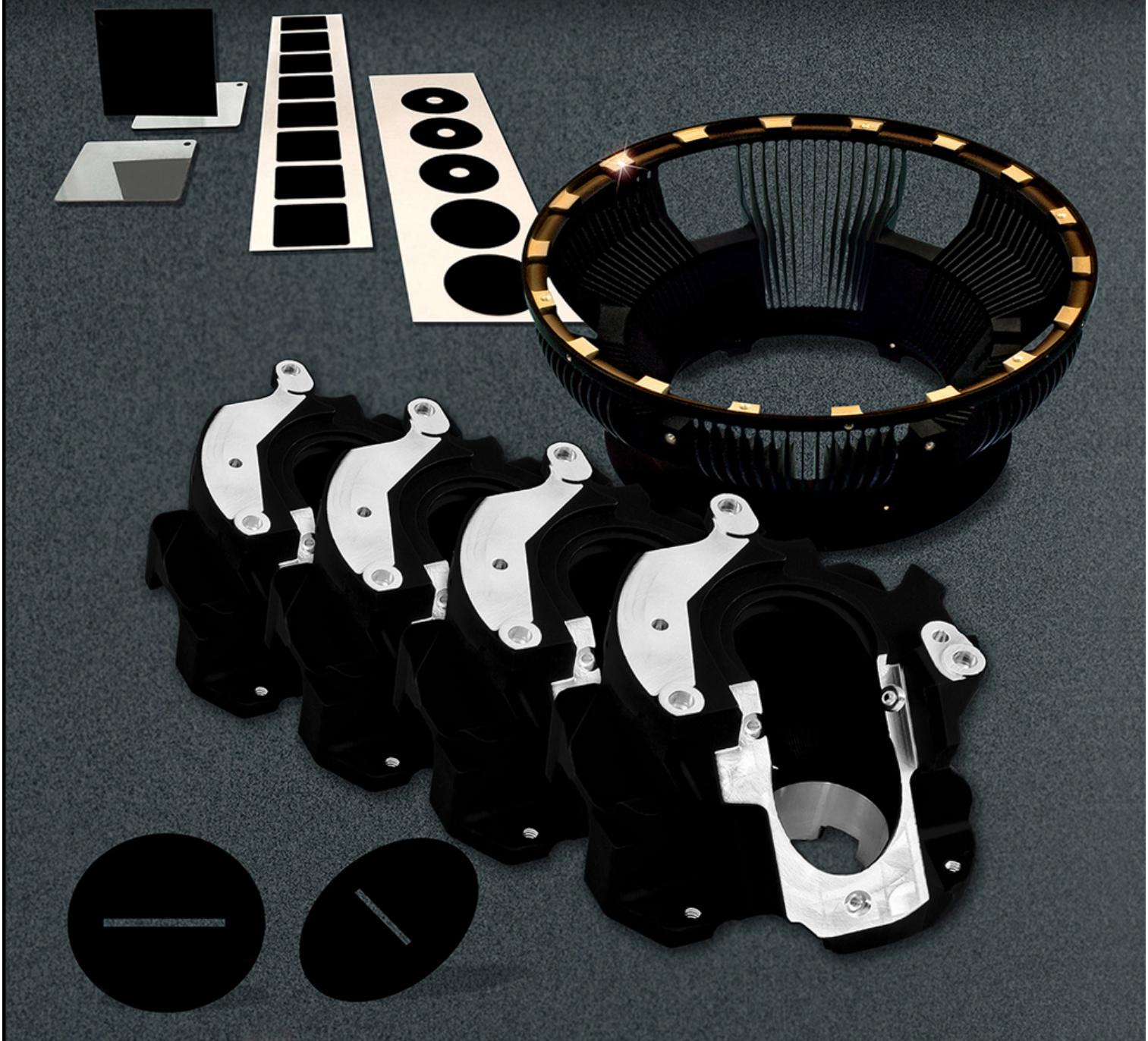
Acktar
Advanced Coatings

Acktar Black™

World's Blackest Coatings

By Industrial Vacuum Deposition Technology

Absorbs 99% EUV- UV, VIS, NIR-FIR
Fits to all Metals, Glass, Plastics



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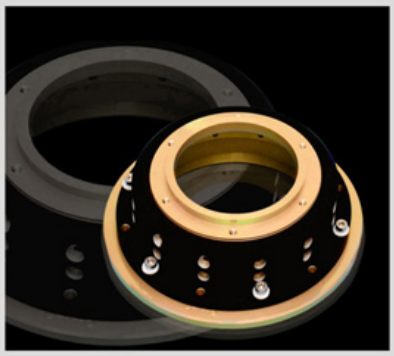
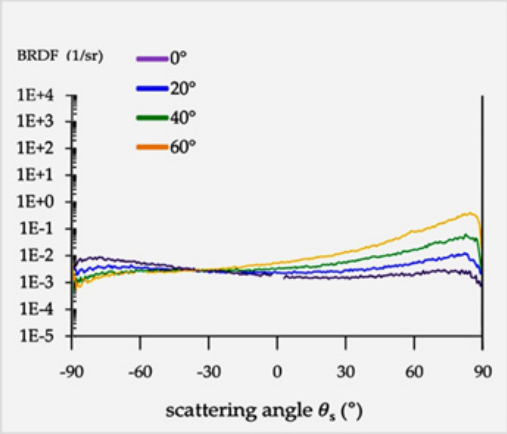


Coating Service – High Performance Black Light-Absorbing Thin-Film Coatings

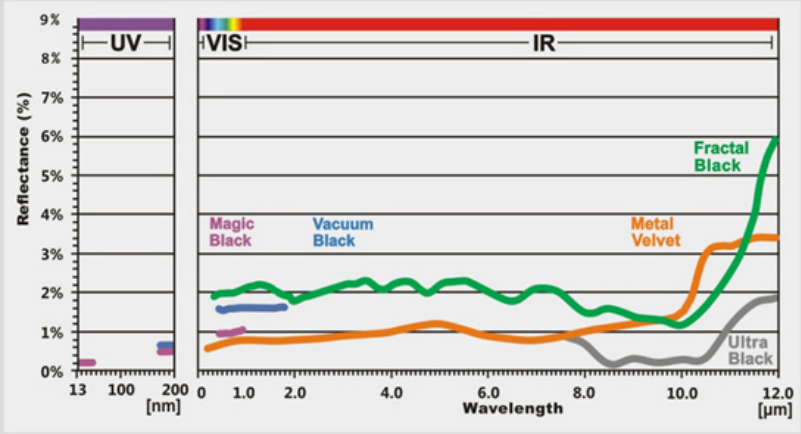
Acktar is the world's largest manufacturer of black coatings and its coatings are the standard of excellence in the field. Acktar coats all types of opto-mechanical parts submitted by customers and also undertakes build-to-print manufacture of the parts and assembly after coating. Since 1993 Acktar has been dedicated to providing the best-in-industry black coatings for applications ranging from satellite optics and endoscopes to automotive IR cameras and smart phones.

www.acktar.com

