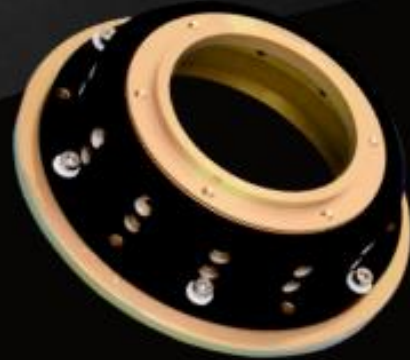


Acktar

Advanced Coatings

- Suppress stray light
- Absorb laser power
- Create high emissivity



ACKTAR

Ultra-black coatings & foils

WHY & WHEN to think about scattered light



WHY

- Enhancing **signal-to-noise**
- Increasing **sensitivity**
- Improving **image quality & contrast**
- Reducing **complexity**

WHEN

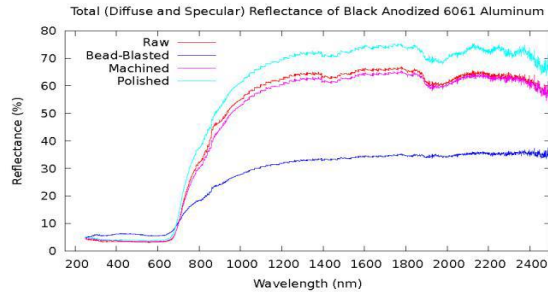
- As **early** as possible in the **development** process of new photonic instruments and systems
- But it is never too late to **implement improvements** in existing products later in the **product lifecycle**



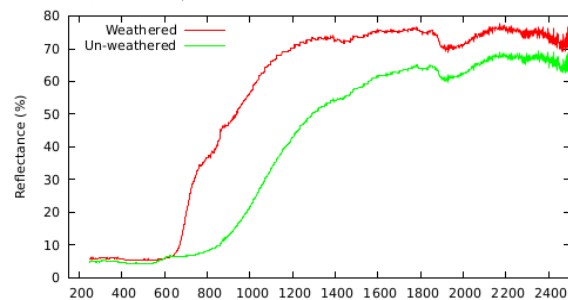
Optical performance – ACKTAR vs. other coatings



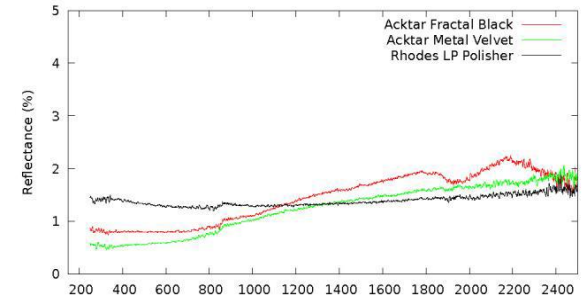
Black Anodized Aluminum



Black permanent marker

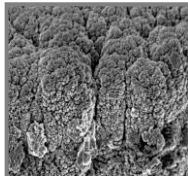
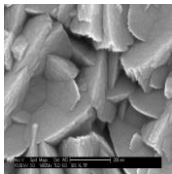
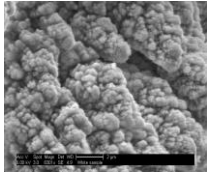
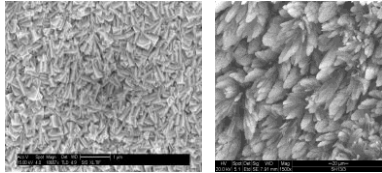


Acktar Black direct coatings



Source: Marshall, J.L. et al. (2014): Characterization of the Reflectivity of Various Black Materials. Department of Physics and Astronomy Texas A&M University

HOW Acktar's ultra-black coatings work



- Applicable for a wide spectral range: **UV-VIS-IR**
- Highly **temperature resistant** and **durable**
- applicable to **most materials** (metals, glass, ceramics, plastics)
- Totally inorganic: qualified for **space** / **vacuum** / **clean room**
- No **particulation** & high **vibration stability**
- **Thin** and **reliable** coating layer
- Highly conformable to **sharp edges** and **complex geometries**
- **Zero fluorescence**
- **RoHS + REACH** compliant
- **Bio-compatible** and cytotoxicity tested
- Replaces conventional etching, graining, anodizing

