

S T R U C T U R A L A L U M I N I U M S H A D I N G

SUNCLIPS®



INTRODUCTION



Ref SUNCLIPS® Evo 96, Oceana Leisure, Leeds (UK), arch. : Bignall Shacklady Ewing-Birmingham

Importance and necessity for sun protection

Large glazed surfaces on a building, for visual contact and exterior view, can lead to uncomfortable situations like overheating and blinding by too much light.

External shading can dramatically reduce direct solar radiation on the glass or elevation and reduces the effect of blinding without limiting the visual comfort to the outside environment.

KYOTO protocol

Through the general Kyoto-protocol, every country has acknowledged this worldwide problem. A lot of countries in Europe have already established new building regulations to encounter the greenhouse effect by reducing the energy consumption with these measures.

An important consumption of energy in building is cooling. By applying an efficient sunshading the remaining cooling need can be strongly reduced or even completely eliminated.

The different already existing regulations are dealing with energy consumption, insulation and ventilation.

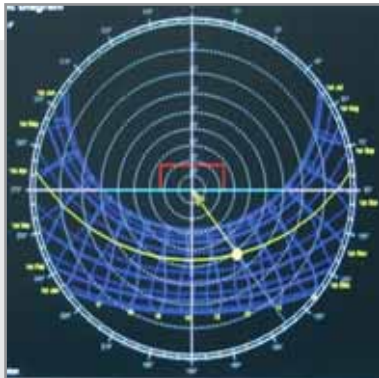
- Belgium : Energie Prestatie Regelgeving (EPB)
- The Netherlands : Energie Prestatie Coëfficiënt (EPC)
- France : Règlement Thermique 2005 (RT2005)
- Germany : Energieeinsparverordnung
- UK : Approved Document L1 'Conservation of fuel and power in dwellings'
Approved Document L2 'Conservation of fuel and power in buildings other than dwellings'



ICARUS® Centre de loisirs, Liffre (FR)
arch. : Cabinet Collier, Liffre



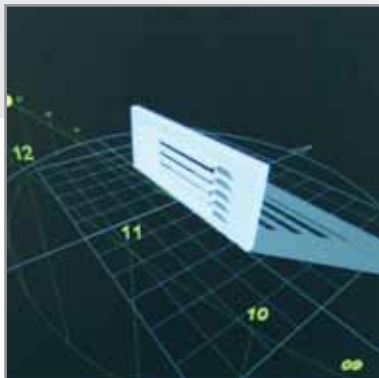
SUNCLIPS® Lou Clapas, Monaco, arch. : Montat



Design of sunshading

The sun is an important primary source of heat and light. The design, dimensioning and control of the sunshading device is sometimes quite complex and difficult. The sunshading has to be designed so it reduces the direct solar heat during summertime, nevertheless solar heat during wintertime can be acceptable and welcome. Beside the heat, sunlight control is also important to reduce blinding and achieve an acceptable light comfort and work efficiency.

Below are some basics concerning the relevant data in order to dimension a solar shading.



Sunpath

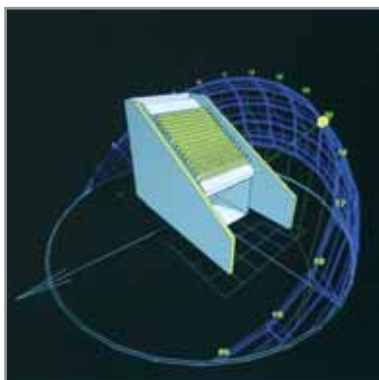
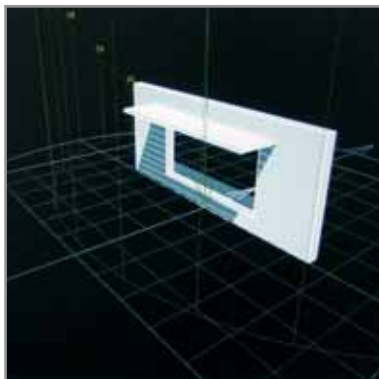
The position of the sun varies from hour to hour, from day to day. The different positions can be visually presented in a sun path diagram. These diagrams are dependant on position on the globe, which can be determined with latitude and longitude degrees.

The diagrams are always based on solar time (highest sun-position at 12 noon) and need to be adapted to the local time zone and eventually winter or summertime.

Taking into account the above parameter, together with the orientation of the elevation, the exact shading angles can be calculated to design the correct dimensions of the shading.

RENSON "Design in Sun protection" has sophisticated simulation tools available to work out the ideal solution for your project.

RENSON "Design in Sun protection" can also advice you with complete building simulation to achieve an optimal comfort with minimal energy consumption.



Development

New developments are conceived with high-end development methods like CFD simulations and collaboration with famous research institutes like BRE, BBRI, Von-Karman Institute, CSTB, ...

All products are profoundly tested on stability and durability.

Stability and design

According to different building regulations, like Eurocodes, a detailed wind and snow loading stability calculation and report can be made. With these loadings the correct spans, design of the mullions and fixing method will be determined.

Project solutions

This documentation only illustrates a short overview of our standard solutions and possibilities. Through years of experience we have built up the know-how for almost every design to be realised. Our project-team is at your service to find the appropriate solution for your project.

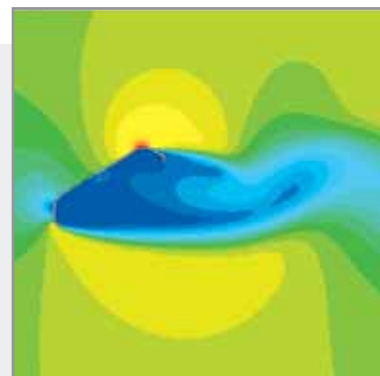
RENSON "DESIGN IN SUN PROTECTION" OFFERS DIFFERENT POSSIBILITIES TO REALIZE AN AESTHETIC AND ARCHITECTURAL SUNSHADING ACCORDING TO THE DIFFERENT REGULATIONS.

ICARUS® sunshading

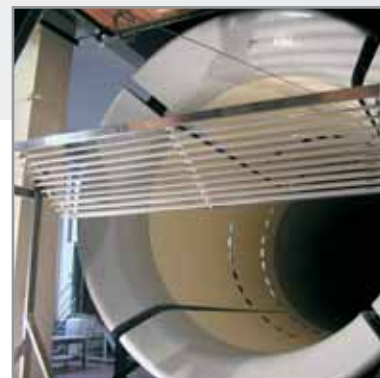
ICARUS® sunshading consists of extruded aluminium aerofoil or rectangular blades for an optimal sun protection. The sunshading can be realised with fixed or movable blades, in horizontal and vertical installation.

