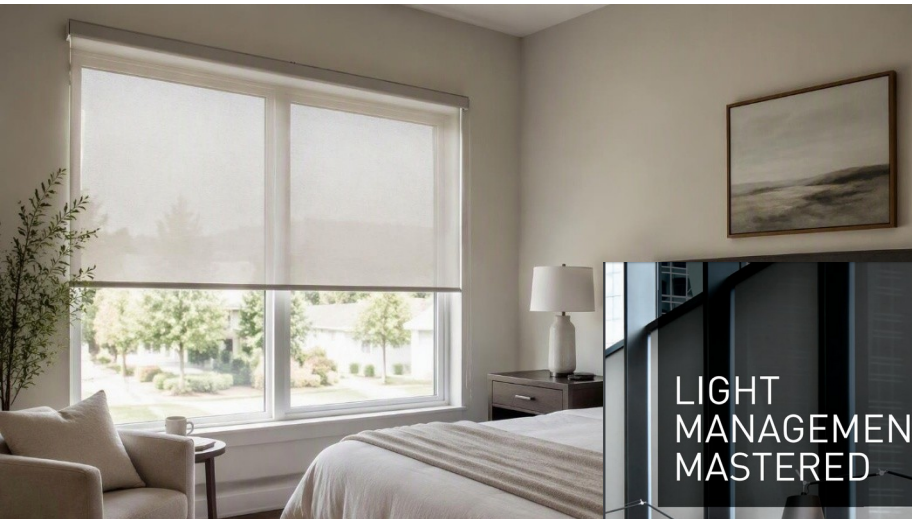




But first.....sunlight



Sunlight

The benefits of sun light are:

- Healthy for body and mind
- Makes it possible to see each other
- It offers a free light source and heating source
- Free energy

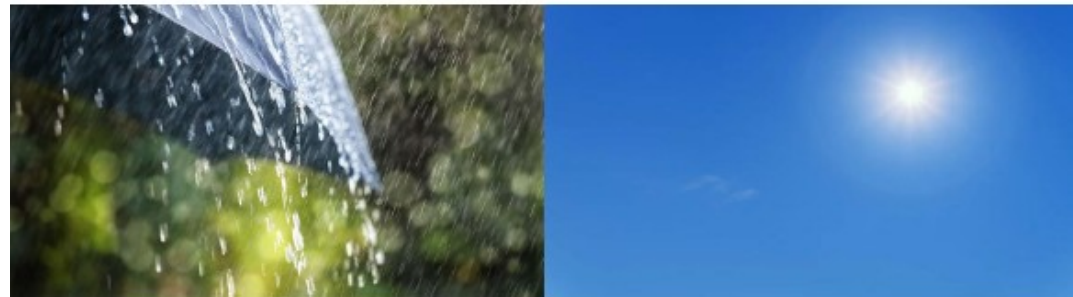
The disadvantages:

- It shines without moderation
- Too much light results in glare
- Too much heat results in thermal discomfort and huge cooling demands
- UV damage: Skin issues and fading of colors

Sunlight

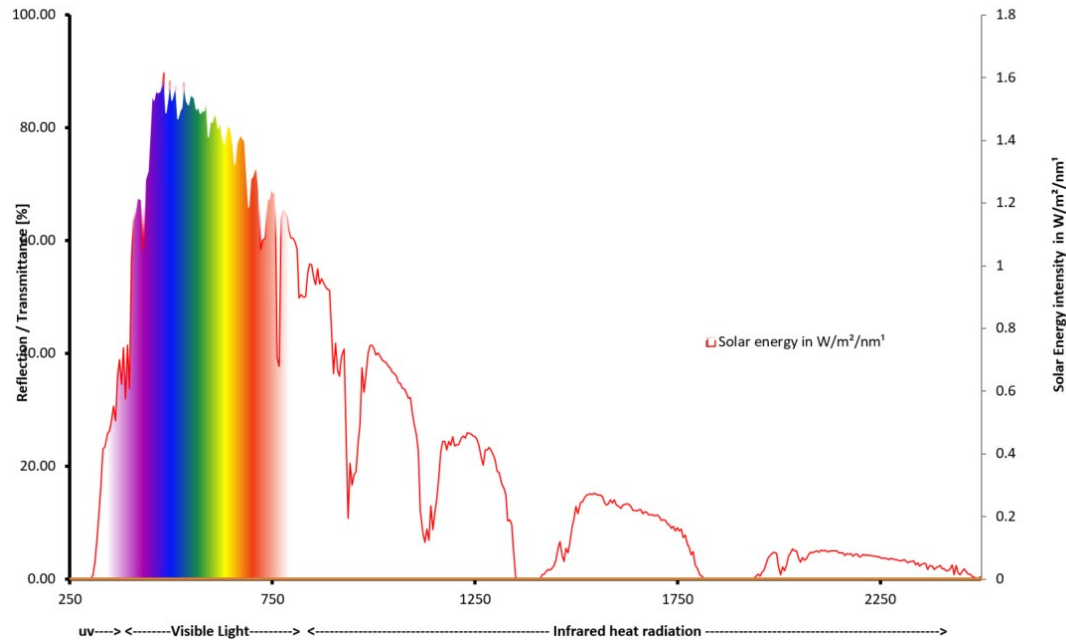
So the aim is not to eliminate the sun,
but to manage the effects of it.
Glazing does a part.

