

MicroLouvre™

solar shading



MicroLouvre™ screens fully deployed



View out



Introduction

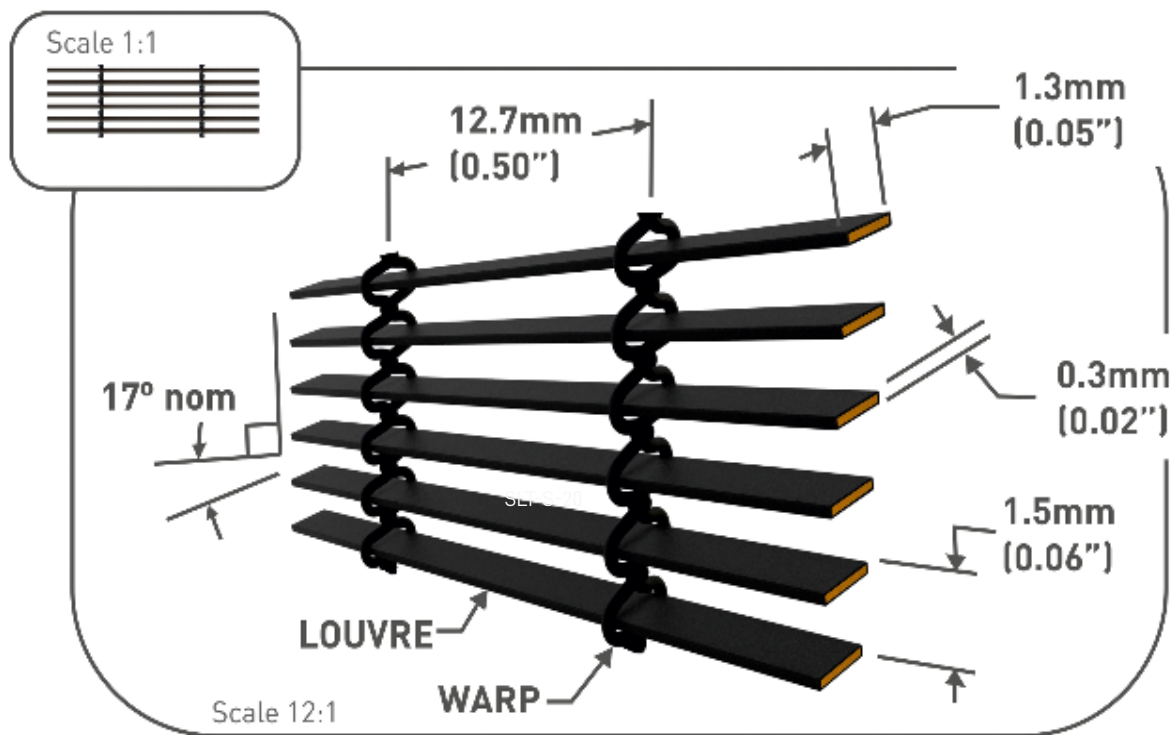
MicroLouvre™ solar shade, comprised of a woven metal fabric, is a result of decades of extensive and exhaustive international research and development, which has made it probably the most efficient modern method of solar shading.

The unique method of stopping the sun from ever reaching the window, by means of miniaturised bronze micro-louvres which nevertheless permit completely uninterrupted outward vision, has been used extensively all over the world on every type of building.

Although MicroLouvre™ is corrosion resistant in itself, it is given a polyester powder coat for added endurance. It is framed under tension and then fitted by various methods to the exterior of the fenestration to suit individual applications.

