



STRUCTURAL ALUMINIUM SOLAR SHADING

# SUNCLIPS<sup>®</sup>



## INTRODUCTION

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

### Solar shading is necessary

A building or home, with large glazed surfaces facing south, offers many advantages. During the autumn, winter and spring you enjoy the benefits of the incoming sunlight. In summer, it can lead to an uncomfortable indoor climate and irritating light reflection.

Structural solar shading and screens prevent this overheating. They stop the sunrays before they come into contact with the glazed surfaces. Undesired heat and blinding light do not enter the building. This means no blinding or annoying reflections on TV or computer screens. And yet, you still keep visual contact with your environment. The view outside is important, and is therefore respected.

### The Kyoto Protocol

Many countries have now signed the Kyoto protocol. With growing awareness, they are now acknowledging the detrimental but not yet irreversible effect man is having on our planet and the climate. These involved countries also want to commit themselves to the cause and take measures. If we want to reduce the greenhouse effect, energy consumption must be reduced.

One significant high-energy activity is the cooling of buildings. Efficient sunshading can partly, and sometimes even fully, resolve this issue. In this case additional cooling is unnecessary and energysaving.

Different governments have already agreed on laws concerning energy consumption and ventilation.

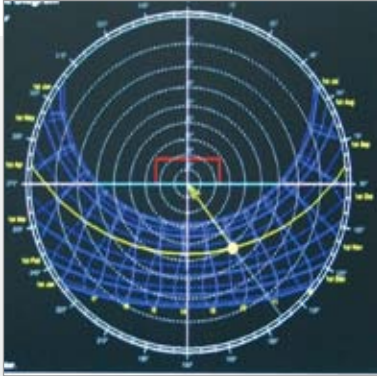
- Belgium: Regelgeving van Energieprestatie & Binnenklimaat (EPB)
- the Netherlands: Energie Prestatie Coëfficiënt (EPC)
- France: Règlement Thermique 2005 (RT2005)
- Germany: Energieeinsparverordnung
- UK:
  - Approved Document L2 'Conservation of fuel and power in buildings other than dwellings'
 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



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



SUNCLIPS® Lou Clapas, Monaco, France

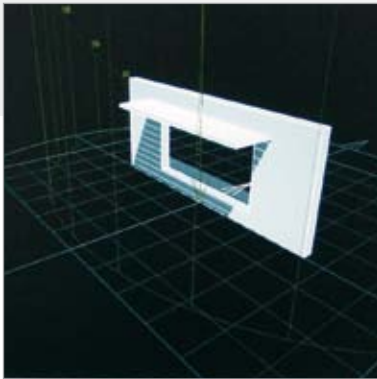


Stereographic diagram

## Dimensioning of sunshading

The sun is an important primary source of heat and light. The design, dimensioning and control of sunshading are sometimes quite complex. The sunshading has to be designed so it reduces direct solar heat during summertime, but the extra warmth is welcome during wintertime. The natural sunlight must also be optimally controlled. There must be sufficient natural lighting, but uncomfortable reflections or the chance of blinding must be avoided.

A number of basics apply concerning the relevant data in order to dimension solar shading.



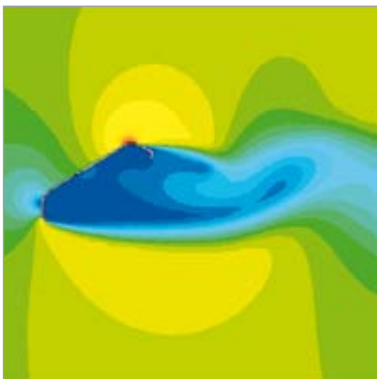
Shadow analysis

## Sun path

The position of the sun varies from hour to hour and from day to day. The different positions can be visually presented in a sun path diagram. These sun path curves are dependent on position on the globe, and can be determined with latitude and longitude. The sun path curves 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 the above into account, together with the orientation of the outer wall, the exact shading angles can be calculated to design the correct dimensions of the shading.

RENSON "Design in Sunprotection" disposes of the software required to offer you professional advice in this respect.



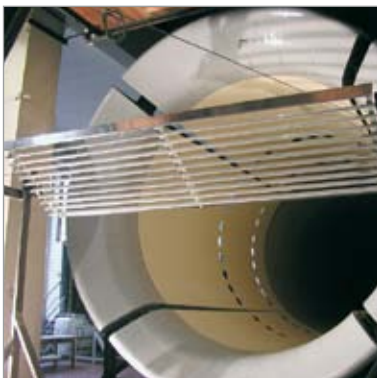
CFD simulation

## Development

New developments are conceived with high-end development methods such as simulations and collaboration with famous research institutes such as BBRI, Von-Karman Institute, CSTB, etc. All products are fully tested for stability and sustainability.

## Stability and dimensions

A detailed stability calculation can be conducted in conformity with the prevailing Eurocodes, to determine the correct wind and snow load on the shading. These loads determine the correct spans of the blades and supporting profiles, as well as the method of fixing to the rear structure.



Wind tunnel test

## Project solutions

This brochure merely gives you an overview of the 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 SUNPROTECTION" OFFERS DIFFERENT POSSIBILITIES TO REALISE AESTHETIC AND ARCHITECTURAL SUNSHADING ACCORDING TO THE DIFFERENT REGULATIONS.**

# CONTENTS

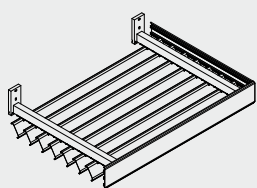
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## SUNCLIPS® blades p.5

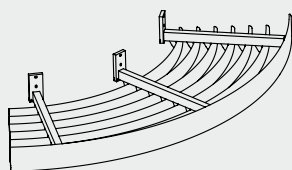
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## SUNCLIPS® mounting possibilities

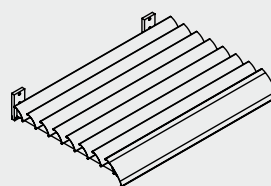
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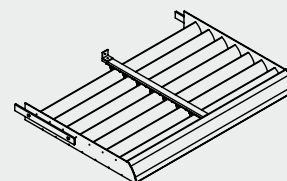
• Horizontal, positioned below p. 6



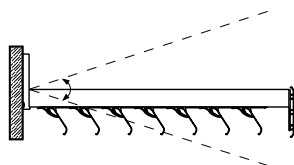
• Horizontal, positioned below, curved p. 8



