



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.

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Give users the right lighting levels

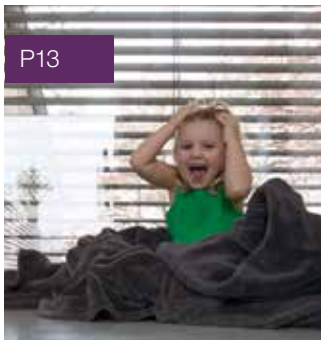


A pleasant, stable interior climate increases general well-being



OUR SOLUTIONS

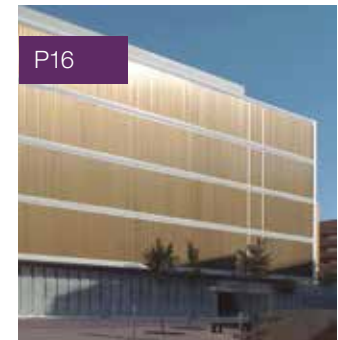
Vertical sun protection
Screens
Outside venetian blinds



Horizontal inside and outside sun protection
Fabric sun protection



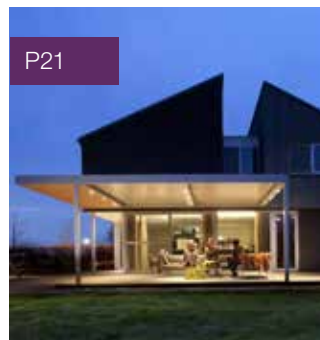
Outside sun protection
Solar architecture



Vertical blinds
Roller blinds



Outside sun protection
Create extra space



Harol: for long-lasting top quality





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



*Sango building Red Cross - Flanders, Belgium
Product: SC800-ZIP screens
Photographer: Sarah Blee
Architecture office: Polo Architects*

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.

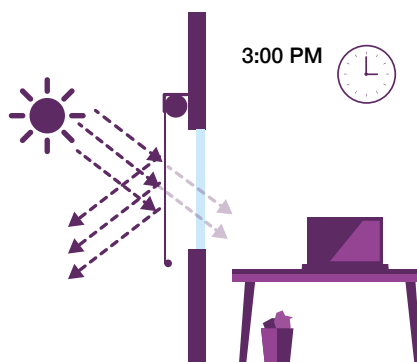
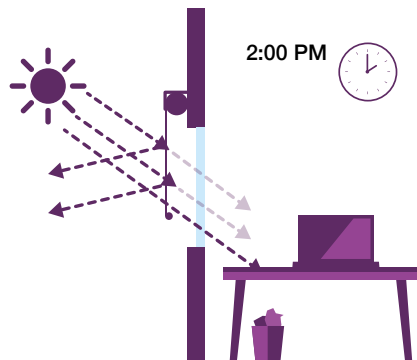
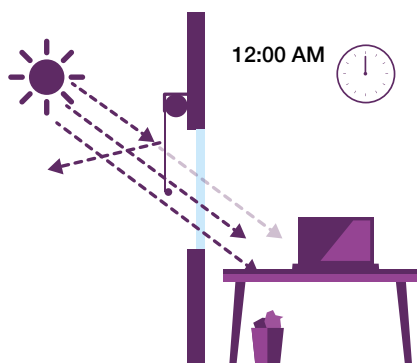
The SANGO building for the Red Cross - Flanders, fitted with HAROL SC800-ZIP screens, was the first non-residential building in Belgium to be awarded the BREEAM-outstanding certificate. This is the highest possible international certificate for sustainable building. BREEAM stands for British Research 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 Draelants
CEO

Give residents and users the right lighting levels

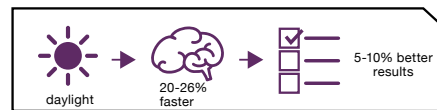
OPTIMUM LIGHTING AT EVERY MOMENT OF THE DAY, THANKS TO DYNAMIC SOLAR MANAGEMENT



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!



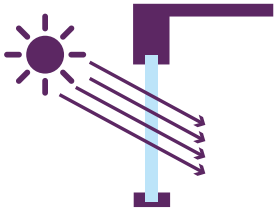
BUT WHAT DOES THIS MEAN FOR THE BUILDINGS OF THE FUTURE?

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.





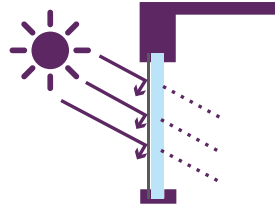
Penetrating light without sun protection



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



Penetrating light with sun protection





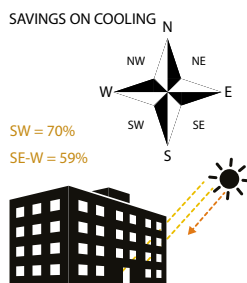
*Zuid-Oost Limburg hospital, Belgium
Product: SC800-ZIP screens
Photographer: A2O Architecten
Architecture office: A2O Architecten*

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 CO₂ 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 CO₂ emissions: sun protection is extremely cost-efficient and easily saves 60 times its CO₂ 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

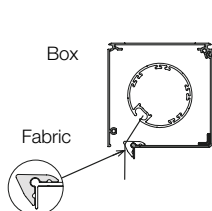


VISIBLE INSTALLATION IN FRONT OF THE WINDOW WITH ZIP SYSTEM

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



This unique technology causes less friction between fabric and box, enabling the fabric to last considerably longer and remain as good as new.

