

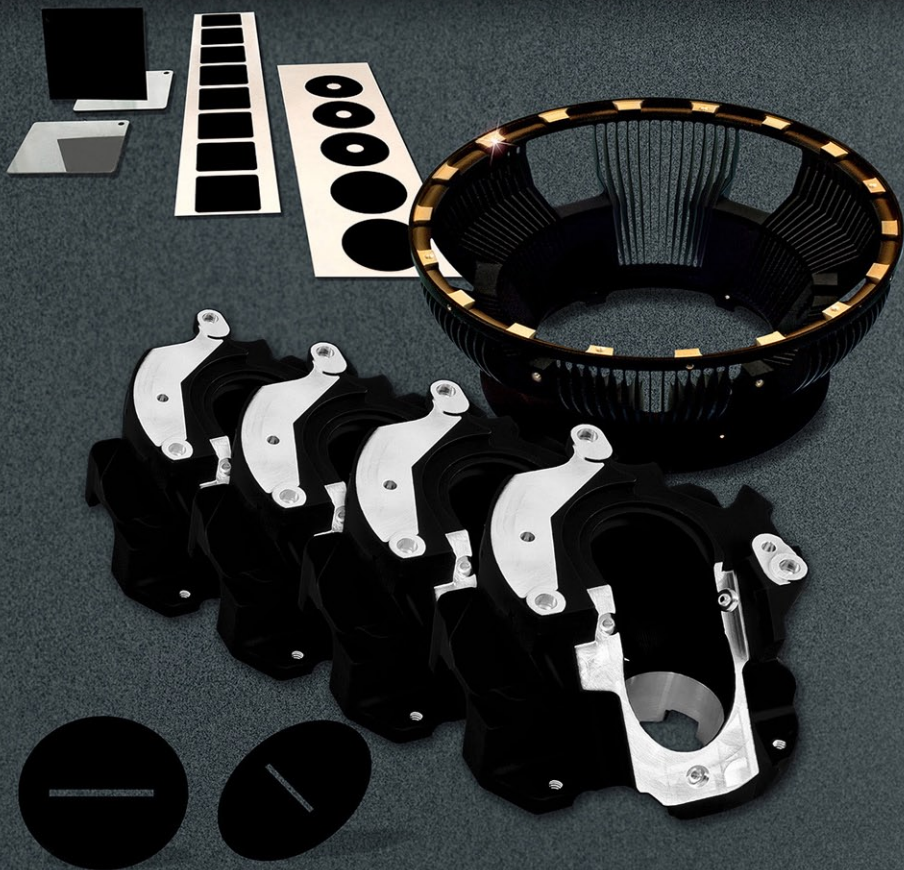
Acktar

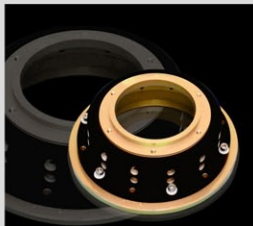
Advanced Coatings

Acktar Black™

World's Blackest Coatings
By Industrial Vacuum Deposition Technology

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



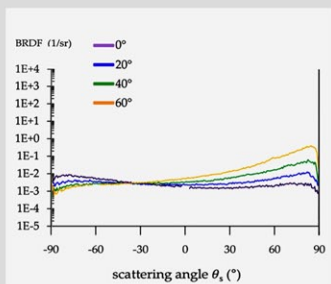


Coating Service – High Performance Black Light-Absorbing Thin-Film Coatings

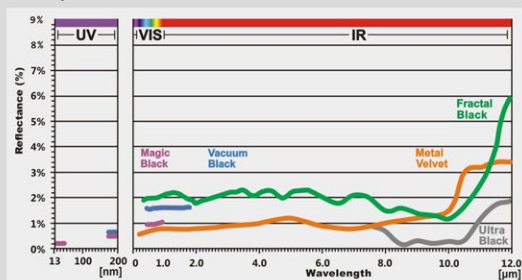
Acktar is the world's largest manufacturer of black coatings and its coatings are the standard of excellence in the field. Acktar coats all types of opto-mechanical parts submitted by customers and also undertakes build-to-print manufacture of the parts and assembly after coating. Since 1993 Acktar has 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, μm	3 - 5	4 - 7	5 - 14	13 - 25	5 - 7
Working temperature	- 269°C to + 450°C (4K to 723K)				
Weight of coating, mg/cm^2	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	CVMC 0.001%, RML 0.2%				
Chemical content	100% inorganic				
Surface resistivity	In the dissipative range				
Cleanability	Coated pieces withstand cleaning with ethanol, IPA or acetone with no change in optical and technical characteristics.				



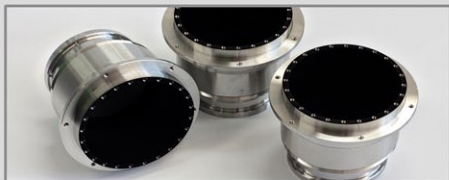
Acktar

Advanced Coatings



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
- Patternable by conventional photolithography etching & lift off
- Tailorable electrical conductivity
- Extremely low molecular contamination MOC < 10-9 g/cm²
- Clean room compatible class 10
- High vibration stability
- Biocompatible

AS 9100D

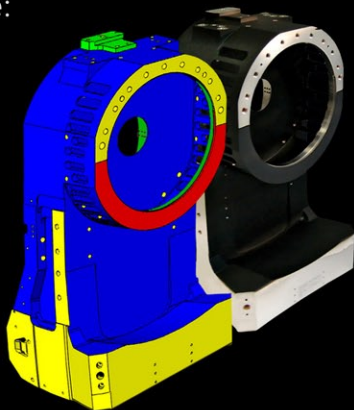
ISO 9001:2015 Certified



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:



Headquarters

Acktar Ltd.
19 Topaz St.,
P.O.B. 8643,
Kiryat-Gat 8213513, Israel
Tel: +972-8-6814213
Fax: +972-8-6810198
E-mail : info@acktar.com
www.acktar.com

Germany

ACM Coatings GmbH
Rudelsburgpromenade 20 c
06628
Naumburg - Bad Koesen
Tel: +49-34463-621340
Fax: +49-34463-621349
E-mail: germany@acktar.com
de.acktar.com

Japan

Acktar Japan
2nd FL., Tanizawa Bldg.,
17-1-Chome, Kanda Nishiki-Cho,
Chiyoda-Ku, Tokyo
Japan #101-0054
Tel: +81-3-5283-7311
Fax: +81-3-3219-1250
E-mail: japan@acktar.com
jp.acktar.com

France

OPTOPRIM
21-23 rue Aristide Briand
92170 Vanves - FRANCE
Tel.: +33(0)1-41-90-61-80
E-mail: france@acktar.com
fr.acktar.com

USA

696 San Ramon Valley Blvd. #334
Danville, CA 94526
Tel.: +1-510-453-7004
Fax: +1-925-886-8833
E-mail: usa@acktar.com



- Specifications presented in this brochure are for information only.
- Binding specifications will be as agreed between Acktar and a customer in each case.
- Acktar reserves the right to change the characteristics and/or specifications of its products at any time without prior notice.