

**HAROL**®



# DYNAMIC SOLAR MANAGEMENT IS THE FUTURE





# Energy-saving all-in solution

The all-in solution from Harol, specialist in solar management, is an integral part of the buildings of the future. Smart management of solar energy and daylight improves the comfort, health and productivity of residents and users. Innovative solar management solutions also prevent overheating in our increasingly well-insulated buildings. Add in the energy savings and you will understand exactly why this concept should be integrated into the design phase of every new build and renovation project.

*Residential building, Belgium  
Product: SC1000-ZIP screens  
Architect: Hannes Benaets  
Photographer: Philippe Van Gelooven*



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*Court building, Hasselt, Belgium  
Product: SC800-ZIP screens  
Photographer: Filip Dujardin  
Architecture office: TWINS (a2o-architects, J. Mayer H., Lens°Ass architects)*



# Buildings of the future



Sufficient daylight and a view outside are extremely important for the mental and physical health of residents and users. This has been proven in numerous studies. A pleasant, stable interior climate also has a huge impact on general well-being.

On the other hand, we are all facing the huge challenge of making our buildings energy-friendly. And the flip-side of the same coin is that overheating is becoming an increasing problem. Well thought-out, dynamic solar management can be of significant support.

Harol, the specialist in dynamic solar management, has all the skills required to successfully complete your building or renovation project. We produce the most user-friendly, low-maintenance and aesthetically pleasing sun protection systems. This allows buildings to not only shine in terms of architecture, but also benefit from sufficient daylight, a healthy interior climate and great cost savings when it comes to energy.

The SANGO building for the Red Cross - Flanders, fitted with HAROL SC800-ZIP screens, was the first non-residential building in Belgium to be awarded the BREEAM-outstanding certificate. This is the highest possible international certificate for sustainable building. BREEAM stands for British Research Establishment Environmental Assessment Methodology and screens buildings in no fewer than 9 different areas. We are proud that our solutions have made a contribution towards the climate and general well-being of the users.

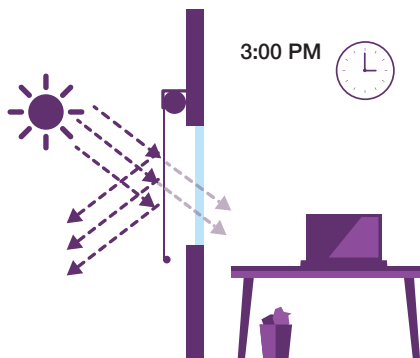
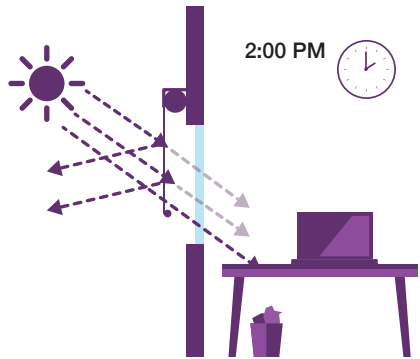
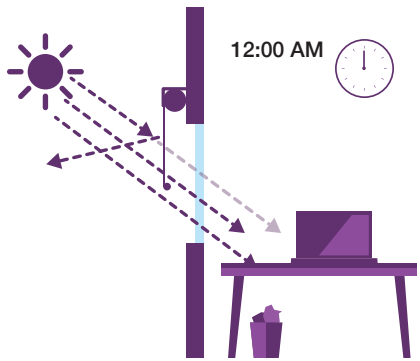
Now it's over to you! Browse through this brochure and discover a range of innovative solutions for the buildings of tomorrow.

*Annick Draclants*  
CEO



# Give residents and users the right lighting levels

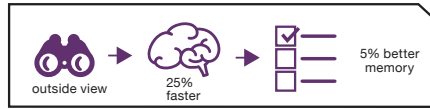
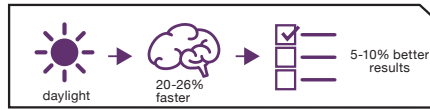
## OPTIMUM LIGHTING AT EVERY MOMENT OF THE DAY, THANKS TO DYNAMIC SOLAR MANAGEMENT



Dynamic solar management is a must-have for all sustainable buildings. In order to avoid overheating but also to provide residents and users with as much natural light as possible. Daylight provides visual comfort and contributes towards general well-being. The very basis of a productive and healthy day! By using daylight efficiently and effectively, you can also save on the consumption of energy for artificial lighting.