FABRIC CONSTRUCTION

Open Area.....	80%
Thickness of fabric.....	1.5mm (0.06") nominal coated
Weight kg/m ²	1.1 kg/m ² (2.4lbs) nominal coated
Maximum Screen Size.....	1800mm x 3000mm (6' x 10')*
Standard Finish.....	80 - 100µm - Interpon A2202 MN204E Polyester- smooth, matt
Coating Durability.....	Meets / exceeds 1,000hrs ISO 9227, ISO 6270 & ASTM G154 QUVB 313B bulbs test
Composition.....	90% CuZn10 (C220) commercial bronze /10% CuSi3 (C655) silicon bronze
Fire Rating.....	Class A1 in accordance with BS EN 13501-1:2002
Fire Attenuation.....	49.4% Compliant screening for bushfire up to BAL-40 (Results based on 40kW/m ² incident irradiance.)
Applications.....	Solar Shading, Lighting Solutions, Glass Lamination Heat Attenuation, Privacy & Security



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*Larger screens on application



The Problem

Window glass, including high performance solar glass, exposed to the sun permits heat gains which can increase inside temperatures in excess of 38°C (100°F). This results in:

- Work output decreases per person
- More mistakes are made
- Absenteeism increases
- Open windows allow in noise

Window glass exposed to the sun also permits excessive glare which brings about

- Worker discomfort
- Unneeded distractions
- Eye Strain

Even in air conditioned buildings

- Energy costs increase
- Hot and cold spots develop
- Equipment life is shortened
- Maintenance costs increase
- Glare is a continuing problem

The Solution


MicroLouvre™

By installing MicroLouvre™ externally on your windows you will benefit from:

- Inside temperatures remain cooler
- Work output is maintained
- Less mistakes are made
- Absenteeism is reduced
- External noise is reduced
- Sky glare is reduced
- Workers remain comfortable
- Concentration is maintained
- Reduced eye strain

If MicroLouvre™ is installed where there are air conditioning systems you will benefit from:

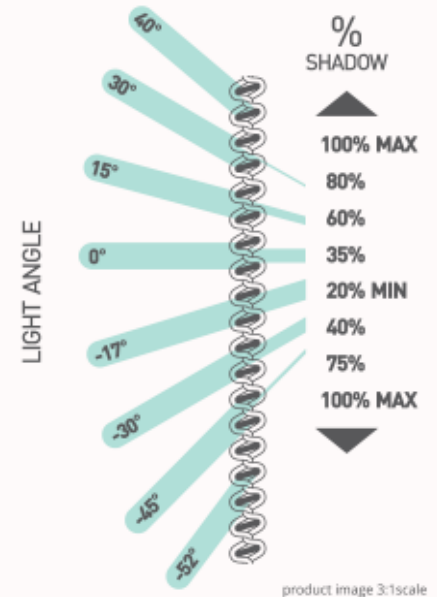
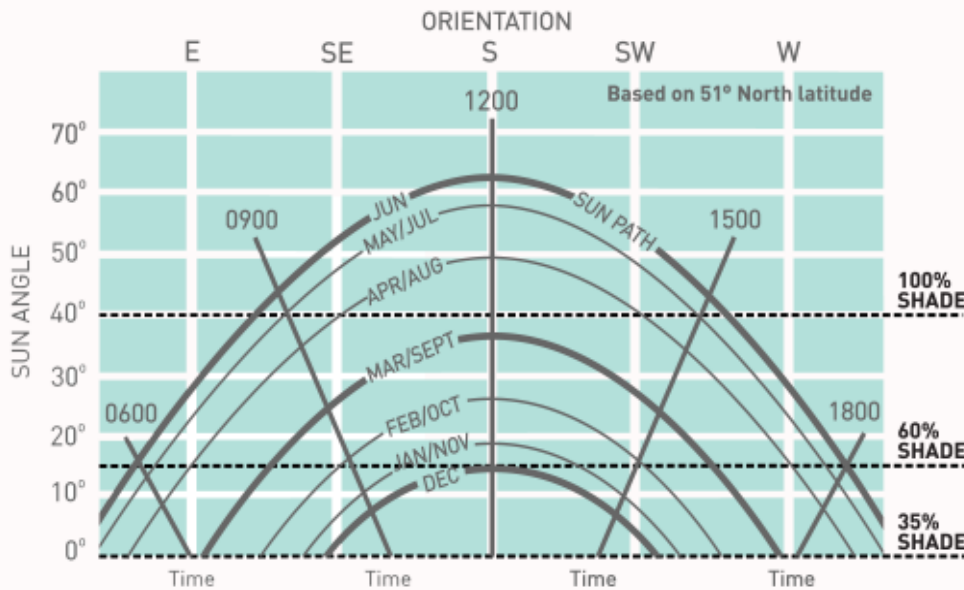
- Energy costs decreased
- Hot and cold spots eliminated
- Equipment life span increased
- Maintenance costs are reduced



