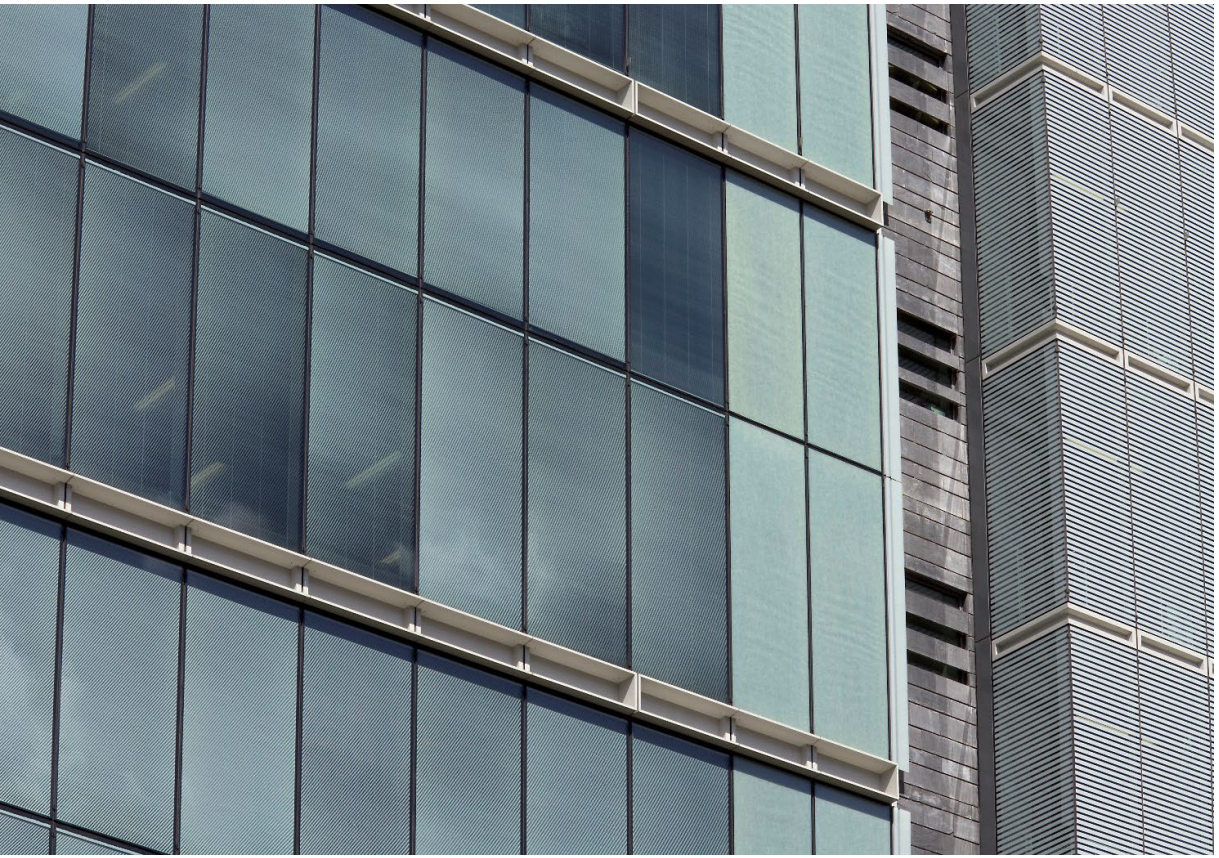
Pellini sun shading for closed cavities
Your sun protection protected

We protect your world

Nordic Façade Forum
09 June 2025, Helsinki



Who we are

For 50 years, Pellini SpA has been a world leader in the field of shading systems, to be integrated within insulating glass units, for internal and external application and for the decoration of yachts and luxury boats, co-operating with the main international architectural practices.

Pellini 50 YEARS ANNIVERSARY

Core Business

Integrated blind systems

Internal and external blinds, blinds for CCF

Blinds for yachts and luxury boats

ScreenLine® by Pellini

Pellini Tende e Sistemi

Pellini Nautica

Some projects

Pellini
Tende e Sistemi

ScreenLine®
by Pellini

Pellini
Nautica

Pellini ScreenLine®

CAMG
Oscar Niemeyer – DGU
Integrated venetian blind

Pellini ScreenLine®

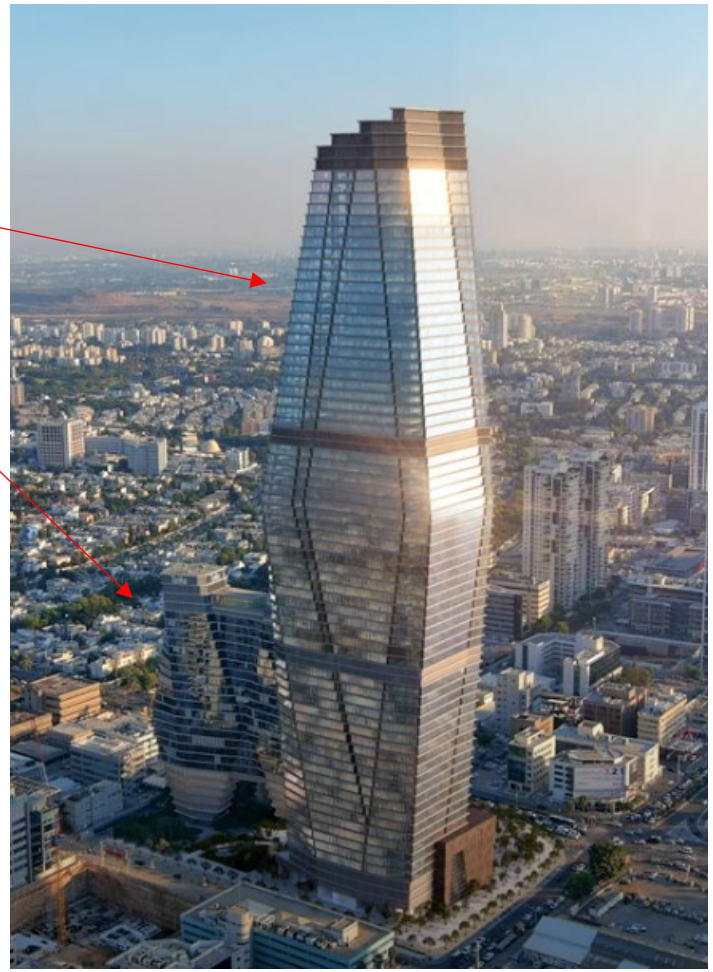
Arlozorov Tel Aviv – Tzur Architects
Integrated blinds

