



VortexIR®

CERAMIC FILM SERIES



Nature meets nanotechnology
for ultimate performance.

What is VortexIR® Ceramic Film Series?

Simply put, it's the ultimate in window film. As the name implies, VortexIR® Ceramic Film Series leverages ceramic particles pulverized on a nanoscale level (think smaller than DNA). These invisible particles are applied to Solar Gard's premium window film to produce unmatched performance, privacy and comfort.

The Ceramic Difference

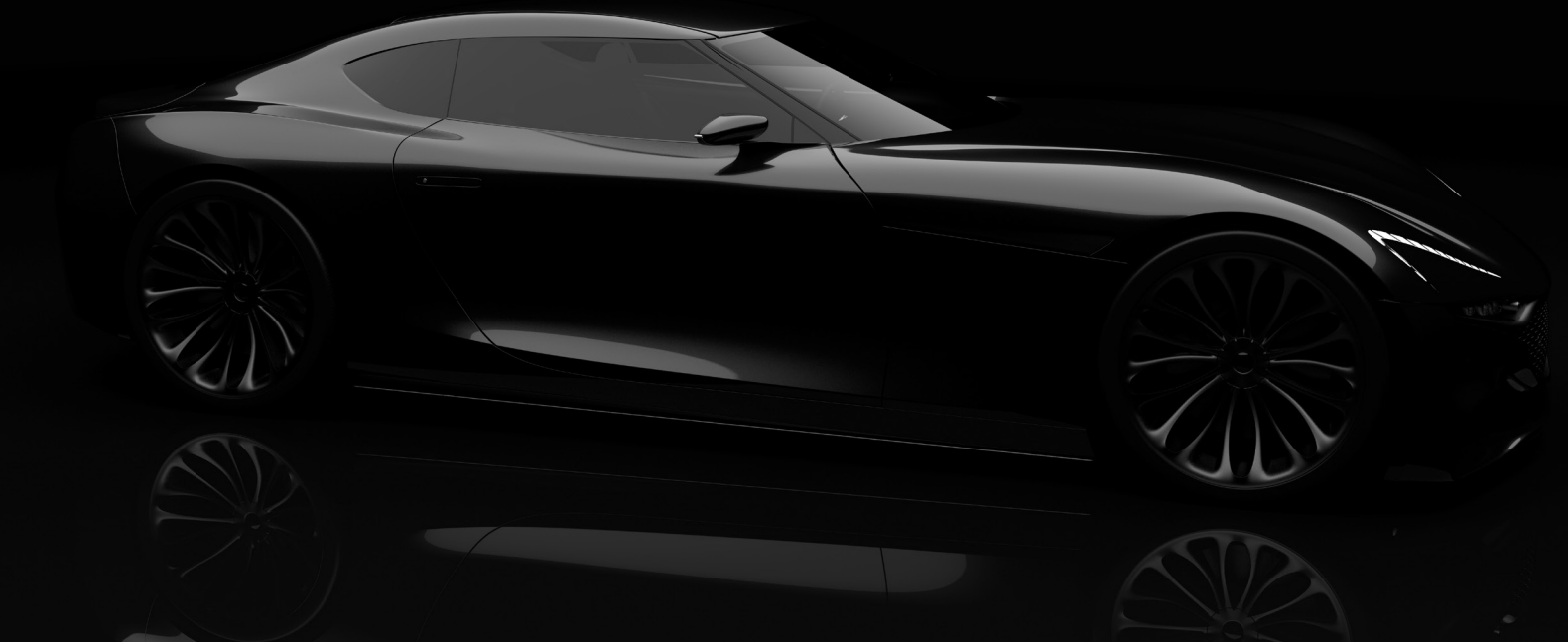
Metal particles found in many films reflect heat, light and radio waves – causing more glare from your windows and a spotty cellular signal. Ceramic nanoparticles absorb energy from the sun, delivering a truer black on your glass, more comfortable interior temperature, and reliable phone and GPS reception. Ceramic is among the finest raw materials created by man or nature, and when applied to window film with the attention to detail that is synonymous with Saint-Gobain's more than 350 years of experience – you can be assured of invisible-yet-powerful advantages.