Police Station – London, England
Heritage Building – installed 1988

The Performance

MicroLouvre™ provides 100% shade at sun altitude of 40° or greater when the screens are installed, in close proximity to the fenestration, in a vertical plane. The unique eclipse angle provides for cool heat free sunlight in the summer whilst allowing in diffused warm sunlight during the winter.



Hurricane Proof

MicroLouvre™ screens have been tested at BRE to wind speeds exceeding 160 km/h (100 mph) without failure.

Wind Loading

MicroLouvre™ screens do not offer wind loading in excess of 14.65 kg sq/m (3 lbs per sq ft.) with a wind velocity of 60 miles per hour through the screen.

Brightness Ratios

MicroLouvre™ screens control excessive brightness and sky glare at the windows so that acceptable Brightness Ratios can be maintained as recommended by the Illuminating Engineering Society.

Natural Ventilation

MicroLouvre™ screens permit an open area of at least 80% for air passage.

Reduction in Noise

MicroLouvre™ screens have proven to reduce external noise intensity by as much as 50%.

Reduction In Heat Loss

MicroLouvre™ screens reduce heat loss outward through 6mm clear plate glass at night under winter design conditions by up to 15%.

Insect Protection

MicroLouvre™ screens provide at least 17 horizontal wires to the vertical 25mm (1 inch) – which is equivalent to or better than a standard fine insect mesh.

The Longevity

Product lifetimes are an important part of product design, the circular economy and sustainable development. MicroLouvre has a proven lifetime of more than 40 years.

- 28 floors
- 3428 windows
- MicroLouvre installed on East, South and West faces
- R.O.I. = 6 years
- 41 years since installation and counting





North Cronulla Beach NSW Australia

The Vision Out

When performance with an uninterrupted view is required MicroLouvre™ is the clear solution. With 80% free open area, optical clarity and colour balance is maintained at all times.



Discreet Systems for Heritage Buildings



NEAS - Oslo, Norway



Museum of Art - Oslo, Norway



Before

The Regeneration of Façades

MicroLouvre™ has been successfully installed worldwide, updating and rejuvenating tired old buildings and façades. Drastically improving buildings appearance giving them a much more modern look, resulting in increased Rental Value!



After

Screen Manufacture

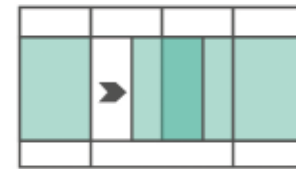
All MicroLouvre™ fabric and extrusions are available in TGIC free polyester powder coat tested to exceed the requirements of ISO 9227, ISO 6270 & ASTM G154 QUVB 313B bulbs test. MicroLouvre™ frames are 6063 T6 extruded, paint quality, aluminium exclusively designed for framing the MicroLouvre™ fabric.

The corners of the frames have concealed internal reinforcing members inserted in such a manner as to secure all corners neatly and firmly together. Top and bottom frames are pre-bowed as required to reduce to a minimum deflection due to screen tension.

The frames are designed to receive continuous vinyl strips in each side, all correctly assembled to ensure tautness and to maintain panel integrity at wind speeds in excess of 100mph.

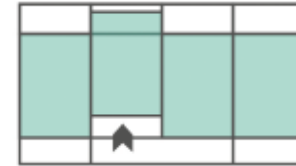
All fasteners, anchors and hardware are comprised of robust corrosion resistant materials.