BRDF Metal Velvet™ - 532 nm



Hemispherical Reflectance



Characteristics of Acktar Black Coatings

	Magic Black™	Vacuum Black™	Fractal Black™	Ultra Black™	Metal Velvet™ (foil)
Operational wavelength	EUV-NIR	EUV-SWIR	VIS-FIR	MWIR-LWIR	EUV-FIR
Coating thickness, microns	3 - 5	4 - 7	5 - 14	13 - 25	5 - 7
Working temperature	- 269°C to + 450°C (4K to 723 K)				
Weight of coating, mg/cm²	1.1 - 1.6	0.7 - 1.1	1.6 - 3.2	3.3 - 6.5	1.4 - 3.2
Abrasion resistance (ref MIL-C-48497A)	light	moderate	moderate	moderate	light
Adhesion to: Metals, Glass, Ceramics, Plastic (ref ECSS-Q-70-13C)	Coated pieces withstand scotch tape test (3M853 Crystal clear tape, strength of 13N per 25mm), without any evidence of coating removal.				
Outgassing	CVCM 0.001%, RML 0.2%				
Chemical content	100% inogranic				
Surface resistivity	In the dissipative range				
Cleanability	Coated pieces withstand cleaning with ethanol, IPA or acetone with no change in optical and technical characteristics.				