FAST FACTS:

- Advanced ceramic technology rejects up to 88% of infrared rays
The amount of infrared energy rejected, as determined by the SIRR measurement
- Total Solar Energy Rejection (TSER) of up to 63%
- Blocks more than 99% of harmful UV rays, preventing overexposure
- Signal-friendly construction won't interfere with mobile phones, GPS navigation, satellite radio, and other electronic devices
- Helps keep shattered glass together for increased safety
- Reduced interior fading
- Rich black color
- Available in a wide range of shades to accommodate any driver's preference and minimize glare

WARRANTY:

- Limited lifetime transferable
- Replacement product and labor
- National dealer network





PERFORMANCE SPECS:

VortexIR	70	55	45	35	30	25	15	5
% Visible light transmittance	71	53	46	38	30	24	17	8
% Visible light applied to auto glass¹	60	45	39	32	25	20	15	7
% Total solar energy rejected	40	47	49	53	55	57	60	63
% Ultraviolet blocked (300 to 380 nanometers)	>99	>99	>99	>99	>99	>99	>99	>99
% Infrared energy rejected (IRER)	52	56	57	60	59	61	62	63
% Selective infrared rejection (SIRR)	60	72	72	74	78	81	82	88
% Glare reduction	20	40	48	57	67	73	80	91
% Visible light reflectance	8	7	6	6	6	5	5	5

Performance Notes:

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Performance results based on film applied to ¼" (6mm) clear glass calculated using NFRC methodology and LBNL Window software, and are subject to variations within industry standards and only intended for estimating purposes. This data is provided for informational purposes only and are subject to normal manufacturing variances.

1 Performance results based on film applied to a representative automotive glass with a base visible light transmission of 75%. Due to variations in glass performance, these values should not be used to comply with local tinting laws.

SOLAR ENERGY TECHNICAL DEFINITIONS

VISIBLE LIGHT TRANSMITTANCE (VLT)

The percent of total visible light that is transmitted through the window film/glass system. The lower the number, the less visible light transmitted.

TOTAL SOLAR ENERGY REJECTED (TSER)

The percent of total solar energy that is directly reflected and absorbed and radiated outwards. The higher the number, the more total solar energy rejected. Calculated as 1-SHGC (Solar Heat Gain Coefficient).

ULTRAVIOLET LIGHT BLOCKED

The percent of invisible light blocked between 300 nm and 380 nm. The higher the number, the more ultraviolet light blocked. This light is a primary cause of skin cancer, fading and discoloration of furnishings, and materials. Solar Gard window films block more than 99% of both UVA and UVB.

INFRARED ENERGY REJECTION (IRER)

The percent of infrared energy (780 nm to 2500 nm) that is directly reflected and absorbed and radiated outwards. Calculated as 1 - SHGC (780 nm to 2500 nm) using Lawrence Berkeley National Laboratory (LBNL) Window software and NFRC 200 solar spectrum from 780 nm to 2500 nm. The higher the number, the more infrared energy reflected and absorbed and released outwards. IRER is the endorsed calculation method of IWFA.

SELECTIVE INFRARED REJECTION (SIRR)

The percent of "film only" transmitted infrared energy (780 nm to 1700 nm) measured using the Solar Spectrum Transmission Meter (model # SS2450). The higher the number, the less infrared directly transmitted.

GLARE REDUCTION

The percent of glare that is reduced by window film/glass system. The higher the number, the more glare reduced.

VISIBLE LIGHT REFLECTANCE

The percent of total visible light that is reflected by the window film/glass system. The lower the number, the less visible light reflected.

If you demand smarter protection on your windows that works as hard as you do, then Solar Gard's VortexIR™ Ceramic Film Series is the right application for your glass.