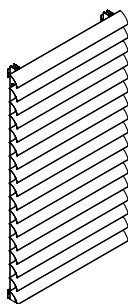
• Horizontal, positioned above p. 10



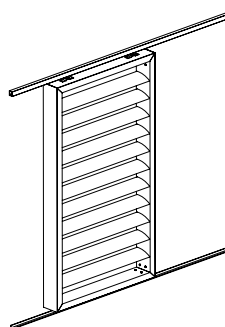
• SUNCLIPS® cassettes p. 12



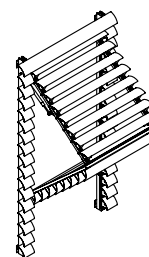
• Inclined p. 8/12



• Vertical assembly p. 14



• SUNCLIPS® sliding panels p. 16



• SUNCLIPS® folding shutters p. 18

## SUNCLIPS® mullions p.20

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## SUNCLIPS® fixing brackets p.21

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## SUNCLIPS® tie rod p.21

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## SUNCLIPS® fascia profile p.22

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## SUNCLIPS® corner solution p.23

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ICT Kortrijk (BE), Sunclips® Evo 96



Vriesenveen (NL)

### Description

SUNCLIPS® blades are made of extruded aluminium profiles to be used as solar shading, wall cladding or visual barrier. The SUNCLIPS® Classic SC.096 is ideal for slim designs. The SUNCLIPS® Evo range has a more aerodynamic design. SUNCLIPS® Evo has 3 dimensions: SE.096, SE.130 and SE.176 with an overall width of 96, 130 and 176 mm oversizing.

### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66

### FINISH

- Anodised (20 micron) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

### FEATURES

Blade type SUNCLIPS® Classic SC.096 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 %.

### FIXING/BLADE SUPPORT

Depending on the application and blade type, the blade can be fastened to:

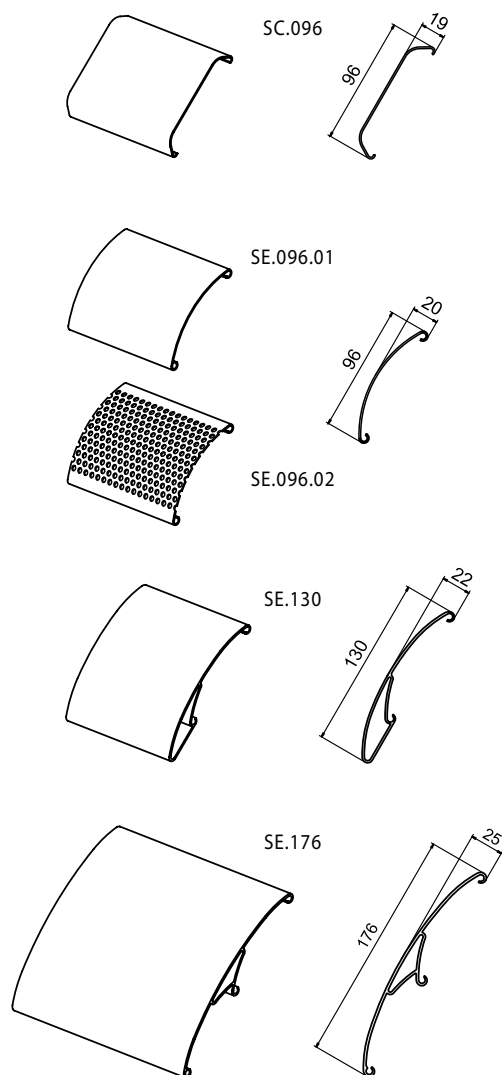
- UV-resistant plastic clips
- aluminium clips
- screwed between endcap plates

### INCLINATION OF THE BLADE

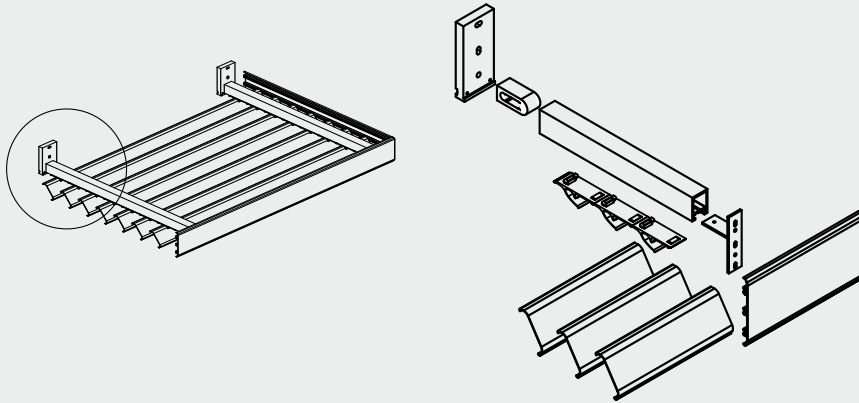
When applied as horizontal sunshading, the inclination of the blades is 60° as standard. With vertical applications or horizontal positioning above, the inclination of the blades is 45° as standard. Other inclinations are possible depending on the application and type of blade.

### BLADE PITCH

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



## SUNCLIPS® HORIZONTAL BLADES POSITIONED BELOW



Visserij, Oostende (BE), Sunclips® Evo 96

### Description

Permanent aluminium sunshading where the blades are positioned continuously under the mullions. This application can be horizontal or with projection with inclination.

#### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66

#### FINISH

- Anodised (20 micron) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

#### BLADE TYPE

Applicable with all SUNCLIPS® blade types

#### BLADE SUPPORT

Blades are clipped onto UV-resistant plastic clips

#### INCLINATION OF THE BLADE

The inclination of the blade is 60° as standard

#### BLADE PITCH

The blade pitch is 100 mm as standard. For blade type SE.130, an intermediate distance of 133 mm is possible. For blade type SE.176, an intermediate distance of 166 mm is recommended.

#### FASCIA PROFILE

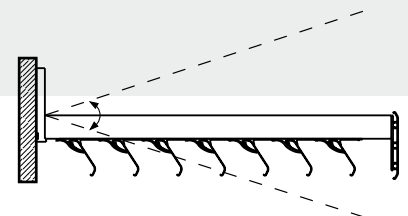
A fascia profile can be applied as a finish of the construction. Multiple types are available. For detailed information see p. 22.

#### WALL FIXING

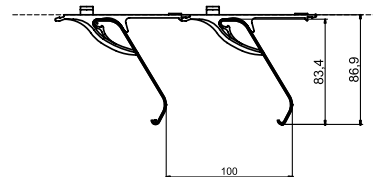
Different solutions are possible for assembly on the wall. For detailed information see p. 21.

#### MULLIONS

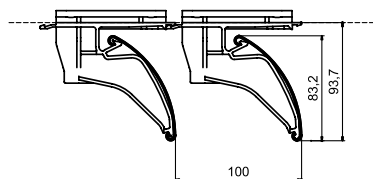
3 types of mullions are available for horizontal sunshading positioned below: SD.014, SD.054 and SD.100. For detailed information see p. 20.