SUNCLIPS® sunshading

SUNCLIPS® sunshading consists of extruded C-shape blades mounted on a fixed structure. The system can be installed horizontally, vertically, or inclined to achieve an optimal shading effect.



simulation airflow



simulation airflow

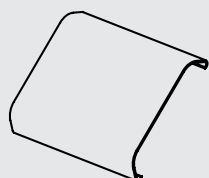


ICARUS® - SUNCLIPS® (PO)

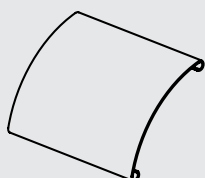


SUNCLIPS® Zeevisserij, Oostende (BE)

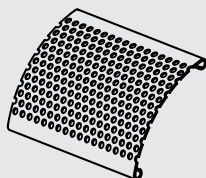
OVERVIEW SUNCLIPS® BLADES



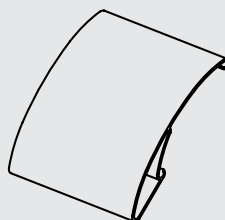
• SUNCLIPS® Classic 96
pg. 6



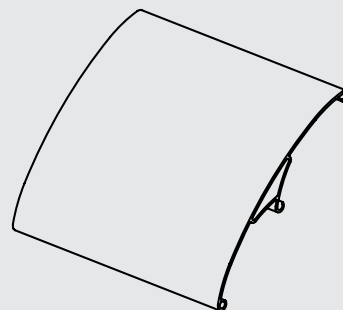
• SUNCLIPS® Evo 96
pg. 6



• SUNCLIPS® Evo 96 perfo
pg. 6

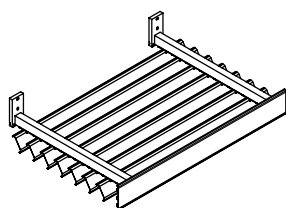


• SUNCLIPS® Evo 130
pg. 6

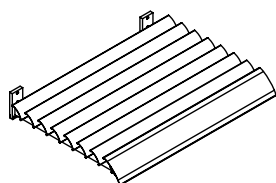


• SUNCLIPS® Evo 176
pg. 6

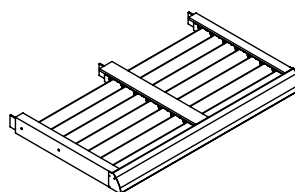
SUNCLIPS® MOUNTING POSSIBILITIES



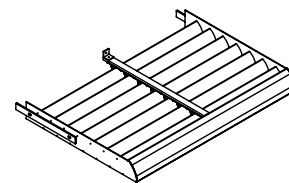
• Horizontal blades
positioned below pg. 8



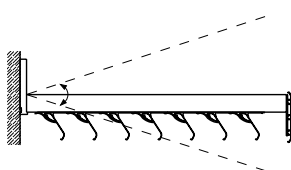
• Horizontal blades
positioned above pg. 10



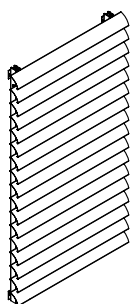
• Horizontal intermediate pg. 12



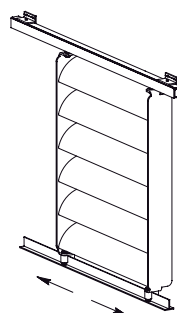
• horizontal or vertical cassette
pg. 14



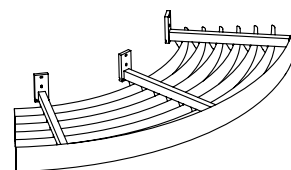
• Inclined pg. 8 - 14
Under conditions, consult our team



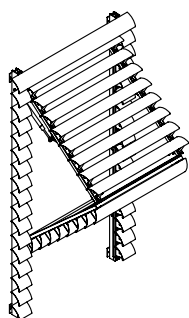
• Vertical pg. 16



• SUNCLIPS® Patio pg. 22



• SUNCLIPS® curved pg. 23



• Project solutions pg. 23

SUNCLIPS® Mullions pg. 18

SUNCLIPS® Fixing brackets pg. 19

SUNCLIPS® Tie rod pg. 20

SUNCLIPS® Fascia profiles pg. 20

SUNCLIPS® Corner solutions pg. 21

SUNCLIPS® BLADES

Description

SUNCLIPS® blades composed of extruded aluminium profiles applicable as sunshading, cladding or visual barrier. SUNCLIPS® Classic SC.096 is ideal for straight solutions. SUNCLIPS® Evo range encounters more design and aerodynamics. SUNCLIPS® Evo has a choice of 3 blades SE.096, SE.130 and SE.176 with an overall width of 96, 130 and 176mm.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66

FINISH

- Anodised (20 microns): SAA, Euras colour range C31-C34 and analock (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

FEATURES

Blade type SUNCLIPS® Classic SC.096.01 can be curved with a minimum radius of 500 mm.

Blade type SUNCLIPS® Evo SE.096.01 can be punched with a free area of 30%.

FIXATION / SUPPORTS

Depending on the application and type of blade, different fixations or supports of the blade are possible.

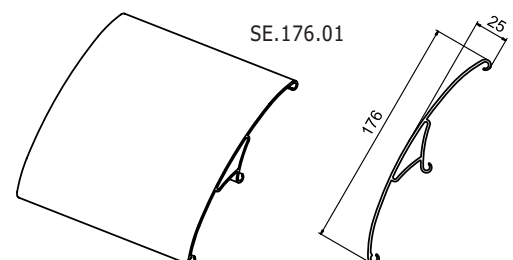
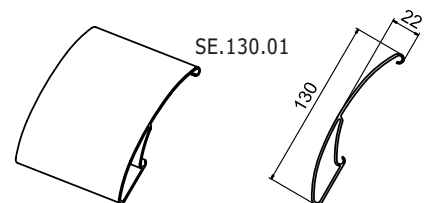
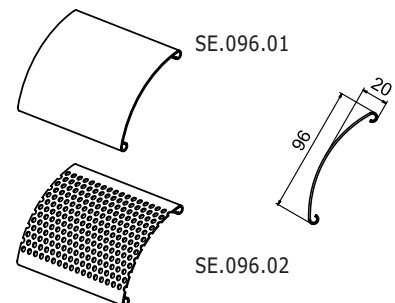
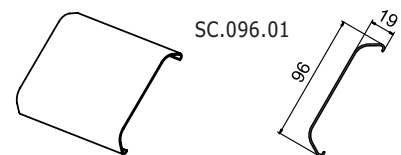
- UV resistant blade supports
- aluminium support
- screwed between end cap plates

INCLINATION OF THE BLADE

For horizontal shading the inclination of the blade is standard 60°. In vertical application the blades are normally positioned under 45°. Other inclinations are possible depending on the application and type of blade.