Shading can contribute a much bigger
part though in a very dynamic way



Sunlight

Energy content of Solar radiation



The total solar spectrum consists of:

Ultraviolet (uv) Short wave, damaging skin, furniture etc.

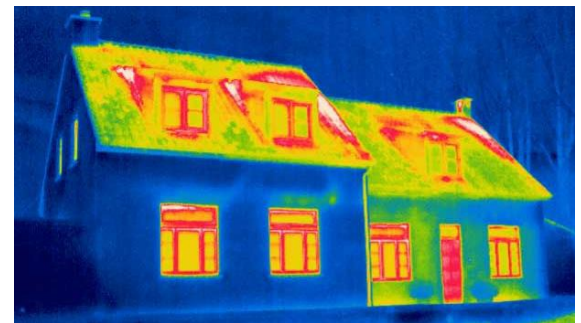
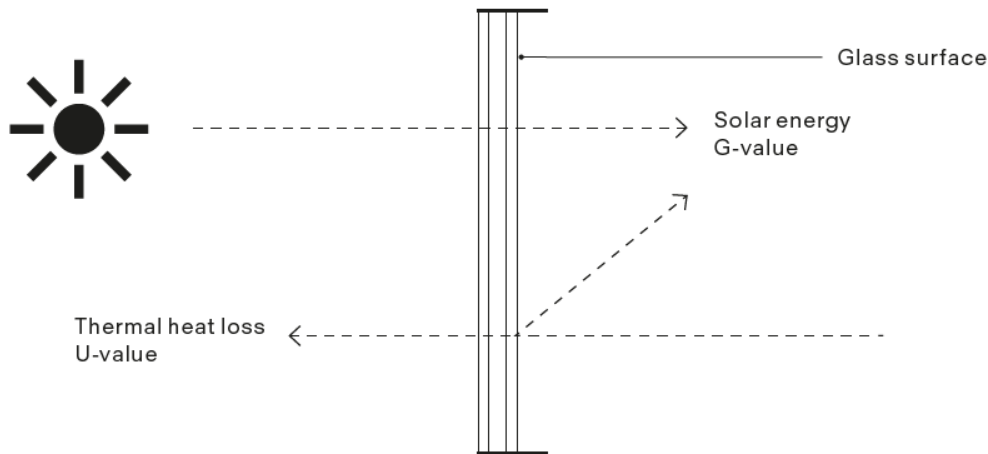
Visual Light (v) is the part we can see with the human eye. It's a balancing act between being able to see each other and have glare.

Infra Red (ir) High energy, turns easily into heat when absorbed

Solar Energy (s) The combination of uv, visual light and infrared is the solar spectrum which results in the total solar radiation.

Glass + blind

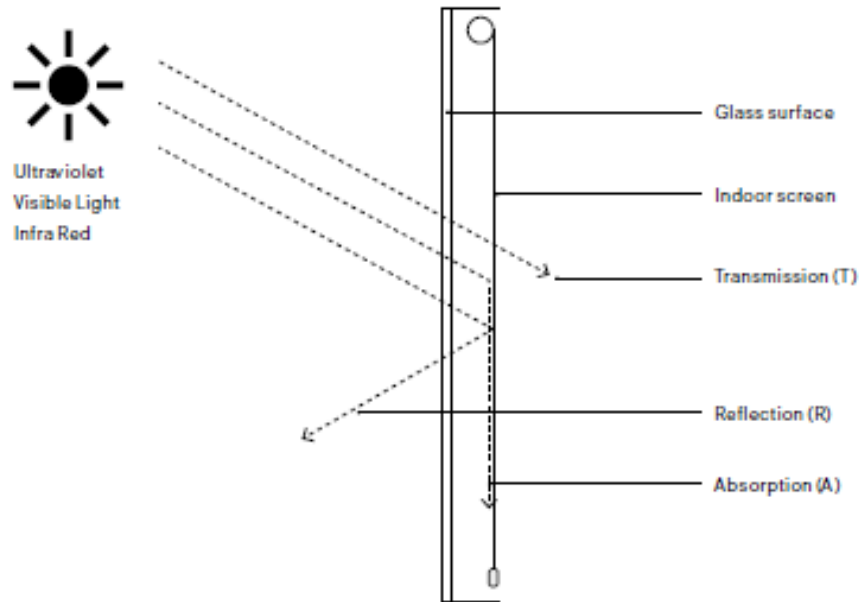
- Glass and frames are the largest energy leaks in a building
- The energy transmission value is called the **g-value**:
how much energy finally enters the room through the glass (and through the shade) by means of transmission or absorption
- The **g-tot / Solar Heat Gain Coefficient** is the % of solar energy that enters the room through the combination of the glass and shade
- Insulating performance is expressed in **U-value** ($\text{W}/\text{m}^2\text{K}$), The lower the better the insulating effect