Pellini Tende e Sistemi

ToHa 1

ToHa 2

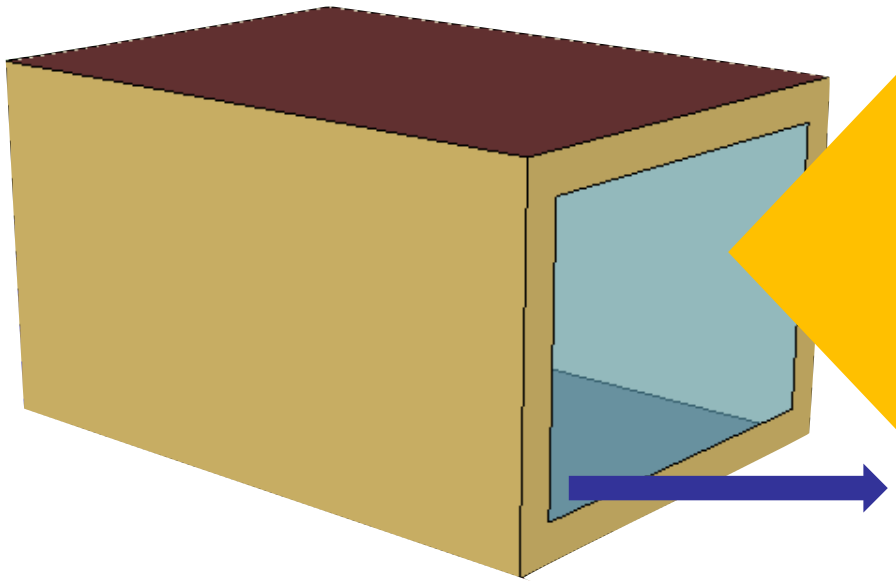
ToHa 1



ToHa 1 & 2, Tel Aviv – Arch. Ron Arad
CCF with integrated roller shades

The importance of solar shading: triple glazing

Through 1m^2 of an insulating glass unit filled with Argon and low-e coatings **the energy leaving the room on winter** (U_g) and the radiation coming in during summer (g value) have very different magnitudes:



≈ 383 W
(Sun 767W/m^{2*})

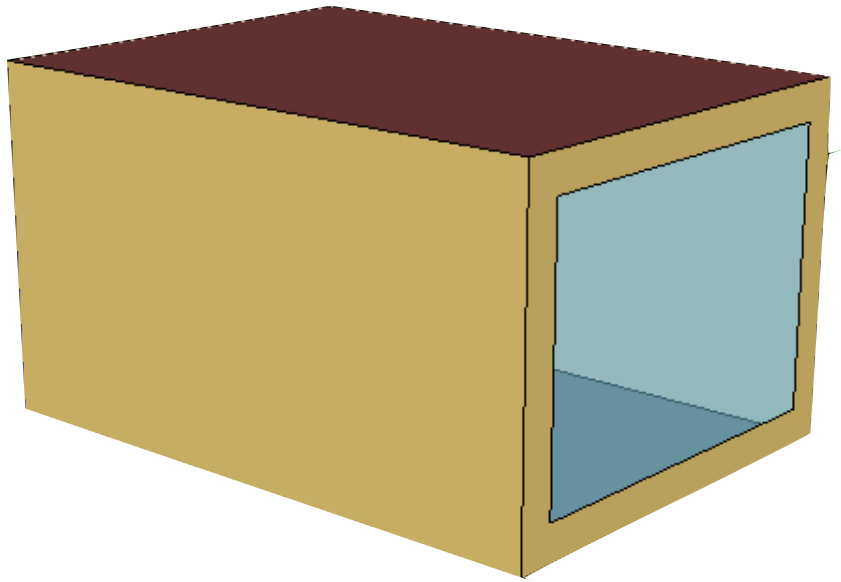
g 50%

≈ 12,5 W
(Ti 20° C, Te -5° C)

U_g 0.5

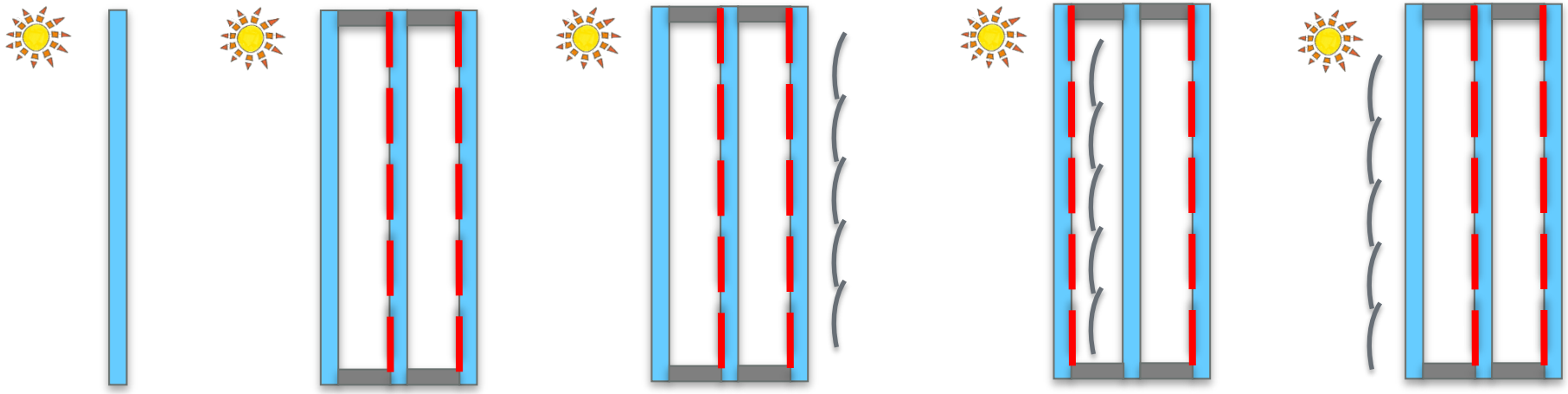
30 times!

