MultiFilm®

Powerful sun protection with film blind

MULTIFILM®
SONNEN- UND BLENDSCHUTZ

www.multifilm.de

MultiFilm®

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Contents

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All dimensions in mm unless otherwise stated.
Max. length of all film blinds depending on pleating

About MULTIFILM®

MULTIFILM® stands for **high-quality interior sun and glare protection.** For over 30 years, our special technology has been improving living and working conditions, ensuring a pleasant room ambience and good lighting and visibility conditions, as well as saving energy.

Our products feature highly-functional materials: **transparent, multi-layered, reflective polyester films** and **selected technical textiles** offer **effective protection against heat and glare** and permit an unobstructed **outside view** thanks to their **transparency**.
The investment in our solutions amortises rapidly via saved energy and satisfied employees.
Functional in design, our products are oriented towards architectural trends and the latest façade technology. MULTIFILM® systems can be easily retrofitted or integrated in façade planning.

The product range includes numerous **system options, counter-pull systems, large-format façade systems** as well as **vertical and panel blinds**.

Products, service and quality

MULTIFILM®offers expert **consulting, measurement and installation** from a single source.

- Products according to customer requirements
- Project support
- Individual product customisations
- Energy efficiency calculation

MULTIFILM® products are robust, reliable, durable and save energy.
Our high quality standards guarantee you an economically sustainable investment.

- Quality and environmental management according to ISO 9001: 2015 and 14001: 2015

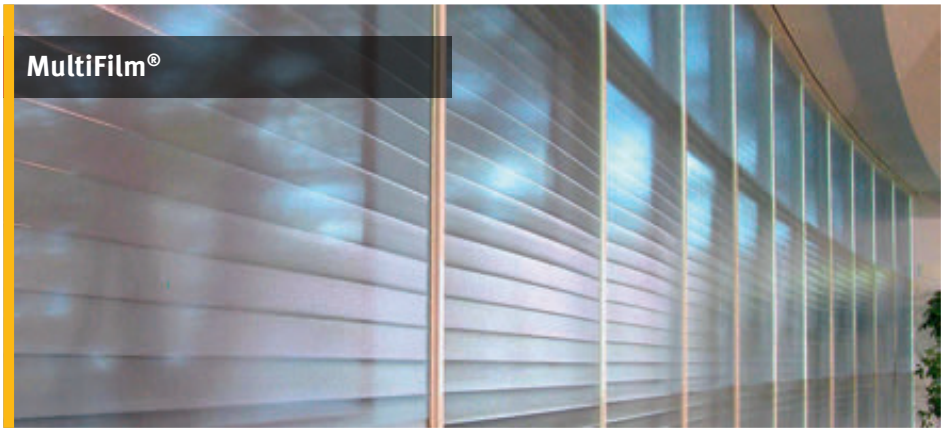
- **Glare protection, heat protection** and **visual contact to the outside** in accordance with DIN EN 14501 (performance requirements for sun protection systems)

RS DER FACHVERBAND FÖRDERMITGLIED

TÜV SÜD

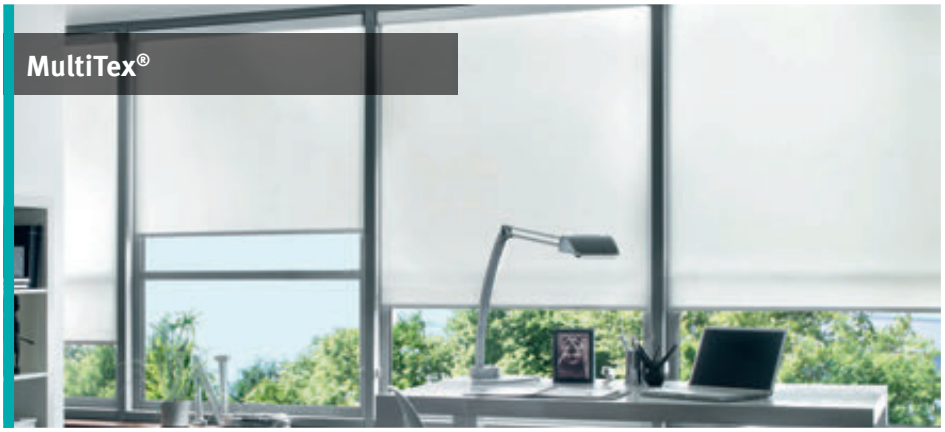
Europäischer Fachverband für Blendschutz am Bildschirmarbeitsplatz e.V.

MULTIFILM® product groups



High-performance film systems
- Effective heat protection
- Pleasant room ambience
- Illumination with natural light
- Optimum glare protection
- Unobstructed outside view
- Reduced cooling and heating energy consumption
- High UV protection

Discover more about MultiFilm® at www.multifilm.de

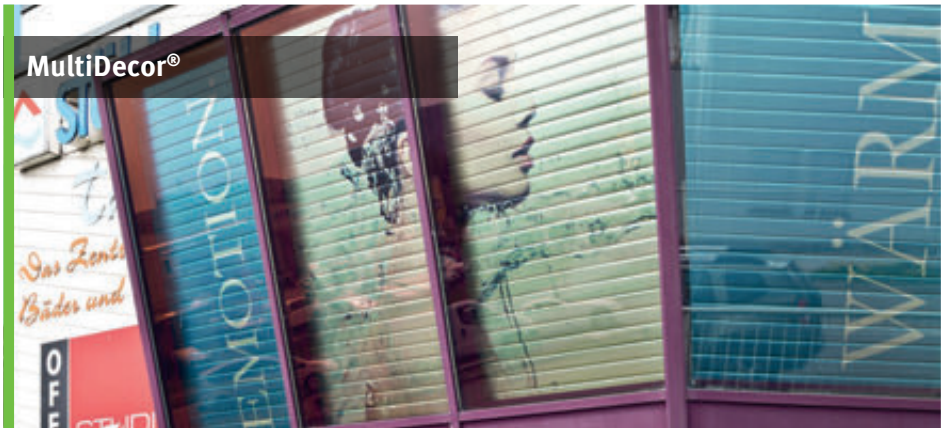


Functional textile blinds
- Optimised room ambience
- Glare protection
- Darkening
- Heat protection possible depending on textile choice
- All MultiTex® fabrics comply with the Oeko-Tex standard.

Discover more about MultiTex® at www.multifilm.de

Roof area and skylight sun protection
- High reflection of solar energy
- Horizontal and inclined shading
- Shading of atria, arcade rooflights
- Room darkening

Discover more about MultiSky® at www.multifilm.de



Film systems with sublimation printing
- Individually customisable
- Highly lightfast and abrasion resistant
- Film system function remains intact
- Advertising print on exterior
- Decorative interior printing

Discover more about MultiDecor® at www.multifilm.de

MultiFilm®technology

Benefits of interior sun and glare protection systems with functional film:

Very good heat protection
- The aluminium-coated exterior reflects a large part of the solar energy, protects against rapid heating of the rooms and saves cooling energy.

Optimum glare protection
- The incoming sunlight is dimmed to a pleasant level by the film, just like sunglasses. Irritating reflections and large illumination differences are avoided.

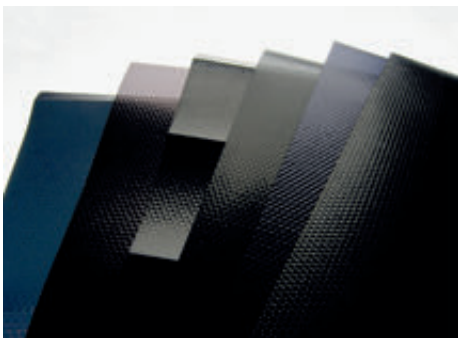
Transparency
- The visibility required by the workplace guidelines is maintained.
- The uniformly transparent film roller blinds reliably dim incoming light.
- The room is not completely darkened.

Sun protection roller blinds with film blinds ensure a pleasant room ambience and room illumination with natural light.
The films' glossy surface create a technical appearance. Technical blind fabrics are available in the product group MultiTex® as an alternative.

How film systems work

The multi-layer film roller blind's exterior is coated with a thin layer of aluminium.
- This layer acts like a mirror, reflecting the solar energy directly back into the open air before it can be converted into heat in the room.
- This effectively deflects up to 90 %[1] of the solar energy from the room.
- The heating of the room is significantly reduced and the ambient temperature remains comfortable.
- The film absorbs the incoming daylight and reliably eliminates any irritating glare on the screen.
- The film's transparency permits a clear, distortion-free outside view.