## SMART SUN PROTECTION FOR IMPROVED PERFORMANCE AND GENERAL WELL-BEING\*

Scientific research has shown that abundant daylight and a good view outdoors improve the memory and other cerebral functions by 10 to 25 percent. Impressive figures!



## BUT WHAT DOES THIS MEAN FOR THE BUILDINGS OF THE FUTURE?

Ideally, dynamic solar management would be integrated into the design, during the conceptual phase. In order to gain a good overview of optimum visual comfort and possible energy savings, a light simulation calculation is an option.

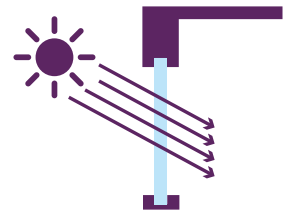


\*A. Deneyer, engineer, head of 'Light and building' laboratory, WTCB file 2013





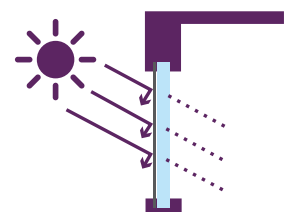
Penetrating light without sun protection



“ Dynamic solar management guarantees perfect levels of daylight and optimum comfort. ”



Penetrating light with sun protection







*Zuid-Oost Limburg hospital, Belgium  
Product: SC800-ZIP screens  
Photographer: A2O Architecten  
Architecture office: A2O Architecten*

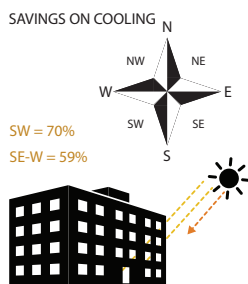


# A pleasant, stable interior climate improves performance...

**AND SAVES ENERGY!**

Nowadays, we tend to use as much glass as we can in buildings and also insulate them as effectively as possible. And this is set to improve further with increasingly stringent energy standards. The flip-side of this coin, however, is that overheating is becoming an increasing problem, in public as well as private buildings. We already have buildings and homes that are not comfortable during the summer. This equates to discomfort, deteriorating (work) performances and higher energy consumption as a result of using air-conditioning. But it does not have to be this way!

In 1997, a scientific study conducted by the WTCB\* confirmed how efficient and vital sun protection is for a stable interior climate. With a good sun protection system, you can benefit from maximum, passive solar heating in the winter. But without experiencing discomfort during the summer.



The impact is huge in relation to southerly facing rooms with glass panels. The energy-related savings for air-cooling for southerly and westerly façades can be up to 59 percent; this could be as much as 70 percent for south-westerly façades.

In addition, there are savings of 80 percent on electricity bills as a result of the reduced need for artificial light. How about that for a good return! Just think how much energy could be saved as a result of dynamic solar management. Year in, year out, over a period of 30 years or longer!



## BUILDINGS AND HOMES CAN ALSO CONTRIBUTE TOWARDS THE EU CLIMATE OBJECTIVES

By 2020, the European Union would like:

- to increase energy efficiency by 20 percent
- to decrease CO<sub>2</sub> emissions by 20 percent
- to obtain 20 percent of energy from renewable sources

Unrealistic? Not at all. But it will require a well thought-through approach that focuses on dynamic solar management.



## HOW CAN SUN PROTECTION CONTRIBUTE TOWARDS THESE EUROPEAN TARGETS?\*

- Energy saving: a city such as Brussels could use demand-driven sun protection to save over 50 percent on energy consumption for cooling, according to calculations by the European Solar-Shading Organization (ES-SO). The global energy savings in relation to buildings (for cooling and heating) with dynamic solar management equates to 13 percent.
- Reduction of CO<sub>2</sub> emissions: sun protection is extremely cost-efficient and easily saves 60 times its CO<sub>2</sub> footprint over a period of 20 years.
- Improved comfort: sun protection improves thermal and visual comfort and provides a healthier and more pleasant interior climate.