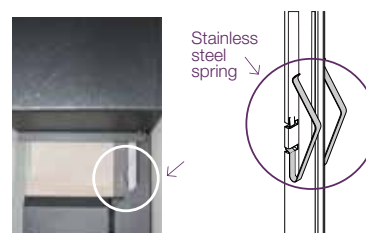
Benefits

- 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



SC900-ZIP

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/m2K

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

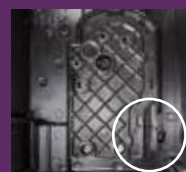


SC1000-ZIP

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

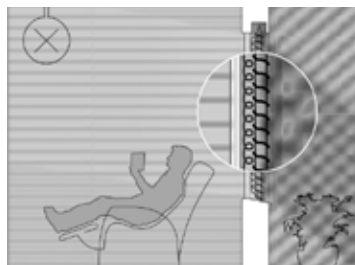


Without venetian blinds, the sun can be blinding so curtains are closed and then artificial light is required to light the room.

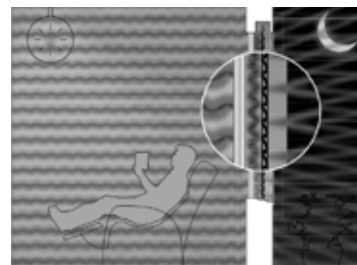


The automatic light tracking provides protection from outside viewers and blinding sunlight but daylight is used efficiently to light the room.

AWE 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 AR 63 Z ECN	ARB 80	AR 92 S ECN 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 ²	14 m ²	11,5 m ²

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

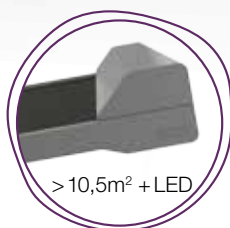
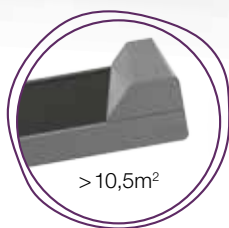
Horizontal inside and outside sun protection

One system, endless options

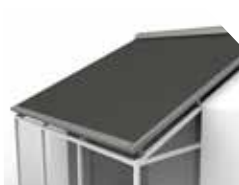
Constructions are getting more complex and architectural designs are creating more challenging glass structures for homes. So it is even more important to find the right solution for every building. HAROL provides the solution with its new generation of sun protection: just like a Swiss Army knife that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