Sunlight

Performance indicators Shading. Most important are:

- Rs= Reflection solar energy (Total)
- Ts = Transmission of solar energy (Total)
- As = The part of the solar energy that is absorbed
- $R + T + A = 100\%$



- Tv = Transmission of visible light (Part of solar energy)
- OF = Openness factor – transparency - Part of the fabric that is open (Holes)

Solar screen fabric and openness factor

A solar screen is a woven shade fabric that filters sunlight while keeping some daylight and a view outside.

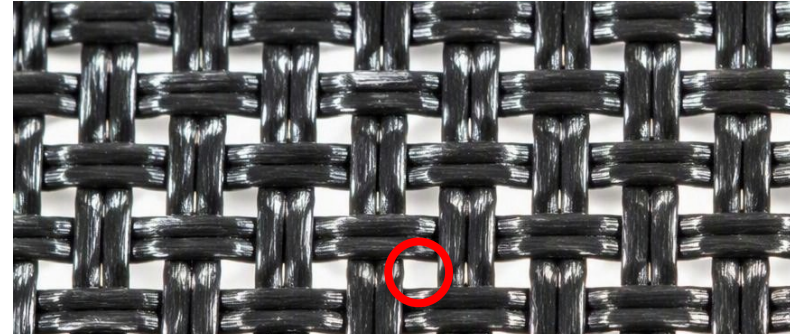
Lower openness usually means less glare and less view.

Higher openness usually means more daylight and more view.

What the fabric does

It reflects some sunlight, absorbs some and lets some pass through.

This changes room brightness, glare and solar heat gain.



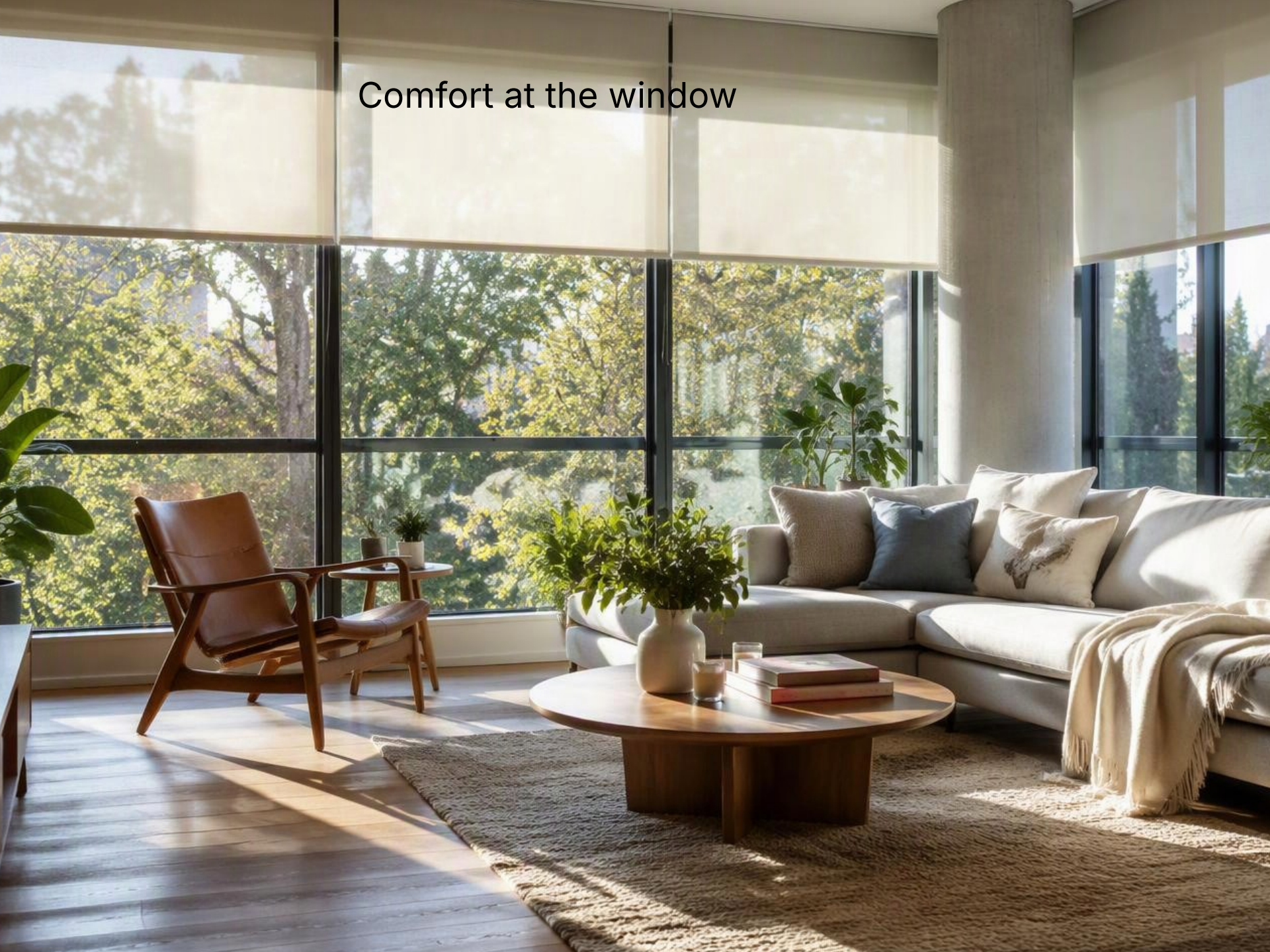
Illustrative weave close-up, not a measured 3% sample