[1] Film SiAt022NM with SunGuard® SuperNeutral double insulating glazing SN 70/37, calculation with WINSLT®, Saxon Textile Research Institute e.V. (STFI)



MULTIFILM®

MultiFilm® technology

Function & benefits

- Optimum protection against irritating glare and reflections on the screen
- Effective heat protection: up to 90 %[1] deflection of total solar energy
- Pleasant atmosphere and room illumination with natural light
- Uniform transparency guarantees unobstructed outside view
- Improvement in the g value and U value of window and façade systems
- Up to 37 %[2] saving on cooling and heating energy creates high sustainability
- Very high UV protection for furniture, operating equipment and artworks
- Rapid amortisation of the investment
- Suitable for new constructions or retrofitting
- Year-round functionality regardless of weather conditions
- Maintenance-free, reliable, durable

[1] SiAt02NM film with SunGuard® SuperNeutral double insulating glazing SN 70/37; WINSLT®, Saxon Textile Research Institute e.V. (STFI)

[2] SiAt01 film with thermal insulating glass (g value: 59 %; U value: 1.2 W/m2K) (calculated with Parasol software, V 6.6, University of Lund/Sweden)

Our highlights & special features

- Shading windows with a width of up to 3 m and height of 8 m with a single system
- **Compact-Line** roller blinds with very small head box (35 x 35 mm)
- MultiSky® systems for horizontal shading in the roof area and skylights
- Transparent MULTIFLEX® films with up to 84 % solar reflection
- Films with different light transmission levels from 1 % – 7 %

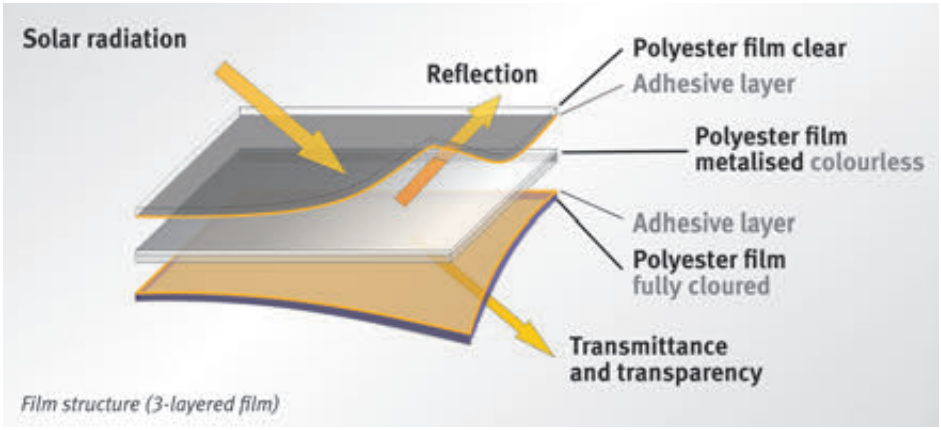
Technology

- Patented MULTIWAVE® pleating with widths of up to 3 m
- MultiDecor® films in individual designs and colours for advertising purposes
- MULTIFLEX® film with two levels of light transmission
- Ultrasonic welding technique for joining films
- Globally unique surface embossing systems for film embossing and colouring

Function & quality

- Customised systems in premium product quality
- All profile parts made of solid, extruded aluminium
- Available with RAL powder coating in many colours on request
- Integrated invisible vents for rear system ventilation
- Large selection of different side guides
- Integrated cleaning brush for film blinds optional and depending on model
- Wide range of different mounting options

MultiFilm® films



Film structure (3-layered film)

Design

- Double- or predominantly triple-layered film
- The third layer also ensures higher film stability and functionality
- MultiFilm® films feature an internally applied aluminium layer
- Functionality changes in accordance with differences in thickness, strength of the aluminium coating and colour and light transmission properties

Finish

Thermal surface embossing

This unique process gives the film a piqué-like embossing. This ensures:

- High resistance to mechanical stress (e.g. scratches)
- Diffuse light distribution in the room
- Reduces reflection
- Maintains a high level of transparency

MULTIWAVE® pleating

- Gentle arched pleating
- Up to 3 m film width possible
- Pleat spacing freely selectable between 30 and 100 mm
- Harmonious internal and external view due to improved surface stability of the film

Film welding

- Special ultrasonic welding process for high-strength joining of individual film segments
- Film systems of up to 3 x 8 m possible
- Weld seam for systems in series at the same height

MultiFilm® films

Range of films (selection)

- Large selection of different film types in various colours, thicknesses and with light transmission and solar reflection levels
- MultiFilm® films are flame-retardant, non-dripping and produce minimal smoke according to ÖNORM A 3800 Part 1.
- The films provide excellent UV protection. The UV transmission corresponds to their light transmission T_{vl}.

Film	Colour external/internal	Light transmission $_{TVL*}$	Solar reflection*	g value*	Suitability with respect to		
					Heat protection	Glare protection	Outside
SiAt01	silver/anthracite	1 %	79 %	5 %	++	++	++
SiAt02	silver/anthracite	2 %	74 %	7 %	++	++	++
SiAt07	silver/anthracite	7 %	61 %	17 %	+	+	++
SiBc02	silver/bronze	2 %	75 %	8 %	++	++	++
SiSi18	silver/silver	16 %	67 %	18 %	+	o	++
GyGy02	grey/grey	3 %	23 %	26 %	-	++	++
GyGy07	grey/grey	7 %	17 %	40 %	-	+	++
SiBk00	silver/black	0.01 %	84 %	3 %	++	++	-
SiWt00	silver/white	0.1 %	84 %	5 %	++	++	-

*All technical data is subject to manufacturing tolerances.

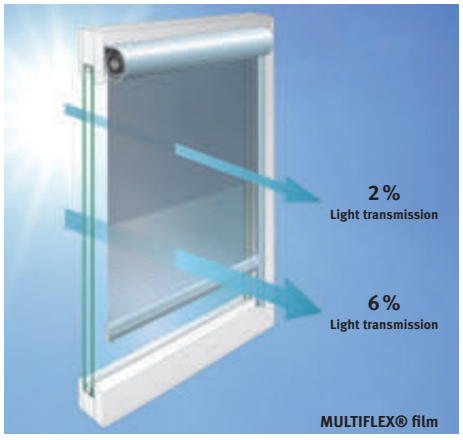
++ highly suitable + suitable o limited suitability - not suitable

Special films

Film	Description	Colour exterior/interior	Visible transmission T_{VL}*	Solar reflectance*	g-value*	Suitability with respect to		
						Heat protection	Anti-glare	Outside visibility
SiAt1V2 MULTIFLEX®	with 2 sections of different light transmission	silver/anthracite	2 %/6 %	61 %	17 %	+	+	++
SiAt023SNM	extra strong three-layered film for improved surface stability	silver/anthracite	2 %	74 %	7 %	++	++	++
GyGy033SR	scratch-protected surface on one side	grey/grey	3 %	16 %	35 %	-	++	++

*All technical data is subject to manufacturing tolerances.

++ highly suitable + suitable o limited suitability - not suitable



Heat protection with MultiFilm®

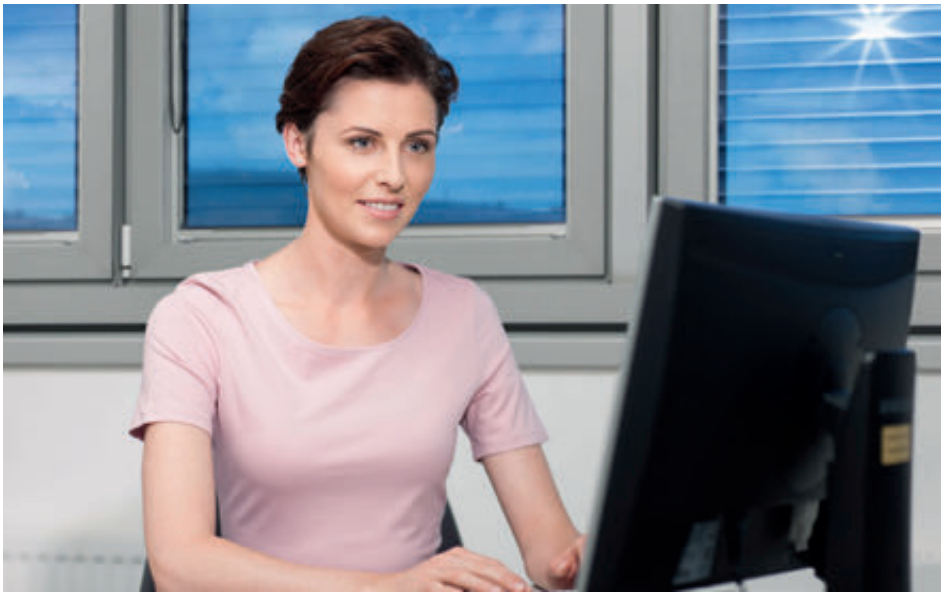
The problem

Without sun protection, rooms and buildings with generous glazing quickly turn into heat traps.

- Short-wave solar radiation is absorbed in the room and converted into heat.
- The room heats up uncontrollably because the glazing cannot transfer the heat outwards.
- Too much heat and light affect the well-being and performance of employees.

