



**ENHANCING SECURITY : MITIGATING THREAT**

## **Solar & Privacy Control Architectural Window Film**

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**WWW.ABBEYPROTECT.COM**

## Performance Data



Technical data according To EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	12%	11%
Solar Energy Reflection, $\rho_e$	56%	53%
Solar Energy Absorbtion, $\alpha_e$	32%	36%
Visible Light Transmission, $\tau_v$	15%	14%
Visible Light Reflection (External), $\rho_{ve}$	62%	
Visible Light Reflection (Internal), $\rho_{vi}$	62%	63%
Ultraviolet Transmission, $\tau_{uv}$	<1%	
Ultraviolet Rejection	>99 %	
g value	0.18	0.29
Shading Coefficient	0.21	0.33
Total Solar Energy Rejected	82%	71%
Glare Reduction	83%	
U value, single glazing (W/m <sup>2</sup> .K)	5.3	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.6
Emissivity, $\epsilon_n$	0.67	
Colour Rendering Index, $R_a$	84	
Film Colour / Appearance	Silver	
Installation position	Internal	
Warranty**: 7 Years		

Installation Notes: Use Film On for installation.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

\*The properties reported for LLumar architectural window films were calculated using EN410 methodology for film applied to single pane (4mm clear glass) and dual pane glazing (4mm clear glass panes, 16mm air space). Reported values were calculated from representative product samples. Actual performance may vary based on a number of factors, including glass properties, and standard manufacturing variances. Solar spectrum used: UV 300-380nm, Visible Light 380-780nm, IR 780-2500nm.

\*\*Warranty validity: UK only

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Solar Control & Energy Savings

# Reflective Dark Silver

R 20 SR HPR

## Features And Benefits



- Solar control and privacy film, reflective appearance
- Provides our highest level of daytime privacy with optical transparency
- Used where both high levels of heat and glare reduction are essential with optimal cost-effectiveness
- Rejects up to 82% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Reduction of hot spots helps increase HVAC efficiency and lower energy costs
- Durable scratch-resistant coating for easy cleaning
- Shields >99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings
- Reduces glare, which is a contributor to eye fatigue
- Interior installation

# Reflective Light Silver

R 50 SR HPR

## Performance Data



Technical data according To EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	39%	34%
Solar Energy Reflection, $\rho_e$	27%	
Solar Energy Absorbtion, $\alpha_e$	34%	39%
Visible Light Transmission, $\tau_v$	49%	45%
Visible Light Reflection (External), $\rho_{ve}$	24%	29%
Visible Light Reflection (Internal), $\rho_{vi}$	26%	
Ultraviolet Transmission, $\tau_{uv}$	<1%	
Ultraviolet Rejection	>99 %	
g value	0.47	0.54
Shading Coefficient	0.54	0.62
Total Solar Energy Rejected	53%	46%
Glare Reduction	45%	
U value, single glazing (W/m <sup>2</sup> .K)	5.53	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.67
Emissivity, $\epsilon_n$	0.76	
Colour Rendering Index, $R_a$	92	
Film Colour / Appearance	Silver	
Installation position	Internal	
Warranty**: 7 Years		

Installation Notes: Use Film On for installation.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

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Solar Control & Energy Savings

# Reflective Light Silver

R 50 SR HPR

## Features And Benefits



- Solar control and privacy film, reflective appearance
- Used where both high levels of heat and glare reduction are essential with optimal cost-effectiveness
- Rejects up to 53% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Reduction of hot spots helps increase HVAC efficiency and lower energy costs
- Durable scratch-resistant coating for easy cleaning
- Shields >99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings
- Interior installation

## Performance Data



Technical data according To EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	7%	6%
Solar Energy Reflection, $\rho_e$	56%	52%
Solar Energy Absorbtion, $\alpha_e$	37%	42%
Visible Light Transmission, $\tau_v$	6%	5%
Visible Light Reflection (External), $\rho_{ve}$	60%	
Visible Light Reflection (Internal), $\rho_{vi}$	13%	
Ultraviolet Transmission, $\tau_{uv}$	<1%	
Ultraviolet Rejection	>99 %	
g value	0.15	0.28
Shading Coefficient	0.17	0.32
Total Solar Energy Rejected	85%	72%
Glare Reduction	94%	
U value, single glazing (W/m <sup>2</sup> .K)	5.06	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.54
Emissivity, $\epsilon_n$	0.59	
Colour Rendering Index, $R_a$	75	
Film Colour / Appearance	Silver/Grey	
Installation position	Internal	
Warranty**: 5 Years		

Installation Notes: RN07GR is specially designed as a "one way mirror" film. It must be installed so that the reflective surface faces the area to be observed. Use Film On for installation.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

\*The properties reported for LLumar architectural window films were calculated using EN410 methodology for film applied to single pane (4mm clear glass) and dual pane glazing (4mm clear glass panes, 16mm air space). Reported values were calculated from representative product samples. Actual performance may vary based on a number of factors, including glass properties, and standard manufacturing variances. Solar spectrum used: UV 300-380nm, Visible Light 380-780nm, IR 780-2500nm.