PITCH OF THE BLADES

100 mm is the standard pitch of the blades, other distances are possible depending on the application and type of blade.



SUNCLIPS® REFERENCES



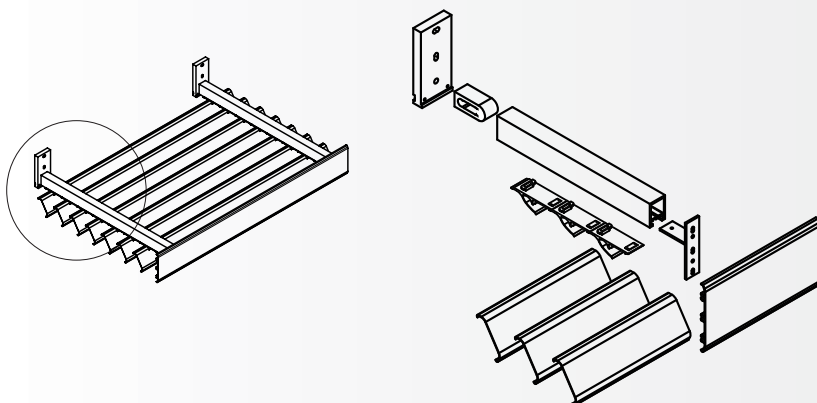
Play - De Prijkels, Nazareth (BE) - arch : Patrick Six, Marie



Zenith Court, Hatfield (UK), SUNCLIPS®



SUNCLIPS® HORIZONTAL BLADES POSITIONED BELOW



Ref Explorer Court, Plymouth (UK), SU Evo130

Description

Horizontal or inclined fixed shading with the blades continuously positioned under the mullions.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66.

FINISH

- Anodised (20 microns): SAA, Euras colour range C31-C34 and analock (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

BLADE TYPE

Applicable on all types of blade.

BLADE SUPPORT

Blades clipped on UV-resistant synthetic blade supports in grey or black.

INCLINATION OF THE BLADE

60° is the standard inclination of the blade.

PITCH OF THE BLADES

Standard pitch of the blades is 100mm. For blade type SUNCLIPS® Evo 130 a pitch of 133mm is possible with use of an intermediate piece. For blade type SUNCLIPS® Evo 176 a pitch of 176 mm is advised.

FASCIA PROFILE (see pg. 20)

As a finish to the sunshading construction a fascia profile is normally used :

- Fascia profile type SC.155, flat fascia profile
- Fascia profile type Evo 176, smooth fascia profile

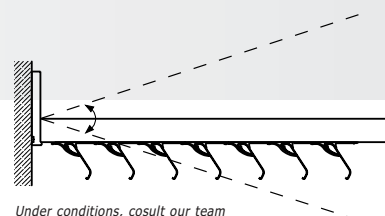
Both fascia profiles are ideal in combination with mullion SD.054 and blade type SUNCLIPS® Classic 96 or SUNCLIPS® Evo 96.

FIXING BRACKET (see pg. 19)

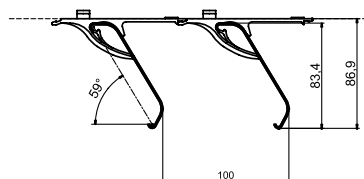
Depending on the wall type different fixing brackets are possible.

MULLIONS (see pg. 18)

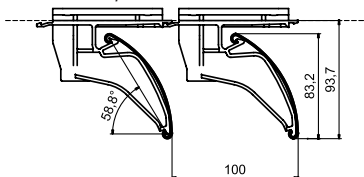
3 types of mullion can be used for this type of sunshading, SD.014, SD.054 and SD.100.



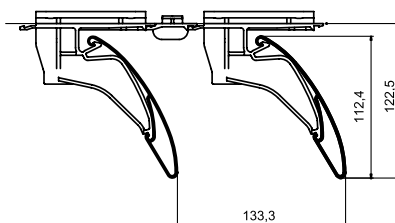
SC.096.01



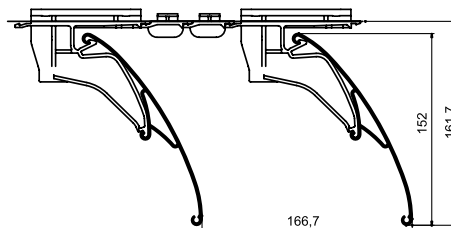
SE.096.01 / SE.096.02



SE.130.01



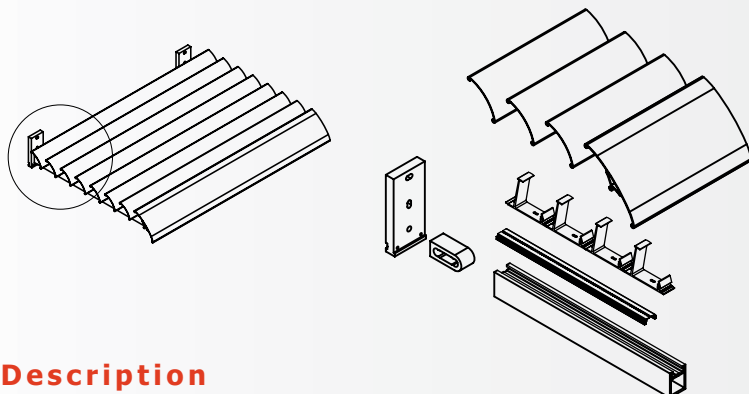
SE.176.01





Ref Explorer Court, Plymouth (UK), SU Evo130

SUNCLIPS® HORIZONTAL BLADES POSITIONED ABOVE



Description

Horizontal or inclined fixed shading with the blades continuously positioned above the mullions.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66.

FINISH

- Anodised (20 microns): SAA, Euras colour range C31-C34 and analock (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

BLADE TYPE

Applicable on all types of blade.

BLADE SUPPORT

Blades are clipped on aluminium supports.

INCLINATION OF THE BLADES.

Inclination of the blades is standard 45°

PITCH OF THE BLADES

100 mm is the standard pitch of the blades. For blade type SUNCLIPS® Evo 130 and SUNCLIPS® Evo176 a pitch of 130 mm and 176 mm is advised.

FASCIA PROFILE (see pg. 20)

As a finish to the sunshading construction a fascia profile is normally used :

- Fascia profile type SC.155, flat fascia profile
- Fascia profile type Evo 176, smooth fascia profile

Both fascia profiles are ideal in combination with mullion SD.054 and blade type SUNCLIPS® Classic 96 or SUNCLIPS® Evo 96.