The solution
MultiFilm® film systems

- Create pleasant room temperatures through effective heat protection
- Allow unobstructed outside view thanks to the transparent film



Overview of shading options

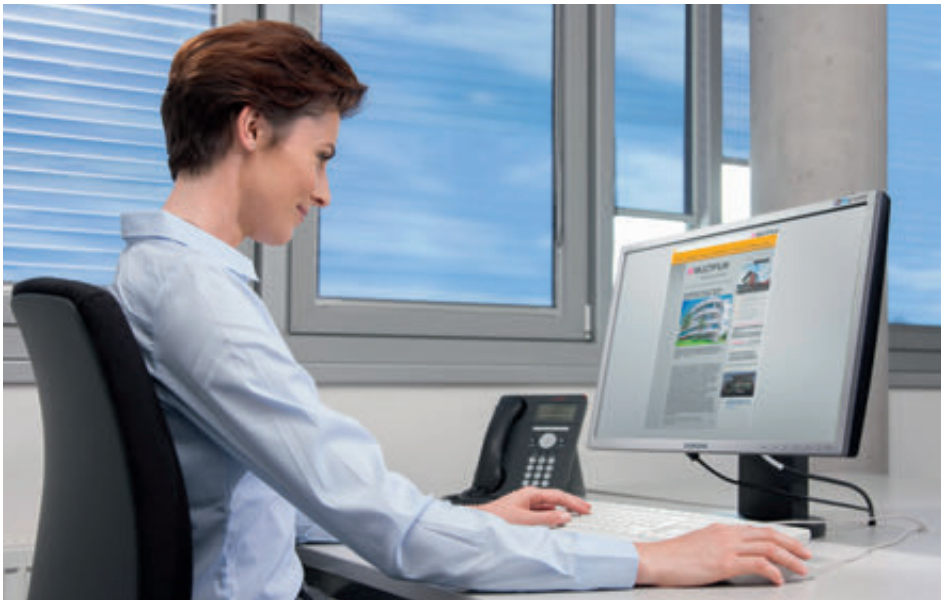
Evaluation criteria	Film roller blinds	Fabric roller blinds	Vertical blinds (fabric)	Horizontal shutters (external)	Horizontal shutters (internal)
Glare protection	++	o	o	o	o
Summer heat protection	+	-	-	+ +	o
Improvement of U value in winter	+	o	o	o	o
External visual contact	++	-	-	o	o
Long-term behaviour / wear	++	+	+	o	+
Use of daylight	+	o	o	o	o
Independent of weather conditions	++	++	++	o	++
Maintenance costs	++	++	-	o	o

++ highly suitable + suitable o limited suitability - not suitable Excerpt from the AGI worksheet F20

Glare protection with MultiFilm®

The problem

If daylight enters the room unhindered, it causes reflections on the screen. This leads to fatigue, headaches and back pain and can even result in muscle strain and eye disorders that cause prolonged absences from work.



The solution
MultiFilm® film systems

Film roller blinds from MULTIFILM® create the conditions for a glare-free, relaxed working atmosphere:

- Absorption of daylight
- Reduction in marked differences in brightness
- Protection against glare and reflections on the screen
- Room illumination with natural light
- Ensure good screen contrast level
- Maintaining of natural colour tones of daylight
- Individual adjustability
- Unobstructed outside view even when the anti-glare system is closed
- Good screen contrast for improved eye protection

Moreover, MultiFilm® sun and glare protection systems comply with numerous legal requirements:

- Ensures compliance of workplace regulations (e. g. daylight at workplace)
- DIN EN 14501-1 (Performance requirements and classification of sun protection systems)

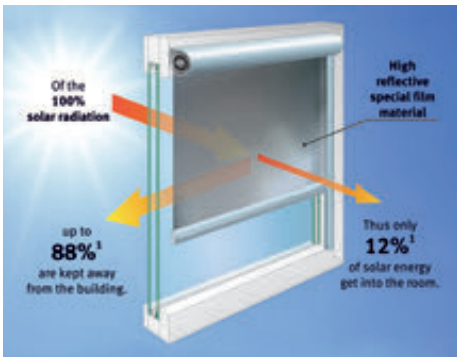
Comparison of sun shading systems according to DIN EN 14501-1

Sun protection system	g value	Anti-glare properties	Outside visibility	Total
Film roller blind with side guides	3	3	2	8
Fabric roller blind with side guides	2	1	1	4
Fabric roller blind without side guides	2	1	1	4
Vertical blinds - fabric	2	1	0	3
Aluminium shutters - internal (closed 90°)	2	3	0	5
Aluminium shutters - internal (cut-off position 45°)	1	0	3	4
Exterior aluminium blinds (closed 90°)	4	3	0	7
Exterior aluminium blinds (cut-off position 45°)	3	0	3	6

Thermal insulating glass (g value 0.50; U value 1.1 W/m²K); 0 = not fulfilled ... 4 = completely fulfilled

Energy saving with MultiFilm®

MultiFilm® film systems improve the energy properties of windows and façades with their highly reflective coating. They protect against heat in summer and improve the insulating properties of the windows in winter. MultiFilm® systems thus ensure a better room ambience and demonstrably save energy in both summer and winter.

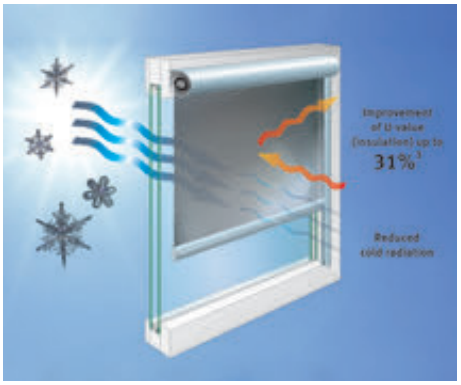


Cooling energy savings in summer

- Reflection of the incoming solar beams on the film
- Deflects up to 88 %[1] of solar energy
- Significant reduction in room overheating
- Savings of up to **30 %**[2] **on cooling energy** compared with an unshaded window

[1] SiAt012 film and sun protection glazing sunbelt polaris 65/34 as per appraisal by TU Berlin

[2] SiAt023 film with thermal insulating glass Climaplus Ultra N (source: ALware)



Heating energy savings in winter

- A film roller blind with side guide counteracts heat loss through the window due to its insulating properties
- The film's aluminium coating reflects the heat radiating from inside to outside back into the room
- The air cushion between the blind and the window further reduces heat loss
- U value of the glass improved by up to 31 %[3]
- Reduces room cooling and **saves on heating energy**

[3] SiAt013 film with insulating glazing Climaplus Ultra N (1.1 W/m2K), as per test report issued by the Fraunhofer Institut IBP Stuttgart

Energy label

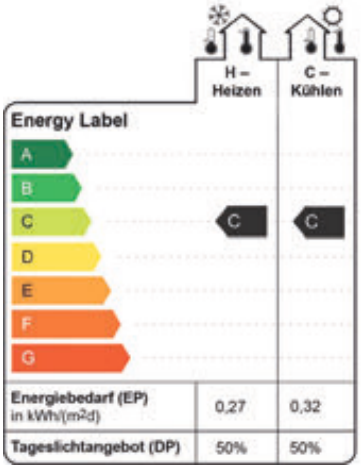
The **ift Rosenheim** (Institute for Window Technology) evaluates windows with sun protection systems in terms of their energy efficiency using descriptive energy labels.

- Energy efficiency classes categorized in a familiar traffic light system
- Summer heat protection and winter energy conservation mapped separately
- Energy efficiency of roller blinds by comparing windows with/without sun protection

The Energy Label highlights the high energy saving potential of MultiFilm® film roller blinds and their positive effect on the energy balance of buildings.

Values without sun protection

Triple-layered sun protection insulating glazing

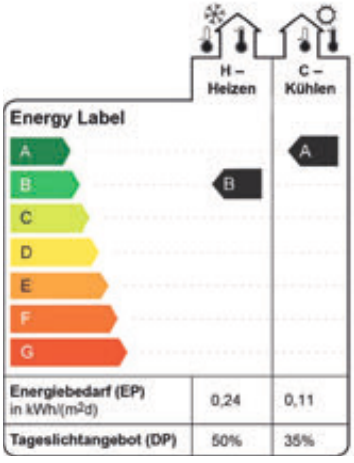


g_w value: 0.37

U_w value: 1.00 W/m²K

Values with sun protection MultiFilm®

Double-layered sun protection insulating glazing with MultiFilm® system, SiAt022NM film



Gt_t value: 0.10

U_t value: 0.43 W/m²K

F_C value: 0.27

Effectiveness of MultiFilm® on different types of glazing

By using MultiFilm® film systems, the total energy input (g value) of the glazing can be reduced in summer and the insulation (U value) improved in winter. Depending on the MultiFilm® film and glass type used, the g value improves by up to 73 % and the U value by up to 31 %. This ensures more pleasant room temperatures and effectively saves cooling and heating energy.