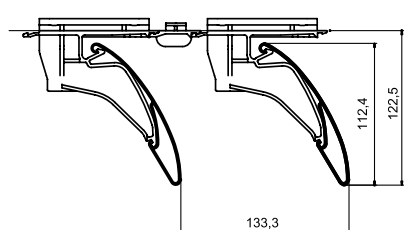
SC.096



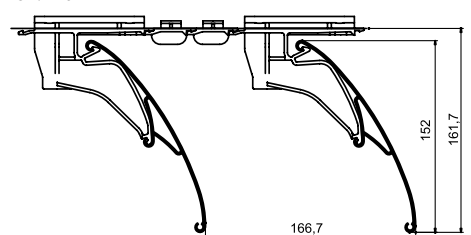
SE.096.01 / SE.096.02



SE.130



SE.176

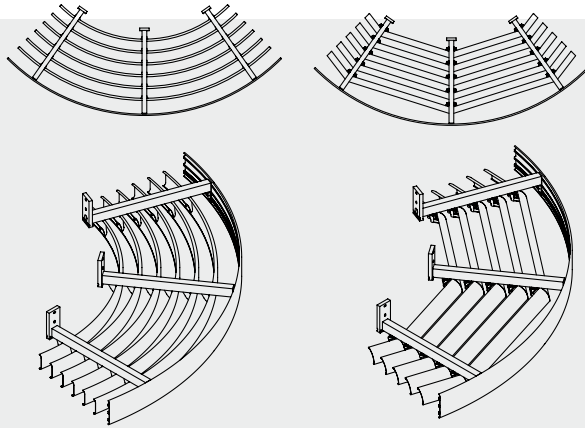


SUNCLIPS® REFERENCE



Circuit Spa – Francorchamps (BE), SUNCLIPS® Evo 96

## SUNCLIPS® HORIZONTAL BLADES POSITIONED BELOW, CURVED



### Description

Permanent aluminium sunshading assembled on a curved outer wall with continuous blades placed under the mullions. This application can be horizontal or with inclination. The design with curved blades is only possible with blade type SC.096, with a minimum radius of 500 mm. Only fascia profile SC.155 can be curved. As an alternative design, the blades can be offered straight with or without a curved fascia SC.155. With this faceted design all SUNCLIPS® blade types can be used.

#### MATERIAL

Aluminium extrusion profiles alloy EN AW-6063 T66

#### FINISH

- Anodised (20 microns) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

#### BLADE TYPE

- Design with curved blades: only SC.096
- Facetted design: all SUNCLIPS® blade types

#### BLADE SUPPORT

- Design with curved blades: aluminium clips type SC.080.11 - .15
- Facetted design:
  - for blade SC.096: UV-resistant plastic clips type SC.084.11 - .14
  - for blades SE.096, SE.130 and SE.176: UV-resistant plastic clips type SE.084.11 - .19

#### INCLINATION OF THE BLADE

- Design with curved blades: 90°
- Facetted design: 60°

#### BLADE PITCH

The blade pitch is 100 mm as standard. For blade types SE.130 and SE.176 an intermediate distance of 133 mm is recommended.

#### FASCIA PROFILE

A fascia profile can be applied as a finish to the construction. Only type SC.155 can be curved. For detailed information see p. 22.

#### WALL FIXING

Different solutions are possible: see p. 21

#### MULLIONS

3 standard types of mullions are applicable: SD.014, SD.054 and SD.100. For detailed information see p. 20.



King Edwards Wharf, Birmingham (UK)  
arch.: Ian Darby Partnership



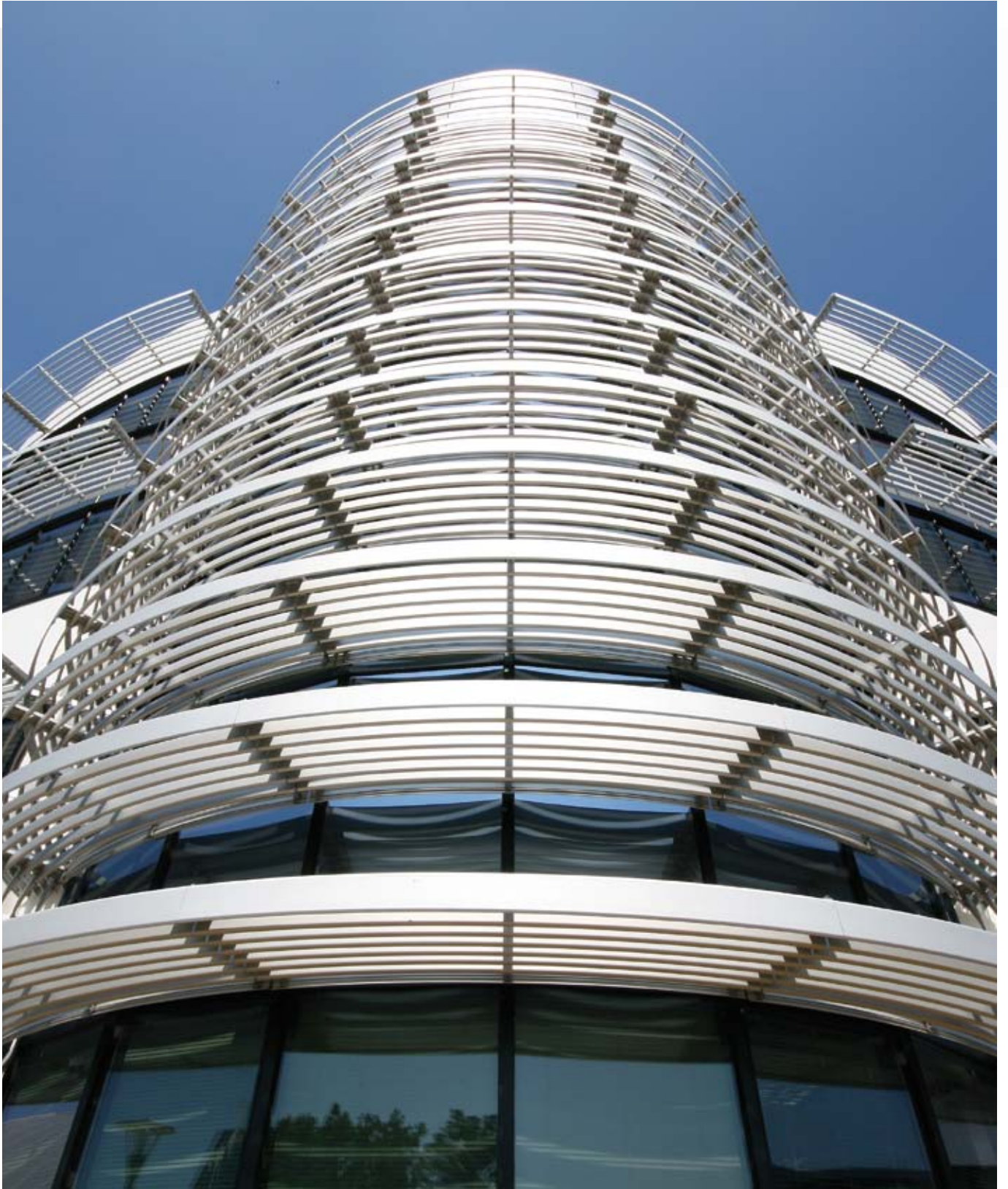
Private home (BE)