FIXING BRACKET (see pg. 19)

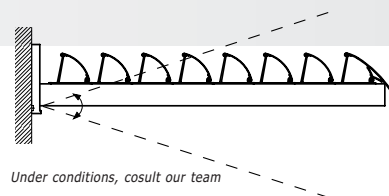
Depending on the wall type different fixing brackets are possible.

MULLIONS (see pg. 18)

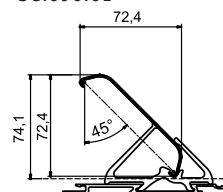
3 types of mullion can be used for this type of sunshading, SD.014, SD.054 and SD.100. For SUNCLIPS® Evo, adapter profile LD.0108 is necessary.



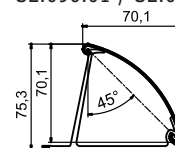
Wetterdienst, Leipzig (D)



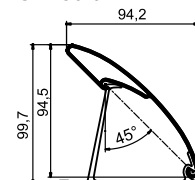
SC.096.01



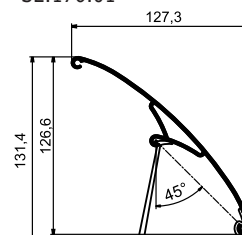
SE.096.01 / SE.096.02



SE.130.01



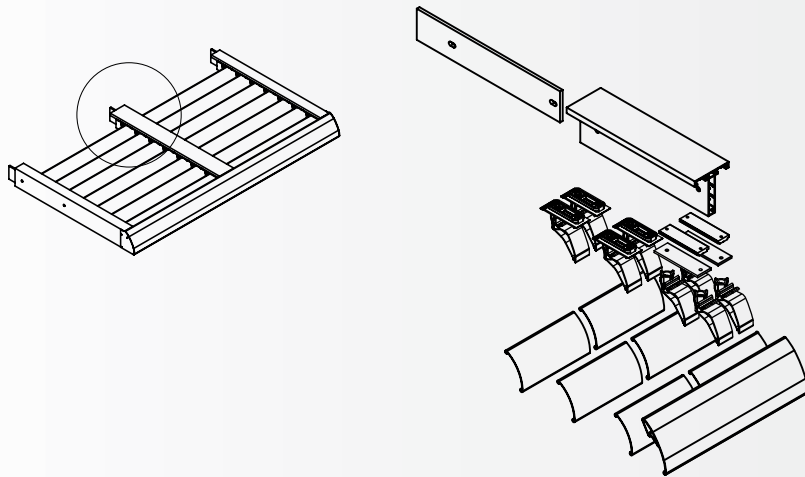
SE.176.01





Wetterdienst, Leipzig (D)

SUNCLIPS® HORIZONTAL INTERMEDIATE



RENSON, Waregem (B) - arch : J. Crepain

Description

Horizontal or inclined fixed sunshading with blades positioned intermediately between the mullions.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66.

FINISH

- Anodised (20 microns): SAA, Euras colour range C31-C34 and analok (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

BLADE TYPE

Preferably used with SUNCLIPS® Evo 96.

BLADE SUPPORT

Blades clipped on UV-resistant synthetic blade supports in grey or black.

INCLINATION OF THE BLADE

60° is the standard inclination of the blade.

PITCH OF THE BLADES

Standard pitch of the blades is 100 mm.

FASCIA PROFILE (see pg. 20)

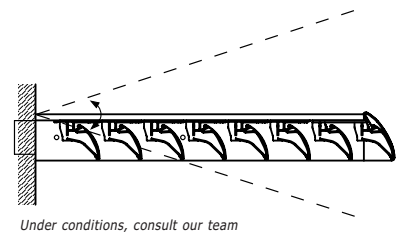
Blade type SUNCLIPS® Evo130 is used as fascia profile.

FIXING BRACKET (see pg. 19)

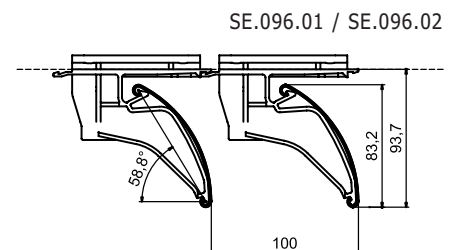
Depending on the wall type different fixing brackets are possible.

MULLIONS (see pg. 18)

The 2 types of mullion applicable for horizontal intermediate sunshading are SD.110.11 and SD.110.12.



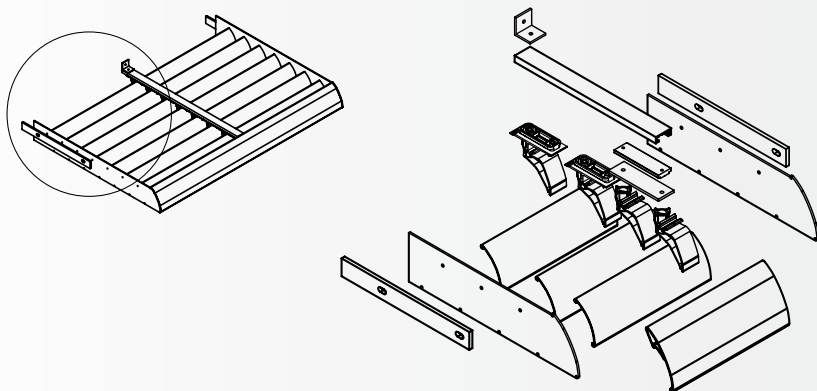
Under conditions, consult our team





RENSON, Waregem (B) - arch : J. Crepain

SUNCLIPS® HORIZONTAL OR VERTICAL CASSETTE



Ref: SUNCLIPS® Evo 96, Oceana Leisure, Leeds (UK),
arch.: Bignal Shaddock Eving-Birmingham

Description

Vertical, horizontal or inclined fixed sunshading with blades screwed between end cap plates. This can be delivered in completely pre-assembled modules to site.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66

FINISH

- Anodised (20 microns): SAA, Euras colour range C31-C34 and analock (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

BLADE TYPE

Only possible with SUNCLIPS® Evo-blades

BLADE SUPPORT

Not used.

INCLINATION OF THE BLADE

Inclination of the blade can be chosen. In horizontal cassettes with an intermediate mullion, the inclination of the blades must be 60°. In vertical cassettes with an intermediate mullion, the inclination must be 45°.

PITCH OF THE BLADES

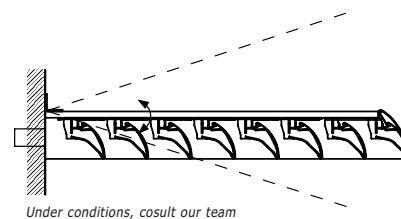
Pitch of the blades can be chosen. Normally there is a pitch of 100 mm.

