# ESPECIFICAÇÕES PELÍCULAS PARA ARQUITETURA

para vidros duplos **3mm**

| FILM TYPE<br>TYPE DE FILM<br>FOLIENTYP<br>TIPO DE LÁMINA<br>TIPO DI PELLICOLA<br>FOLIETYPE | VISIBLE LIGHT TRANSMISSION<br>LIGHT TRANSMISSION<br>TRANSMISSION DE LUMIÈRE VISIBLE<br>TRANSMITTANCIA DE LA LUZ VISIBLE<br>TRASMISSIONE DELLA LUCE VISIBILE<br>LICHTDOORLAATBAARHEID | SOLAR ENERGY REJECTION<br>ENERGIE SOLAIRE REJETÉE<br>SONNENENERGIEABWEISUNG<br>REDUCCIÓN TOTAL DE ENERGÍA SOLAR<br>ENERGIA SOLARE RIFIUTATA<br>TEGENSCHOOIDERZONNE-ENERGIE | VISIBLE LIGHT REFLECTANCE (EXT/INT)<br>REFLEXION DE LA LUMIÈRE VISIBLE (Extérieur/Intérieur)<br>LICHTREFLEXION (Außenreflexion/Innenreflexion)<br>REFLEXIÓN DE LA LUZ VISIBLE (Exterior/Interior)<br>RIFLESSIONE DELLA LUCE VISIBILE (Esterna/Interna)<br>REFLECTIE VAN ZICHTBAAR LICHT (Exterieur/Interieur) | SHADING COEFFICIENT<br>COEFFICIENT D'OMBRAGE<br>SCHATTIERUNGSKOEFFIZIENT<br>COEFICIENTE DE SOMBREADO<br>COEFFICIENTE DI SCHERMATURA<br>SCHADUWFACTOR | SOLAR HEAT GAIN COEFFICIENT<br>COEFFICIENT DE GAIN D'ÉNERGIE SOLAIRE<br>SOLARWÄRMEGEWINNKOEFFIZIENT<br>COEFICIENTE DE GANANCIA DE CALOR SOLAR<br>COEFFICIENTE DI GUADAGNO SOLARE<br>ZONTOETREDINGSFACTOR | U-FACTOR NFRC<br>FACTEUR U NFRC<br>U-FAKTOR NFRC<br>FACTOR U NFRC<br>FATTORE U NFRC<br>U-FACTOR NFRC | SOLAR ABSORPTION<br>ABSORPTION SOLAIRE<br>SOLARABSORPTION<br>ABSORCIÓN SOLAR<br>ENERGIA SOLARE ASSORBITA<br>GEABSORBEERDE ZONNE-ENERGIE | GLARE REDUCTION<br>RÉDUCTION DE L'ÉBLOUISSEMENT<br>BLENDSCHUTZ<br>REDUCCIÓN DE LA LUZ ENCEGUECEDORA<br>RIDUZIONE DELL'ABBAGLIO<br>VERBLINDINGS REDUCTIE | FADING REDUCTION<br>RÉDUCTION DE LA DÉCOLORATION<br>FADING-REDUZIERUNG<br>REDUCCIÓN DE DESCOLORAMIENTO<br>RIDUZIONE DI PERDITA<br>VERKLEURINGSREDUCTIE | IRER / SIRR REJECTION<br>REJET L'ENERGIE INFRAROUGE / IR SÉLECTIF<br>INFRAROT-ENERGIEABWEISUNG / IR-SELEKTIV<br>RECHAZO DE ENERGÍA INFRARROJA / SELECTIVO DE IR<br>RIFIUTO DI ENERGIA INFRAROSSA / SELETTIVO DEL RAGGIO IR<br>AFWIJZING INFRAROOD ENERGIE / SELECTIEVE IR | HEAT LOAD REDUCTION RATING<br>INDICE DE RÉDUCTION DE LA CHARGE THERMIQUE<br>WÄRMEBELASTUNGSREDUZIERUNG<br>CLASIFICACIÓN DE REDUCCIÓN DE CARGA DE CALOR<br>GRADO DI RIDUZIONE DEL CARICO TERMICO<br>VERMINDERING VAN DE WARMTE RATING |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **VIDROS DUPLOS 3mm** | 81% | 24% | 15% | 15% | 0.88 | 0.76 | 0.54 | 17% | 0% | 0% | 28% | 37% | not rated |