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Solar Control & Energy Savings

# Reflective Dark Grey

RN 07 GR SR HPR

## Features And Benefits



- “One Way Mirror” – Daylight privacy
- Used where excellent heat and glare reduction are required, and a lower interior surface reflectance is desired at night (compared to the reflective range)
- Provides our highest level of daytime privacy with optical transparency
- Rejects up to 85% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Reduction of hot spots helps increase HVAC efficiency and lower energy costs
- Durable scratch-resistant coating for easy cleaning
- Reduces glare, which is a contributor to eye fatigue
- Interior installation

## Dual Reflective Medium Neutral

V 28 SR CDF

## Performance Data



Technical data according To EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	23%	21%
Solar Energy Reflection, $\rho_e$	32%	
Solar Energy Absorbtion, $\alpha_e$	45%	47%
Visible Light Transmission, $\tau_v$	29%	27%
Visible Light Reflection (External), $\rho_{ve}$	32%	35%
Visible Light Reflection (Internal), $\rho_{vi}$	20%	21%
Ultraviolet Transmission, $\tau_{uv}$	<1%	
Ultraviolet Rejection	>99 %	
g value	0.34	0.47
Shading Coefficient	0.39	0.54
Total Solar Energy Rejected	66%	53%
Glare Reduction	67%	
U value, single glazing (W/m <sup>2</sup> .K)	5.56	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.66
Emissivity, $\epsilon_n$	0.77	
Colour Rendering Index, $R_a$	91	90
Film Colour / Appearance	Neutral Reflective	
Installation position	Internal	
Warranty**: 10 Years		

Installation Notes: X-100 may be used for installation. Use Film On for installation.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

\*The properties reported for LLumar architectural window films were calculated using EN410 methodology for film applied to single pane (4mm clear glass) and dual pane glazing (4mm clear glass panes, 16mm air space). Reported values were calculated from representative product samples. Actual performance may vary based on a number of factors, including glass properties, and standard manufacturing variances. Solar spectrum used: UV 300-380nm, Visible Light 380-780nm, IR 780-2500nm.

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# Dual Reflective Medium Neutral

V 28 SR CDF

## Features And Benefits



- Solar control and privacy film, dual reflective neutral interior appearance
- Blue-grey hue with low interior and high exterior reflectivity
- Used where excellent heat and glare reduction are required, and a lower interior surface reflectance is desired at night (compared to the reflective range)
- Offers good daytime privacy with optical transparency
- Optically-clear sputtered film with advanced colour stable technology
- Rejects up to 66% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Durable scratch-resistant coating for easy cleaning
- Shields >99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings\*\*
- Reduces glare, which is a contributor to eye fatigue
- Interior installation

## Sputtered Medium Bronze

N 1035 B SR CDF

## Performance Data



Technical data according To EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	26%	24%
Solar Energy Reflection, $\rho_e$	36%	35%
Solar Energy Absorbtion, $\alpha_e$	38%	41%
Visible Light Transmission, $\tau_v$	37%	34%
Visible Light Reflection (External), $\rho_{ve}$	25%	29%
Visible Light Reflection (Internal), $\rho_{vi}$	22%	24%
Ultraviolet Transmission, $\tau_{uv}$	<1%	
Ultraviolet Rejection	>99 %	
g value	0.34	0.45
Shading Coefficient	0.39	0.52
Total Solar Energy Rejected	66%	55%
Glare Reduction	59%	
U value, single glazing (W/m <sup>2</sup> .K)	5.31	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.6
Emissivity, $\epsilon_n$	0.68	
Colour Rendering Index, $R_a$	93	94
Film Colour / Appearance	Neutral Bronze	
Installation position	Internal	
Warranty**: 7 Years		

Installation Notes: X-100 must not be used to install this film. Use Film On for installation.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