What openness factor means

The percentage of tiny gaps in the weave.

A 3% fabric has 3% open area. Light can also pass through the yarns.

Comfort at the window



Wellbeing and comfort are heavily influenced at the window:

Thermal comfort

- Temperatures in summer
- Temperatures in winter
- The need / use of HVAC

Visual comfort

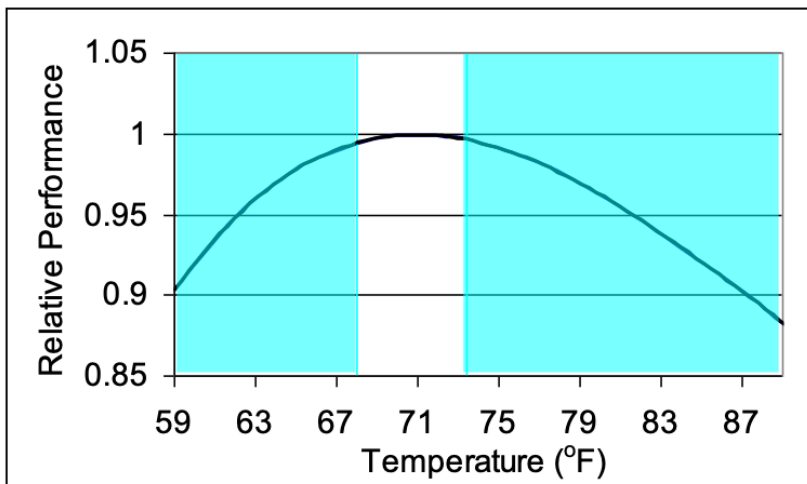
- Glare control
- The access to natural daylight
- View through

Thermal comfort

Relative performance / productivity

As windows are a large factor in heat gain and loss, window coverings have a considerable impact on thermal comfort.

- High temperatures may lead to a 15% loss in productivity and wellbeing
- Students may score 4% higher when tested in comfortable indoor temperatures
- Cooling requirements may increase by 25% when the sun hits a building



Source: Seppänen, O., W.J. Fisk, and Q.H. Lei, *Effect of temperature on task performance in office environment in 5th International Conference on Cold Climate Heating, Ventilating, and Air Conditioning* 2006: Moscow

Visual comfort

Visual comfort has many aspects, for instance:

- Control of opacity
- Privacy at night, vision to the exterior
- Glare control
- Use of natural light
- Color rendering.

Our experience of light greatly influences our productivity and wellbeing.