FIXING BRACKET (see pg. 19)

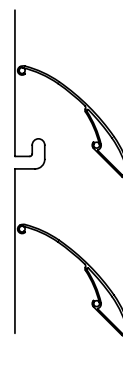
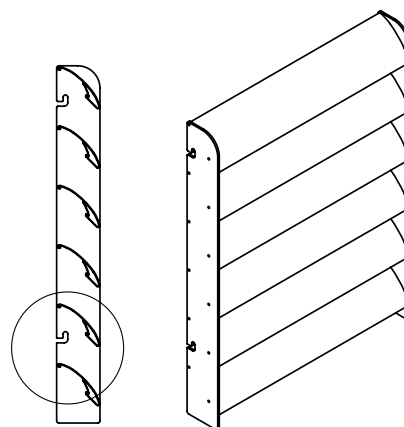
Always mounted on knife or with fixing brackets in vertical application.

MULLIONS

Not used.



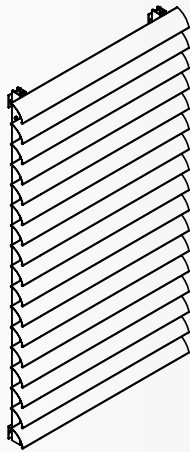
Under conditions, consult our team





Ref SUNCLIPS® Evo 96, Oceana Leisure, Leeds (UK), arch. : Bignall Shacklady Ewing-Birmingham

SUNCLIPS® VERTICAL



City hall, Amay (B) - Arch. : H. Garcia

Description

Vertical fixed sunshading or cladding. Ideal as sunshading for east or west facing facades.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66

FINISH

- Anodised (20 microns): SAA, Euras colour range C31-C34 and analock (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

BLADE TYPE

Applicable on all types of blade.

BLADE SUPPORT

Blades are clipped on aluminium supports

INCLINATION OF THE BLADES.

Inclination of the blades is normally 45°

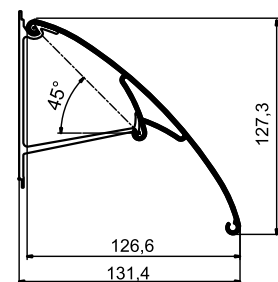
PITCH OF THE BLADES

100 mm is the standard pitch of the blades. For blade type SUNCLIPS® Evo 130 and Evo176 a pitch of 130 mm and 176 mm is advised.

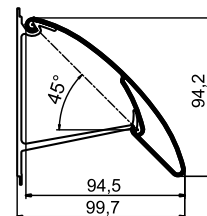
MULLIONS (see pg. 18)

SUNCLIPS® Classic 96 only possible with mullions SD.014, SD.054 and SD.100.

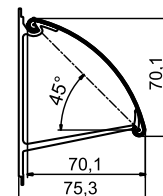
SUNCLIPS® Evo range possible with all types of mullion



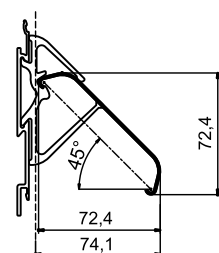
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SE.130.01



SE.096.01 / SE.096.02

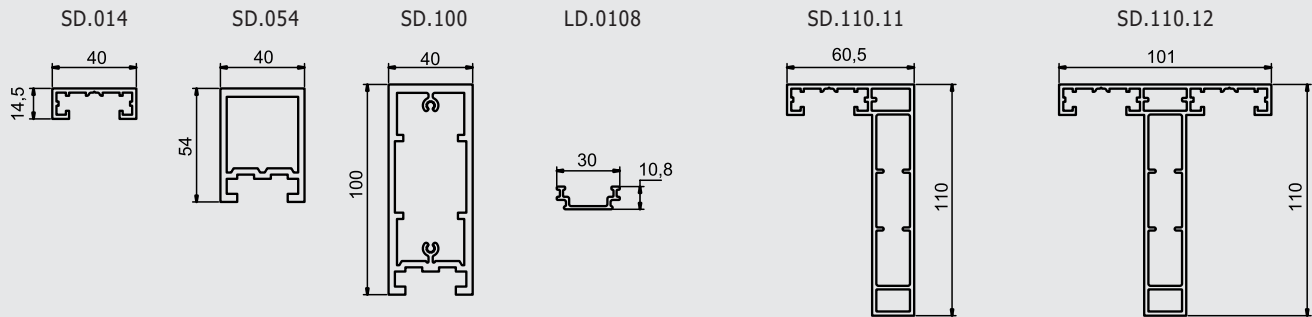


SC.096.01



ref City hall, Amay (B) - Arch. : H. Garcia

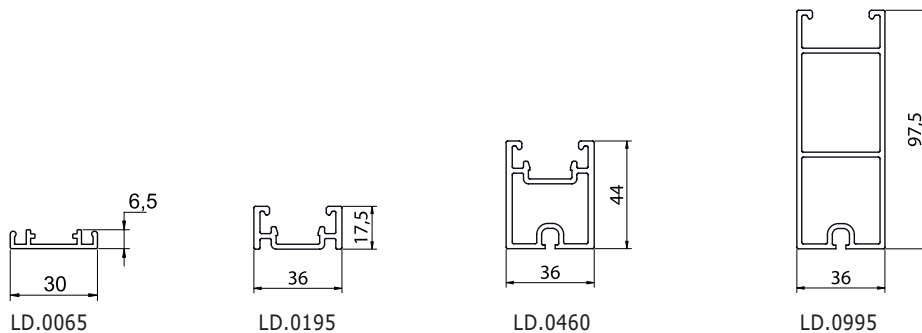
SUNCLIPS® mullions type SD



DESCRIPTION

Extruded aluminium profiles, type SD, are preferably used as mullions in a horizontal application.

SUNCLIPS® mullions type LD



DESCRIPTION

Extruded aluminium profiles, type LD, are preferably used as mullions in a vertical application.

MATERIAL

Aluminium extrusion alloy EN AW-6063 T66.

