

Anti-Reflective (AR) Coatings

Glass Fabrication



Coating Deposition



CNC Machining



Strengthening - Chemical & Heat



Screen Printing of Graphics



Abrisa Technologies, a member of HEF Photonics, is a globally recognized technology glass fabrication and optical thin film coating company with expertise in high volume manufacturing and engineering capabilities, delivering Total Solutions that provide excellent performance, fitness-for-use and economies of scale.

Our US based, state-of-the-art ISO 9001:2015 and ITAR registered facilities include Abrisa Industrial Glass in Santa Paula, CA and ZC&R Coatings for Optics in Torrance CA. These two divisions produce solutions from cut-to-order coated glass components to custom complex and Ready-to-install fabricated, strengthened, optically coated, electronically enabled and branded sub-assemblies.

Our Total Solutions serve a variety of markets including Micro-Electronics, Defense and Avionics, Display, Industrial Automation, Optical Sensors, Imaging, Photonics, Medical & Dental, Life Science and more.



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ARC 0323



Your Total Solution Partner

Anti-Reflective (AR) Coatings

These coatings are all dielectric, single or multi-layers and are designed for low reflectance and high transmittance in the UV, visible, and near IR spectral bands.

AR coatings meet the requirements of MIL-C-675C, MIL-C-14806A, and MIL-C-48497A. AR Coatings are often crucial components in optical systems with multiple lenses or other optics where the maximum possible light energy is needed. AR coatings help to produce brighter images while reducing the intensity of ghost images which may otherwise be produced in optical systems having multiple reflecting surfaces.

Features:

- High Transmittance
- Low Reflectance
- Operating Temperature of $\geq 300^{\circ}\text{C}$ (typical)
- Durable & Easy-to-Clean

Specifications: (Standard)

- **Substrates:**
 - Soda-Lime Float Glass
 - Borofloat[®] Borosilicate Glass
 - Water White Float Glass
 - Polished & Drawn Technical Glass Materials such as BK7, Fused Silica & Eagle XG[®]
 - IR Materials such as silicon, zinc selenide, and germanium
 - Crystalline materials such as CaF₂ & Crystal quartz

Thicknesses:

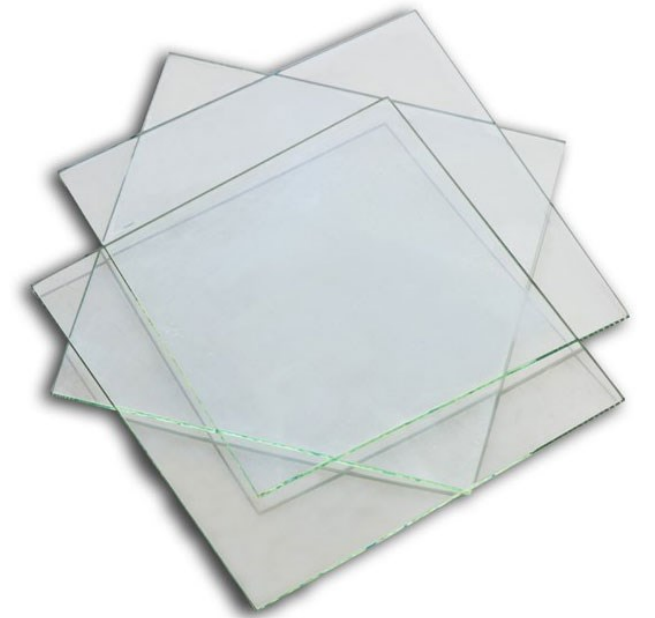
- Range from 0.1mm to over 25.4 mm & Thicker

Reflectance:

- As Low as 0.05% Depending upon Wavelengths Covered

Transmittance:

- Typically Very High. Contact the Factory for Specific Values for each Substrate Material.



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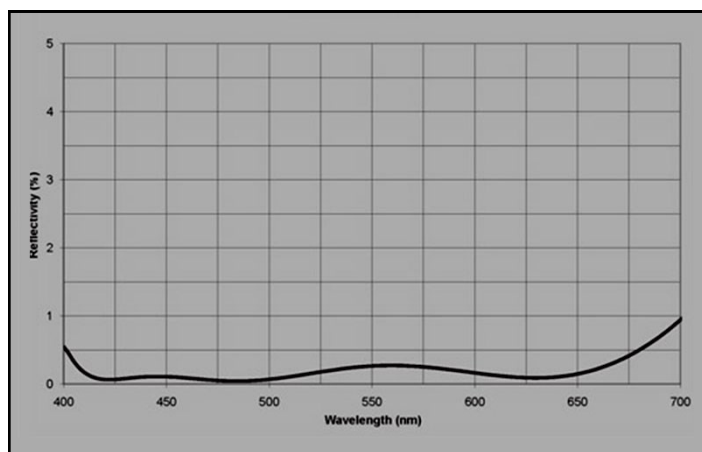
Anti-Reflective (AR) Coatings

Custom and standard AR coatings commonly deposited by Abrisa Technologies are generally separated into two groups. The first group is made up of AR coatings that target one or more broad wavelength bands. Our BARC coatings are examples of this group.