Glass			Film	Glass with film roller blind				
Type/structure	g value	U value	Type	Total g value	*g* value improvement	F_c value	Total U value	U value improvement
Double-layered **insulating glazing** (4/14Air/4) (existing glazing in old construction)	0.77	2.81	SiAt01	0.19	73 %	0.25	1.60	43 %
			SiAt02	0.24	69 %	0.31	1.63	42 %
Double-layered **thermal insulation glazing** Climaplus Ultra 1.1 N (4/16Ar/4)	0.63[4]	1.10[4]	SiAt01	0.21	67 %	0.33	0.76[1]	31 %
			SiAt02	0.26	59 %	0.41	0.76	31 %
Double-layered **thermal insulation glazing** Climaplus V 1.1 N (4/16Kr/4)	0.54[2]	1.10[4]	SiAt01	0.17[2]	69 %	0.32[2]	0.76	31 %
			SiAt02	0.25[2]	54 %	0.46[2]	0.76	31 %
			SiAt07	0.29[2]	46 %	0.54[2]	0.76	31 %
			SiWt00	0.18[2]	67 %	0.33[2]	0.76	31 %
Double-layered **sun protection glazing** Sunbelt Polaris 65/34 (6/16Kr/4)	0.38[2]	1.10[4]	SiAt01	0.12[2]	69 %	0.31[2]	0.84	24 %
			SiAt02	0.14[2]	63 %	0.37[2]	0.85	23 %
Triple-layered **sun protection and thermal insulation glazing** (6/12Kr/4/12Kr/6)	0.43	0.51	SiAt01	0.26	40 %	0.60	0.44	14 %
			SiAt02	0.28	35 %	0.65	0.44	14 %
Triple-layered **sun protection and thermal insulation glazing** Solawer Neutral STW 12 VSG (10/12Ar/6/12Ar/6)	0.27[4]	0.70[4]	SiAt01	0.17[3]	37 %	0.63	0.57	19 %
			SiAt02	0.18[3]	33 %	0.67	0.58	17 %
Triple-layered **thermal insulation glazing** (4/16Ar/4/16Ar/4)	0.48	0.70	SiAt01	0.28	42 %	0.58	0.58	17 %
			SiAt02	0.30	37 %	0.63	0.59	16 %

[1] Fraunhofer Institute for Building Physics Stuttgart; [2] Technical University Berlin; [3] Institute for Window Technology Rosenheim; [4] Manufacturer specifications; all other values: calculations

Savings on cooling and heating energy

The actual savings on cooling and heating energy with MultiFilm® systems were determined using a calculation model[3].

Data base

- Office space (19.4 m²) with 2 people and 2 PCs
- Window (5.4 m²), south-facing and thermal insulation glazing according to DIN EN 14501-1, type C (g value: 59 %; U value: 1.2 W/m²K)
- Desired temperature: between 20 and 26 °C
- Geographical location: Munich
- Observation period: 1 year

Procedure

Determination of the annual energy requirement for an unshaded office space in comparison with the energy required when using four different sun protection systems.

Result

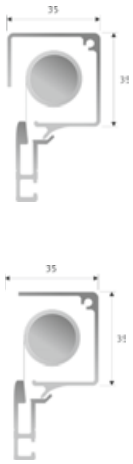
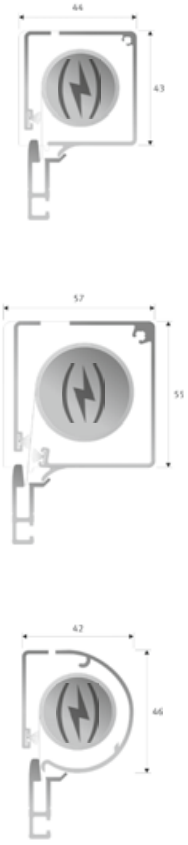
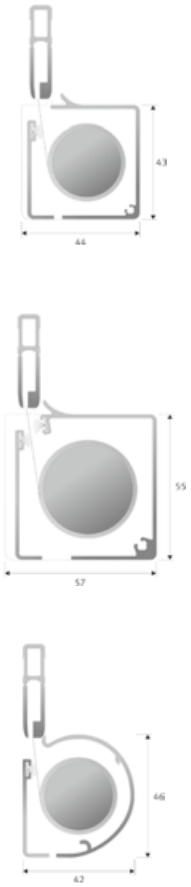
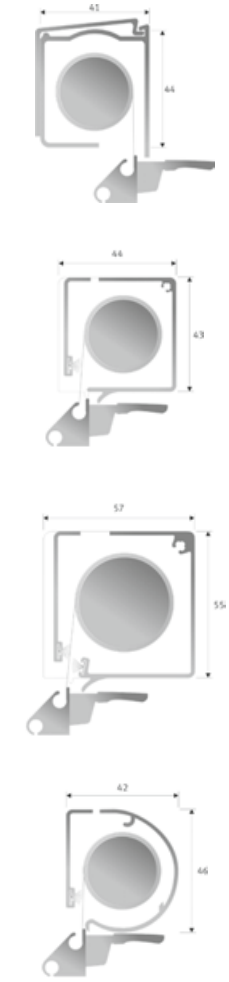
37 % of cooling and heating energy can be saved with aluminium-coated MultiFilm® film systems compared to a room with unshaded windows. This places the film roller blind in first place among the list of systems compared. The F_c value of the film glass combination examined is 0.44. This corresponds to energy efficiency class 2 (“high”).[4]

[3] Calculated with Parasol software, V 6.6, University of Lund/Sweden

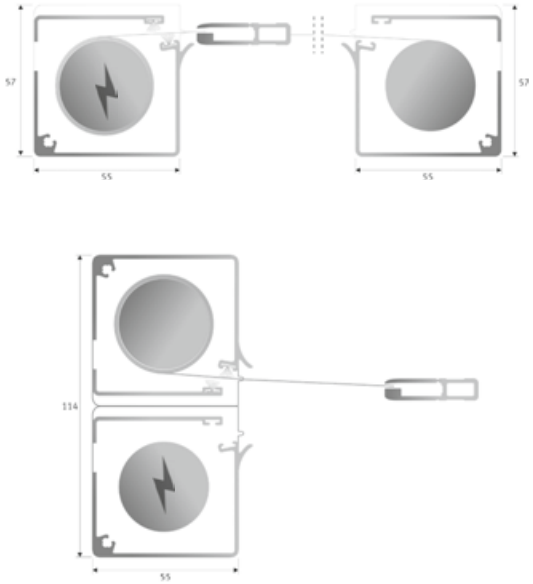
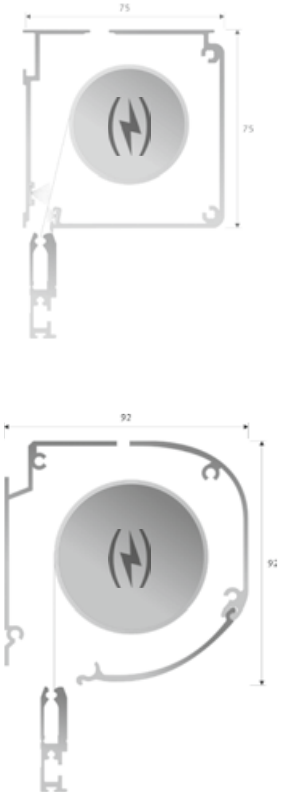
[4] As per energy efficiency classification, Association for Interior Sight and Sun Protection Systems (ViS)

Sun protection system	MultiFilm® system	Roller blind	Shutters	Shutters
Position	internal	internal	internal	external
Blind	SiAt012N aluminium coated	fabric Verosafe 12.228/1	slats Turnils 17 alu blank	slats aluminium
Remarks	with side guides	without side guides	slats in cut-off position	slats in cut-off position
Total U value	0.89	1.11	1.17	
Total g value	0.26	0.41	0.51	
F_c value	0.44	0.70	0.86	
Total cooling and heating energy requirement without sun protection in kWh	998	998	998	998
Total cooling and heating energy requirement with sun protection in kWh	625	775	845	670
Total cooling and heating energy savings with sun protection in %	37	23	15	33

MultiFilm® – Overview of roller blind systems

Product	Compact-Line	Classic-Line	Lux-Line	Multistop roller blinds for roof windows
Illustration				
Head box/design	COg, CO	C1, C2, R1	C1, C2, R1	DF, C1, C2, R1
Max. dimensions manual operation (Max. length depending on pleating)				
Width in mm	1,500	2,200	2,200	1,500
Height in mm	3,400	3,400	3,400	2,000
Max. dimensions electric operation (Max. length depending on pleating)				
Voltage	–	Battery / 24 V	-	-
Width in mm	–	2,200	-	-
Height in mm	–	3,400	-	-
Side guide				
Side guides	yes	yes	yes	yes
Cable guide	no	optional	no	no

MultiFilm® – Overview of system components

Trend-Line	Counter-pull technology	XXL façade systems
		
R3, carrier rail	C2	F1, F2
2,200	-	3,000
3,400	-	8,000
Battery / 24 V	24 V	230 V
2,200	1,800	3,000
3,400	3,000	8,000
no	yes	yes
optional	no	optional

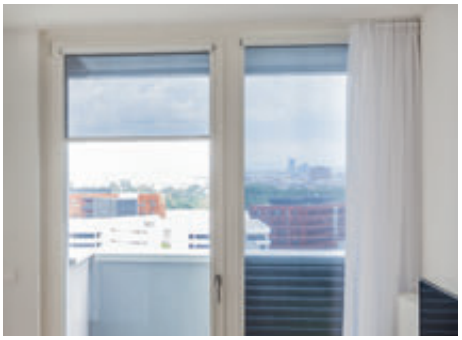
Compact-Line *Smart and economical*

Features

- Very compact head box
- Simple and quick installation
- No screw fixing necessary – adhesive installation or head box insertion
- Variety of side guides available

Use

- Predominantly in the commercial and public sector
- Industrial, commercial and administrative buildings
- Also suitable for private use



Maximum sizes

- Max. width 1,500 mm
- Max. height 3,400 mm (depending on pleating)
- Depending on width and film