FINISH

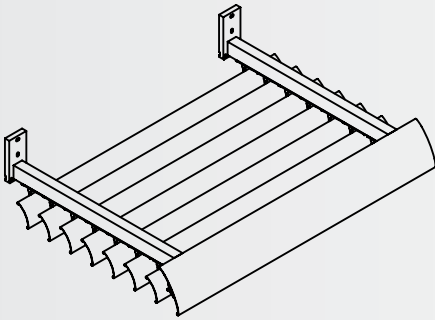
- Anodised (20 microns): SAA, Euras colour range C31-C34 and analock (UK)
- Polyester powder coating (60-70 micron) RAL-colours and Syntha Pulvin range

TECHNICAL CHARACTERISTICS

	LD.0065	LD.0195	LD.0460	LD.0995	SD.014	SD.054	SD.100	SD.110.11	SD.110.12
Profile depth mm	6,5	17,5	44	97,5	14,5	54	100	110	110
Profile width mm	30	36	36	36	40	40	40	60,5	101
Moment of inertia mm ⁴	261	5931	83348	625740	4510	208672	1248414	1084700	1241198
Section modulus mm ³	60	570	3560	12079	497	7360	24405	16026	17144

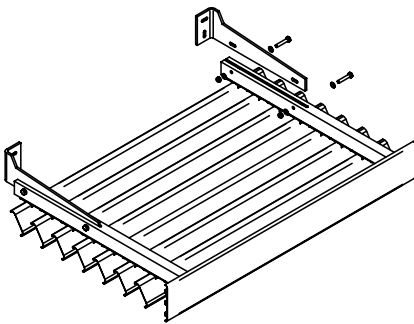
SUNCLIPS® FIXING BRACKETS

Design of the sunshading, wind and snow load and fixing possibilities determine the type of fixing bracket. Different standard solutions can be advised.



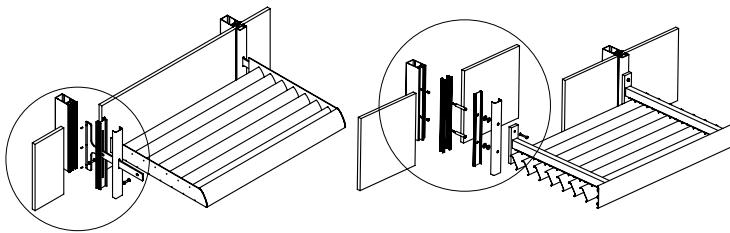
TYPE : RENSON BRACKET

RENSON has some different standard fixing brackets in the program. These brackets are pre mounted on the mullions type SD. Mostly advised when directly mounted on steel constructions, brickwork and C/W with widths of 50/60 mm.



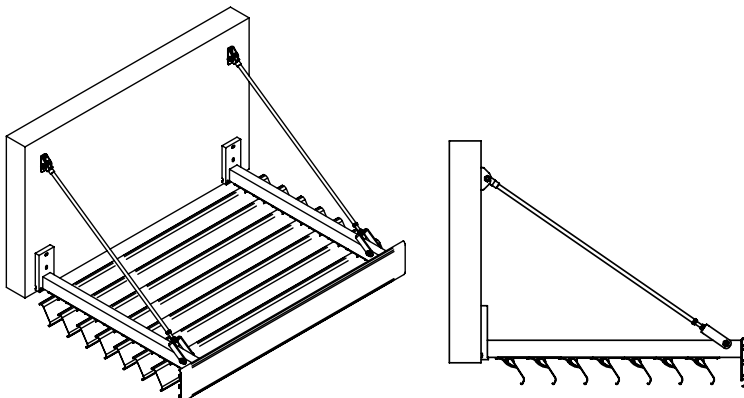
TYPE : FIXING ON KNIFE

Installation of the knife is pre mounted on the facade. Sunshading mullions are mounted afterwards.



TYPE : CURTAIN WALLING FIXING

Depending on the type of C/W, different fixing brackets can be designed.



SUNCLIPS® TIE ROD

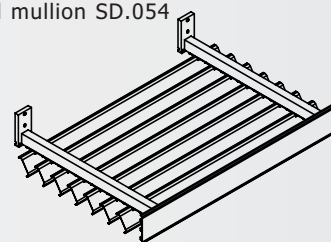
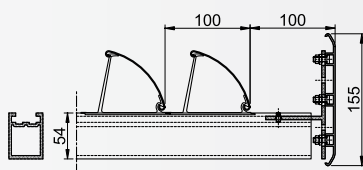
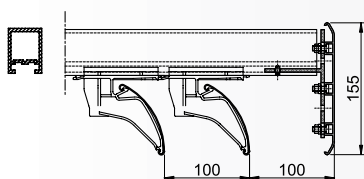
Depending on the projection, fixing method and loadings, a tie-rod can be designed made-to-measure and delivered.

SUNCLIPS® FASCIA PROFILES

Depending on the projection, fixing method and loadings, a tie-rod can be designed made-to-measure and delivered.

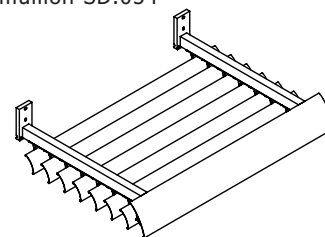
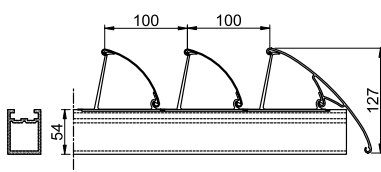
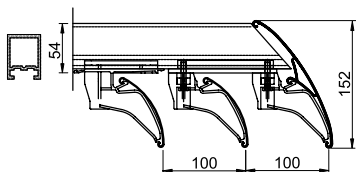
FASCIA PROFILE SC.155

- Mounting : for blades under or above the mullion
- Applicable in combination with blade type SUNCLIPS® Classic SC.096 or Evo SE.096 and mullion SD.054



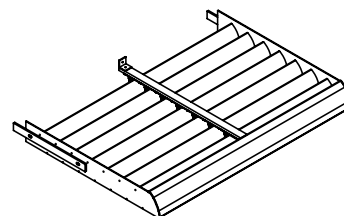
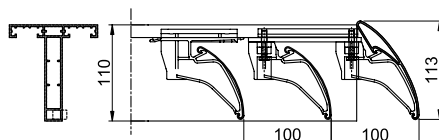
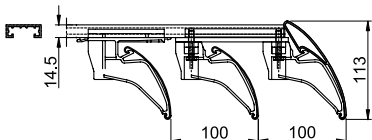
FASCIA PROFILE SUNCLIPS® EVO-BLADE SE.176

- Mounting: for blades under or above the mullion
- Applicable in combination with blade type SUNCLIPS® Classic SC.096 or Evo SE.096 and mullion SD.054



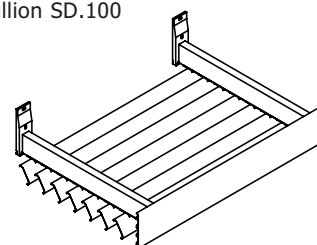
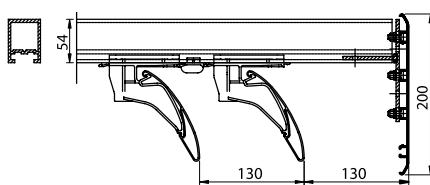
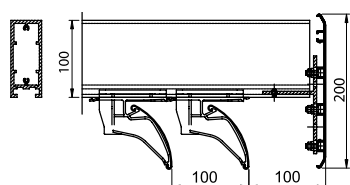
FASCIA PROFILE SUNCLIPS® EVO-BLADE SE.130