Hotel Mercure (PL)

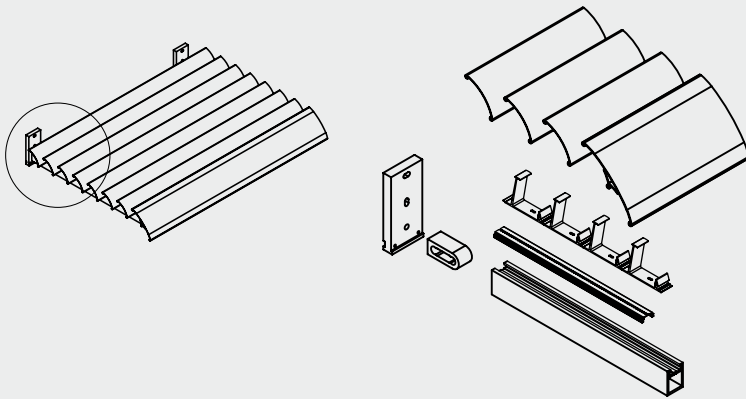


Agnes Heemskerk (NL)



Nautile Essec, Paris (FR), SUNCLIPS®, multiple curved layers

## SUNCLIPS® HORIZONTAL BLADES POSITIONED ABOVE



Wetterdienst, Leipzig (D)

### Description

Permanent aluminium sunshading where the blades are positioned continuously above the mullions. This application can be horizontal or with inclination.

#### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66

#### FINISH

- Anodised (20 micron) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

#### BLADE TYPE

Applicable with all SUNCLIPS® blade types

#### BLADE SUPPORT

Blades are clipped onto aluminium clips

#### INCLINATION OF THE BLADE

The inclination of the blade is 45° as standard

#### BLADE PITCH

The blade pitch is 100 mm as standard. For blades type SE.130 and SE.176 intermediate distances of 130 and 176 mm respectively are recommended.

#### FASCIA (SEE P. 22)

A fascia profile can be applied as a finish to the sunshade construction:

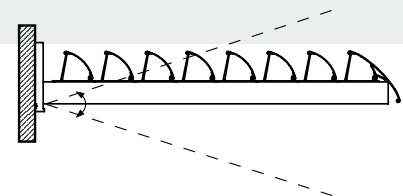
- fascia profile type SC.155: flat fascia profile
- fascia profile blade type SE.176: rounded fascia profile

#### WALL FIXING (SEE P. 21)

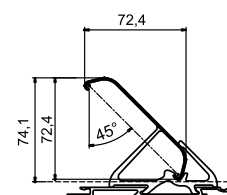
Different solutions are possible for assembly on the wall

#### MULLIONS (SEE P. 20)

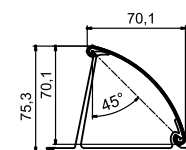
3 types of mullions are applicable for horizontal sunshading positioned above: SD.014, SD.054 and SD.100. For SUNCLIPS® Evo, adapter profile LD.0108 is required.



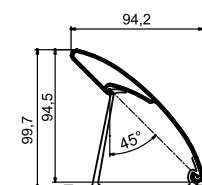
SC.096



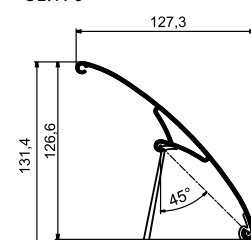
SE.096.01 / SE.096.02



SE.130



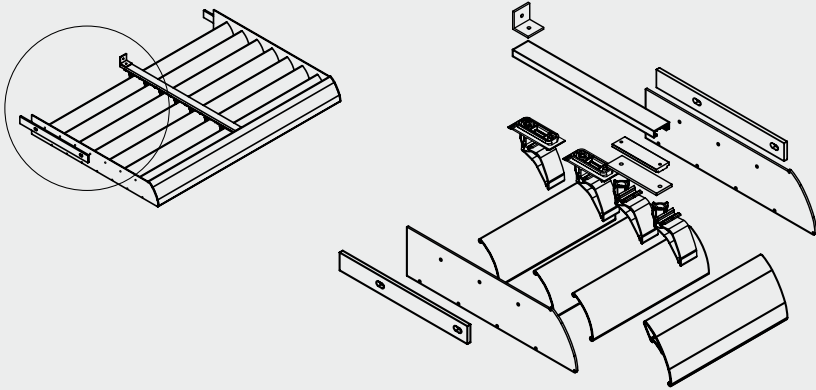
SE.176





Wetterdienst, Leipzig (D)

## SUNCLIPS® CASSETTES



Stade de Genève, Genève (CH)

### Description

Permanent visual barrier or sunshading where the blades are screwed between endcap plates. This application can be vertical, horizontal or with inclination. The cassettes can be delivered in completely preassembled modules on site.

#### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66  
Endcap plates in aluminium or treated steel

#### FINISH

- Anodised (20 micron) SAA (only aluminium parts)
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

#### BLADE TYPE

Possible with blades SE.096, SE.130. and SE.176

#### BLADE SUPPORT

Not applicable

#### INCLINATION OF THE BLADE

Inclination of the blade as required. For cassettes with an intermediate mullion the inclination must be 60° for horizontal shading and 45° for vertical applications.

#### BLADE PITCH

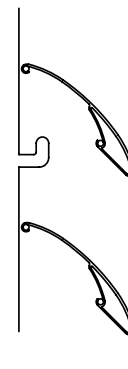
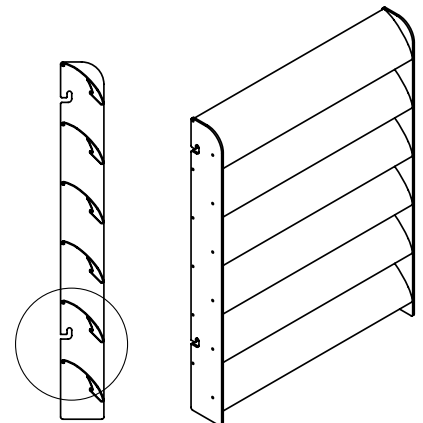
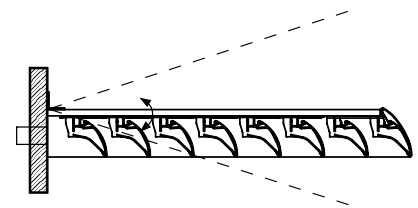
The blade pitch is 100 mm as standard. Other pitches can be chosen.