## Sunlight®

SPECTRALLY-SELECTIVE CLEAR SOLAR PROTECTION

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SUN 70** | 64% | 47% | 24% | 21% | 0.62 | 0.54 | 0.53 | 37% | 21% | 60% | 59% | 83% | not rated |

## Palisade®

PREMIUM NANO-CERAMIC SOLAR PROTECTION

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PD 50** | 44% | 61% | 16% | 10% | 0.68 | 0.59 | 0.54 | 57% | 46% | 69% | 46% | 81% | not rated |
| **PD 45** | 41% | 46% | 21% | 14% | 0.63 | 0.55 | 0.53 | 56% | 49% | 66% | 52% | 85% | not rated |
| **PD 40** | 38% | 47% | 21% | 15% | 0.61 | 0.53 | 0.55 | 54% | 53% | 67% | 52% | 83% | not rated |
| **PD 75 EXT** | 69% | 52% | 14% | 15% | 0.55 | 0.48 | 0.54 | 53% | 15% | 60% | 70% | 85% | ★★★☆☆ |

SUGESTÃO

## NightScape®

DUAL REFLECTIVE, NON-SPUTTERED FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **NS 35** | 32% | 45% | 22% | 12% | 0.63 | 0.55 | 0.53 | 51% | 60% | 68% | 48% | 72% | not rated |
| **NS 25** | 24% | 58% | 38% | 17% | 0.49 | 0.42 | 0.51 | 48% | 70% | 73% | 60% | 82% | ★★★☆☆ |
| **NS 15** | 13% | 63% | 44% | 11% | 0.43 | 0.37 | 0.51 | 50% | 84% | 77% | 64% | 85% | ★★★★☆ |
| **NS 07** | 8% | 63% | 41% | 8% | 0.43 | 0.37 | 0.51 | 54% | 90% | 78% | 63% | 85% | ★★★★☆ |
| **NS 05** | 5% | 56% | 18% | 12% | 0.51 | 0.44 | 0.52 | 65% | 94% | 77% | 61% | 84% | ★★★☆☆ |

## ScenicView®

DUAL REFLECTIVE, NON-FADING FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SV 50** | 45% | 41% | 21% | 14% | 0.68 | 0.59 | 0.55 | 47% | 44% | 64% | 45% | 71% | not rated |
| **SV 35** | 33% | 51% | 30% | 18% | 0.57 | 0.49 | 0.54 | 51% | 59% | 69% | 55% | 83% | ★★★☆☆ |
| **SV 25** | 25% | 58% | 40% | 25% | 0.48 | 0.42 | 0.53 | 49% | 69% | 73% | 62% | 88% | ★★★☆☆ |
| **SV 10** | 8% | 71% | 57% | 25% | 0.34 | 0.30 | 0.53 | 50% | 90% | 80% | 71% | 96% | ★★★★★ |
| **SV 50 EXT*** | 41% | 60% | 20% | 18% | 0.46 | 0.40 | 0.54 | 49% | 49% | 69% | 66% | 77% | ★★★★☆ |
| **SV 25 EXT*** | 26% | 73% | 36% | 26% | 0.31 | 0.27 | 0.54 | 43% | 68% | 76% | 78% | 87% | ★★★★★ |
| **SV 10 EXT*** | 8% | 88% | 56% | 27% | 0.14 | 0.13 | 0.54 | 37% | 90% | 85% | 90% | 96% | ★★★★★ |

