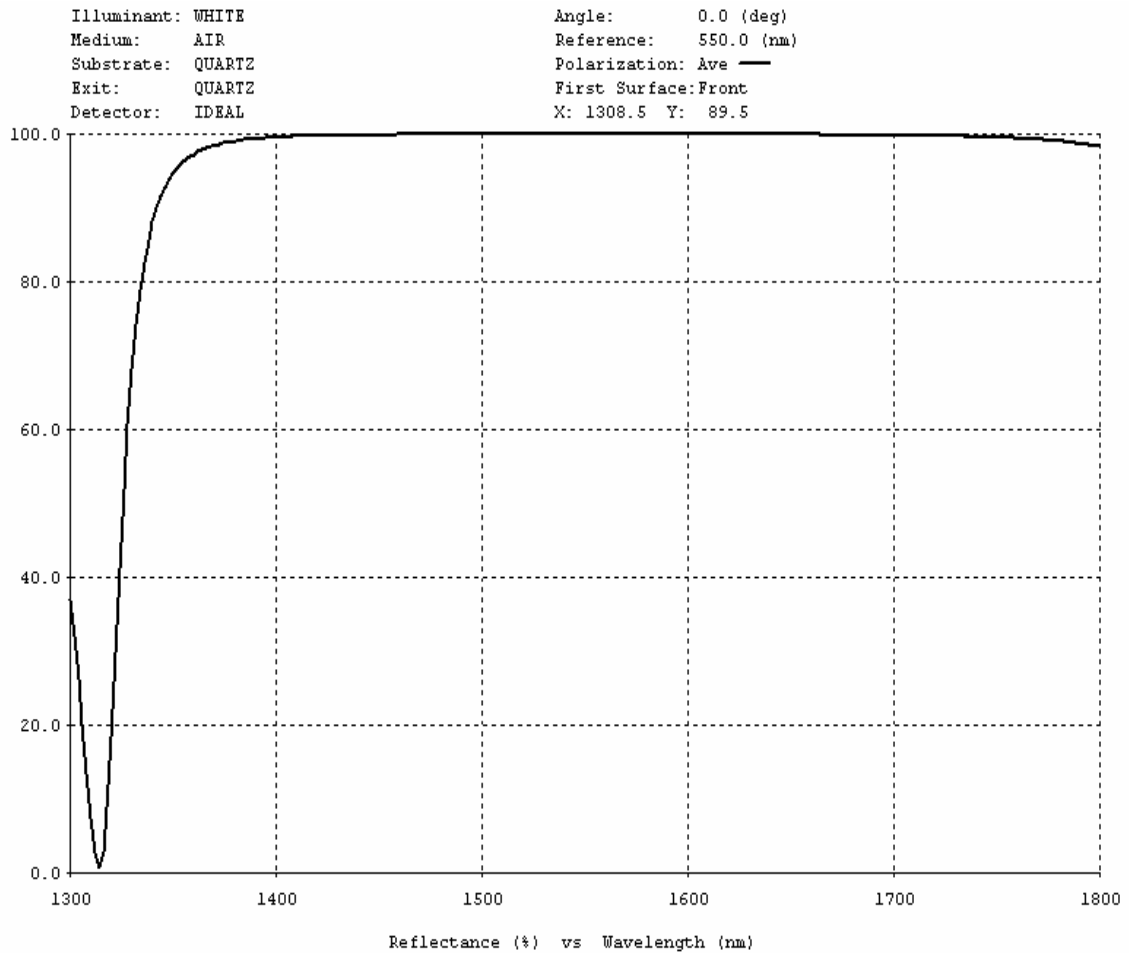
Protected Gold for IR >3 μ



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AC240 Dielectric Mirror

R > 99.9% 1550-1650 nm



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Contact Us

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Affiliations:

American Precision Optics Manufacturers Association (APOMA)
American Vacuum Society (AVS)
Optical Society of America (OSA)
Photonics Directory
Photonics Online
Photonics Spectra
Rochester Regional Photonics Cluster (RRPC)
Society of Vacuum Coaters (SVC)
SPIE - The International Society for Optical Engineering