#### WALL FIXING (SEE P. 21)

Assembly on knife, directly on the outer wall or with suspension points on the outer wall for vertical applications.

#### MULLIONS

Not applicable



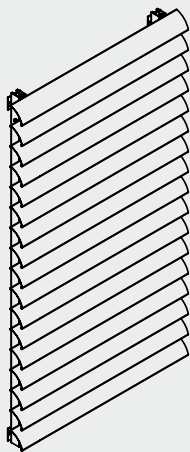
## SUNCLIPS® REFERENCE

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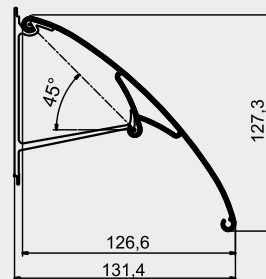


Ref SUNCLIPS® Evo 96, Oceana Leisure, Leeds (UK), arch.: Bignall Shacklady Ewing - Birmingham

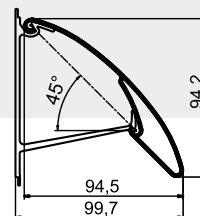
## SUNCLIPS® VERTICAL



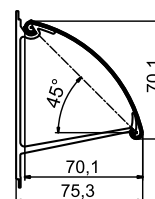
Town Hall, Amay (B) – arch.: H. Garcia Lunenburg (DE)



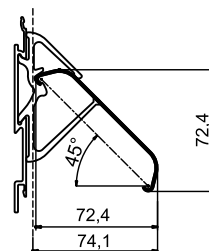
SE.176



SE.130



SE.096.01 / SE.096.02



SC.096



(00) bloquaunt

### Description

Vertically assembled permanent visual barrier or sunshading. Ideal for use as sunshading on east or west walls.

#### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66

#### FINISH

- Anodised (20 micron) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

#### BLADE TYPE

Possible with all SUNCLIPS® blades

#### BLADE SUPPORT

Blades are clipped onto aluminium clips

#### INCLINATION OF THE BLADE

Inclination of the blade is 45° as standard

#### BLADE PITCH

The blade pitch is 100 mm as standard

#### MULLIONS (SEE P. 20)

SUNCLIPS® Classic 96 is only possible on mullions SD.014, SD.054 and SD.100. SUNCLIPS® Evo range is possible on all SD and LD mullion types.

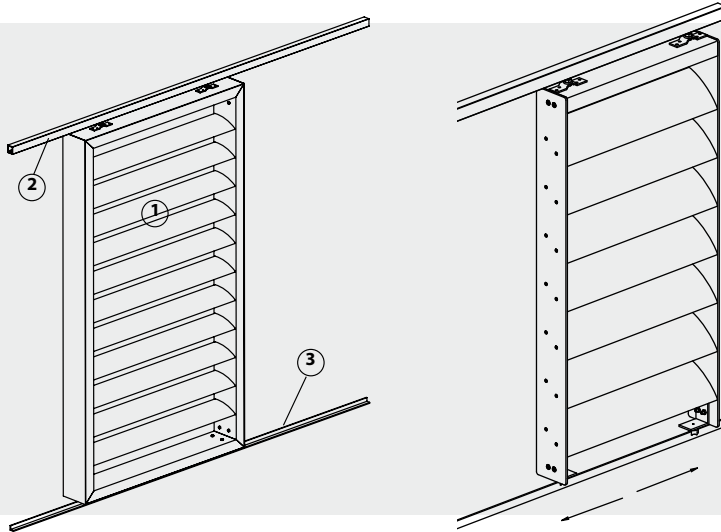
#### OPTIONAL: EXTENSION PANELS

Prefabricated extension panels can be provided for vertical sunshading, e.g. for maintenance of the windows.



Porte Océane, Auray (FR), SUNCLIPS® Evo 96 vertical

## SUNCLIPS® SLIDING PANELS



Buges (B), Sunclips® Patio



Buges (B), Sunclips® Patio



Kortrijk (B)



Jardin des Sens (FR)

### Description

RENSON has developed a wide range of sliding panels to manage solar heat and natural light. Based on the SUNCLIPS® blades, two types are available: LOGGIA® and PATIO®.

LOGGIA® panels are made of type LG.130 frames with SUNCLIPS® blade type SE.130. The blades are assembled fixed or movable.

PATIO® panels are sliding SUNCLIPS® cassettes, where the blades are screwed between endcap plates.

In both cases, the blades can be positioned at different inclinations and with different blade pitches depending on the desired shading and the required view.

### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66

### FINISH

- Anodised (20 micron) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

### BLADE TYPE

Possible with blades SE.096, SE.130. and SE.176

### STANDARD ASSEMBLY

1. Sunshading blades type SUNCLIPS®
2. High quality, sliding hardware
3. Guide rail

### OPERATION

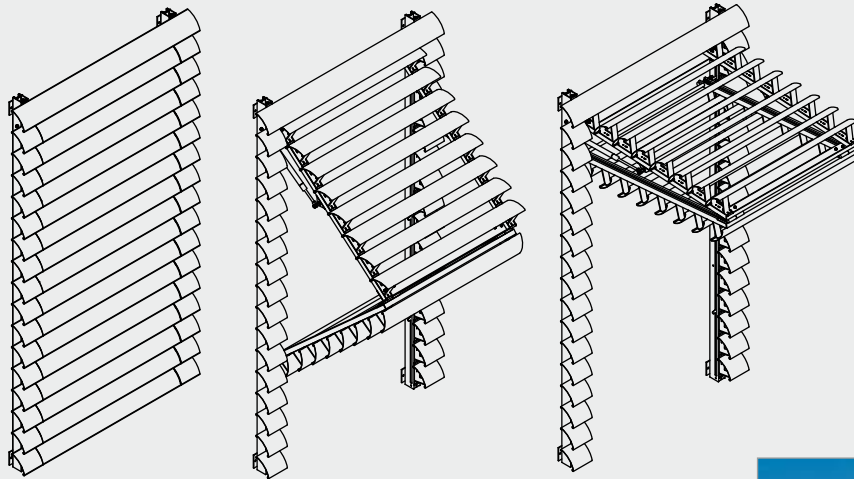
Manual or motor control

SUNCLIPS® REFERENCE



Ref. : Candy Wharf, Copperfield Road – London (UK), SUNCLIPS® Patio Evo 96

## SUNCLIPS® FOLDING SHUTTERS



### Description

The RENSON SUNCLIPS® FOLDING SHUTTER is an adjustable structural sunshading that can be electrically moved from a vertical to a horizontal, folded up position.

In the folded up, horizontal position the system leaves an undisturbed view outside.