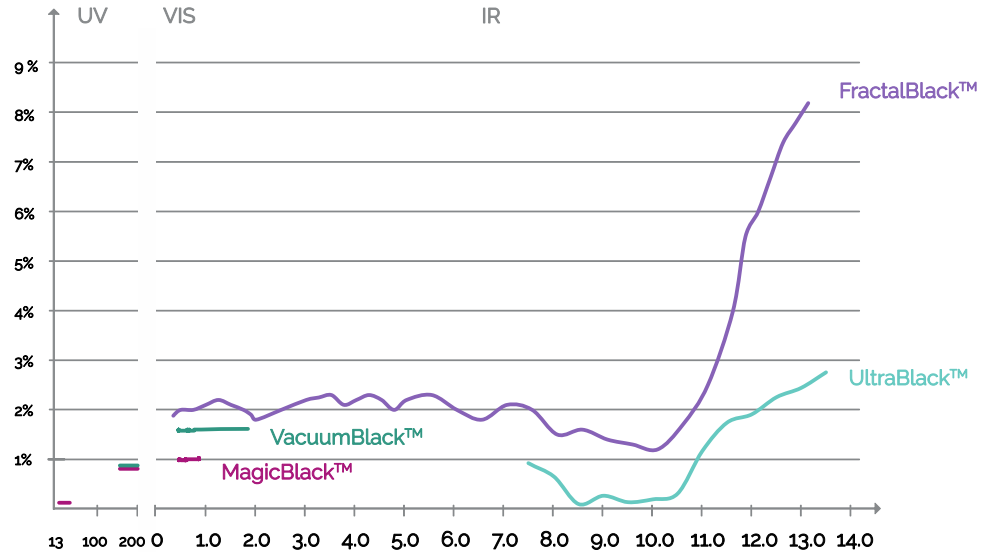
Broadband
99%
absorption

very low reflectance
in
UV - VIS - IR

Optical performance – Hemispherical Reflectance of ultra-black direct coatings



- Magic Black
- Vacuum Black
- Ultra Black
- Fractal Black



Acktar's ultra-black product portfolio



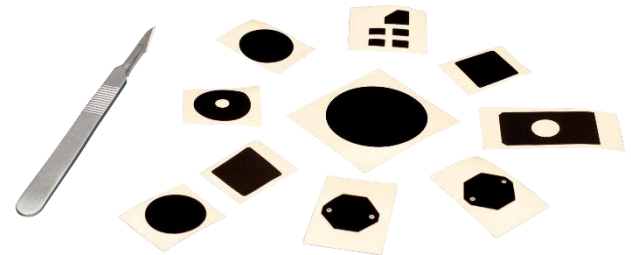
— ULTRA-BLACK DIRECT COATINGS

- On your optical and mechanical components



— ULTRA-BLACK COATED FOILS

- For assembling to your components



Markets & Applications



SPACE

- **Stray light reduction:** by coated deflector plates on CHEOPS or Sentinel 4
- **Passive heat management:** by foiled telescope on SPHERE-instrument



LASER

- **Increase laser beam quality:** by absorbing beam apertures
- **Controlled blocking laser radiation:** with laser beam dumps



AUTOMOTIVE

- **Increasing performance:** of LIDAR systems
- **Increasing sensor precision:** by calibration targets or coated apertures



MEDICAL

- **Improve image quality:** of endoscope cameras
- **More accurate in diagnostics:** by aperture diaphragms or direct coating on other optical & opto-mechanical components



BIOANALYTICS

- **Improving signal strength & detection speed**
- **Almost zero auto-fluorescence:** by blackened substrates or components e.g. microarray slides; well plates; micro plates



ONE-STOP-SHOP

- **Stray light absorption & suppression**
- **US - VIS - IR Optics:** by coating lenses rim; optical packaging; sharp edged diaphragms & blades, e.g. apertures, field stops, pinholes, slits

Contact us



Earth observation image taken by ESA Sentinel 2 with Acktar Black coatings aboard.

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