Group 1 Coatings

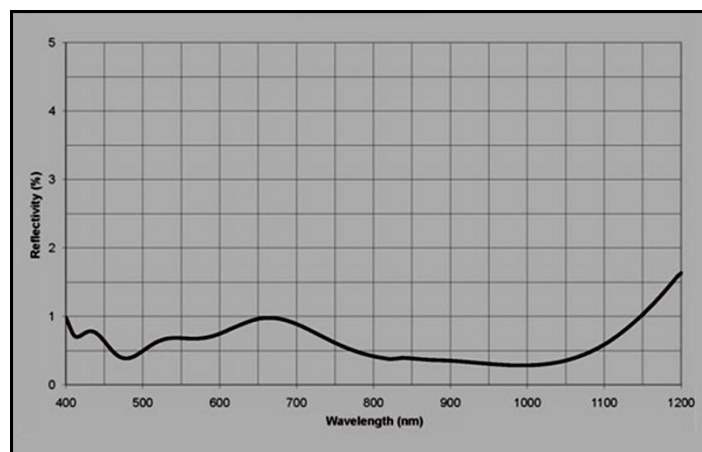
BBAR BARC-5

This high efficiency broadband anti-reflective coating reflects less than 0.5% average from 425-675nm. Higher performance specifications are also available. Standard & custom coatings are available for refractive indices of 1.46-1.90.



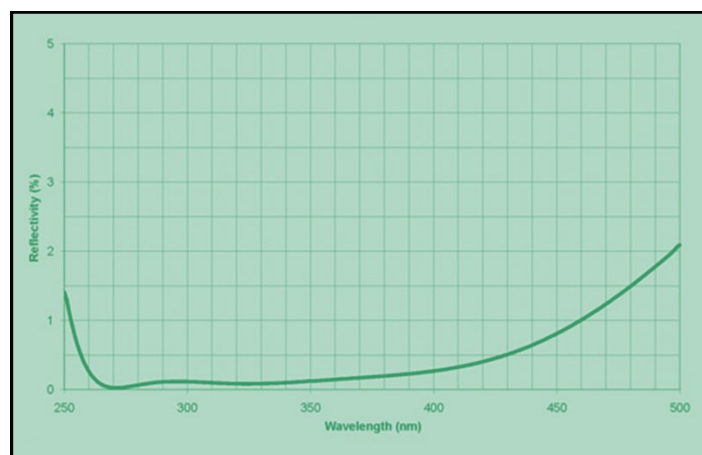
BBAR BARC-11

This broadband coating provides a low level of reflectance across a wide spectrum from 400-1100nm, reflecting less than 1.0% average. Standard and custom coatings are available for refractive indices of 1.46 to 1.90.



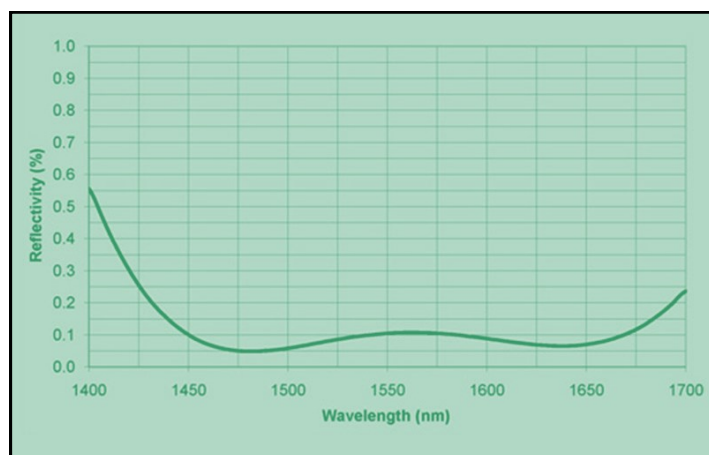
UV BBAR

This broadband AR coating is particularly designed for the ultra-violet region. It provides a low level of reflectance less than 0.5% average from 275-425nm. Standard & custom coatings are available for refractive indices of 1.46-1.90.



BBAR Optimized for Telecommunications

This broadband AR coating is particularly designed for telecommunication applications. It provides a low level of reflectance to less than 0.25% average from 1450-1650nm. Standard & custom coatings are available for refractive indices of 1.46-1.90.