\*New vision on sun protection, Peter Winters, ES-SO vzw, March 2015

\*WTCB: Scientific and Technical Centre for Construction Companies





# Vertical outside sun protection Screens

The extensive range of screens by HAROL offers all you need to improve the visual and thermal comfort of your building. And nothing is left to chance during development when it comes to assembly and maintenance either. HAROL is not only distinct in terms of its astonishingly comprehensive range. Innovative technology makes the difference too. A browse through the range:

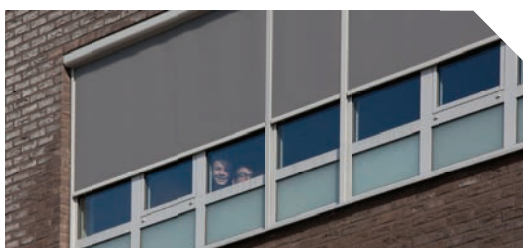
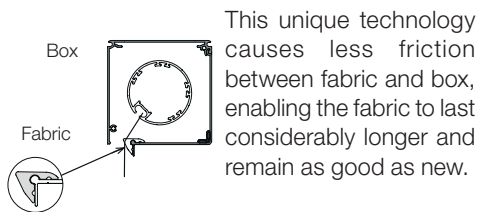


**VISIBLE INSTALLATION IN FRONT OF THE WINDOW**

## Benefits

- No perforation of the building shell
- Ideal for renovations
- Selection of different box models
- Unique Xglide anti-wear fabric technology
- Lowest purchase price
- Steel cable guides available

## Xglide anti-wear fabric technology



**VISIBLE INSTALLATION IN FRONT OF THE WINDOW WITH ZIP SYSTEM**

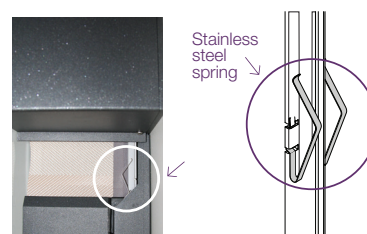
## Benefits

- All the benefits of the SC700 (excl. steel cables)
- Innovative ZIP system

**EXTREMELY DURABLE ZIP SYSTEM!**

## Ultra-taut fabrics with the innovative ZIP system!

The highly durable ZIP system ensures that the fabric stays beautifully taut throughout the day. Unique to our system is the concealed stainless steel spring within the guide rails. The spring is subject to hardly any wear, so our fabrics will remain taut for many years to come. The system is also extremely wind-resistant, up to 140 km/h\*, and insect-repellent!



\* Test results according to the WTCB at constant pressure of up to 1000 Pa "> 140 km/h\*" and average dimensions of 3.5 x 3 m.





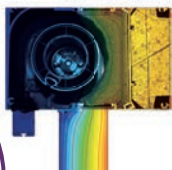
Danske Bank, Lithuania  
Product: SC800-ZIP screens  
Photographer: Peter Claes



**PARTLY HIDDEN INSTALLATION WITH SUPER-INSULATING BOX**

**Benefits**

- Ideal for large renovations and new builds
- Super-insulating and soundproof box made of extruded aluminium
- Box - visible on the inside of the house - can be finished in the same colour as the window profiles
- Rapid installation on the window (click principle)
- Option to hide the guide rails in the façade
- Also available without insulated box. The client can decide on the insulation and finish (type SC910-ZIP)



Super-insulating 1.3 W/m<sup>2</sup>K

Extremely soundproof 54 (0;-3) dB

**INNOVATION: SECURO MOTOR!**

**Selve SEZ motor**

- Obstacle detection for lowering and raising
- Automatic fabric stretch compensation
- Can be adjusted remotely
- Possible with the SC900, SC910, SC1000



**FULLY HIDDEN INSTALLATION NO PERFORATION OF THE BUILDING SHELL**

**Benefits**

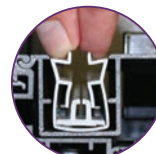
- Ideal for passive and low-energy houses
- Box is fully concealed in the cavity wall without perforating the building shell
- Bottom lath closes the box and is invisible in closed position = sleek design
- Extra narrow guide rails
- Safe and easy maintenance thanks to the Click & Lock system:



This system means the fabric roll clicks securely into the box, allowing maintenance to be carried out easily.