- Mounting: cassette or intermediate
- Applicable in combination with mullion SD.014 or mullion SD.110.11 and SD.110.12



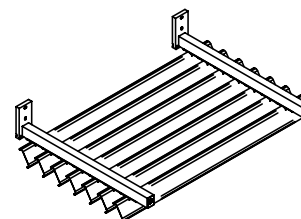
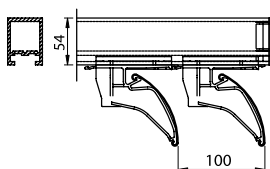
FASCIA PROFILE SL.200

- Mounting: for blades under or above the mullion
- Applicable in combination with - blade type SUNCLIPS® Classic SC.096 or Evo SE.096 and mullion SD.100
- blade type SUNCLIPS® Evo SE.130 and mullion SD.054



NO FASCIA PROFILE - MULLION CAP SD.054.98

- Applicable in combination with mullion SD.054



SUNCLIPS® CORNER SOLUTIONS



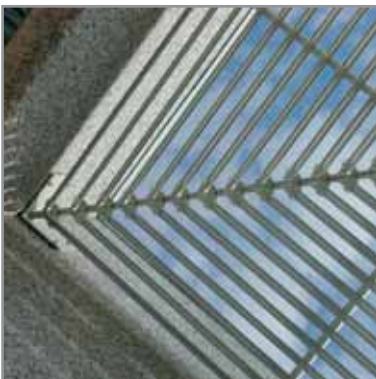
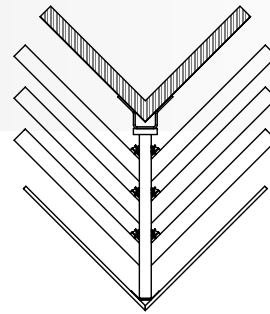
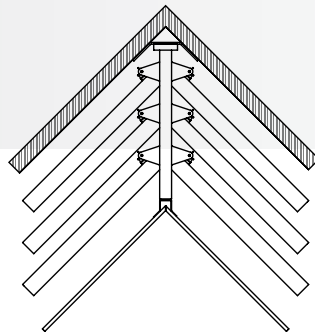
ref. Apotheek De Pauw, SU Classic, Varsenare (BE), arch.: Ivan De Coster

RENSON has a unique corner solution for installation with blades under the mullions with the following advantages:

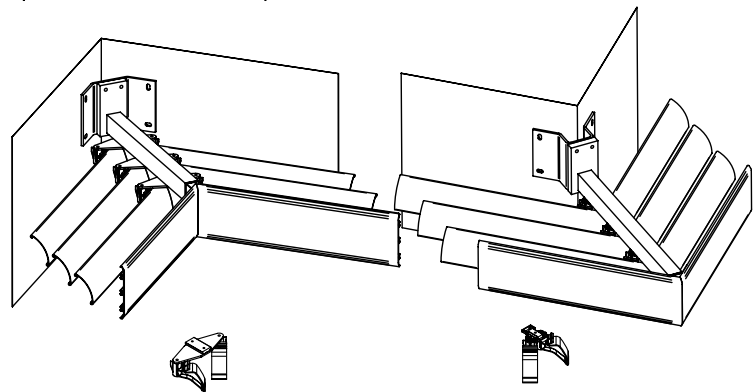
- only 1 corner mullion needed
- all angles possible
- internal and external corner possible
- perfect match of the blades
- possible with all type of Sunclips blades



ref. IPSA, Angoulême (FR), SU Classic, Arch.: Axiale Architecture



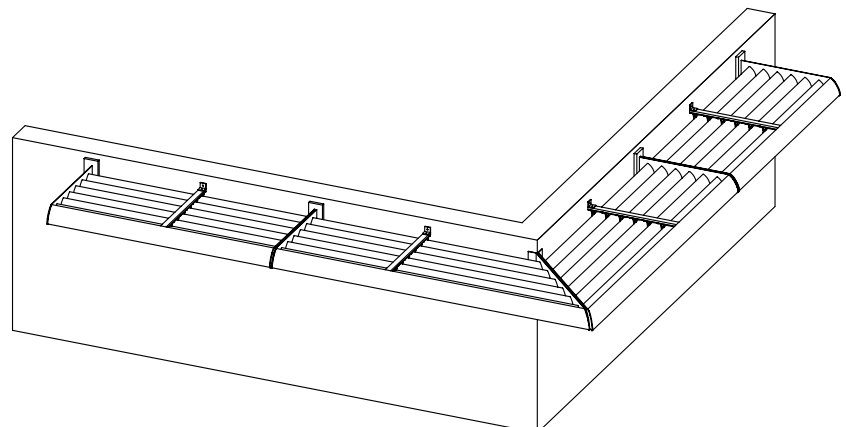
ref. Trade Park (NL), arch.: Noort, Oosterhout



for cassette applications special corner solutions can be designed.

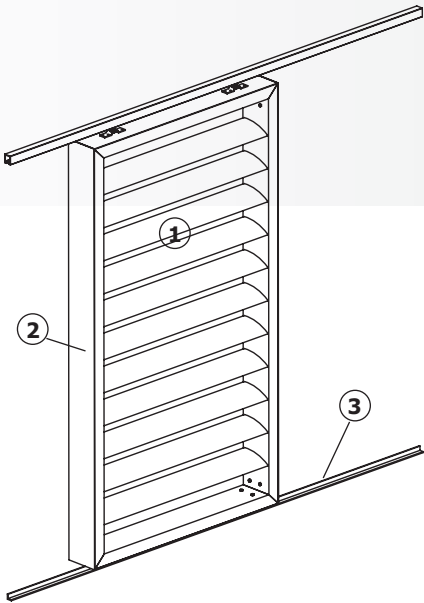


ref. Transat, Lorient (FR), arch.: Mollo



SUNCLIPS® PATIO

To obtain an optimal solar heat and natural light, RENSON has developed SUNCLIPS® Patio sunshading aluminium sliding panels. The panels consist of a fixed frame (LOGGIA® 130) in which SUNCLIPS® Evo130 blades are fitted. The blades can be fitted under different angles and pitches.