Visual comfort - daylight



90% Of our time is now based inside buildings

The result: fatigue, loss of productivity, sleeplessness. Eventually, the lack of exposure to daylight starts to interfere with our biological clock. The positive effects of daylight include:

- 46 minutes more sleep per night
- Employees are up to 18% more productive
- Students learn 20–26% faster

Visual comfort – glare control

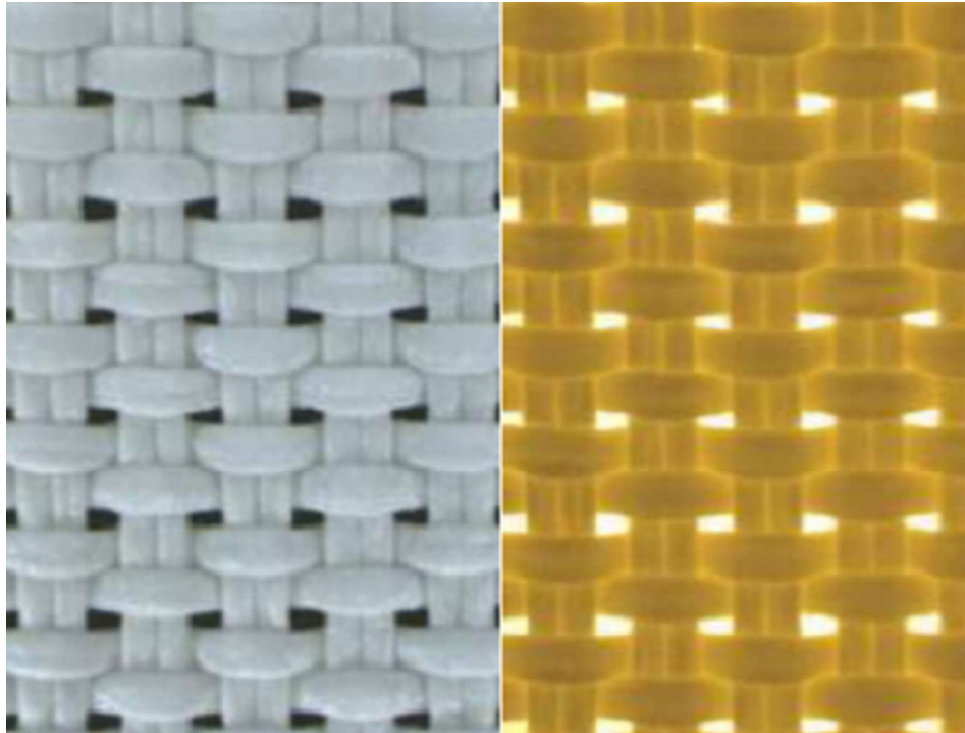
Glare causes discomfort by creating contrast between bright light from the window and low light from, for instance, the television screen. This results in eyestrain as our attempt to manage the difference.

Glare is caused by:

- Too high transparency / openness factor
- Too much diffuse light through the yarns (light colors)



How is glare affected by the diffuse light through yarns?



Light leaks / transmits through both pores and yarns

Visual comfort: view through

Views link people inside a building with the world outside. They support wellbeing and quality-of-space:

The textile's ability to deliver view-through depends on a many factors:

- Transparency / openness factor
- Diffuse light transmission
- Color of the textile
- Texture of the textile
- Internal reflection

Visual comfort

View through - Openness Factor



Visual comfort

View through - Colours



Visual comfort

View through – Texture



Visual comfort

View through – Internal reflection



kvadrat shade

Challenges with common blinds:

Traditional solutions



Traditional approaches to solve glare and heat

Light color shades



+ Good thermal comfort

- High glare issues
- Limited view through
- No visual comfort
- Diffuse light

Dark color shades



+ Good visual comfort

- Negative effect on thermal comfort
- High absorption of energy = HEAT
- Increased cooling demands

Blockout shading



+ No glare and limited heat gain

- No view out (why do we have windows?)
- No natural healthy light
- Need for artificial lighting

How can interior solar shading give the optimal balance between:

- Thermal comfort?
- Visual comfort?

The answer: Metallised textiles



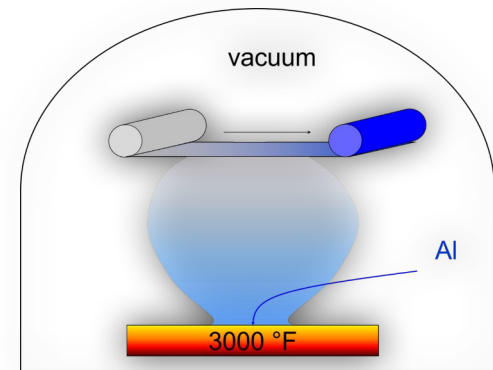
What are metalized textiles?

Aluminum is placed on the yarns of the fabric via a Vacuum Deposition Process

- Aluminum is heated up to 3000°F / 1500°C
- Pressurized chamber

Why Vacuum Deposition?