**Fabric simple to install and maintain**

The flexible ZIP profile clicks in and out of the lateral guides, making assembly and maintenance of the fabric to be carried out very easily. Comes as standard with SC900, SC910 and SC1000.





# The right fabric for a perfect result

## Extremely durable

All our fabrics are weather and UV resistant. They do not discolour, stretch or tear and comply with the ISO 1421 standard.

But we also consider the environment. Many of our collections are 100% recyclable.



## Visual comfort

From fabrics that allow sufficient daylight to permeate, to full black-out fabric for rooms where daylight has to be eliminated.

Everything is possible!



## Thermal protection

The light permeability level and colour of the fabric determine the degree of thermal protection.

Our extensive range effortlessly fulfils all of the thermal requirements of a building.



## Dirt repellent

Our screen fabrics have a smooth surface and are treated with a mould-resistant coating. This makes them extremely low-maintenance and durable.

An anti-bacterial treatment is also an option; ideal for sterile environments.



## Perfect harmony

Check out the wide range of colours and combine our various collections. So the façades of your building(s) are perfectly matched with one another.

You create a stylish and harmonious look that radiates calm.



# Vertical outside sun protection Outside venetian blinds

Timeless design and function go hand in hand with our outside venetian blinds. With this innovative solution, you limit both light and heat radiation. Great protection from outside viewers at any moment of the day. Thanks to the wide range of slat types and the numerous assembly variants in top quality aluminium, the individual style of the building is shown off to its full extent.

WIND  
RESISTANCE  
CLASSES IN LINE  
WITH EN 13659



## HIGH PERFORMANCE LIGHT TRACKING EFFECT

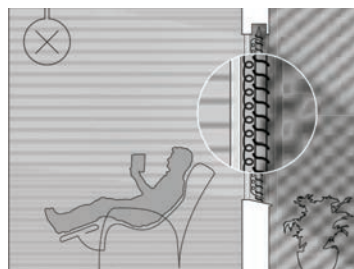


Without venetian blinds, the sun can be blinding so curtains are closed and then artificial light is required to light the room.

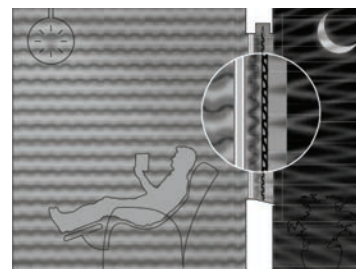


The automatic light tracking provides protection from outside viewers and blinding sunlight but daylight is used efficiently to light the room.

## SAVE ON YOUR ENERGY BILLS THE WHOLE YEAR ROUND






In the summer, air circulation ensures that heat transfer is avoided.



In the winter, the air cushion created by closed venetian blinds retains heat.

## RANGE OF OUTSIDE VENETIAN BLINDS

| Slat type              |  |  |  |
|------------------------|---|--|---|
| Outside venetian blind | AR 63 S ECN<br>AR 63 Z ECN  | ARB 80   | AR 92 S ECN<br>AR 92 Z ECN  |
| Slat height            | 63 mm   | 80 mm  | 92 mm   |
| Lateral guides         | Cable/guide rail  | Cable/guide rail   | Cable/guide rail  |
| Max. width             | 5000 mm   | 5000 mm  | 4000 mm   |
| Max. Height            | 5200 mm   | 5200 mm  | 4600 mm   |
| Extra wind protection* | Yes   | Yes  | Yes   |
| Max. surface area      | 14 m <sup>2</sup>   | 14 m <sup>2</sup>  | 11,5 m <sup>2</sup>   |