Head box	CO/COg
Max. width	1,500
Max. height Chain loop	3,400

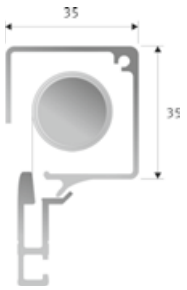
Colours

Colours	white (wt)	grey (gy)	black (bk)	RAL
Profiles	x	x (anodised)	–	optional
Side caps/ bearing plates	chrome	chrome	–	optional
Guide chain Metal chain optional	x	x	x	–

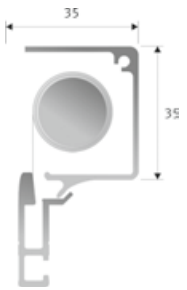
Compact-Line *Smart and economical*

Head box/design

- Head box **COg**, closed head box for installation between glazing beads
- Head box **CO**, open head box for installation on the frame



COg



CO

Bottom rail

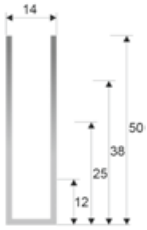
- **P**

P

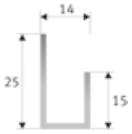
Side guide rails

Selection according to roller blind size

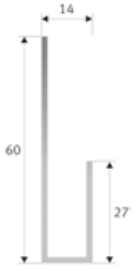
- With **U25**, **U38**, **UL38**, **U50** and **UL50** side blind cover
- With **U12** gap on both sides
- With **U15/25**, **U27/60** and **U30/50** no gap, blind swinging freely facing the room



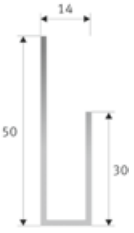
U12, U25, U38, U50



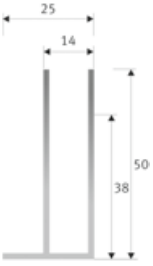
U15/25



U27/60



U30/50



UL38, UL50

Installation

- **Adhesive installation** of the guide rails on or in the frame
- No drilling necessary

Adhesive installation of the side guide rails

Simple plug-in installation of the head box

Classic-Line *Classically versatile*

Features

- Versatile product group with respect to operational options, head box and side guide selection
- R1 option without head box available for ceiling installation or façade integration

Use

- Predominantly in the commercial and public sectors
- Industrial, commercial and administrative buildings
- Also suitable for private use

Drive

- **Chain operation**
- **Electrical drive**

Drive	Options	Benefits
Chain loop	cable guide optional	vertical and up to 20° free movement
Electrical	24V motor via switch or remote control Rechargeable battery motor with remote control	Battery can be easily retrofitted and recharged

Maximum sizes

- Max. width 2,200 mm
- Max. height 3,400 mm (depending on pleating)
- Depending on width, drive and film

Head box	C1	R1	C2
Max. width	1,500	1,500	2,200
Max. height Chain loop	3,400	3,400	3,400
Max. height Motor	3,100	2,800	3,400

Colours

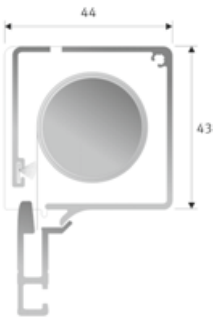
Colours	white (wt)	grey (gy)	black (bk)	RAL
Profiles	x	x (anodised)	–	optional
Side caps/ bearing plates	chrome	chrome	–	optional
Guide chain Metal chain optional	x	x	x	–

MULTIFILM®

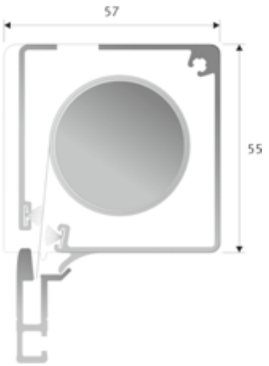
Classic-Line *Classically versatile*

Head box/design

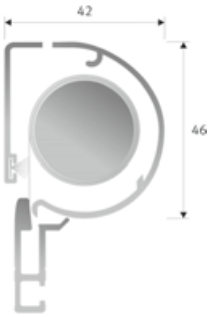
- Head box **C1** (44 x 43 mm)
- Head box **C2** (57 x 55 mm)
- Head box **R1** (42 x 46 mm)



C1



C2

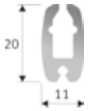


R1

Bottom rails

- P and T

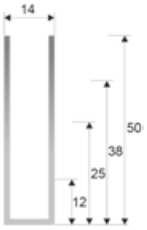
P



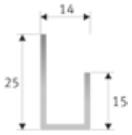
T

Side guides

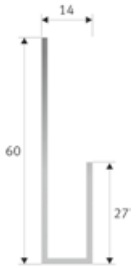
- Selection according to roller blind size
- With **U25**, **U38** and **U50** side blind cover
- **UL38** and **UL50** with wide mounting surface
- With **U12** gap on both sides
- With **U15/25, U27/60** and **U30/50** no gap, blind swinging freely facing the room



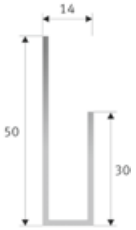
U12, U25, U38, U50



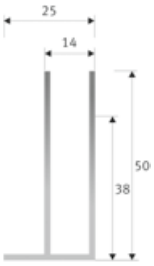
U15/25



U27/60



U30/50

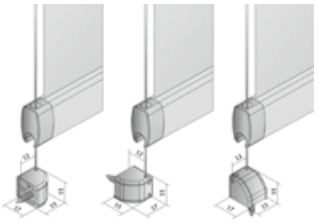


UL38, UL50

Cable guide

- Medium spring-loaded cable guide
- Screw mounting of the brackets downwards, to the side or to the rear

Medium cable guide bracket

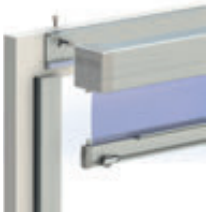


Medium cable guide installation options

Installation

- **Adhesive plug-in installation** on or in the frame (without drilling)
- **Screw mounting** on the frame
- **Installation** with clamps on the frame (without drilling)
- **Adhesive installation** on or in the frame (without drilling)
- Installation with plates possible

Adhesive plug-in installation on the frame (without drilling)



Screw mounting on the frame

with clamps on the frame (without drilling)

Adhesive installation with riveted rear head box R1

Lux-Line

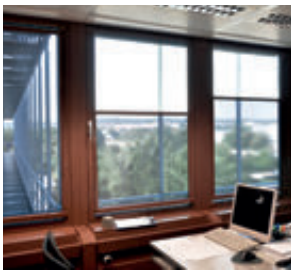
The bottom-up roller blind

Features

- Blind closes from bottom to top
- Optional chain or cord guide
- Customisable geometric options available

Use

- Enables daylight utilisation in the upper window area with simultaneous glare protection at eye level
- Narrow, high or non-rectangular windows
- Inclined windows
- Ideal for gable windows



Maximum sizes

- Max. width 2,200 mm
- Max. height 3,400 mm
- Max. height depending on films
- Vertical and ≤ 20° inclined windows with chain loop
- Vertical and ≥ 20° inclined windows with pull cord

Head box	C1	R1	C2
Max. width	1,500	1,500	2,200
Max. height	1,800	1,800	3,400

Colours

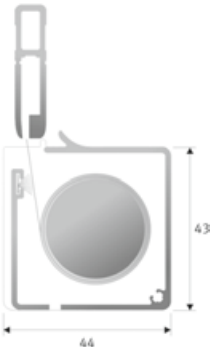
Colours	white (wt)	grey (gy)	black (bk)	RAL
Profiles	x	x (anodised)	–	optional
Side caps/ bearing plates	chrome	chrome	–	optional
Guide chain Metal chain optional	x	x	x	–
Guide cord	x	x	x	–

Lux-Line

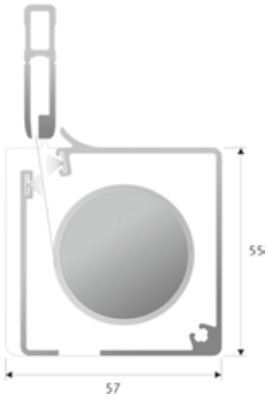
The roller blind from bottom to top

Head box/design

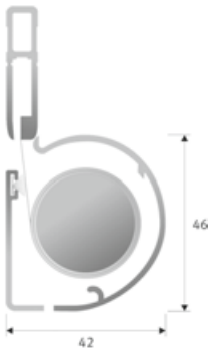
- Head box **C1** (44 x 43 mm)
- Head box **C2** (57 x 55 mm)
- Head box **R1** (42 x 46 mm)



C1



C2



R1

Bottom rail

- **E**

E

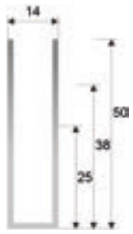
Options

- Different geometric options available
- 50 mm gap with pull cord
- 25 mm gap with chain loop

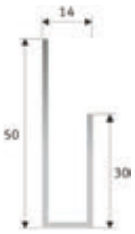
Side guide rails

Selection according to roller blind size

- Compatible with Lux-Line chain loop **U38**, **UL38**, **U50** and **UL50**
- For Lux-Line pull cords, all side guides shown are compatible (for **U30/50** and **U27/60** films, swinging freely facing the room)
- Other special shapes on request



U25, U38, U50



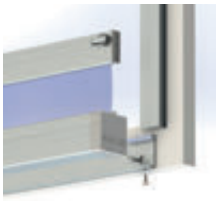
U30/50

U27/60

UL38, UL50

Installation

- **Screw mounting** of the head box and adhesive mounting installation of the side guides
- **Adhesive installation** on the frame with riveted rear head box
- Installation with plates possible