In its lowered position the system offers the desired shading by screening direct sunlight while still allowing much light through.

### MATERIAL

Aluminium extrusion profiles alloy EN AW-6063 T66

### FINISH

- Anodised (20 micron) SAA
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

### BLADE TYPE

Applicable with all SUNCLIPS® blade types

### BLADE SUPPORT

Blades are clipped onto aluminium clips

### INCLINATION OF THE BLADE

The standard inclination of the blade is 45°

### BLADE PITCH

The blade pitch is 100 mm as standard. For blade types SE.130 and SE.176 intermediate distances of 133 mm and 176 mm respectively are recommended.

### OPERATION

The panels are operated by a geared belt system and 24 V motors.



Marie de Relecq, Relecq Kerhuon (FR)  
Sunclips® folding shutters

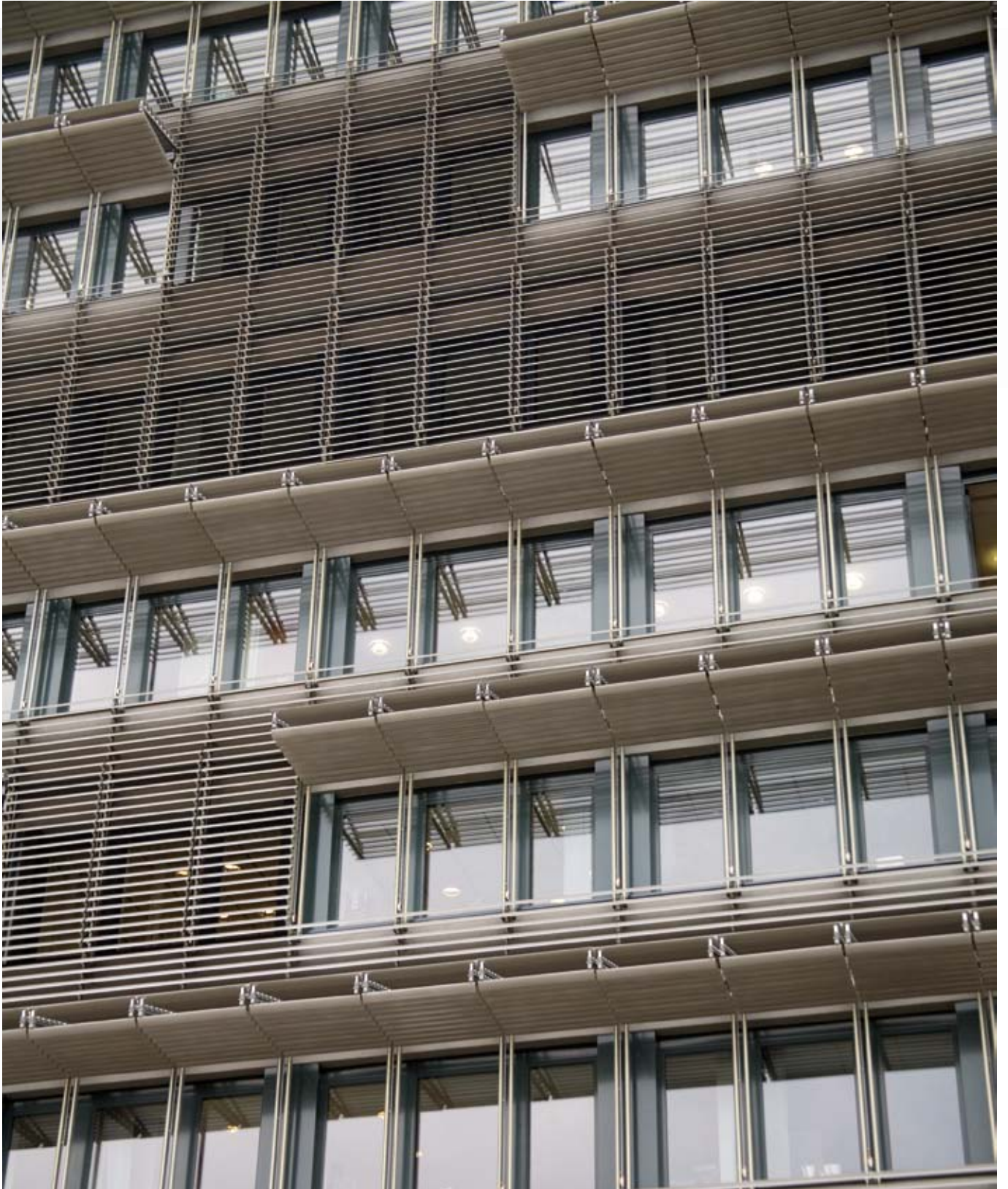


Musterfassade, München (D)



Ref.: Raiffeisenlandesbank Kärnten, Klagenfurt (AT)

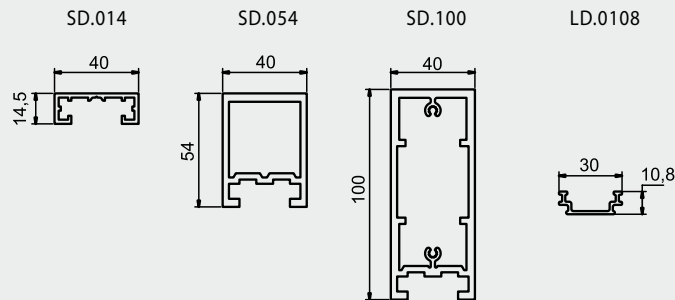
SUNCLIPS® REFERENCE



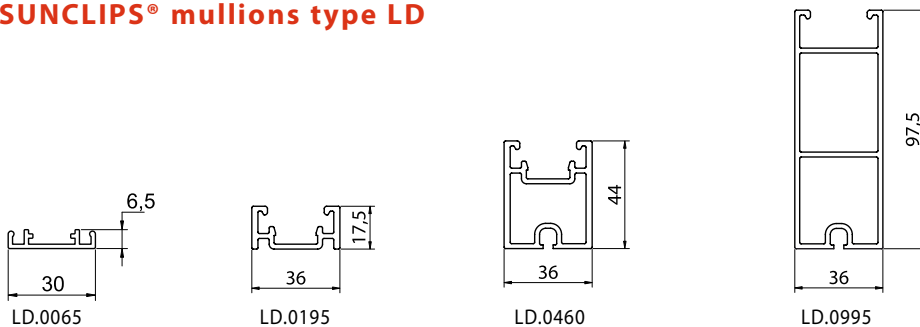
Ref. : Raiffeisenlandesbank Kärnten, Klagenfurt (AT)

## SUNCLIPS® MULLIONS

### SUNCLIPS® mullions type SD



### SUNCLIPS® mullions type LD



#### DESCRIPTION

Extruded aluminium profiles mainly used as mullions with permanent vertical sunshading.