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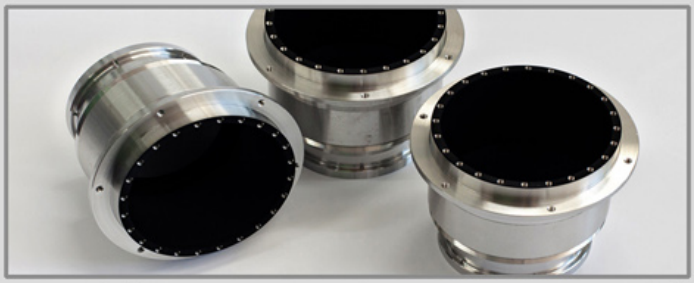
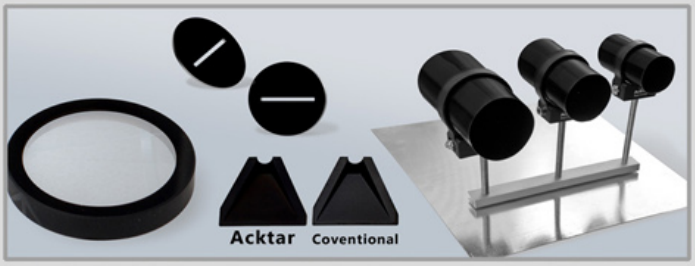
Sensors & Imaging

Where signal-to-noise determines the quality of images or the sensitivity of sensors Acktar coatings provide superior stray light suppression across the spectrum from EUV through the IR.



Space & Science

Satellite-borne optics typically require the highest level of stray light suppression combined with space compatibility conditions. Acktar space-qualified coatings combine superior optical performance with a unique mix of features and advantages such as wide-range thermal stability, essentially zero outgassing, vacuum compatibility, and survival under space radiation. The maintenance of knife edge geometry in star-tracker baffles is an example where Acktar provides a significant performance boost.



Lasers & Inspection

Acktar coatings are particularly advantageous in high energy density laser applications because they offer high Laser Induced Damage Thresholds (LIDT) in addition to their unique mix of optical performance and other features and advantages. A typical example: Magic Black™ coated aluminium - LIDT > 800 watts/sqcm for 532nm quasi CW.

Acktar's Black™ coating capabilities include:

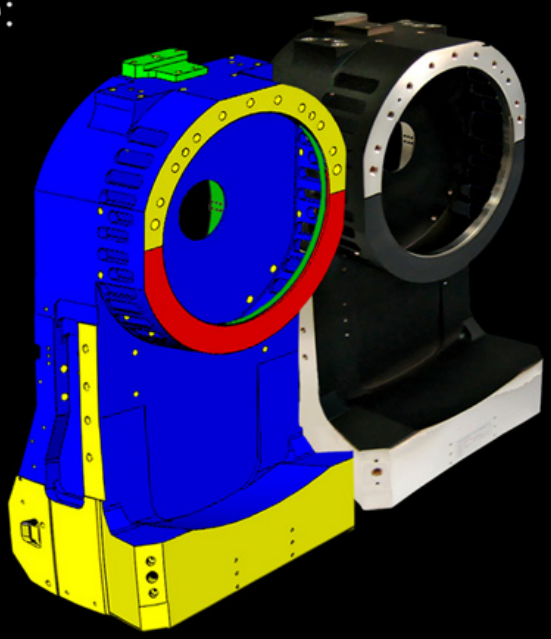
- High emissivity: >99% (at 3-10 microns); > 94% (at 3-30 microns)
- Thickness tolerances +/-0.6 microns
- Ideally conforms to knife edge of baffle vanes - radius < 15 microns
- Zero fluorescence
- Space qualified (ATOX, radiation, thermal cycling, outgassing)
- UHV compatible: 10^{-11} mbar
- Paternable by conventional photolithography etching & lift off
- Tailorable electrical conductivity
- Extremely low molecular contamination MOC < 10-9 g/cm^2
- Clean room compatible class 10
- High vibration stability
- Biocompatible

AS 9100D | ISO 9001:2015 Certified | RoHS COMPLIANT | REACH

4 COATING CATEGORIES TO DEFINE WHEN YOU ORDER Acktar Black

coating code		requirement
blue	primary coated area	black coating fully compliant with specifications
red	secondary coated area	relaxed specifications with regards to blackness
green	no requirement	not coated, coated or partially coated at Acktar's discretion
yellow	uncoated (masked) area	area which must be free of any Acktar coating

Example:



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