Screw mounting/ adhesive installation

Adhesive installation withriveted rear head box

Geometric guidance

Geometric shape

Trend-Line *Universal roller blind without side guides*

Features

- With head box or carrier rail
- Without side guide rails
- Electrical and manual operation possible
- Cable guide (optional)

Maximum sizes

- Max. width 2,200 mm
- Max. height 3,400 mm (depending on pleating)
- Depending on width, drive and film

Head box	R3	Carrier rail only (without head box)
Max. width	2,200	2,200
Max. height	3,400	3,400

Motors

Motors	Specials	min. width	Voltage	Cable length	Volume
Somfy WT28		400	24 V	2.20 m	comfort
Somfy Roll-up 24 RTS	Battery / remote	550	12 V	–	comfort
Somfy Sonesse 28 RTS	Battery / remote	600	12 V	–	silent

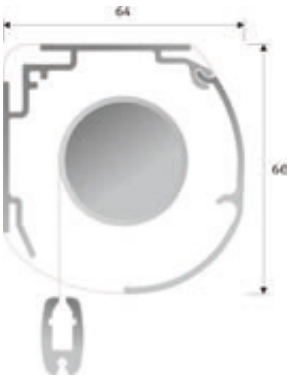
Colours

Colours	white (wt)	grey (gy)	black (bk)	RAL
Profiles	x	x (anodised)	–	optional
Side caps/ bearing plates	chrome	chrome	–	optional
Guide chain Metal chain optional	x	x	x	–

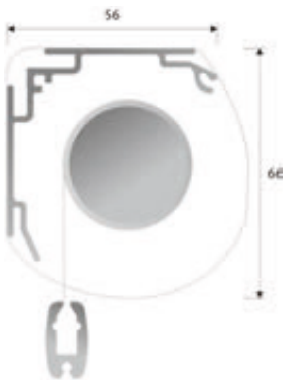
Trend-Line

Head box/design

- Head box **R3**
- With **carrier rail** (without head box)



R3



Carrier rail

Bottom rails

- **T** up to 1,500 mm width
- **S** from 1,501 mm width

T

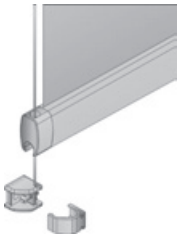
S

Side guide rails

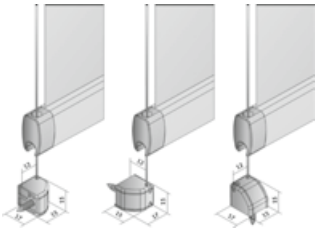
- Without side guide rails

Cable guide (optional)

- Medium spring-loaded cable guide
- Screw mounting of the brackets downwards, to the side or to the rear



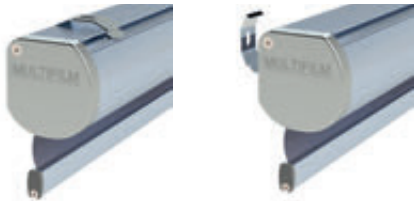
Medium
cable guide bracket



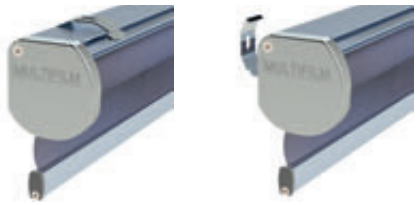
Medium
cable guide installation options

Installation

- **Screw mounting** possible via clips to the rear or top, number of clips according to width



Screw mounting with head box



Screw mounting with carrier rail

Counter-pull technology

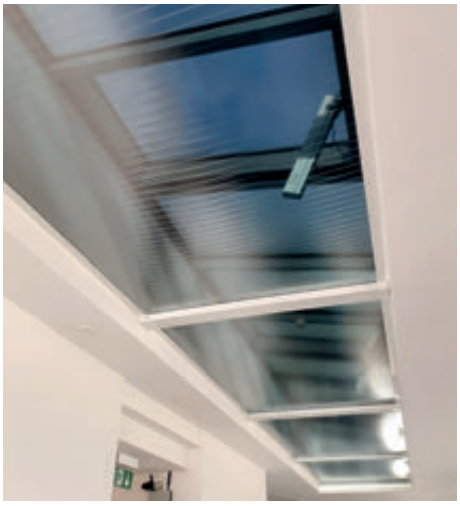
Effective sun protection in horizontal and inclined areas

Features

- System with two opposing head boxes
- Head box with spring-loaded blind and counter-pull head box with motor
- Blind always remains taut due to spring tension-inclined and horizontal installation positions possible
- Non visible pulling tapes

Use

- Inclined and roof glazing
- Skylight domes and arcade rooflights
- Large atria and inner courtyards
- Inaccessible horizontal window surfaces
- Triangular and trapezoidal windows
- Conservatories and overhanging porches



Maximum sizes

- Max. width 1,800 mm
- Max. height 3,000 mm
- Depending on width to height ratio

Head box	C2
Max. width	1,800
Max. height motor (depending on pleating)	3,000

Motors

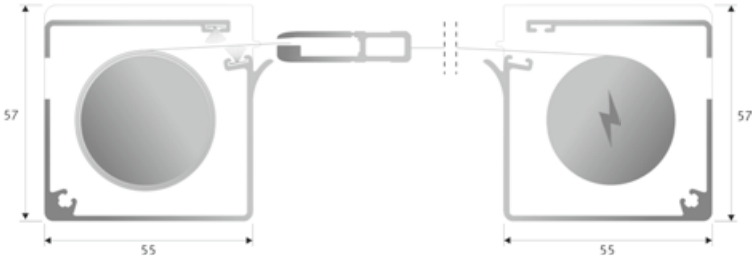
Motors	Specials	Min. width	Voltage	Cable length	Volume
Somfy WT28		400	24 V	2.20 m	comfort
Somfy Sonesse 28 RTS	Bat-tery / re-mote	600	12 V	–	silent

Colours

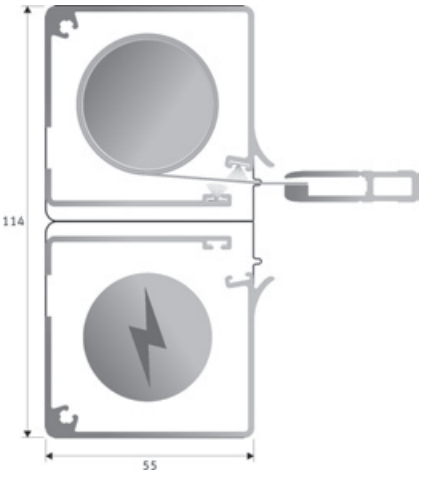
Colours	white (wt)	grey (gy)	RAL
Profiles	x	x (anodised)	optional
Side caps/bearing plates	chrome	chrome	optional

Head box/design

- Combination of spring-loaded roller blind and counter-pull element
- Roller blind and counter-pull element either opposite or one-sided with re-routing



C2 opposite head boxes



C2 one-sided head boxes

Counter-pull options

Bottom rail

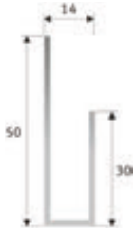
- **E**

E

Side guide rails

- Selection according to roller blind size and installation requirements

U38, U50



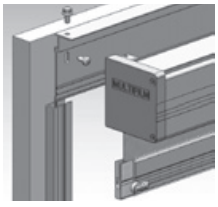
U30/50

U27/60

UL38, UL50

Installation

- Screw mounting on or in the frame, on rafters or transom-mullion construction
- Project-specific installation solutions



Screw mounting on the frame

Film façade systems *for large glass façades*

Features

- Sun protection for large-scale glazing
- Systems of up to 3 x 8 m possible
- Extra-strong film with MULTIWAVE® pleated blinds
- Façade integration possible

Use

- Commercial and administrative sectors

Maximum sizes

- Max. width 3,000 mm
- Max. height 8,000 mm
- Depending on width and film

Head box	F1	F2
Max. width	2,700	3,000
Max. height	6,000	8,000

Motors

Motors	Specials	Element width	Voltage	Cable length	Volume
Somfy LS40		560 – 2,800	230V	2.50 m	comfort
Somfy Altus 40 RTS	Remote	600 – 2,800	230V	3.00 m	comfort
Somfy Sonesse 40		560 – 2,800	230V	2.50 m	silent
Somfy Sonesse 40 RTS	Remote	600 – 2,800	230V	3.00 m	silent
Gaposa XS4P330		580 – 2,800	230V	2.50 m	super silent
Gaposa XS4EX330	Remote	680 – 2,800	230V	2.50 m	super silent
Somfy Hermes LT50		670 – 4,000	230V	2.50 m	comfort
Somfy Altus 50 RTS	Remote	820 – 4,000	230V	3.00 m	comfort
Somfy Sonesse 50		880 – 4,000	230V	3.00 m	silent
Somfy Sonesse 50 RTS	Remote	950 – 4,000	230V	3.00 m	silent
Gaposa XS5P530		600 – 4,000	230V	2.50 m	super silent
Gaposa XS5EX530	Remote	640 – 4,000	230V	2.50 m	super silent