The importance of solar shading: Comparison between 5 solutions of glass and glass + shading

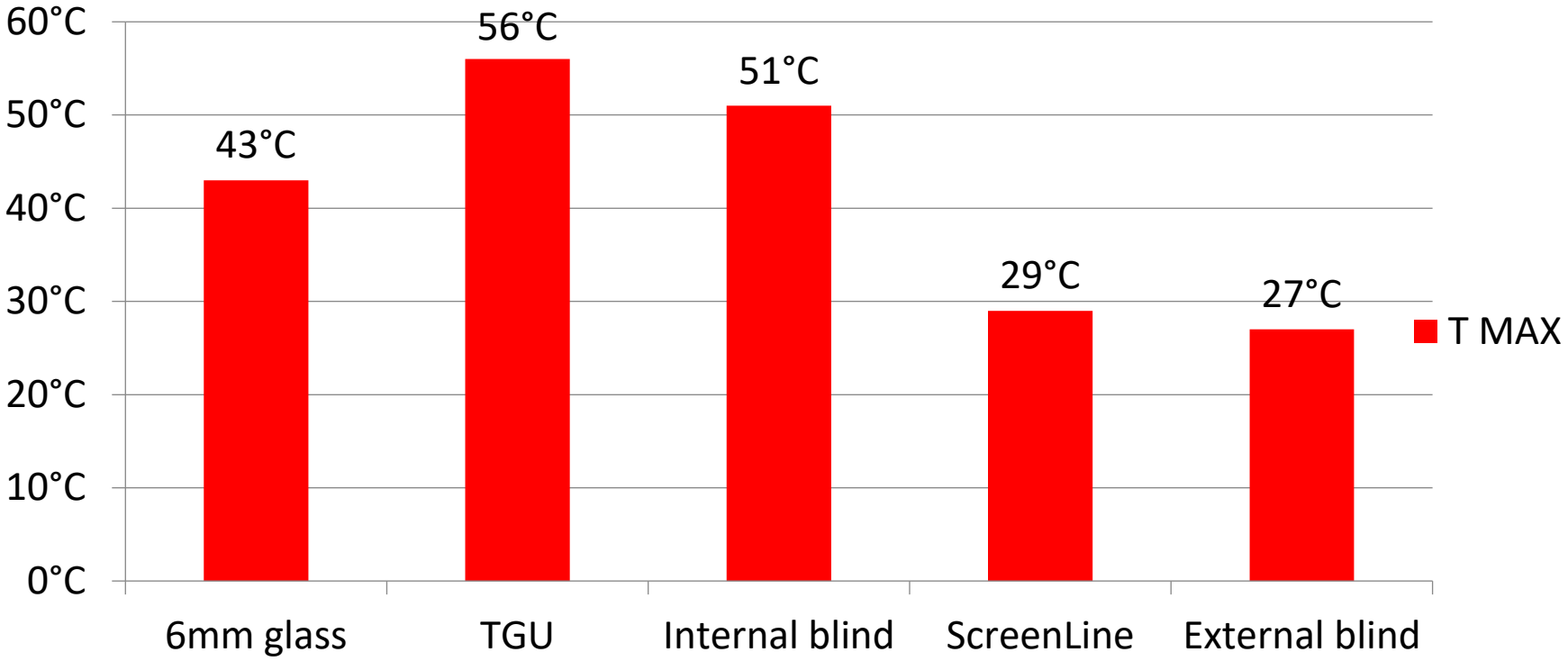


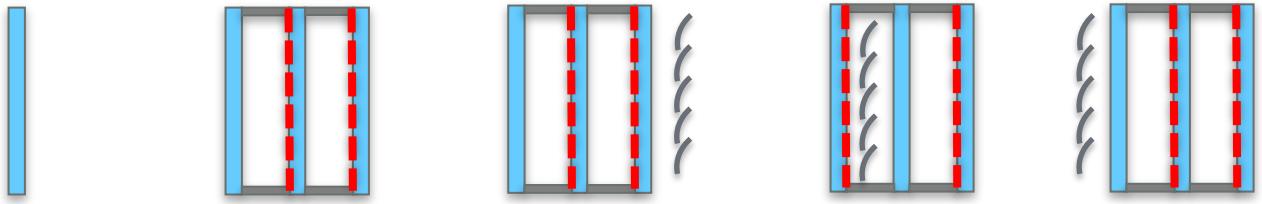
- Window facing East,
- Milan
- Well insulated
- Airtight
- Free dynamics
- 5 glass and glass + shading solutions

The importance of solar shading: Comparison between 5 solutions of glass and glass + shading



4-mm glass	Triple glazing (TGU)	TGU with internal blind	TGU with integral blind	TGU with external blind
g=0.87	g=0.50	g=0.29	g=0.08	g=0.03
U_g=5.8 W/m^{2}K	U_g=0.5 W/m^{2}K	U_g=0.5 W/m^{2}k	U_g=0.5 W/m^{2}k	U_g=0.5 W/m^{2}k