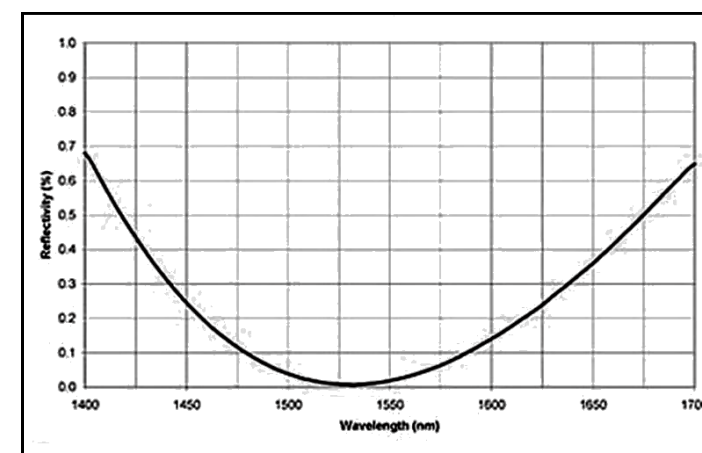


Anti-Reflective (AR) Coatings

Group 2 Coatings

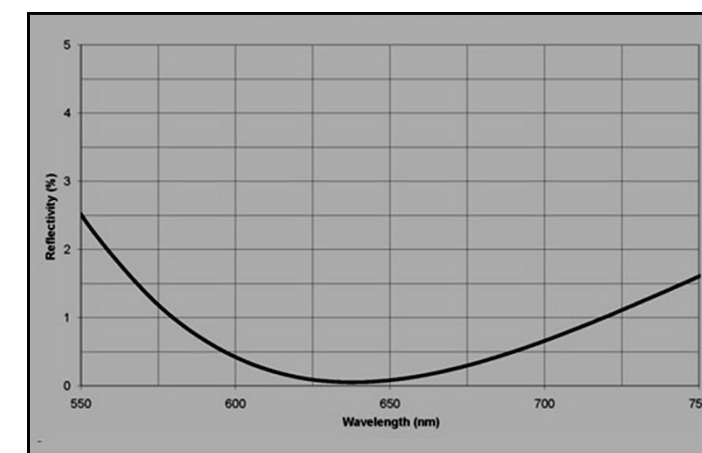
Narrow Band AR (nominally centered @1550nm)

This narrow band AR is an excellent coating for targeting a single wavelength or very narrow band of wavelengths at or near 1550nm. Standard < 0.25% and high performance < 0.05% reflectivity specifications are available.



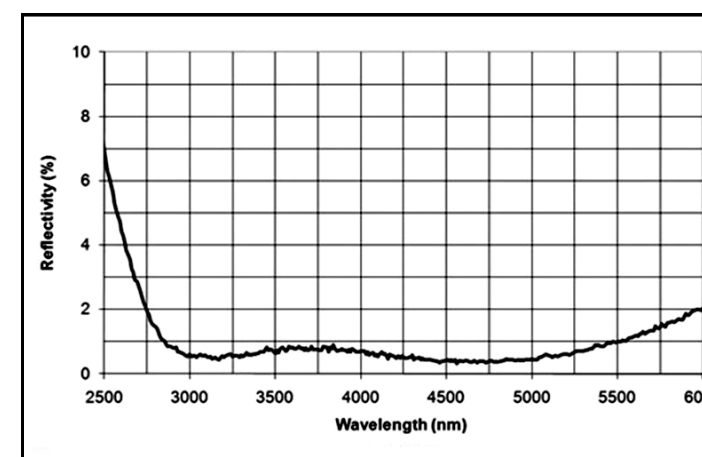
Narrow Band AR (nominally centered @632.8nm)

This narrow band AR is an excellent coating for targeting a single wavelength or very narrow band of wavelengths. Standard < 0.25% and high performance < 0.05% reflectivity specifications are available.



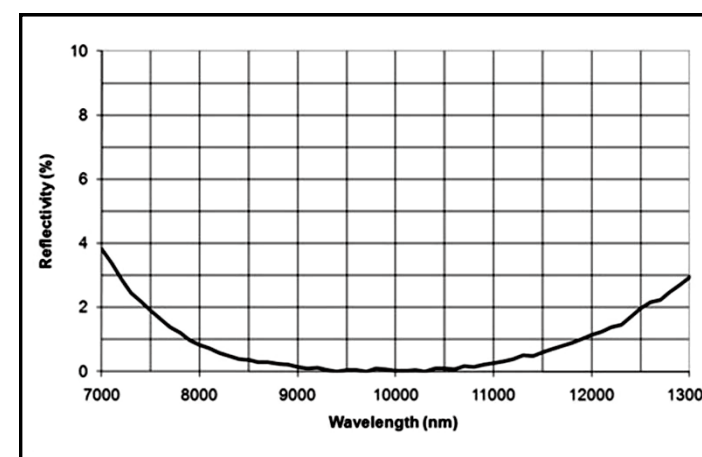
IR-BBAR 3-5 Microns

This AR coating provides a low level of reflectance for the mid-infrared spectrum (3000nm to 5000nm). Band averaged reflectance is less than 1.0% at normal incidence.



IR-BBAR 8-12 Microns

This AR coating provides a low level of reflectance for the far-infrared spectrum (8µm to 12µm). Band averaged reflectance is less than 1.0% at normal incidence.



Custom AR Coatings:

Often, our customers need a custom AR coating that is tailored to meet their specific requirements. The ZC&R Coatings for Optics division of Abrisa Technologies has developed thousands of AR coatings to fulfill such needs. If you have a custom AR requirement please contact us and we will submit a design curve for your review.