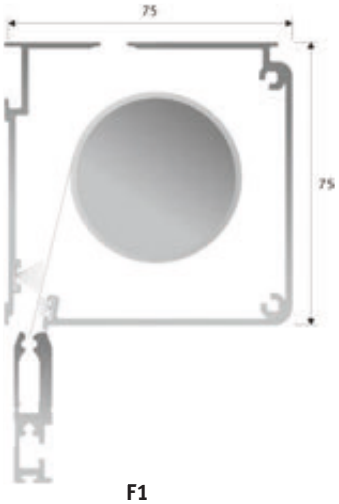
Colours

Colours	white (wt)	grey (gy)	black (bk)	RAL
Profiles	–	x (anodised)	–	optional
Side caps/bearing plates	chrome	chrome	–	optional
Guide chain (metal chain optional)	x	x	x	–

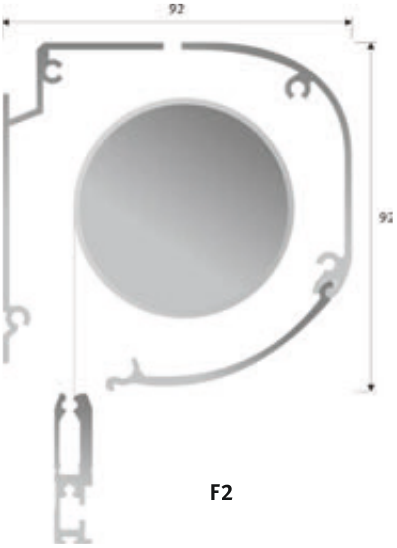
Film façade systems *for large glass façades*

Head box/design

- Head box **F1**
- Head box **F2**



F1



F2

Bottom rail

- **S**

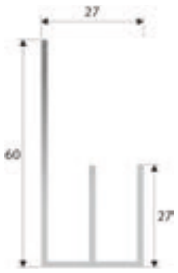
S

Side guide rails

- For F1 **U25** and **U27/60**
- For F2 **U25, U27/60** and **E60/27**
- Long rails to the back

U25

U27/60



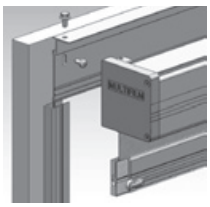
E60/27

Cable guide

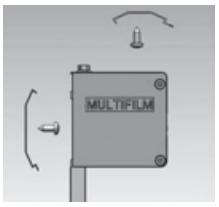
- Large spring-loaded cable guide
- Screw mounting of the brackets downwards, to the side or to the rear

Installation

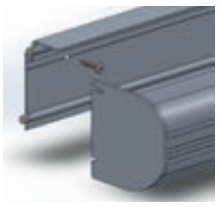
- Screw mounting on/in the frame, on rafters or transom-mullion construction
- Installation with plates/brackets possible
- Extensive installation options



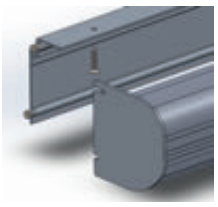
Example screw mounting F1



Example clip installation F1



Example screw mounting F2

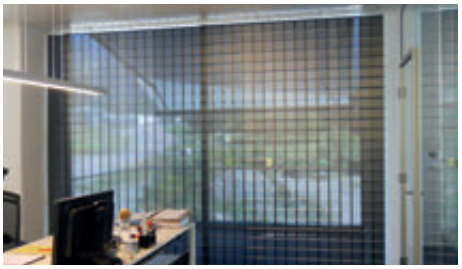


Example of installation F2 via upwards-facing rear head box

Vertical blinds *Large glass surfaces shaded elegantly*

Product information/use

- Customisable arrangement options
- Slats made of surface-embossed and MULTIWAVE® pleated film with 100 mm pleat spacing
- Retrofitting of existing systems with film slats possible
- Slat hangers as clip system
- Shading of inclined or arched window areas possible
- For the industrial, commercial and administrative sectors, especially in conference rooms and foyers



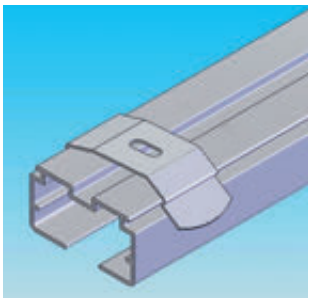
System size/design

- Max. 6,000 mm width x 3,500 mm height
- Individual slats: 127 mm in width
- System options: Slope (for triangular windows, e.g. in the gable)
- Package arrangement: one-sided, central, divided to the right and left
- Blinds can overlap

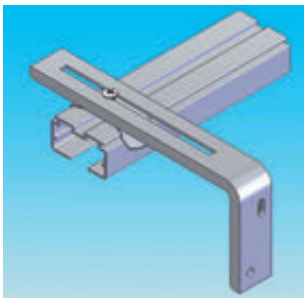
Operation

- Operation with lateral pull cord
- Slats are turned with chain loop

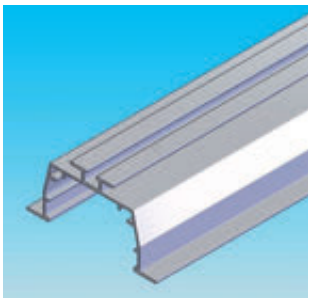
Installation



via joists on the ceiling



via wall brackets to the wall



via installation profile in suspended ceiling

Arrangement examples

Bundle on one side, right or left, operation to the right or left

Bundle in the centre, operation to the right or left

Bundle divided, operation to the right or left

Sloped blinds, bundle and operation to the right or left

Panel blinds *Large glass surfaces shaded elegantly*

Product information/use

- Customisable arrangement options
- Panels freely movable or connected to each other
- Panels of MULTIWAVE® pleated film or fabric
- Combinable rails for large system widths
- Arched systems possible
- For the industrial, commercial and administrative sectors
- Can also be used as room dividing systems

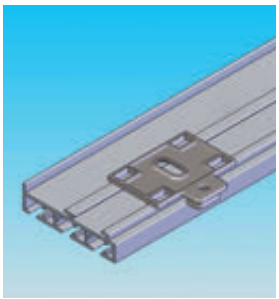
System size/design

- Pull cord up to 12 m in width
- Freely movable with control panel, unlimited width
- Individual panels: up to 3 m wide x 3.50 m high
- System options: up to 10 runs per blind (coupled systems)
- Numerous arrangement options

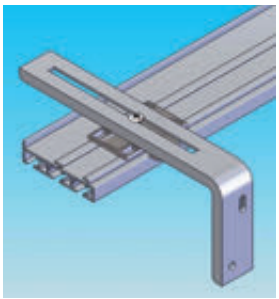
Operation

- Side pull cord
- Control panel
- Freely movable

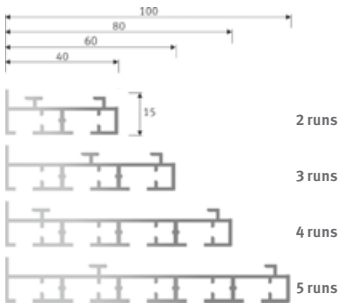
Installation



via joists on the ceiling

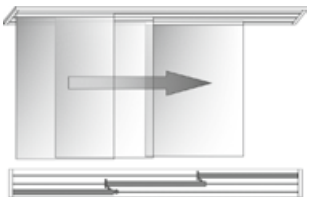


via wall brackets to the wall

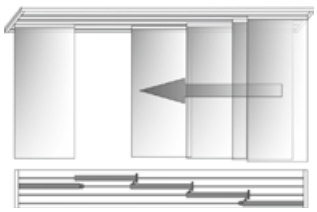


Rails

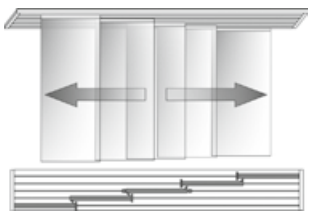
Arrangement examples



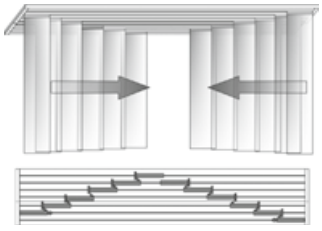
3 runs, one-sided, bundle to the left, one fixed panel



4 runs, one-sided, bundle to the right, two fixed panels



5 runs, bundle in the centre, one fixed panel



7 runs (rails coupled), two-sided, two fixed panels

MultiDecor® – examples of use as advertising space

MultiDecor® transforms functional film roller blinds into advertising media or decorative surfaces. The special sublimation print gives the MultiFilm® heat and glare protection films a highly lightfast and abrasion-resistant colour. There are no limits to the design. The films can be printed individually with logos, slogans or photos, or clients can choose from the wide range of designs and plain colours available. In the process, an unobstructed view and excellent heat and anti-glare properties are fully retained.

Sublimation printing

- Embedding of transparent ink in polyester film via thermal printing
- 100 % abrasion resistant
- Highly lightfast

MultiDecor® film blinds

- Transparent colours allow an unobstructed outside view
- Internal printing ensures excellent heat protection

Application and use

- Exterior printing for advertising, signage and building design (logos, slogans, lettering, signs, photos)
- Interior printing for advertising/info purposes
- For decorative room design (designs, photos, colours)

Basic films for printing

The transparent ink mixes with the background colour (e.g. coloured window glass or ink).