SUGESTÃO

## DaylightNatural®

NEUTRAL, NON-FADING SPUTTERED FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DN 60** | 56% | 33% | 17% | 12% | 0.77 | 0.67 | 0.56 | 38% | 31% | 59% | 35% | 55% | not rated |
| **DN 50** | 44% | 38% | 20% | 13% | 0.71 | 0.62 | 0.55 | 46% | 46% | 63% | 40% | 64% | not rated |
| **DN 35** | 34% | 41% | 23% | 18% | 0.67 | 0.59 | 0.55 | 50% | 58% | 66% | 41% | 67% | not rated |
| **DN 20** | 20% | 50% | 30% | 26% | 0.57 | 0.50 | 0.55 | 58% | 75% | 72% | 51% | 82% | ★★★☆☆ |
| **DN 15** | 16% | 49% | 24% | 17% | 0.58 | 0.51 | 0.55 | 67% | 80% | 73% | 50% | 87% | not rated |
| **DN 35 EXT*** | 34% | 58% | 18% | 23% | 0.49 | 0.42 | 0.54 | 52% | 58% | 71% | 56% | 67% | ★★★☆☆ |
| **DN 20 EXT*** | 20% | 71% | 26% | 30% | 0.33 | 0.29 | 0.54 | 57% | 75% | 77% | 71% | 82% | ★★★★★ |

SUGESTÃO

## Sunset Bronze®

COPPER, NON-FADING SPUTTERED FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SB 30** | 30% | 57% | 30% | 25% | 0.49 | 0.43 | 0.52 | 49% | 63% | 71% | 64% | 87% | ★★★☆☆ |
| **SB 20** | 18% | 66% | 38% | 34% | 0.40 | 0.34 | 0.51 | 50% | 78% | 77% | 72% | 94% | ★★★★☆ |

## Solar Silver®

SILVER, NON-FADING METALLIZED FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SS 35** | 32% | 58% | 42% | 40% | 0.48 | 0.42 | 0.51 | 43% | 60% | 71% | 62% | 85% | ★★★☆☆ |
| **SS 20** | 17% | 69% | 56% | 57% | 0.36 | 0.31 | 0.51 | 44% | 79% | 78% | 69% | 88% | ★★★★☆ |
| **SS 35 EXT*** | 33% | 71% | 41% | 39% | 0.34 | 0.29 | 0.54 | 34% | 59% | 74% | 77% | 85% | ★★★★★ |
| **SS 20 EXT*** | 19% | 81% | 52% | 49% | 0.22 | 0.19 | 0.54 | 33% | 77% | 80% | 85% | 91% | ★★★★★ |

SUGESTÃO

## Architectural

COLOR METALLIZED SOLAR CONTROL FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MBL 35** | 31% | 44% | 18% | 19% | 0.64 | 0.56 | 0.54 | 53% | 62% | 68% | 48% | 72% | not rated |
| **MBL 20** | 18% | 58% | 25% | 42% | 0.49 | 0.43 | 0.51 | 56% | 78% | 75% | 64% | 86% | ★★★☆☆ |
| **MGN 35** | 31% | 43% | 16% | 16% | 0.66 | 0.57 | 0.54 | 55% | 62% | 68% | 45% | 69% | not rated |
| **MGN 20** | 17% | 57% | 23% | 42% | 0.50 | 0.44 | 0.51 | 59% | 79% | 75% | 63% | 86% | ★★★☆☆ |
| **MGN 35** | 30% | 58% | 37% | 40% | 0.49 | 0.43 | 0.51 | 46% | 63% | 72% | 62% | 85% | ★★★☆☆ |
| **MGD 20** | 16% | 67% | 50% | 58% | 0.37 | 0.33 | 0.51 | 48% | 80% | 77% | 70% | 92% | ★★★★☆ |

*Designed for exterior (EXT) use • Conçus pour la pose en extérieur (EXT) • Entwickelt für die Außenanwendung (EXT) • Diseñado para uso exterior (EXT) • Progettate per l'installazione esterna (EXT) • Ontworpen voor buiten (EXT) gebruik

## Specialty Series

DECORATIVE SPECIAL APPLICATION FILMS

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **UV CLR** | 81% | 25% | 16% | 16% | 0.86 | 0.75 | 0.55 | 20% | 0% | 51% | 29% | 38% | not rated |
| **WHTFST** | 63% | 34% | 24% | 23% | 0.76 | 0.66 | 0.55 | 27% | 22% | 57% | 35% | 49% | not rated |
| **WHTOUT** | DUE TO LIGHT SCATTERING – NFRC MEASUREMENTS ARE NOT MEANINGFUL | | | | | | | | | | | | |
| **BLKOUT** | 0% | 49% | 13% | 5% | 0.58 | 0.51 | 0.55 | 89% | 100% | 77% | 51% | 99% | not rated |

RECOMMENDED SKIN CANCER FOUNDATION

The Skin Cancer Foundation recommends Johnson Window Films products as effective UV protectants.