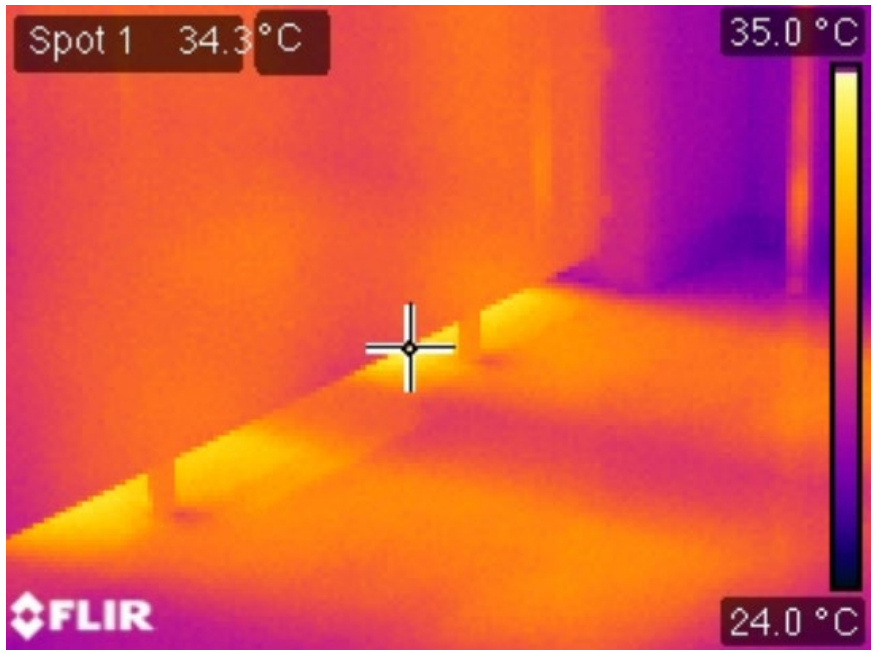


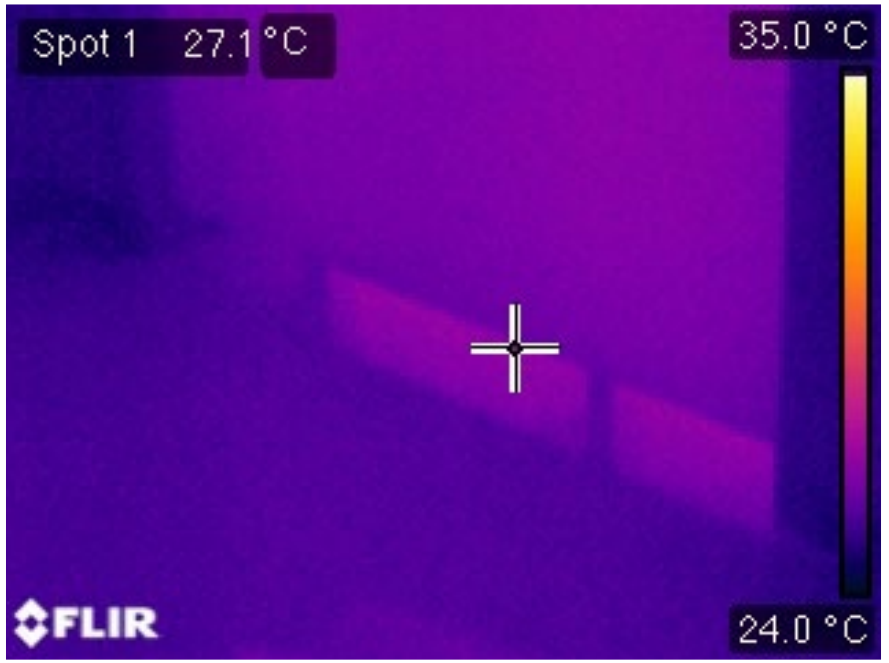


6mm glass	TGU	Internal blind	ScreenLine	External blind
g=0.87	g=0.50	g=0.29	g=0.08	g=0.03
U_g=5.8	U_g=0.5	U_g=0.5	U_g=0.5	U_g=0.5
588W	338W	196W	54W	20W

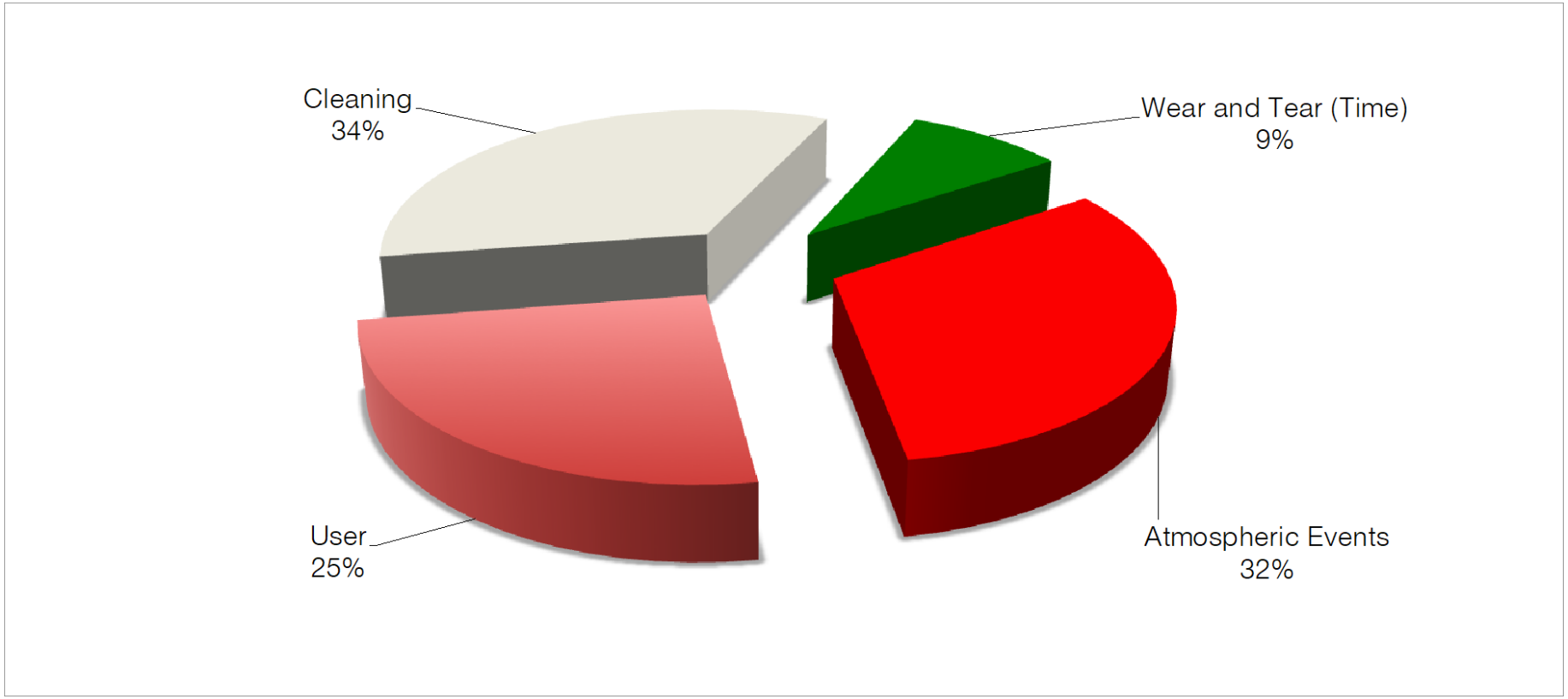
The importance of solar shading:
Comparative thermography of two twin rooms

Selective glass (g=37%) vs Integral blind
&
the importance of the right control system



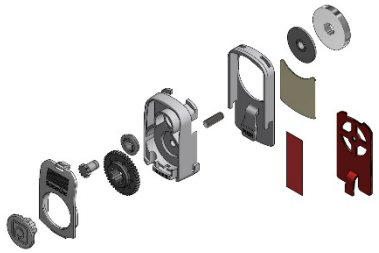


Reasons for blind and shutter breakage



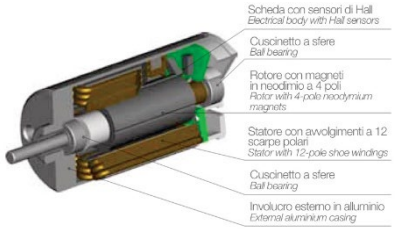
A blind inside an IGU or CCF is only subject to Wear and Tear, which is very easily predicted and solved with correct design and materials