- 100% coverage of yarns on 1 side
- No clogged pores that limit visibility
- Best adhesion of aluminum to the base cloth



Why does metallization solve glare issues

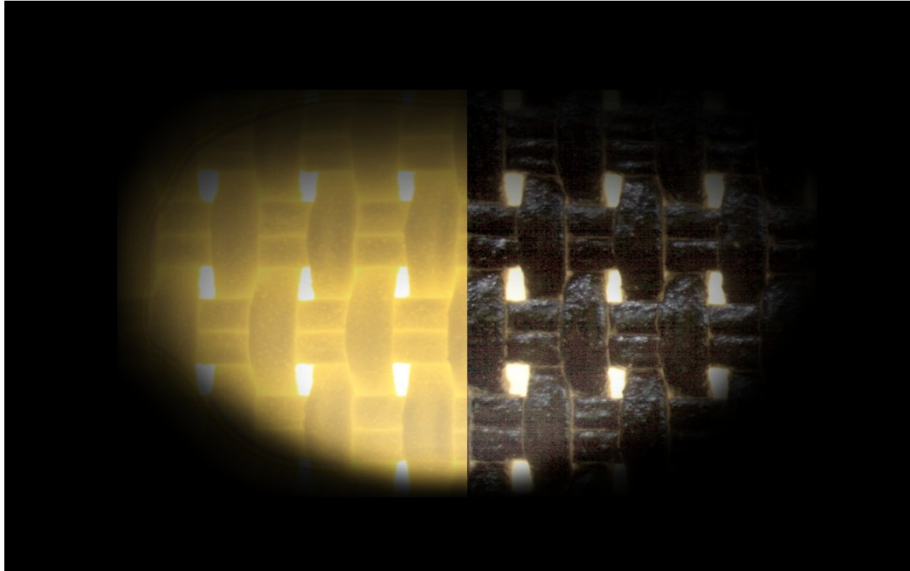


Common



Metallized

Why does metallization solve glare issues



Common

Metallized

How does a metalized textile creates a better view through?



Generic textile



Hi-performance metalized textile

The same light transmission does not mean the same view through.

Less diffuse light through the pores means the possibility to have a higher transparency

Why does metallization solve heat gain issues

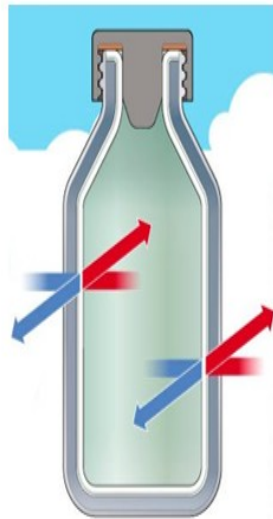


Radiant energy reflection → Up to 85% of the incoming energy can be reflected through the window to the outside

Why does metallisation solve "heat loss issues"

A metallised layer not only reflects, it also works as a low-emissivity coating, or like a thermo cup, to prevent heat loss in winter time.

When keeping the metalized shades down in winter time, the heat and cold transfer through the window will be drastically reduced and eliminating cold draughts.



Additional benefits

Provide a view through yet privacy



Exterior:
View to the outside



Interior:
Privacy to the inside

Visual comfort – view through + privacy to the inside



Visual comfort – view through + privacy to the inside



Benefits for the home

Freedom of colour inside

Create a calm, coordinated interior while keeping a consistent appearance from outside.