#### MATERIAL

Aluminium extrusion profile alloy EN AW-6063 T66

#### FINISH

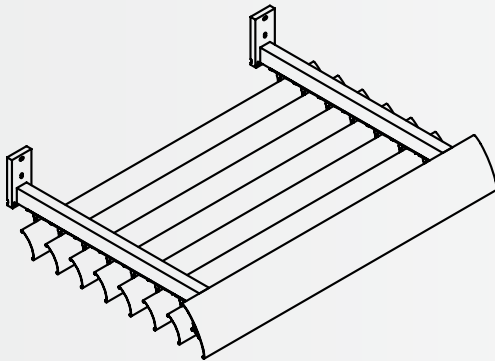
- Anodised (20 micron) SAA and Euras range of colours C31-C34
- Polyester powdercoating RAL or Suntha Pulvin colours (60-70 micron / UK : min.40 micron – min.60 micron for white finish)

#### TECHNICAL DATA

	LD.0065	LD.0195	LD.0460	LD.0995	SD.014	SD.054	SD.100
Profile depth (mm)	6,5	17,5	44	97,5	14,5	54	100
Profile width (mm)	30	36	36	36	40	40	40
Moment of inertia (mm <sup>4</sup> )	261	5931	83348	625740	4510	208672	1248414
Section modulus (mm <sup>3</sup> )	60	570	3560	12079	497	7360	24405

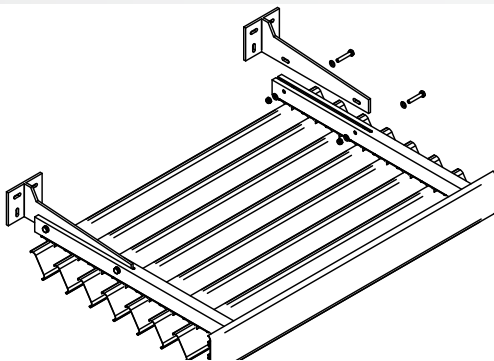
## SUNCLIPS® FIXING BRACKETS

The method of fixing is determined by the dimensions of the construction, the wind load and the type of wall construction on which the sunshading is assembled. We can supply various standard solutions.



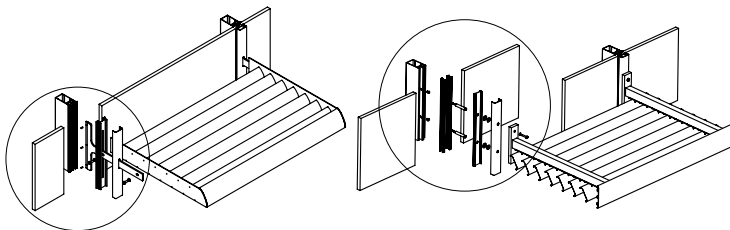
### TYPE: RENSON BRACKET

RENSON has different standard fixing brackets that can be pre-mounted on mullions type SD. Mainly used with direct assembly on steel, concrete or curtain walls 50/60 mm.



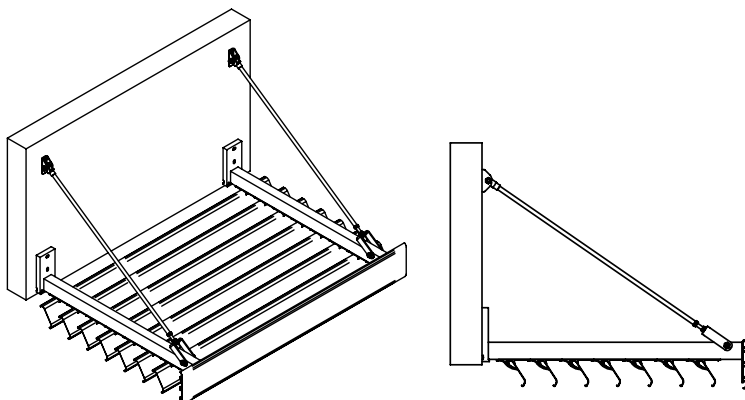
### TYPE: FIXING ON KNIFE

The knife is pre-mounted on the facade. The shading construction can be mounted afterwards.



### TYPE: CURTAIN WALL FIXING

Specific project solutions can be developed depending on the type of curtain profile. Analogue to fixing on knife.



## SUNCLIPS® TIE ROD

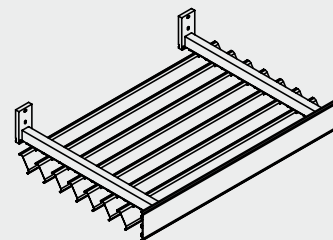
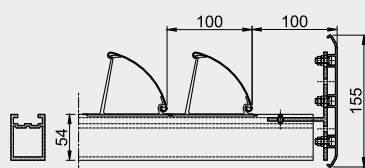
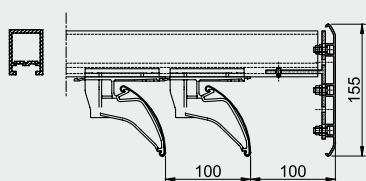
Depending on projection, fixing options and wind load, a custom-made adjustable tie rod can be supplied.

## SUNCLIPS® FASCIA PROFILES

Depending on the fixing method, different fascia profiles can be used to finish the construction.

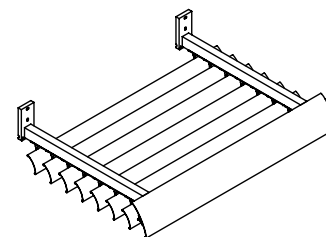
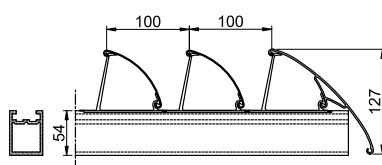
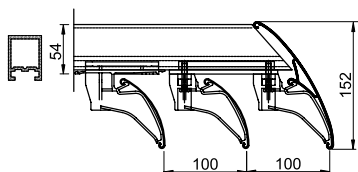
### Fascia profile SC.155

- Mounting: shading construction positioned below or above
- Applicable: in combination with blade type SUNCLIPS® Classic SC.096 or Evo SE.096 and mullion SD.054.