All Johnson Window Films are protected by CST™ scratch resistant hardcoat.

**Solar specifications represent film mounted to 3mm (1/8") dual pane clear glass.**

Tests, equipment and methods according to ASTM, ANSI and NFRC standards. Calculations performed using Lawrence Berkeley Lab's Optics/Window 6. Values expressed hereof are typical and provided for comparative purposes only.

Only the user is aware of the conditions in which the product will be used.
It is the user's responsibility to determine if the product is suitable for use.

Johnson® Window Films
Manufactured by Johnson Laminating & Coating, Inc.
An ISO 9001:2015 Certified Company
www.johnsonwindowfilms.com

# TERMS & DEFINITIONS

FLAT GLASS FILM SPECIFICATIONS

## VISIBLE LIGHT TRANSMISSION
Visible Light Transmission is the percentage of solar visible light (daylight) that passes through a glazing system.

## SOLAR ENERGY REJECTED
Solar Energy Rejected is the percentage of total solar energy (heat) that is rejected away from a glazing system. This equals solar heat reflectance plus the amount of solar heat absorbed that is then re-radiated outwards.

## EXTERIOR REFLECTANCE
Exterior Reflectance is the percentage of reflectivity (mirror effect) that occurs on the outside of a glazing system. The higher the value, the more reflective the exterior, providing a more mirror-like appearance.

## INTERIOR REFLECTANCE
Interior Reflectance is the percentage of reflectivity (mirror effect) that occurs on the inside of a glazing system. The higher the value, the more reflective the interior, providing a more mirror-like appearance.

## SHADING COEFFICIENT
Shading Coefficient is the ratio of solar heat gain passing through a glazing system to the solar heat gain that occurs under the same conditions if the window were made of clear, un-shaded double strength window glass (lower SC equals better solar shading performance).

## SOLAR HEAT GAIN COEFFICIENT
Solar Heat Gain Coefficient is the percentage of total solar heat that enters a glazing system. This includes heat directly transmitted as well as heat that is absorbed by the glass and then transmitted inwards (lower SHGC means less heat transfer from the exterior to the interior).

## U-FACTOR NFRC
U-Factor (or U-Value) is a measurement of solar heat transfer due to outdoor/indoor temperature differences. This represents the amount of heat passing through one square foot of glass in one hour for each 1 degree Fahrenheit temperature difference between the indoor and outdoor. The lower the U-Factor the less solar heat passes through a window of interest for keeping heat inside a building in colder climates.

## SOLAR ABSORPTION
Solar Absorption is the percentage of total solar heat that is neither transmitted through nor rejected away from a glazing system (i.e. the percentage of total solar heat absorbed by the glazing system).

## GLARE REDUCTION
The ratio of the difference in visible transmission of the glass before and after installing film to the visible transmission of the glass with no film. Expressed as a percentage and is determined by the respective visible transmission values of the glass with and without film.

## FADING REDUCTION
Combined fading percentages are determined by applying rejection percentages on each cause of fading to determine the overall reduction in fade that a specific product can return.
Using the IWFA fading explanation found at www.iwfa.com

## INFRARED ENERGY REJECTION (IRER)
The measurement of heat experienced from solar infrared radiation (780 - 2,500 nm), which includes both re-radiated and absorbed energy.

## SELECTIVE IR REJECTION (SIRR)
Solar infrared radiation (780 - 2,500 nm) not directly transmitted through the glass.

## HEAT LOAD REDUCTION RATING
Heat load reduction rating is based on the Solar Heat Gain Coefficient to determine which products offer the most in energy savings.