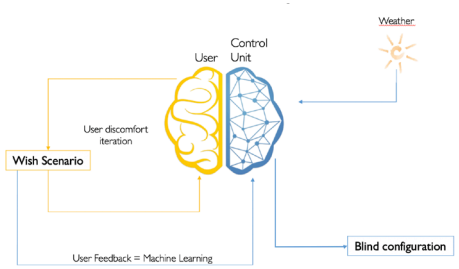
R&D



MECHANICAL SYSTEMS

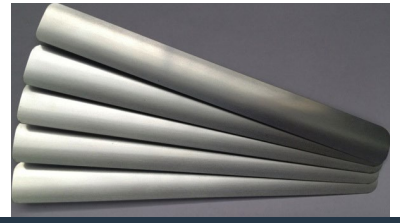
ELECTRONIC DEVICES





CONTROL LOGIC

NEW MATERIALS



RHPE - Brushless roller blinds for CCF

- Blind specifically designed for Ventilated Double Skins and Closed Cavity Façades
- Operation Temperature up to 90° C
- Fabric type: Metallized Polyester – Verosol EnviroScreen (or SilverScreen depending on cavity temperatures)

MB - Brushless integrated Venetian blinds

State-of-the-art technology

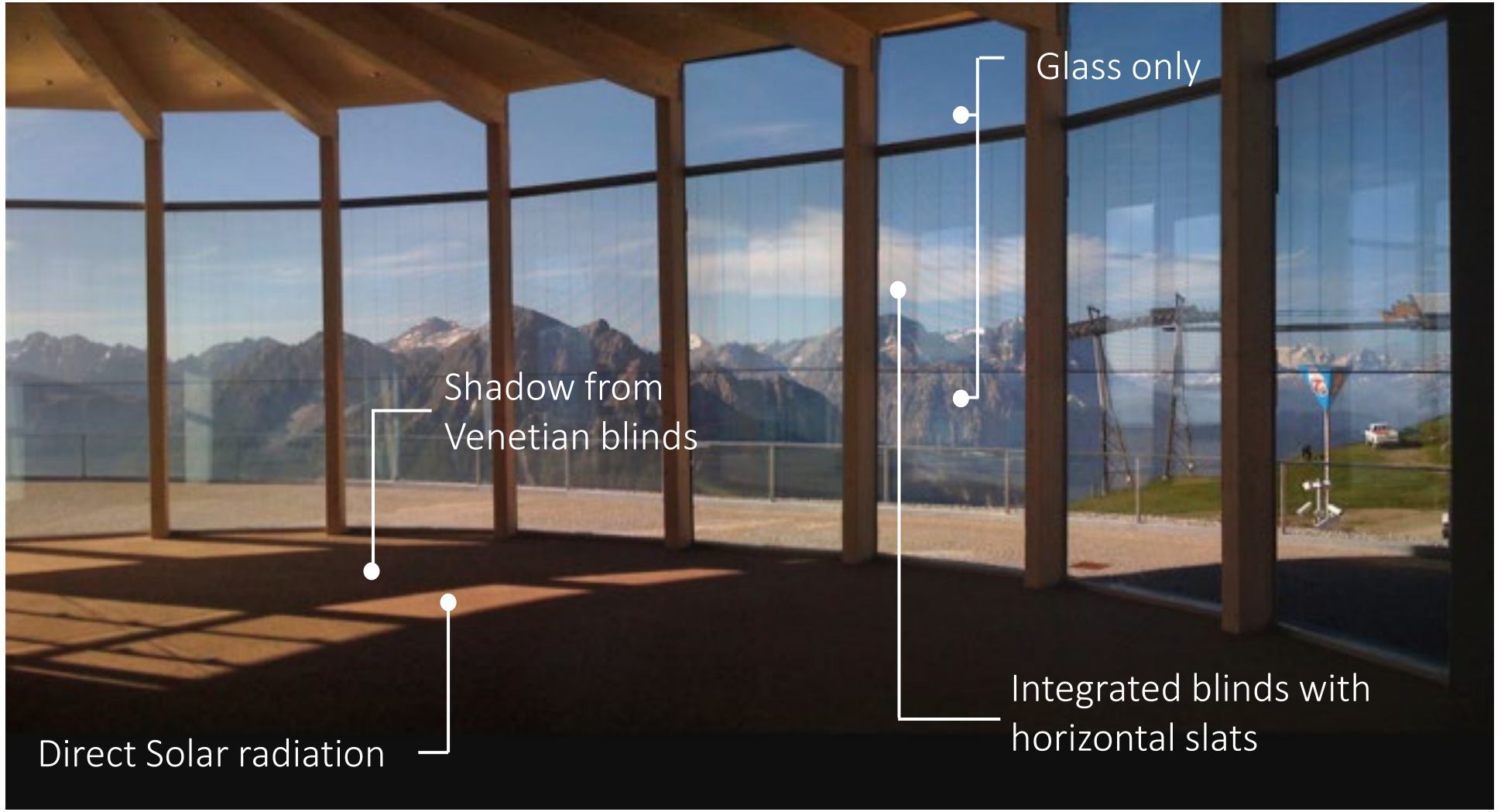
- No brushes, no wear
- 200,000+ cycles certified
- High precision control

Venetian blinds maximum flexibility
Light shelf effect

Depending on the tilting degree of a Venetian blind, ScreenLine directs the light radiation towards the ceiling, transforming it into a chandelier of diffused daylight.

- Reduction of direct glare
- Greater living comfort
- Reduced use of artificial lighting

Venetian blinds maximum flexibility
Cut-off position



70/35 8*-29-5-12-*6 Low-e

S157 Closed

g_{tot} 8%

S157 Cut-off

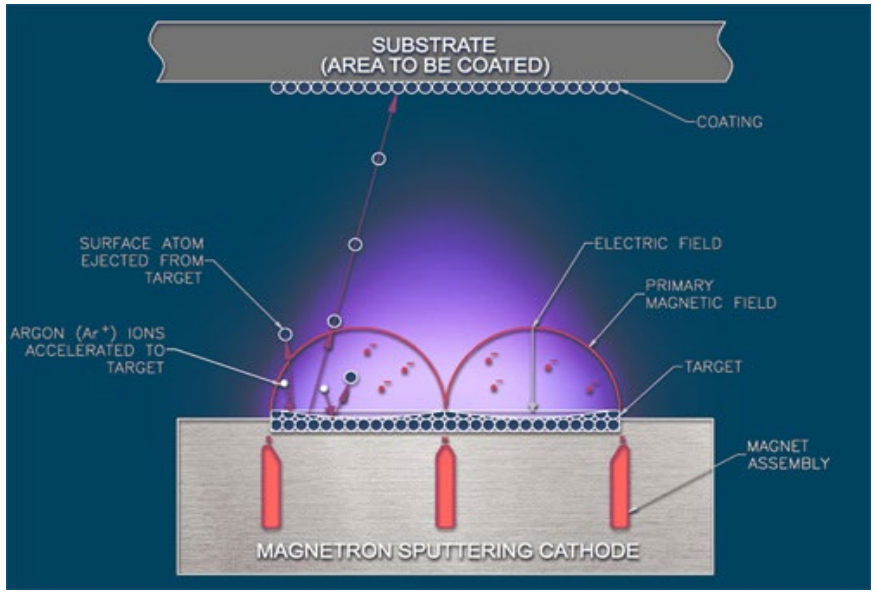
g_{tot} 12%

Great solar control
&
maximum contact
to outdoors

Venetian blinds
V95

Special slat developed for use in DGU with selective coatings and TGU

- Slats with high reflection efficiency and Low-E coating
  - Coating tailored to complement selective coatings
  - High reflection in light spectrum where selective coatings typically perform less good
- Raw aluminium slat
  - No paint = no fogging
- Results in:
  - Lower g_{tot} values
  - Lower system and glass temperatures