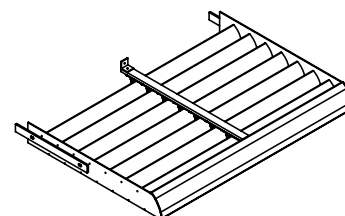
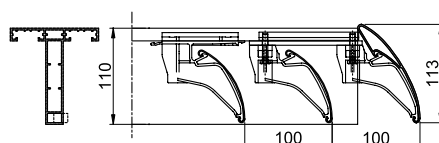
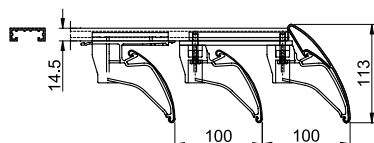
### Fascia profile SUNCLIPS® Evo blade SE.176

- Mounting: shading construction positioned below or above
- Applicable: in combination with blade type SUNCLIPS® Classic SC.096 or Evo SE.096 and mullion SD.054



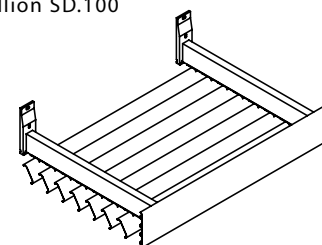
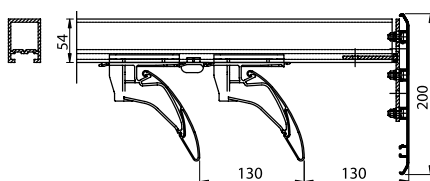
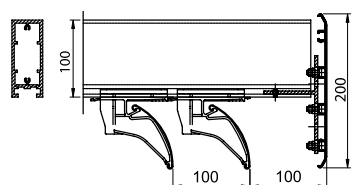
### Fascia profile SUNCLIPS® Evo blade SE.130

- Mounting: cassette and intermediate
- Applicable: for mullion SD.014



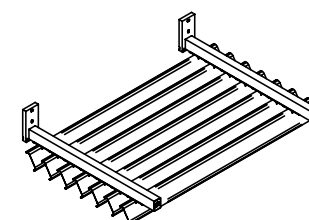
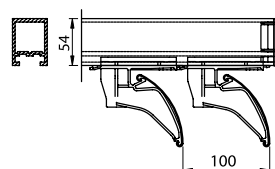
### Fascia profile SC.200

- Mounting: shading construction positioned below or above
- Applicable: in combination with
  - blade SUNCLIPS® Classic SC.096 or Evo SE.096 and mullion SD.100
  - blade SUNCLIPS® Evo SE.130 and mullion SD.054



### Without fascia profile - Mullion cap SD.054.98

- Applicable: in combination with mullion SD.054



## SUNCLIPS® CORNER SOLUTIONS



Pharmacy De Pauw, Sunclips® Classic  
Varsenare (BE), arch.: Ivan De Coster



Ipsa (FR)



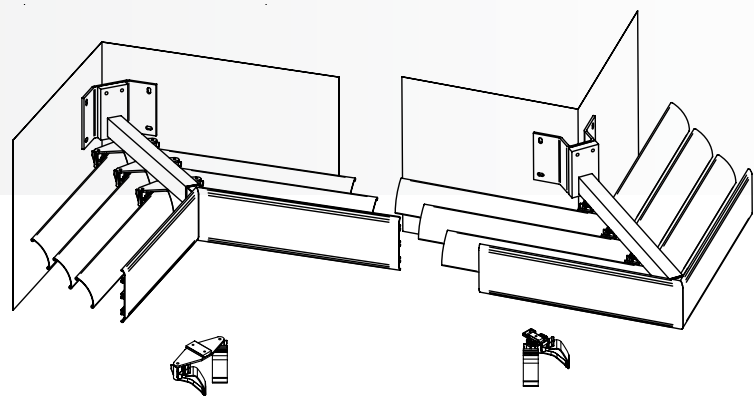
Sports and Leisure Centre, Budapest



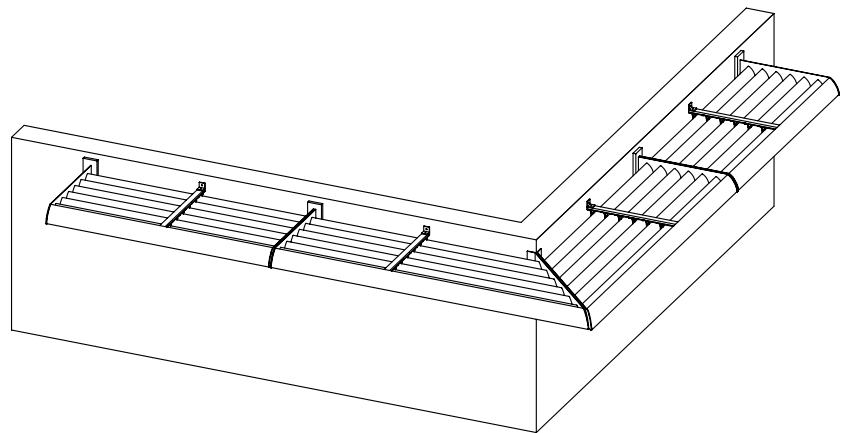
Transat, Lorient (FR), Conception: Atelier Roland Castro -  
Sophie Denissof, Construction: Louis Mollo arch.

RENSON has a unique corner solution for installation with:

- only 1 mullion is required
- all angles possible
- inner and outer corners are possible
- blades are continuous
- applicable with all types of SUNCLIPS® blades



Corner solutions are also possible for framed sunshading (with SUNCLIPS® Evo blade). Specific designs can be made per projects.



## SUNCLIPS® PROJECT SOLUTIONS

This brochure gives you an overview of our standard solutions. Our project leaders can advise you and develop any desired system on a project basis.

## RENSON - YOUR PARTNER FOR VENTILATION AND SOLAR SHADING

RENSON, with its rich tradition in innovation and experience since 1909, is profiling itself as the undisputed European market leader in natural ventilation and solar shading. Our headquarters are located in a remarkable building in Waregem (Belgium). The building is a working example of our Healthy Building Concept and functions as a prototype, exhibiting our technological strengths.

RENSON's mission is the ongoing development, production and selling of unique and innovating products for natural ventilation and solar shading. Our main objective is to improve the living conditions of people and at the same time cut energy costs. Our systems are environmentally friendly; sound absorbing and good for the health of all its users.

### RENSON HAS IT ALL :

- Our multidisciplinary R&D department is co-operating with leading European research organizations. The result of that is a complete range of innovative concepts and products.
- Our automatic powder coating installation, anodisation unit, moulding centre, plastic injection moulding facilities, assembly department and warehouse are all accommodated within an area of 75,000m<sup>2</sup>. This degree of vertical integration allows RENSON to ensure the quality consistency of its products.
- RENSON's headquarters, sales and marketing department and production plant are located in Belgium, but we also have plants and offices in France and in the UK. RENSON has sales representatives active all over Europe and has set up a network of distributors throughout the world.
- The diversity and capability of our staff are our warranty for correct solutions for each individual building project. The creation of constructive long term relationships with construction specialists is our priority.



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Conditional technical changes • The most recent edition of the brochure can be downloaded on [www.renson.eu](http://www.renson.eu)

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 **RENSON**  
DESIGN IN SUNPROTECTION