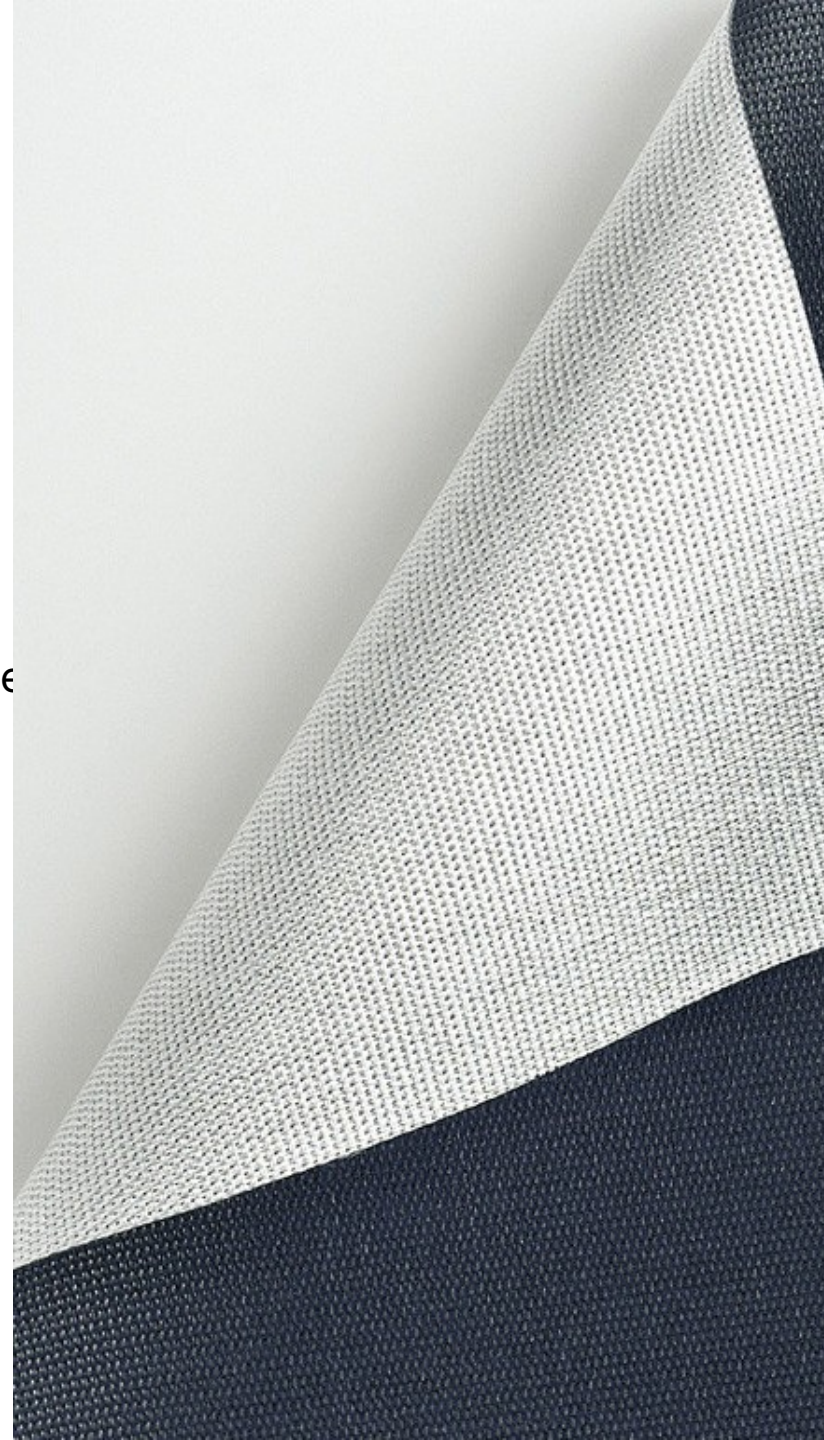
A calm, consistent exterior for every home



Benefits at a glance

Comfort and value at home:

- Helps reduce unwanted solar heat in summer
- Supports warmth and comfort in winter
- Controls glare while maintaining a view outside
- Adds daytime privacy without making rooms feel closed
- Choose any interior colour, with consistent performance



OmniaScreen (3% Open)

Positioning: Accessible high-performance screen for the home

Performance

3% openness

Solar reflectance up to 75%

Phthalate-free

Up to 110 inches wide

Strengths

Strong price-performance balance

Helps create thermal and visual comfort

A practical step up from standard screen fabrics

Best For

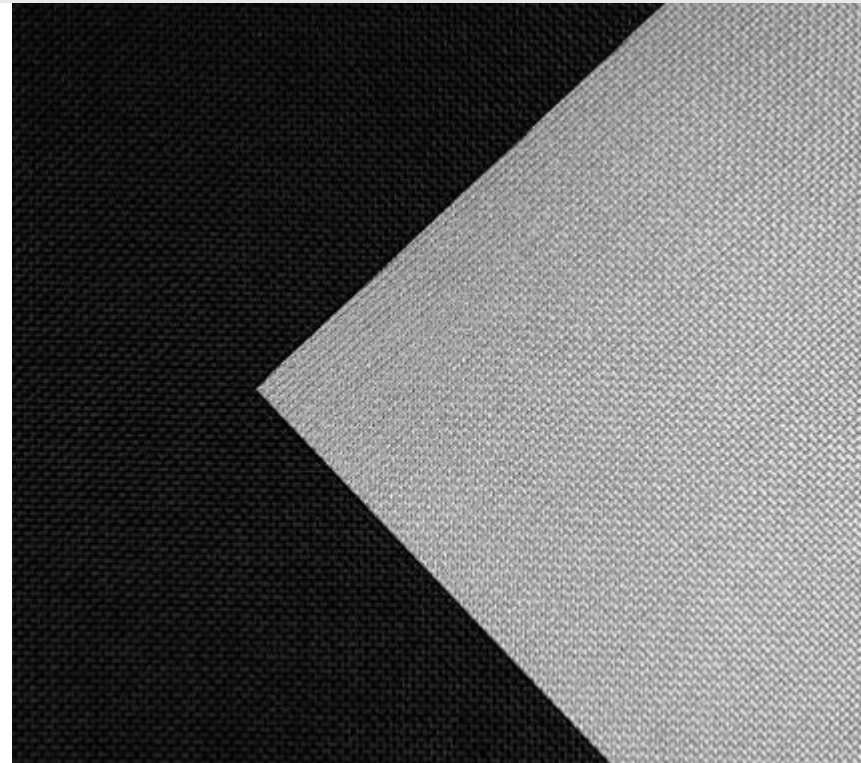
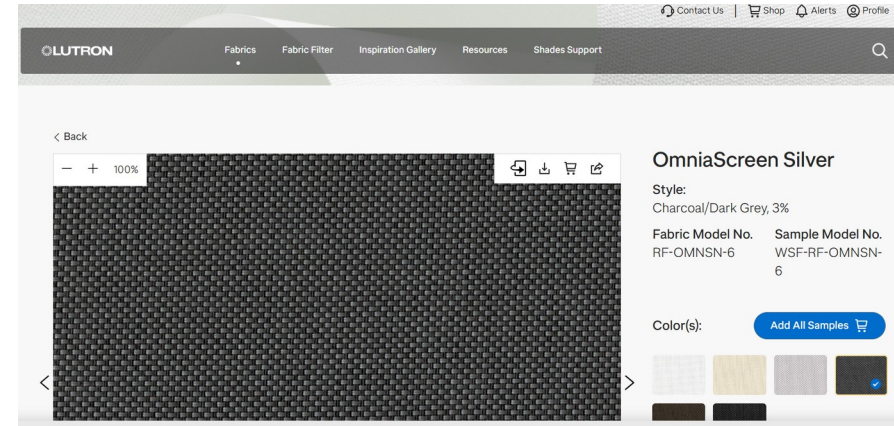
Living rooms and open-plan spaces

