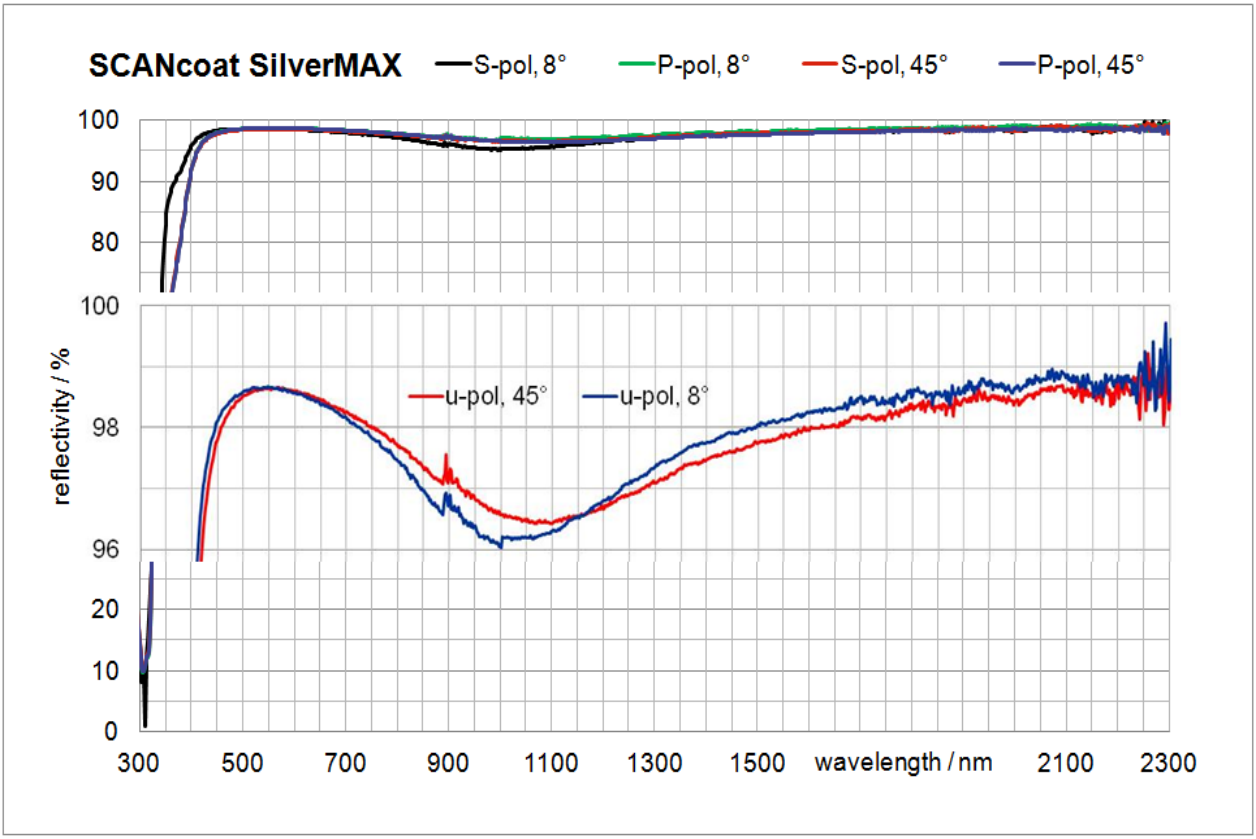
Coatings for ultra-high performance optoSiC-PLUS® mirrors

SCANcoat SilverMAX used for spectral broadband

SCANcoat SilverMAX is sputtered with a protected metallic silver coating. It is spectral smooth and gives very high reflectivity for vision systems and spectral radiation uniform broad band requirements. Optimised for applications under harsh environmental conditions in specialised technological systems when abrasion hardness and a easy cleaning possibility is requested.

Coated optoSiC-PLUS®-mirrors can withstand strong laser radiation at high power and high energy densities. For other wavelength are dedicated standard coatings available and many other coatings on request. Please refer to technical datasheets for SCANcoat coatings available on optoSiC-PLUS® or see download-links on homepage and ask our sales people for further choices on other specialized coatings.



GENERAL	PROPERTIES		Typical values	
COATING	**Wavelength [λ_1]**	**(nm)**	450	s. spectrum
	Wavelength [λ_2]	**(nm)**	2300	s. spectrum
	Scan Angle	**(°)**	45 ±10	
	$R_{avg}(\lambda_1)$ @45° u-pol	**(%)**	>98	+/- 0,5 % ; AOI 45°
	$R_{avg}(\lambda_2)$ @45° u-pol	**(%)**	>98	+/- 0,5 % ; AOI 45°
	Phase Shift	**(°)**	n.d.	
	Powerdensity	**(kW/cm²)**	n.d.	measured at 1064nm
	Damage Treshhold Energy Density	**(J/cm²)**	n.d.	measured at 1064nm 10 ns, 1 Hz , 0°

LIDT = laser induced damage threshold typically given as
x-Watts per linear millimeter of beam radius (br) ($1/e^2$ intensity points) ±10%
at 45° Angle of Incidence. r-pol = random polarised or u-pol = unpolarised
Transmission edges can vary ~ 1% of the given wavelength.
All data given for lab.-conditions 20…25°C, at higher temperatures thermal shifts will occur.
n.d. = not defined
R-values are qualified on fused silica-samples in transmission R = 1-T

COATING characteristics	SCANcoat SilverMAX		
Adhesion	MIL-M-13508 C	§ 4.4.6	Tape Test: peal off medium grade 50 wipes cottoncloth
Humidity	MIL-M-13508 C	§ 4.4.7	Storage 49°C : 95 % RH : min. 24 h
Salt Fog	MIL-M-13508 C	§ 4.4.8	24h salt spray 4,5%NaCl
Abrasion/Hardness	MIL-M-13508 C	§ 4.4.5	"cheesecloth", 50 times pulles with force 450 g over the surface
Temperature	MIL-M-13508 C	§ 4.4.4	Typ ambient use: -20 … 70 °C storage -62°C … 71°C for min. 5 h
Cleaning:	MIL-C48497	§ 4.5.4.2	wipe carfully with analytical grade reagent; di-Water, Alcohol iso-Propanol, Aceton

Use an air bulb to blow off any loose contaminants from the surface before proceeding to the cleaning steps.

I. Damp an unused cotton swab or a cotton ball with acetone or iso-propanol (analytical purity-grades 99.99).
II. Gently wipe the surface with the damp cotton. Do not rub hard.
III. Drag the cotton across the surface just fast enough so that the liquid evaporates right behind the cotton. This should leave no droplets or streaks.
Note: Use only paper-bodied cotton swabs and high-quality surgical cotton balls.

Please Contact:

MERSEN Deutschland Holding GmbH & Co. KG
Niederlassung München
Rupert-Mayer-Str.44
D-81379 München
Germany

Phone: +49 (0) 89 780 7239 0
Fax: +49 (0) 89 780 7239 211
E-Mail: info@optoSiC.com
www.optosic.mersen.com