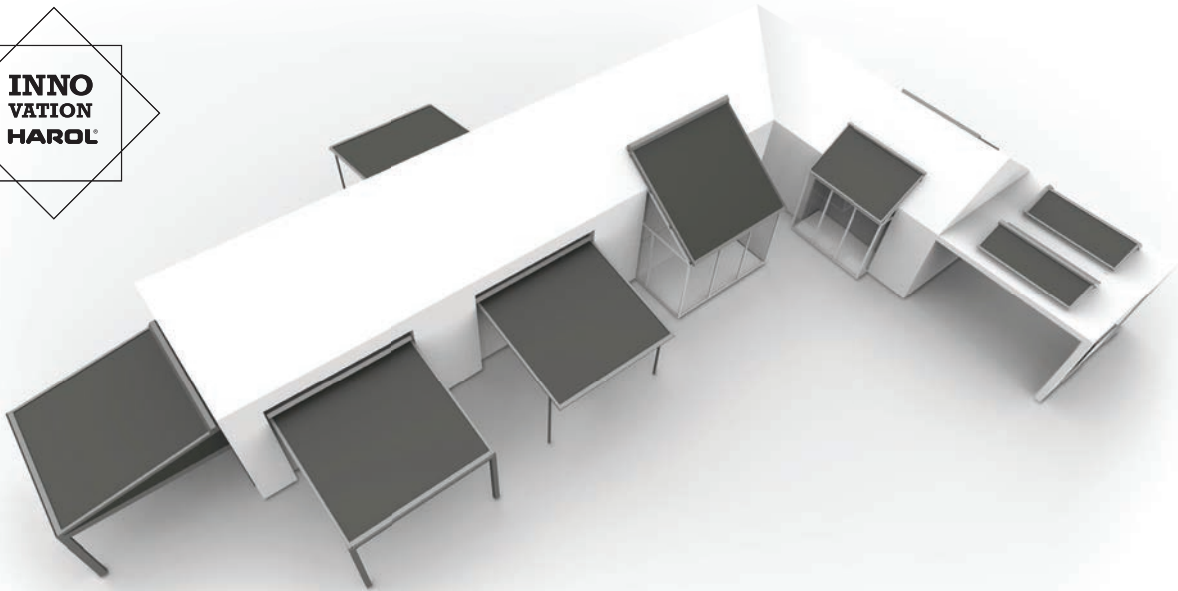
\* There is an option of extra tensioning cables in order to better protect the outside venetian blinds from wind.



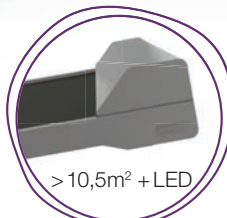
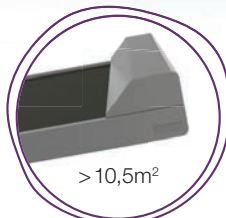
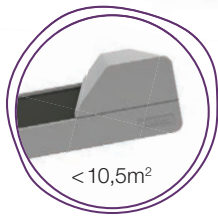
# Horizontal inside and outside sun protection

## One system, endless options

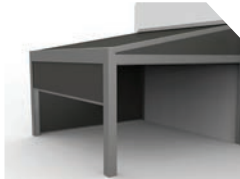
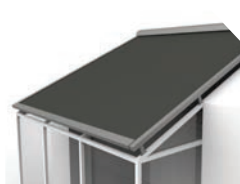
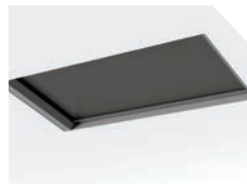
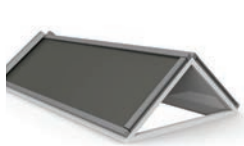
Constructions are getting more complex and architectural designs are creating more challenging glass structures for homes. So it is even more important to find the right solution for every building. HAROL provides the solution with its new generation of sun protection: just like a Swiss Army knife that has a solution for every situation.



### BOX TYPES



### SOLUTIONS





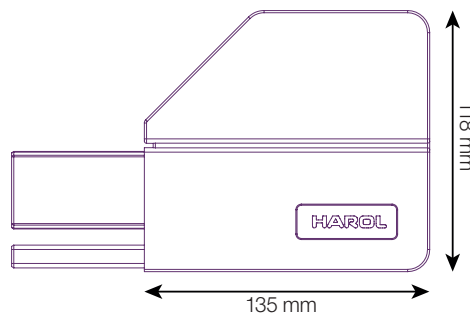
# Horizontal fabric sun protection

## Fits any surface: VZ080-ZIP

With VZ080-ZIP blinds, you get the most from your veranda, skylight or rooflight. With this example of timeless design, you can enjoy precisely the right level of shade. It will never get too hot. Thanks to the ingenious design, you can also block out the sun completely. The compact box helps create a refined look.

