

# NR Nano Ceramic IR Series Automotive Window Film

Revision 0

## Introduction

Avery Dennison® NR Nano Ceramic IR Series automotive window films deliver exceptional performance with advanced nano ceramic technology, for long lasting colour stability and outstanding heat rejection. Its high optical clarity and deep graphite colour tone upgrades vehicle aesthetics for a stunning look and comfortable ride.



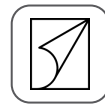
### Face Film

38 micron (1.5 mil) Graphite PET - Nanotechnology + IR combined with UV Stable Dye



### Adhesive

Pressure Sensitive Adhesive (PSA)  
Permanent - acrylic



### Backing

PET



### Warranty\*

Lifetime. Limited to original owner



### Shelf Life

When stored in original packaging upon arrival at the customer: 2 years.  
Recommended Storage conditions are 20 °C (± 2 °C) with 50%RH (± 5%)

\*For more information on warranty terms, exclusions and certain limitations that apply, please refer to warranty bulletins, terms and conditions, applicable data sheets, bulletins and literature on our website: [graphicsap.averydennison.com](http://graphicsap.averydennison.com)

## Features

- Premium cool comfort from the latest ceramic technology that delivers extreme infrared heat rejection, up to 87% (SIRR)
- Certified maximum UV protection 50+, blocks >99% of harmful UV rays
- Maximum glare reduction, up to 93%, with minimal reflective effect
- Scratch-resistant hardcoat for scratch-free installation and maintenance
- High performance PSA (Pressure Sensitive Adhesive) with great initial tack, fast dry and clean removal
- High optical clarity and deep graphite colour tone upgrades vehicle aesthetics for a stunning look
- Available in a broad range of light transmission levels to suit your preference
- Zero interference of electronic equipment (metal free)

## Conversion

Product is designed for automotive window tinting purposes and is easy to size by manual cutting during application. Material should be applied using the wet application method.

## Recommendations

Commonly applied on the internal side of glass substrate of:

- Personal Vehicles
- Commercial and Fleet Vehicles

Before applying the product, the user shall determine the suitability of the product for its intended use. The user shall ensure that the application and the intended use of the product is in accordance with any and all applicable laws and regulations concerning the use of automotive window film, and user assumes all risk and liability in connection therewith.

## Optical & Solar Properties

	NR Nano Ceramic IR 05	NR Nano Ceramic IR 15	NR Nano Ceramic IR 20	NR Nano Ceramic IR 30	NR Nano Ceramic IR 35	NR Nano Ceramic IR 40	NR Nano Ceramic IR 50
Visible Light Transmitted (VLT)	6%	17%	20%	30%	35%	40%	48%
Visible Light Reflected	7%	7%	7%	7%	7%	7%	8%
Ultraviolet Block	>99%	>99%	>99%	>99%	>99%	>99%	>99%
Total Solar Energy Reflected (TSER)	6%	6%	5%	7%	6%	7%	7%
Total Solar Energy Transmitted	10%	16%	17%	22%	25%	27%	31%
Total Solar Energy Absorbed	84%	78%	77%	71%	69%	66%	62%
IR Energy Rejection (IRER)	62%	60%	60%	59%	58%	57%	57%
Selective IR Rejection (SIRR)	87%	85%	85%	83%	82%	81%	81%
Glare Reduction	93%	82%	78%	66%	60%	54%	45%
Shading Coefficient	0.42	0.46	0.47	0.51	0.53	0.55	0.58
Total Solar Energy Rejected (TSER)	64%	60%	59%	56%	54%	52%	50%

Performance results are calculated on 6mm clear glass using NFRC methodology and LBNL Window 5.2 software, and are subject to variations in process conditions within industry.

## Definitions

### Visible Light Transmitted (VLT)

The percentage of total visible light (380-780 nanometers) to be passed through a glazing system. Test method - ASTM E 903-96.

### Visible Light Reflected (VLR)

The percentage of total visible light to be reflected by a glazing system. Test method - ASTM E 903-96.

### Total Solar Energy Reflected

The percentage of total solar energy (300-2500 nanometers) to be reflected by a glazing system. Test method - ASTM E 903-96.

### Total Solar Energy Transmitted

The percentage of total solar energy (300-2500 nanometers) to be passed through a glazing system.

### Total Solar Energy Absorbed

The percentage of total solar energy (300-2500 nanometers) to be absorbed by a glazing system. Solar absorption is that portion of total solar energy neither transmitted nor reflected. Since solar transmittance and reflectance are measured directly, the following equation is used for calculating solar absorption. Test method - ASTM E 903. Total solar energy absorbed = 100% - (Total solar energy reflected) - (Total solar energy transmitted).

### Selective IR Rejection (SIRR)

The percentage of IR radiation that does not directly transmit through a glazing system. Calculated as %SIRR = 100% - % Transmission (@780nm-2500nm).

### IR Energy Rejection (IRER)

The percentage of energy rejected of Near Infrared as measured between 780-2500nm. This is the equivalent of the SHGC measuring only the NIR range, and is more accurate than the SIRR as it takes in consideration both reflected and absorbed energy reradiating. Calculated as the TSER over 780-2500nm: %IRER = 100% - 100\*SHGC (@780-2500nm)

### Ultraviolet Block

The percentage of Ultraviolet radiation (300-380 nanometers) to be blocked by a glazing system. Ultraviolet is one portion of the total solar energy spectrum which greatly contributes to fading and deterioration of fabric and furnishings.

### Shading Coefficient (SC)

The ratio of the solar heat gain through a given glazing system to the solar heat gain under the same conditions for clear, unshaded double strength window glass (DSA). Shading coefficient defines the sun control capability or efficiency of the glazing system.

### Glare Reduction

Glare usually defined as being the difficulty of seeing in the presence of bright light such as direct or reflected sunlight or artificial light such as car headlamps at night. Window film can provide glare reduction of up to 95%.

### Total Solar Energy Rejected (TSER)

Measures the window film's ability to reject solar energy in the form of visible light, infrared radiation and ultraviolet light. The higher the TSER number, the more solar energy is rejected away from the window.

## Important

Information on physical and chemical characteristics and values in this document are based upon tests we believe to be reliable and do not constitute a warranty. They are intended only as a source of information and are given without guarantee and do not constitute a warranty. Purchasers should independently determine, prior to use, the suitability of this material to their specific use.

All technical data are subject to change. In case of any ambiguities or differences between the English and foreign versions of this document, the English version shall be prevailing and leading.