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# Sputtered Medium Bronze

N 1035 B SR CDF

## Features And Benefits



- Solar control and privacy film, bronze appearance
- Used where substantial glare and heat reduction are essential, with a warm bronze colour in transmission and reflection to match aesthetic design requirements
- Rejects up to 66% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Reduction of hot spots helps increase HVAC efficiency and lower energy costs
- Durable scratch-resistant coating for easy cleaning
- Shields >99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings
- Reduces glare, which is a contributor to eye fatigue
- Interior installation

## Sputtered Medium Neutral

N 1040 SR CDF

## Performance Data



Technical data according To EN 410 and EN 673*	4 mm single	4/16/4 mm double
Solar Energy Transmission, $\tau_e$	35%	31%
Solar Energy Reflection, $\rho_e$	16%	20%
Solar Energy Absorbtion, $\alpha_e$	49%	
Visible Light Transmission, $\tau_v$	39%	36%
Visible Light Reflection (External), $\rho_{ve}$	18%	23%
Visible Light Reflection (Internal), $\rho_{vi}$	15%	16%
Ultraviolet Transmission, $\tau_{uv}$	<1%	
Ultraviolet Rejection	99%	>99%
g value	0.47	0.59
Shading Coefficient	0.54	0.68
Total Solar Energy Rejected	53%	41%
Glare Reduction	57%	56%
U value, single glazing (W/m <sup>2</sup> .K)	6	
U value, double glazing, Air filled (W/m <sup>2</sup> .K)		2.73
Emissivity, $\epsilon_n$	0.88	
Colour Rendering Index, $R_a$	99	98
Film Colour / Appearance	Neutral	
Installation position	Internal	
Warranty**: 10 Years		

Installation Notes: X-100 may be used for installation. Use Film On for installation.

Please check the complete Film to Glass Thermal Stress Compatibility Guidelines before film installation; Contact Eastman Performance Films for full details.

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# Sputtered Medium Neutral

N 1040 SR CDF

## Features And Benefits



- Solar control and privacy film, neutral appearance
- Used where moderate glare and heat reduction are essential, combined with neutral daylight colour balance
- Improves building aesthetics
- Rejects up to 53% of solar energy, helping reduce heat build-up, and energy costs, increasing occupant comfort.
- Reduction of hot spots helps increase HVAC efficiency and lower energy costs
- Durable scratch-resistant coating for easy cleaning
- Shields >99% of UV radiation, helping to reduce fading of valuables, fabrics and furnishings
- Reduces glare, which is a contributor to eye fatigue
- Interior installation

# NRM PS2

## Technical data according to EN 410 and EN 673

### 4 mm single

### 4 / 16 / 4 mm double

Corrected emissivity of uncoated glass surface

**0.837**

Solar Energy Transmission,  $\tau_e$

**68 %**

**57 %**

Solar Energy Reflection,  $\rho_e$

**18 %**

**20 %**

Solar Energy Absorption,  $a_e$

**14 %**

**22 %**

Visible Light Transmission,  $\tau_V$

**74 %**

**68 %**

Visible Light Reflection (External),  $\rho_{Ve}$

**22 %**

**26 %**

Visible Light Reflection (Internal),  $\rho_{Vi}$

**23 %**

**28 %**

Ultraviolet Transmission,  $\tau_{UV}$

**> 5 %**

Ultraviolet Rejection

**< 95 %**

g value

**0.71**

**0.65**

Shading Coefficient

**0.82**

**0.75**

Total Solar Energy Rejected

**29 %**

**35 %**

Glare Reduction

**15 %**

**23 %**

U value, single glazing (W/m<sup>2</sup>.K)

**5.70**

-

U value, double glazing, Air filled (W/m<sup>2</sup>.K)

-

**2.70**

Emissivity,  $\epsilon_n$

**0.88**

Thickness without liner

**56  $\mu$**

Colour Rendering Index,  $R_a$

**99**

**98**

Film Colour / Appearance

**White Matte**

Installation position

**Interior**

Warranty

**5 years\*\***

Installation Notes: Use Film On for installation.

\* Please check the complete Film to Glass Thermal Stress Compatibility Guidelines **before** film installation. \*\* Contact Solutia Performance Films for full details. All values for engineering parameters are determined by the manufacturer and independent testing laboratories.

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# NRM PS2

## Features & Benefits

- Translucent privacy frosted tint: Has a pure and clean effect / frosted glass
- Ideal for windows and glazed partitions
- White frosted tint: Privacy effect similar to frosted and acid etched glass types
- High light transmission
- Also suitable for design and décor applications
- Extremely well adapted to single, double and double low-E insulating glazing systems
- Interior installation

## Spectra