Large residential windows

Bedrooms, kitchens and home offices

Why choose it

- ✓ Comfortable everyday light control
- ✓ Phthalate-free material
- ✓ Reliable solar performance



SilverScreen 2%

Positioning: Maximum solar control / Low-E performance

Performance

2% openness

85% solar reflectance (highest in range)

IR emissivity **0.03** (very low-E)

Up to 25% energy savings claim

Up to 110 inches width

Strengths

Best heat rejection

Strongest glare control

Excellent winter insulation

Best For

Façades with extreme solar loads

Net-zero / high-performance buildings

Projects prioritizing energy metrics

Differentiator

- ✓ Highest reflectivity
- ✓ Best thermal performance
- ✓ Most glare control
- ✓ Tightest openness for privacy



Residential inspiration from around the world



Germany



Australia



United States



United Kingdom



Australia



Hong Kong

Common homeowner questions

- Does the aluminium layer have a high environmental impact?
- Will the fabric look metallic or shiny?
- Can I still enjoy the view from my living room?
- Does it provide privacy during the day?
- Is shading useful on every side of the home?
- Can an indoor blind really help control heat?

Is aluminium a sustainable choice?

The aluminium is applied as an extremely thin layer, using very little material while improving solar performance.

Will the blind look shiny from outside?

No. The woven, rounded yarns give the exterior a soft grey appearance rather than a mirror-like finish.

Is this only relevant for architects?

No. Homeowners, interior designers and installers can use metallised textiles to improve comfort without compromising the interior style.

Do north-facing rooms need shading?

Reflections from nearby homes, paving or water can still create glare. Shading also supports privacy and a consistent look across the home.

Can an interior blind help with heat?

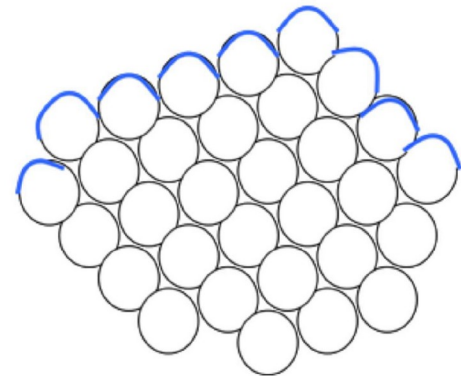
The metallized surface reflects part of the sun's energy back through the glass before it becomes heat indoors.

Should I focus only on high-performance glass?

Glass and shading work together. The right blind can add flexible, everyday control of light, privacy and comfort.

LOOKS: Does it look like a mirror?

No, the yarns are round and therefore create a diffuse reflection to the outside. Only flat reflective layers like mirrors will create these glare reflection. (and so do foils!)



LOOKS: How does it look behind the window?



Behind Transparent Glazing
looks Off White



Behind Colored Glazing looks
like a Blackout

USE: Can it be cleaned?

Sure.... Just but be careful not to scratch the aluminum.

Also, cleaning with a soft cloth or even with neutral hand soap is OK, don't use aggressive detergents or rub the metallized side too firmly.

Be careful, it is a high performance product, must be treated as such.