### UNIQUE PROPERTIES

- Super compact box
- One system, countless options
- Sleek and timeless design
- Many years of ultra-taut fabrics thanks to unique ZIP system
- Easy maintenance and after-service



**MOST COMPACT BOX FOR 3.5 M DROP**

### FITTING OPTIONS

Sideways



Top-down



Bottom-up



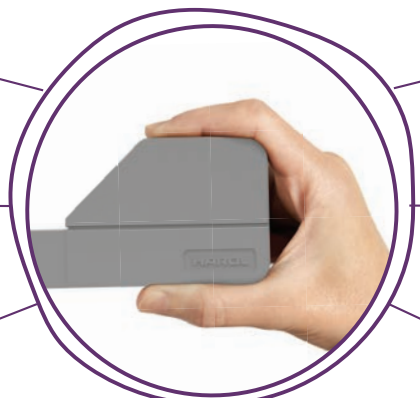
Interior sun protection



Surface-mounted



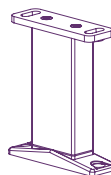
Built-in



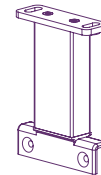
### PERFECT SHADING: THE FABRIC SHUTS LIGHT OUT COMPLETELY



### VARIOUS MOUNTING OPTIONS



Support foot 1



Support foot 2



Guide rail

|                                | SOLTIS 86   | SOLTIS 92   | BLACK OUT B92 |
|--------------------------------|-------------|-------------|---------------|
| Weight ca. (g/m <sup>2</sup> ) | 380         | 420         | 650           |
| Thickness ca. (mm) 0.43        | 0,45        | 0,60        | 0,43          |
| Direct solar radiation         | 14%         | 8%          | 0%            |
| G-Total value (*)              | 0.15 - 0.22 | 0.05 - 0.15 | 0.02 - 0.05   |

\* Glazing C U=1.2





# Outside sun protection

## Solar architecture

Greater durability, maximum comfort and lower energy consumption thanks to passive technologies. Architectural sun protection fulfils various aims. Our intelligent systems help realise these aims and enable the efficient control of solar radiation and natural ventilation. These are elements with significant aesthetic value, developed for the future.



Distributed by HAROL  
Designed by TAMILUZ



“ Construction is becoming more complex. Architectural designs are also creating more challenging glass structures for homes. HAROL offers a suitable solution for every construction ”







Showroom Barcelona, Spain  
Product: Roller blind



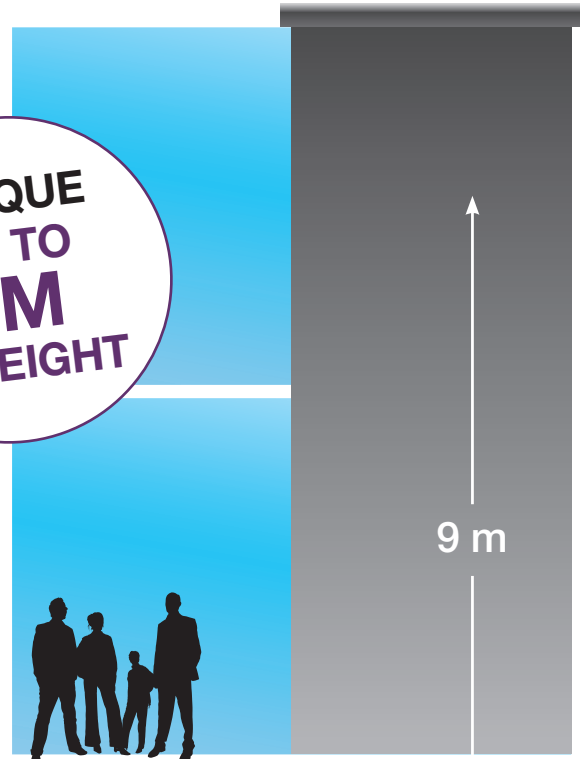
# Interior sun protection

## Roller blinds

Interior sun protection is usually installed to optimise the visual comfort of residents or users. But the right choice of materials and/or a combination with sun protection could also mean that interior sun protection could help in terms of thermal comfort and general well-being.