Venetian blinds
V95

- For example: SNX60 8*-29-5T-12-*6 Low-e
  - g_{tot} with S157 silver and S102 White = 7% vs 5% with V95
  - Maximum temperature middle pane and SL system 10° to 15° lower
- Higher reflection
  - Increases light shelf effect
  - Requires more precise control to prevent glare
- V95 allows more glass compositions to be used in triple glazed units

Venetian blinds
Colour neutral slat

- In triple glass units often selective coatings on #2 are used
  - Excellent energy values but:
  - Façade and slat appearance is affected by the coating
    - Architects asked us for a solution

- Pellini found a solution which allows us to adjust the slat appearance to the specified coating and result in a color neutral slat!

Venetian blinds
Colour neutral slat

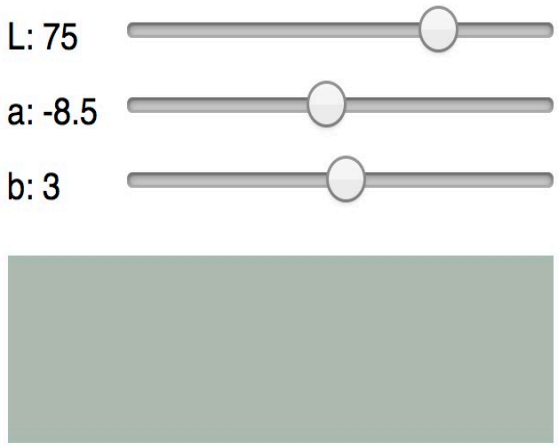
Lab color coordinates

Lab color coordinates are used because they are more coherent to our perception. As an alternative, XYZ are absolute coordinates, but a small variation could result in a great perceived change in color, or vice-versa.

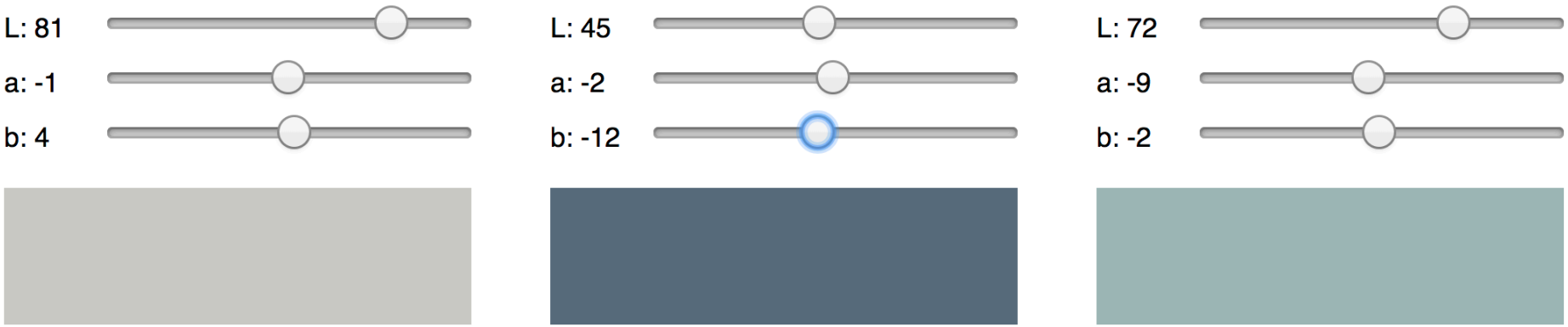
L: stands for lightness. 0 means black and 100 means white

a: is the **green** (negative) to **red** (positive) coordinate. Being 0 neutral.

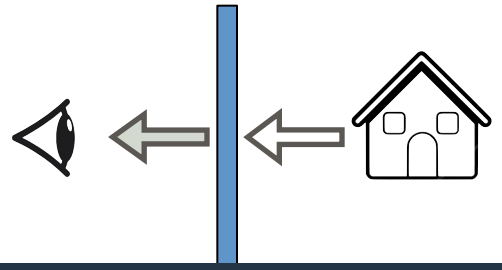
b: is the **blue** (negative) to **yellow** (positive) coordinate. Being 0 neutral.