Installation



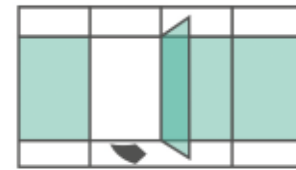
Horizontal Sliding

For access and dynamic solar control



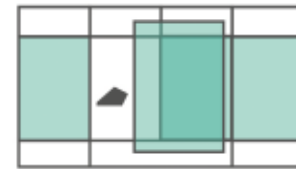
Vertical Sliding

For access and dynamic solar control



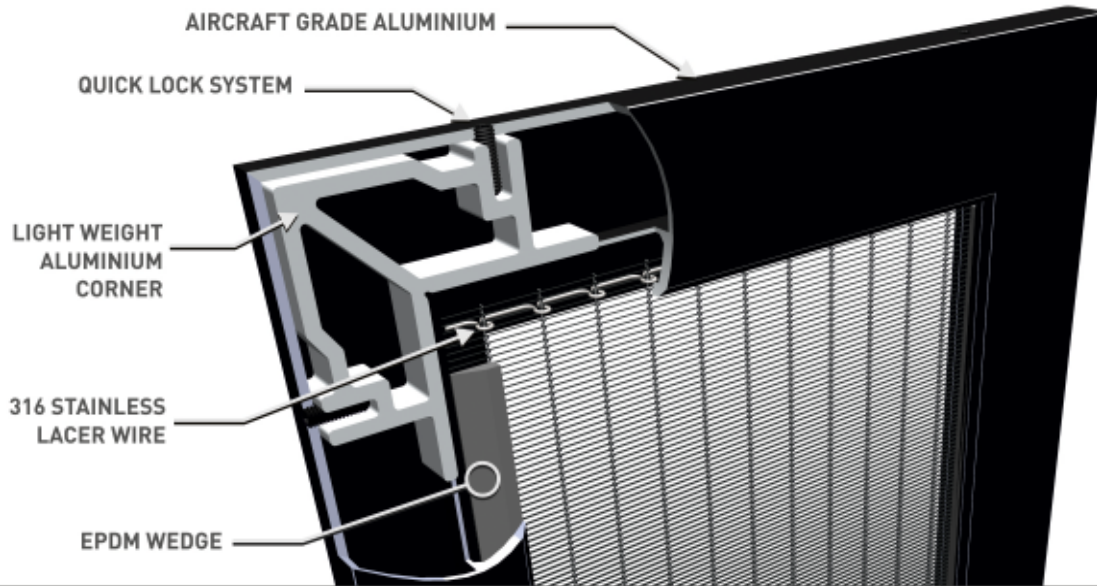
Hinged

For access and maintenance



Direct Fix

Removable for maintenance



Stock Extrusion



FE51 Frame
13mm x 51mm
0.5" x 2.0"



FE38 Frame
13mm x 38mm
0.5" x 1.5"



FE25 Frame
13mm x 25mm
0.5" x 1.0"



BT32 Track
32mm x 15mm
1.25" x 0.6"



DT34 Track
34mm x 32mm
1.3" x 1.25"



RT37 Roller Track
37mm x 43mm
1.45" x 1.7"

1800 x 3000
6' x 10'

1400x2400
5' x 8'

1200x1800
4' x 6'