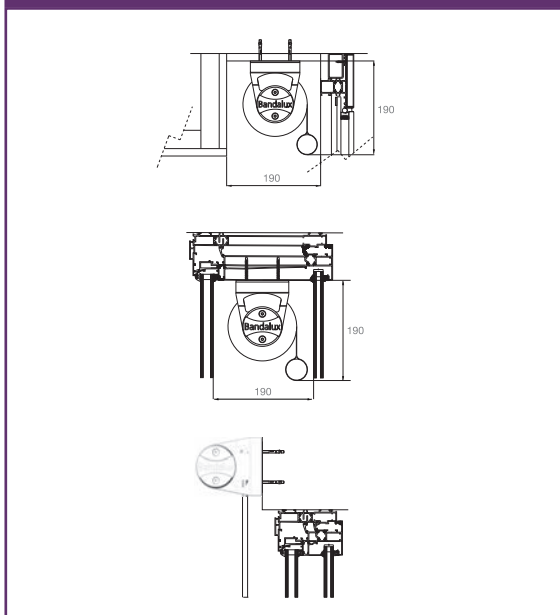
UNIQUE  
UP TO  
9M  
IN HEIGHT



### BENEFITS

- Up to 9 m height = unique in the market!
- Wide range of colours and finishes
- Complete set of fitting options

### FITTING OPTIONS



### FEATURES

- Mechanism with one motor for surfaces up to 63 m<sup>2</sup> thanks to solid supports.
- Guide rail system with cable in stainless steel for the roller blind strengthens attachment to the exterior of the façade.
- For large surfaces, there are motors that are similar to the motors used for awnings.
- Fabrics that fulfil the standards and regulations for the building sector: Polyscreen®, fire-retardant, shading, anti-bacterial, recycled and weather-resistant.

Distributed by HAROL  
Designed by Bandalux





*Residential building Heverlee, Belgium  
Product: Slatted roof Umbris  
Photographer: Philippe Van Gelooven*



# Outside sun protection

## Slatted roofs, folding roofs and roller blinds

Innovative covering systems. Create a pleasant and cosy environment all year round. Enjoy the outdoor air at every opportunity.

### SLATTED ROOFS



#### Benefits

- Free-standing or integrated solution
- Sun, rain and snow resistant
- Air ventilation via tilting slats

### FOLDING ROOFS



#### Benefits

- Free-standing or integrated solution
- Sun and rain resistant
- Roof can be fully folded back

### FREE-STANDING AWNINGS



#### Benefits

- Free-standing solution with numerous fitting options
- Very robust frame made of galvanised metal
- Wide range of fabrics, mould and dirt-repellent

### AWNINGS



#### Benefits

- Integrated solution for any type of façade and window
- Shadow and light penetration via variable drop angle (0° to 120°)
- Plenty of choice of fabrics



# HAROL: for long-lasting top quality

## 100% GUARANTEED QUALITY

As a Belgian manufacturer with over 70 years of experience in the field, we ensure that our solutions meet the most stringent quality requirements. Moreover, we offer a 5-year quality guarantee on all products.

## EASY TO OPERATE

All our solutions are available with motor and remote control. The roller shutters can be operated using different methods (manually or electrically) and they can be linked to an automatic control.

## MADE-TO-MEASURE SOLUTIONS

All our solutions can be perfectly tailored to meet your needs:

- > 100% made to measure
- > You can choose from over 300 RAL colours and scratch-proof structured paints
- > Our products are suitable for both new build and modernisation/renovation
- > Extensive range of options to increase your comfort to a maximum

## FULL SERVICE FROM START TO FINISH

Our customer service will assist you with advice and support:

- > You can go to them for advice in relation to your wishes and requirements
- > Questions about colours, materials and maintenance
- > After-sales service

*More information: [www.harol.com](http://www.harol.com)*





# Outstanding enjoyment



INSTALLATION  
BY  
PROFESSIONALS



LOW  
MAINTENANCE



MADE TO  
MEASURE



CONTEMPO-  
RARY DESIGN



TOP-QUALITY  
BELGIAN  
PRODUCT



ROBUST  
WARRANTY



HEALTHY  
INDOOR  
CLIMATE

HORIZONTAL SUN PROTECTION •

VERTICAL SUN PROTECTION •

VERANDA SUNBLINDS •

ARCHITECTURAL SUN PROTECTION •

OUTDOOR LIVING •

## HAROL®



# CE

HAROL reserves the right to make changes to its products and this leaflet. Issued May 2016.





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