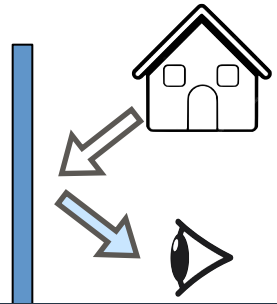
Venetian blinds
Colour neutral slat



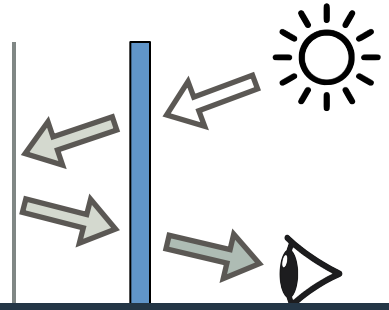
Transmittance



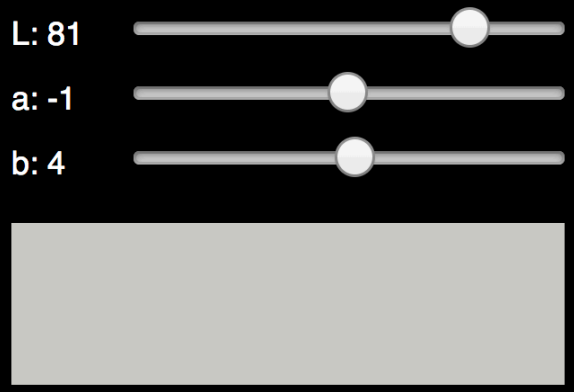
Specular Reflectance



Double Transmittance



Venetian blinds
Colour neutral slat



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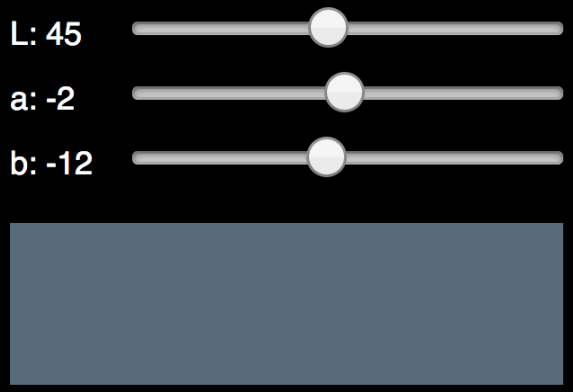
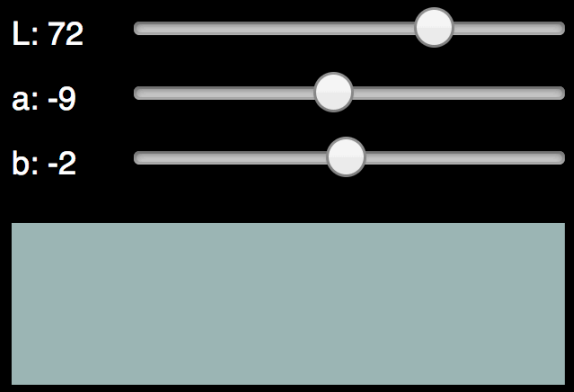
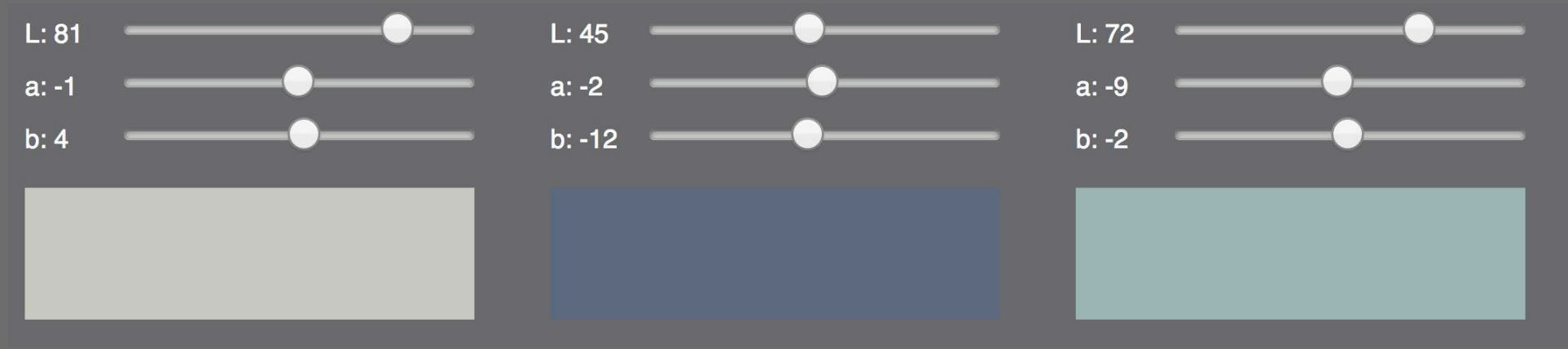


