ZC&R Coatings for Optics
Now Offers a Family of Solutions for Abrasion Resistant Optical Windows

Santa Paula, CA – ZC&R Coatings for Optics, a division of Abrisa Technologies, now offers a family of abrasion resistant windows that are custom designed to meet unique customer requirements. All abrasion resistant windows feature ZC&R’s high performance anti-reflective (AR) coatings that maximize optical transmittance while eliminating image ghosting, thereby protecting optical systems in hostile as well as common operating environments.

Abrasion from common airborne particles such as sand or poor cleaning procedures applied to external optical surfaces can significantly degrade the optical system performance. Airborne chemicals such as hydrogen sulfide, nitric acid, sulphuric acid, carbonic acid, and other corrosive constituents of urban smog can, over time, produce staining and etching of exposed optical surfaces.

To counteract these harmful environmental effects, ZC&R Coatings for Optics provides three levels of protection:

- **Level 1** – Hardened anti-reflective (AR) coatings applied to conventional glass substrates for less hostile operating environments.
- **Level 2** – Hardened anti-reflective (AR) coatings on hard optical substrates for more challenging environments.
- **Level 3** – Hardened anti-reflective (AR) coatings on sapphire laminated substrates for the most hostile operating conditions.

**Level 1** coatings are the most economical, provide superior optical performance over most spectral ranges, offer superior abrasion resistance in comparison to conventional windows, and are available in a variety of sizes including large apertures up to 10” in diameter.
Abrasion Resistant Windows

**Level 2** coatings are moderate in cost, provide increased abrasion resistance, while also offering significant improvement in resistance to corrosive chemical exposure, have superior optical performance over most spectral ranges, and are available in a variety of sizes including large apertures up to 10” in diameter.

**Level 3** coatings provide maximum resistance to abrasion, significant resistance to corrosive chemicals, while also providing enhanced protection from ballistic damage with superior optical performance over most spectral ranges. Level 3 coatings are available in apertures up to 6” in diameter.

Typical applications include:

- Camera lens systems
- Telescopes
- Point-of-purchase (POP) displays
- Menu boards
- Display monitors
- Digital signage
- LCD screens
- Handheld displays

Anti-reflective (AR) coatings provided by ZC&R meet the following MIL specifications:

- MIL-PRF-13830B
- MIL-C-675C
- MIL-F-48616
- MIL-C-48497A
- MIL-C14806A

AR coatings from ZC&R Coatings for optics will extend the service life of optical window systems while enhancing optical clarity and viewability. In addition, the coatings provide protection from weather and deterioration from chemical attack.

**About ZC&R Coatings for Optics:** ZC&R Coatings for Optics, located in Torrance, California is a division of Abrisa Technologies, providing high quality precision coatings and components from 200 nm to 20 microns, from UV to the FAR IR; including high power laser coatings at 1.604, 1.54, 1.57, and 10.6 microns. Other available coatings include anti-reflection (AR), beamsplitters, hot and cold mirrors, band pass color filters, heat and color control, ITO and index-matched ITO, metal coatings, dielectrics, covert and fluorescence filters. Specializing in prototypes and OEM volumes, ZC&R is a global leader in quality optical thin films. [www.zcrcostings.com](http://www.zcrcostings.com)

**About Abrisa Technologies:** Abrisa Technologies is headquartered in Santa Paula, California and is comprised of three divisions that provide precision optical products and services. The divisions include; Abrisa Industrial Glass, Inc., Sycamore Glass Components, and ZC&R Coatings for Optics. As a market leader in optical coatings and high quality precision glass fabrication, Abrisa Technologies is dedicated to providing premier customer service and cost-effective products that fit each customer’s exacting requirements. [www.abrisatechnologies.com](http://www.abrisatechnologies.com)

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