Max Screen Sizes | Larger Sizes Available on Application

Glass Laminated Systems



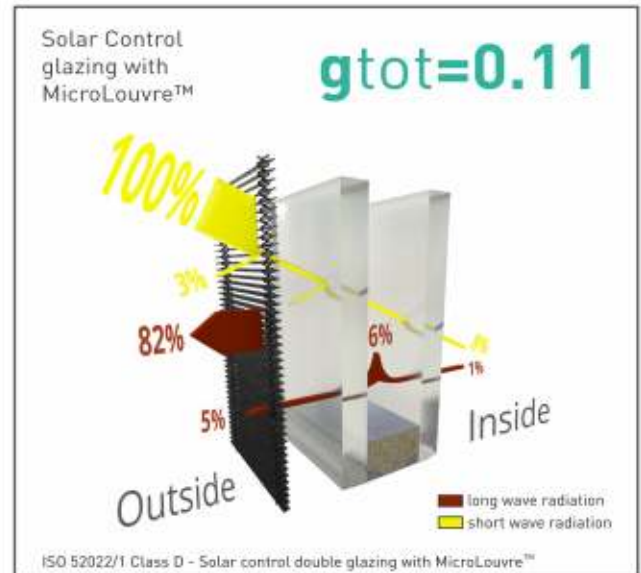
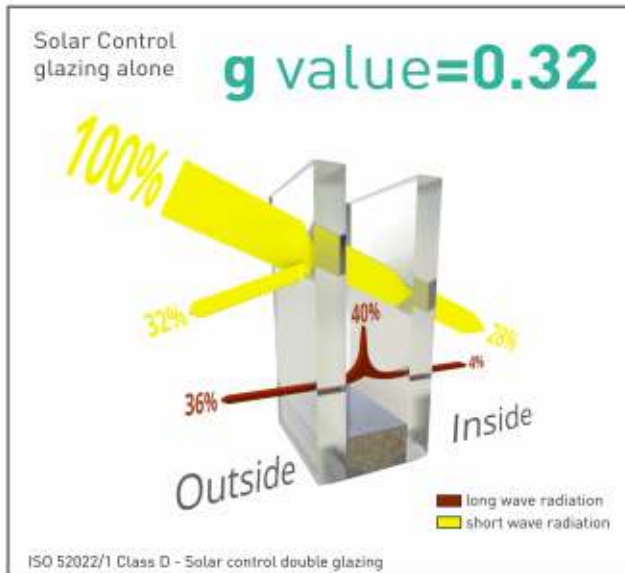
Technical Institute of Mechanics - Fribourg, Switzerland

Museum Tinguely - Basel, Switzerland



Tested Performance

- Absorb up to **100%** of the summer sun's radiation
- Stop up to **100%** of total solar heat gain during summer
- Reflect no more than **3%** of total light transmission
- Allow up to **63%** back of room daylight transmittance



Thermal Factors based on European Standards EN 14501 and calculated at BRE

MicroLouvre™ @ 50°N latitude		Summer Thermal factors (May-August)														
		Fabric					Fabric + Glazing									
		Tv/ UV	U (W/m²K)	Ts	Rs	As	A : gv = 0.85		B : gv = 0.75		C : gv = 0.59		D : gv = 0.32		E : gv = 0.55	
Colour	Orientation					Ext	Mid	Ext	Mid	Ext	Mid	Ext	Mid	Ext	Mid	
Matt black	South	51.5	2.8	12	3	85	0.28	N/A	0.22	0.34	0.14	0.17	0.11	0.08	0.09	0.13
	S East/S West			12	3	85	0.29	N/A	0.23	0.37	0.15	0.19	0.12	0.09	0.10	0.14
	East / West			18	2	80	0.33	N/A	0.27	0.40	0.18	0.22	0.14	0.11	0.13	0.17
	N East/N West			23	2	75	0.36	N/A	0.30	0.41	0.20	0.23	0.15	0.11	0.15	0.19
	North			29	2	69	0.39	N/A	0.32	0.39	0.22	0.23	0.16	0.11	0.17	0.19

gv = 0.85: Solar factor of standard glazing (A), clear glass single glazing [U value thermal transmittance = 5.8 W/m²K].

gv = 0.76: Solar factor of standard glazing (B), clear glass 4/16/4 double glazing filled with Argon [U value thermal transmittance = 2.9 W/m²K].

gv = 0.59: Solar factor of standard glazing (C), low-emission 4/16/4 double glazing filled with Argon [U value thermal transmittance = 1.2 W/m²K].

gv = 0.32: Solar factor of standard glazing (D), reflecting low-emission 4/16/4 double glazing filled with Argon [U value thermal transmittance = 1.1 W/m²K].

gv = 0.55: Solar factor of standard glazing (E), low-emission 4/16/4/16/4 tripple glazing filled with Argon [U value thermal transmittance = 0.8 W/m²K].

Comfort classification according to EN 14501 standard:

① very little effect ② little effect ③ moderate effect ④ good effect ⑤ very good effect

The technical data listed are correct as of the date of publication. Smartlouvre Technology Ltd. reserves the right to change the technical data; only the data provided on the company's website www.smartlouvre.com shall be deemed to be current.



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