Specular
Reflectance



Double
Transmittance

Venetian blinds
Colour neutral slat

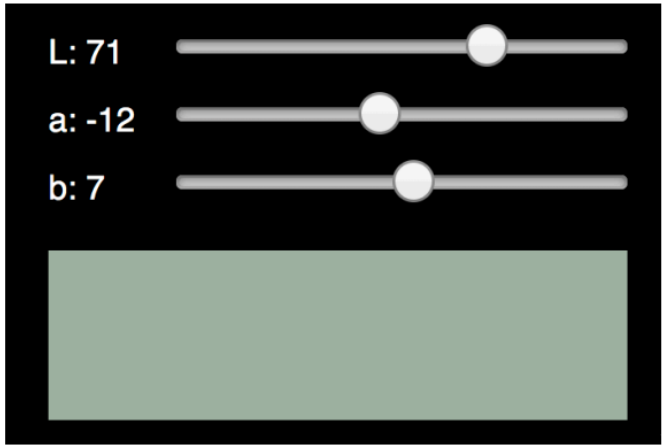


Transmittance

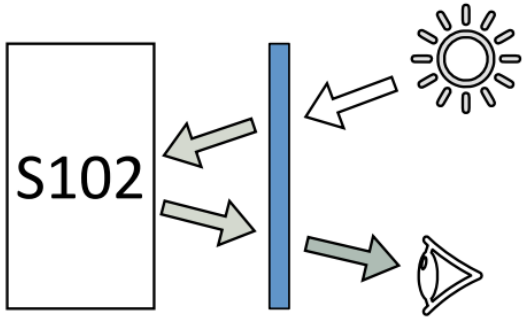
Specular Reflectance

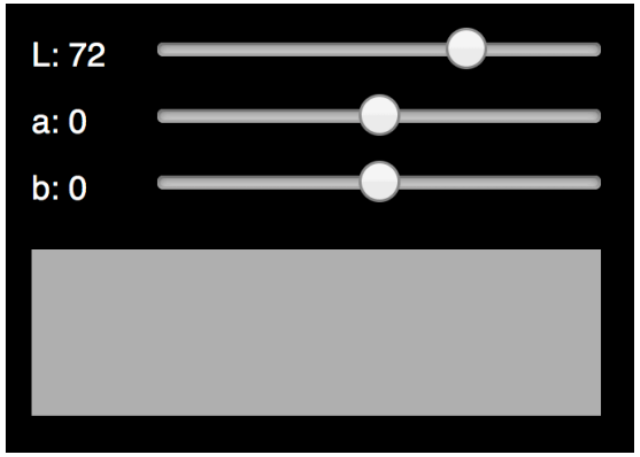
Double Transmittance

Venetian blinds
Colour neutral slat

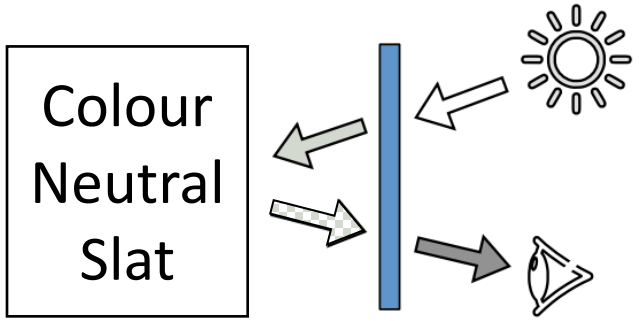


How a white blind is viewed





How a Colour Neutral blind is viewed



Venetian blinds
Colour neutral slat

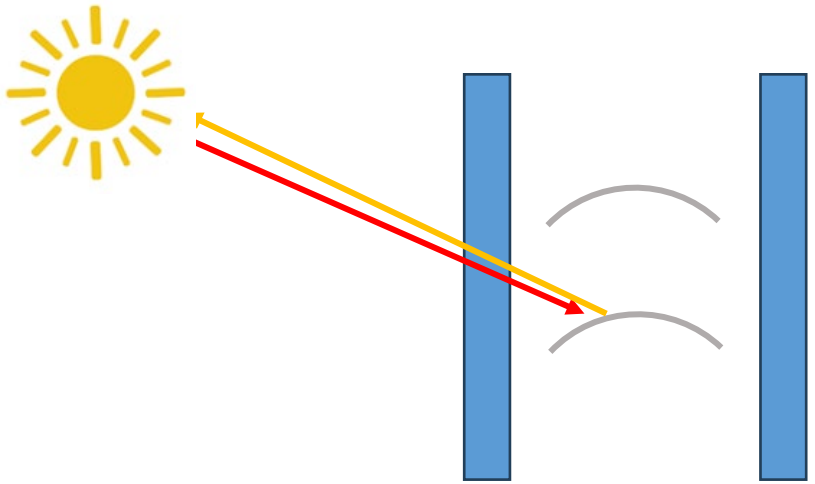
Color Neutral slat

Grey slat

Venetian blinds
Retroreflective slat (Under development)

- Standard slats reflect the sun partially to the inside of the building
  - This helps us to create the light shelf effect
  - We need to adjust the angle of the slats based of the sun angle to avoid glare
    - The lower the angle of the sun the further we need to close the slats

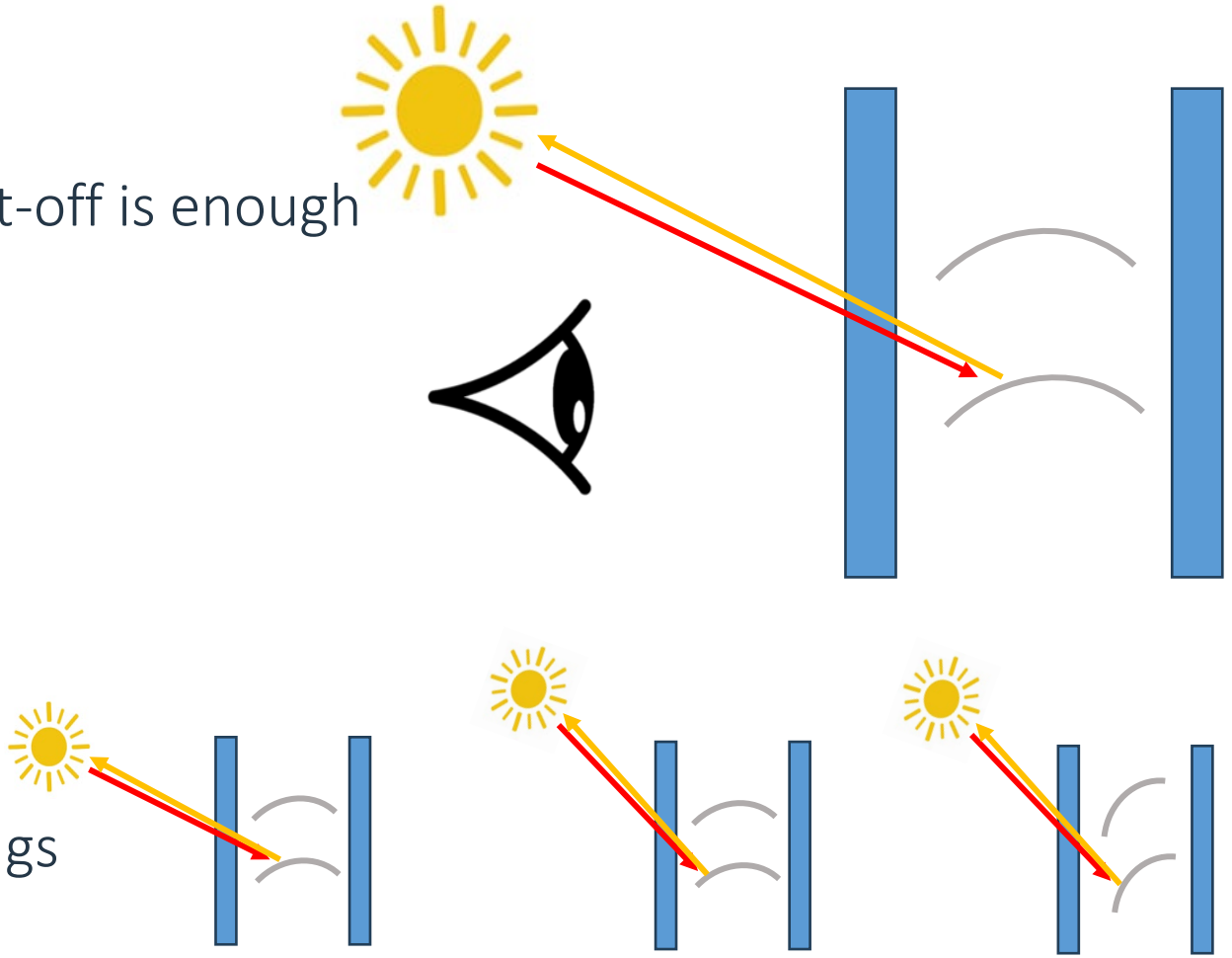
- A retroreflective slat bounces the solar ray solely back to where it came from



Venetian blinds
UNDER DEVELOPMENT; Retroreflective slat

Benefits of a retroreflective slat

- No glare
- Blinds can stay tilted open much more , cut-off is enough
  - Excellent view to the outside
  - More daylight entering the room
- Lower g_{tot}-value
- No mirror effect of the facade
- Heat is redirected to the sun
  - Will result in less heating of surroundings



Pellini sun shading for closed cavities (DGU, TGU & CCF)
Your sun protection protected

- Dynamic solar shading a must-have to achieve the right solar protection when it is needed
- A blind inside an IGU or CCF is only subject to Wear and Tear, which is very easily predicted and solved with correct design and materials
- A wide range of shading solutions is available
- Extremely innovative and effective solutions are under development
- Let us help you to find the perfect solution for your project

Thank you!

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