BOX TYPES



SOLUTIONS



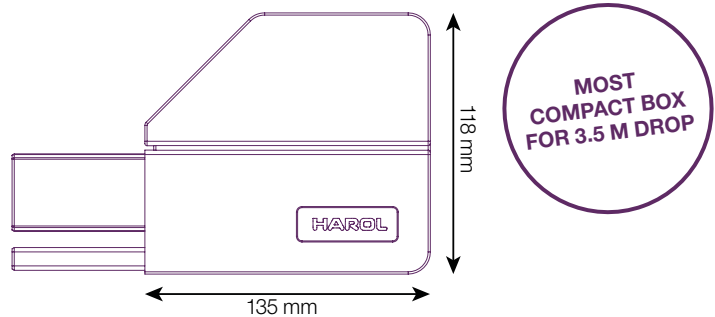
Horizontal fabric sun protection

Fits any surface: VZ080-ZIP

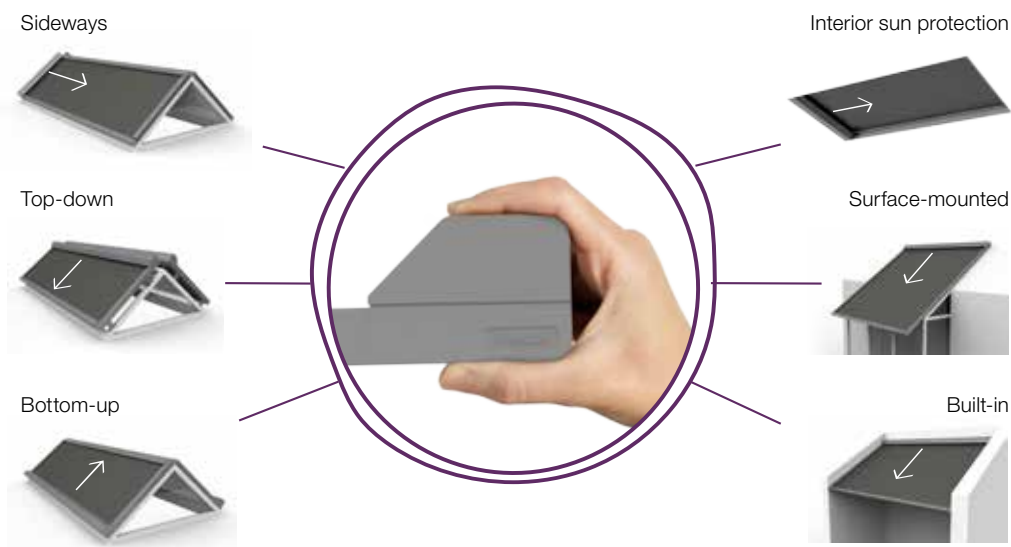
With VZ080-ZIP blinds, you get the most from your veranda, skylight or rooflight. With this example of timeless design, you can enjoy precisely the right level of shade. It will never get too hot. Thanks to the ingenious design, you can also block out the sun completely. The compact box helps create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



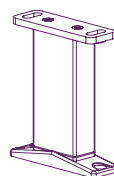
FITTING OPTIONS



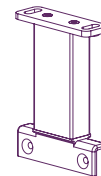
PERFECT SHADING: THE FABRIC SHUTS LIGHT OUT COMPLETELY



VARIOUS MOUNTING OPTIONS



Support foot 1



Support foot 2



Guide rail

	SOLTIS 86	SOLTIS 92	BLACK OUT B92
Weight ca. (g/m ²)	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.



“ 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

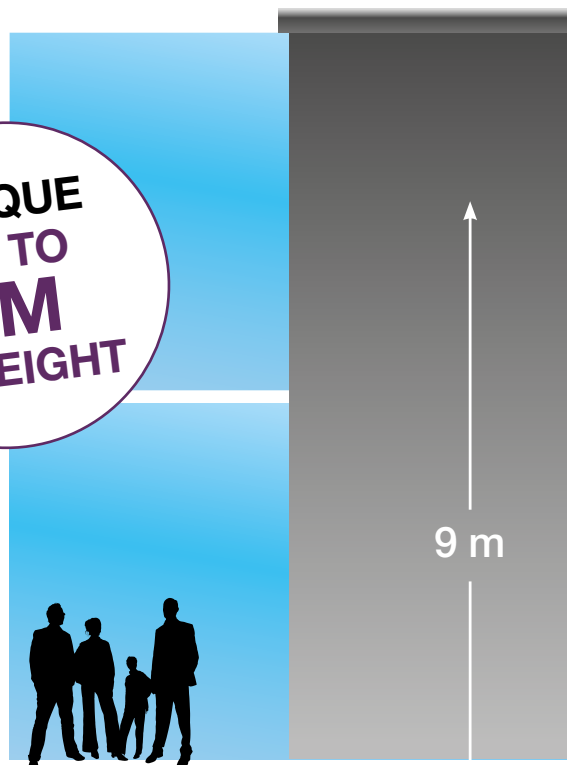
Roller blinds

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.

ROLLER BLINDS



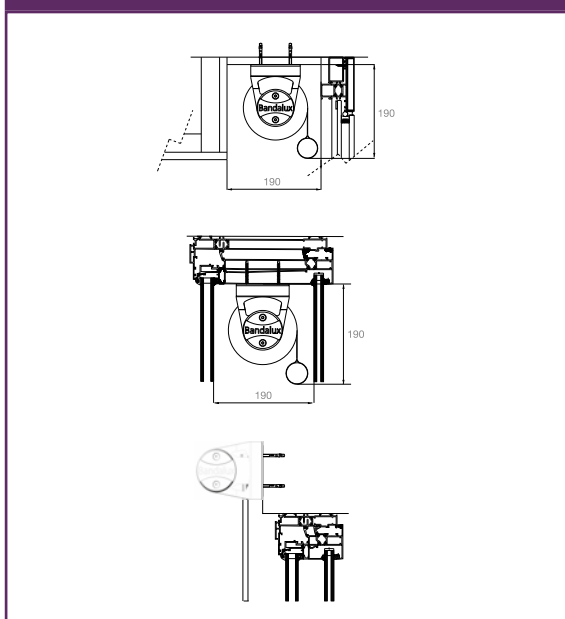
UNIQUE
UP TO
9M
IN HEIGHT



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 m² 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



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 •

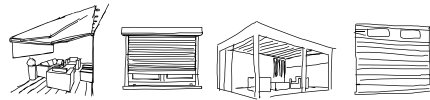
VERTICAL SUN PROTECTION •

VERANDA SUNBLINDS •

ARCHITECTURAL SUN PROTECTION •

OUTDOOR LIVING •

HAROL®



CE



HAROL®



www.harol.com