Ref. Candy Wharf, Copperfield Road - London (UK),
SUNCLIPS® patio Evo130

Typical maximum dimensions of sliding panels LOGGIA®130 (width x height)

Blade type	Blade angle (A)	Pitch (P)	650Pa	800Pa	1250Pa
SE 130	60°	130 mm	1300 x 5510	1300 x 4720	1300 x 4680
SE 130	45°	160 mm	1300 x 5130	1300 x 4870	1300 x 3930
SE 130	45°	190 mm	1300 x 5350	1300 x 5080	1300 x 4390

Other dimensions available on request

STANDARD ASSEMBLY

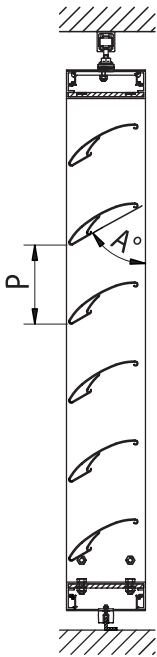
1. Blade type SUNCLIPS® Evo130
2. Frame type LOGGIA® 130
3. Silent low friction rail system

CONTROL

Manual or motorised

ALTERNATIVE :

Sliding panels with the blades positioned between end plates. Blade type : applicable with different types of SUNCLIPS® Evo blades (propositions on request).

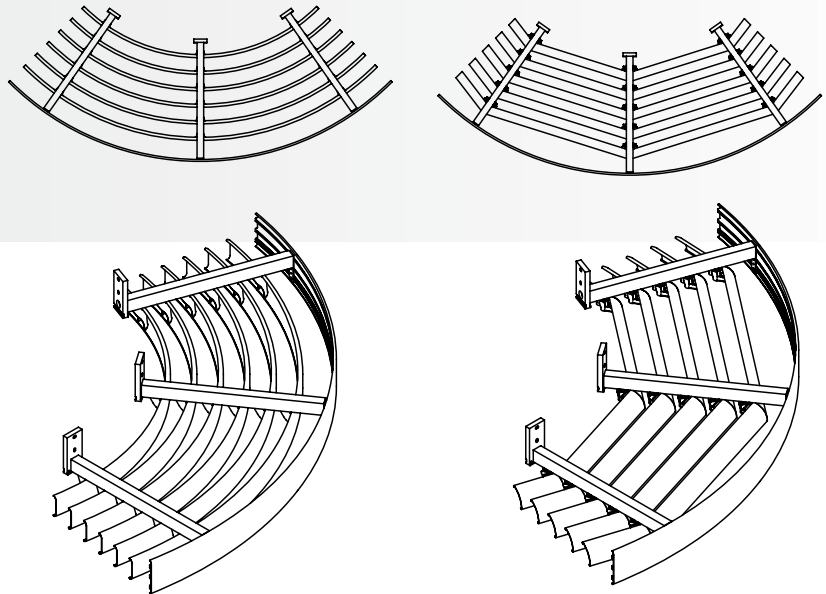


SUNCLIPS® CURVED



Ref. Arlington Road - London (UK), SU

Curved application only possible with blade type SUNCLIPS® Classic 96 and with a minimum radius of 500 mm. Also fascia profile type SC.155 can be curved. Alternatively blades can be faceted (possible with all types of blade) and a curved fascia profile.



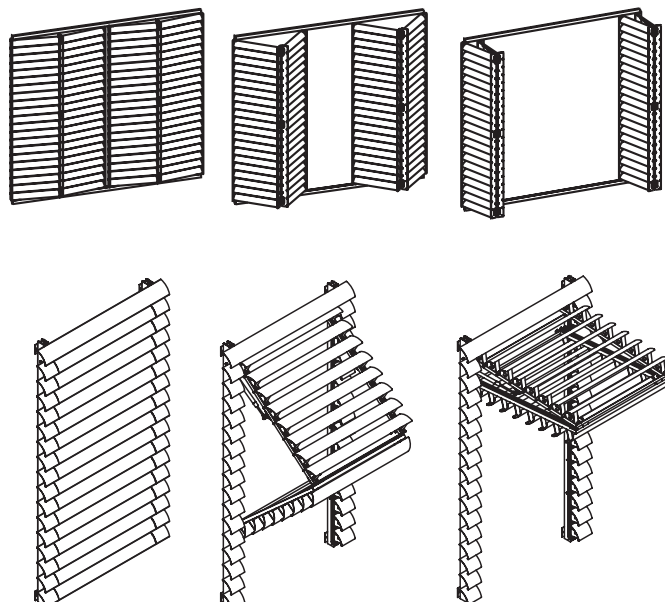
Ref. Private house (BE), SU Classic



Ref. Hotel Mercure (PL), SU Classic

SUNCLIPS® PROJECT SOLUTIONS

This brochure will only give an overview of our standard solutions. Our project department can advise you and design your specific project solution.



Ref. Raiffeisenlandesbank Kärnten, Klagenfurt (AT)

RENSON: YOUR PARTNER IN NATURAL VENTILATION AND SOLAR SHADING

RENSON, with its rich tradition in innovation and experience since 1909, is profiling itself as an undisputed market leader in natural ventilation and solar shading. Since 2003, our head quarters have been located next to the E17 Kortrijk - Gent motorway in Waregem (Belgium). This remarkable building is a real and working model of our "Healthy Building Concept" and is a prototype exhibiting our technological strengths.

A healthy internal climate is RENSON's priority and this is far more than just a trend. We develop and commercialise products that contribute to lower energy consumption. In this way, RENSON provides an important link towards the regulation applications from the Kyoto ClimateTreaty.

RENSON HAS IT ALL

- Our multidisciplinary R&D department is co-operating with leading European research organizations. The outcome is a complete range of innovative concepts and products.
- Our automatically powder coating installation, anodisation unit, PVC injection installation, PVC mould construction, assembly department and warehouse facilities are spread over a surface area of 75.000 m². Thanks to its consequent vertical integration, RENSON delivers high quality products.
- RENSON's head quarters, sales and marketing department are in Belgium, but we also have plants and offices in France and the UK. RENSON also has a sales structure beyond the European borders.
- The diversity and capability from RENSON's project team are our warranty for correct solutions for each individual building project. The creation of constructive long term relationships with construction specialists is our priority.



RENSON headquarters (BE)



RENSON headquarters (BE)



RENSON (UK) Maidstone

Conditional technical changes • The most recent edition of the brochure can be downloaded on www.renson.eu

RENSON Sunprotection • Industriezone 2 Vijverdam • Maalbeekstraat 6 • B-8790 Waregem
Tel. +32 (0)56 62 71 07 • Fax +32 (0)56 62 71 47 • projects@renson.be • www.renson.eu

RENSON Fabrications LTD (UK) • Fairfax Units 1-5 • Bircholt Road • Parkwood Ind Est
Maidstone • Kent • ME15 9SF • Sales Tel. 01622/754123 • Fax 01622/689478
Fax 01622/689479 • info@rensonuk.net • www.renson.eu

 **RENSON**
DESIGN IN SUNPROTECTION