- For external printing: films with silver exterior
- For internal printing: films with silver interior or white tinted film

MultiDecor®films are surface embossed and can be MULTIWAVE® pleated and ultrasonically welded.
The sublimation-printed films are found in all MULTIFILM® products.

INTERRA, Joure (Netherlands)

System requirements
- Optimum glare protection for computer workstations with daylight use
- Underlining the futuristic character of the building without affecting the exterior view
- Representative, individual solution
- Unobstructed exterior view

Technical implementation
- 10 slope panel blinds precisely adapted to the geometry of the façade
- Use of a silver-anthracite coloured film with 2 % light transmission
- Aesthetic and calming façade view through arched MULTIWAVE® pleating

The unusual shape and colour scheme and its coveted waterside location make the headquarters of the engineering and architecture company INTERRA extremely eye-catching.
Film panel blinds shade the futuristic glass façade.

University of Applied Sciences of the Saxon Municipal Administration, Meißen (Germany)

System requirements
- Effective heat protection with unobstructed view for a pleasant room ambience
- Optimum glare protection and best viewing conditions on digital media
- Individual operation

Technical implementation
- Panel blinds and 400 Compact-Line film roller blinds
- Use of a silver-anthracite coloured film with 2 % light transmission
- MULTIWAVE® pleated blind for homogeneous appearance of the free-hanging film panels

The University of Public Administration and Administration of Justice of the Free State of Saxony offers a three-year dual study programme with specialist theoretical and practical content to prepare students for future tasks in public administration and the judiciary.

Bayernwerk AG, Regensburg (Germany)

System requirements
- Good glare protection and unobstructed outside view
- Discreet window fit
- Systems always available regardless of weather conditions

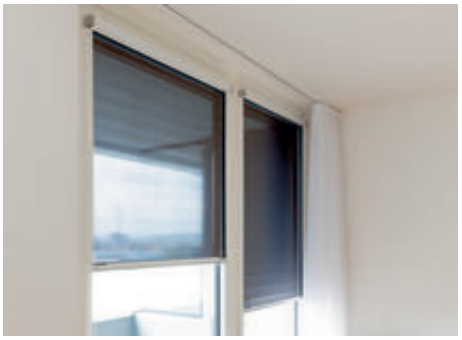
Technical implementation
- 2,100 Compact-Line roller blinds
- Customisable manual operation via chain loop
- Complete assembly in just 20 working days thanks to simple plug-in installation
- Silver-anthracite coloured film with 74 % solar reflection and 2 % light transmission
- Homogeneous appearance thanks to MULTIWAVE® curved pleated blinds

Bayernwerk AG is the largest regional network operator for electricity, gas and water. In the search for suitable sun protection, the choice fell on MultiFilm® film roller blinds, which are in line with the company's ecological values and responsible use of energy.

Messecarrée Nord residential complex, Vienna (Austria)

System requirements
- Effective heat protection
- Discreet appearance of the roller blinds – matching the apartments' understated interior aesthetic
- Fulfilment of structural building requirements (F_c value ‹ 0.43)

Technical implementation
- Over 800 Compact-Line film roller blinds (800 x 1,300 mm)
- Heat protection film with 74 % solar reflection and 2 % light transmission
- Discreet appearance due to small head box (35 x 35 mm) and white profiles
- Harmonious interior and exterior view



The Messecarrée Nord residential complex is ideal for contemporary luxury living. In the completely furnished apartments, MultiFilm® provides optimum glare protection and a pleasant room ambience. Over 10,000 film roller blinds have already been installed in Viennese residential buildings.

MULTIFILM®

Bad Stübler GmbH, Eislingen, near Stuttgart (Germany)

System requirements
- Heat and glare protection for bathroom display
- Use of the roller blinds as advertising space
- Easily retrofittable systems
- Discreet window fit

Technical implementation
- 14 electric Classic-Line film roller blinds (1,200 x 2,800 mm) on inclined glass façade (partly trapezoidal)
- Customisable MultiDecor® printing
- Partial images on the individual roller blinds create the overall picture
- Heat protection film with 74 % solar reflection and 2 % light transmission
- Roller blind profiles in the colour of the façade construction

Stübler presents its bathroom inspiration in a generously glazed sales gallery. However, too much sun and heat quickly spoiled what was a unique shopping experience. MultiFilm® film systems provide heat and glare protection and also serve as innovative advertising space.

Deltares, Delft (Netherlands)

System requirements
- Supplementing the existing natural shading (reflective façade panels)
- Effective glare protection on floor-to-ceiling windows

Technical implementation
- Installation of 350 Classic-Line film roller blinds, partly on non-rectangular windows inclined outwards
- Partial use of cable guide instead of side guide
- Chain loop operation
- Film with 2 % light transmission for effective glare protection
- MULTIWAVE® pleated film for harmonious interior and exterior view

Scientists at the independent research institute Deltares develop solutions for the sustainable protection of rivers, coastal areas and estuaries.

www.multifilm.de

Centre for Virtual Engineering (ZVE), Stuttgart (Germany)

System requirements
- Internal glare protection
- Excellent unobstructed outside view
- Discreet window fit
- No impairment of the façade view

Technical implementation
- 250 electric film roller blinds without head box
- Creation of a property-specific ceiling installation profile
- Use of a discreet grey anti-glare film for a subtle appearance
- Integration within the building control system

At the Centre for Virtual Engineering, scientists from the Fraunhofer Institute for Industrial Engineering (IAO) research new solutions in the fields of innovative work structuring, future mobility and digital engineering.

Trade Association for Wood and Metals, Mainz (Germany)

System requirements
- Optimum glare protection for computer workstations
- Unobstructed outside view
- Window area to be shaded approx. 1,000 x 2,500 mm

Technical implementation
- 900 Lux-Line film roller blinds
- Customised mounting solution
- Use of a silver-anthracite coloured film with 7 % light transmission
- Aesthetic interior and exterior appearance with MULTIWAVE® pleated blinds

The Trade Association for Wood and Metals is one of nine industrial professional associations in Germany. It serves around 4.7 million employees, making it one of the three largest legal accident insurers in Germany.

Asian Infrastructure Investment Bank (AIIB), Beijing (China)

System requirements
- Effective heat and glare protection on double-glazed windows
- Discreet window fit

Technical implementation
- 1,700 Classic-Lineroller blinds (1,700 x 2,700 mm) in office spaces
- Use of a highly reflective, transparent film with 2 or 7 % light transmission – depending on the façade direction
- MULTIWAVE®pleated film for harmonious interior and exterior appearance
- 70 electrically operated façade systems with blackout fabric in the conference rooms
- All profile parts with RAL powder coating in window colour

The Asian Infrastructure Investment Bank (AIIB) promotes infrastructure projects in Asian emerging markets. The bank's headquarters in Beijing was the first MULTIFILM® project in China to be completely equipped with film roller blinds.

European Court of Justice, Central Luxembourg

System requirements
- Internal glare protection
- Installation behind a suspended ceiling
- Compliance with modular dimensions of the open office concept

Technical implementation
- Over 1,000 film façade systems, including divided blinds
- System sizes of 1,000 x 3,000 mm to 2,400 x 3,500 mm
- Use of a triple-layer, double-sided grey film with 1 % light transmission
- Customisable electrical operation via individual control unit or centrally via BUS control unit

The Palais de Justice was built in 1972 and has undergone several extensions since this date. The latest extension included the expansion of the previous structure and the construction of two new office towers featuring a golden cladding of anodised aluminium mesh.

Control Tower, London Heathrow Airport (UK)

System requirements
- Reliable glare protection for inclined, trapezoidal glass surfaces
- Clear, distortion-free view of the airfield and airspace
- Electrical operation

Technical implementation
- 48 electrically-operated trapezoidal film façade systems (2,000 x 5,500 mm)
- Lateral guidance by steel cables
- Bottom rail with telescopic extensions on both sides to compensate for trapezoidal widths
- Use of a grey, non-embossed and reflection-free film with 7 % light transmission
- Use of a non-embossed film for a clear and distortion-free view of the airfield

London Heathrow is the largest airport in Europe, serving over 70 million passengers a year.
The Control Tower's completely glazed façade is around eleven metres high and inclines outwards.

Schneefernerhaus Environmental Research Station, Zugspitze (2,650 metres above sea level), Germany

System requirements
- Reliable glare protection for conference rooms and computer workstations

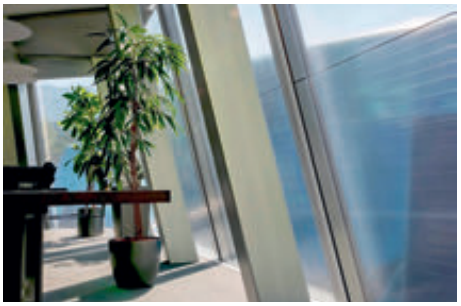
Technical implementation
- 13 electric film façade systems (2,000 x 2,100 mm) and 13 Compact-Line film roller blinds
- Extra-strong triple-layered film for high surface stability
- Anti-glare film with 2 % light transmission and 74 % solar reflection
- MULTIWAVE® pleated film for harmonious interior and exterior appearance

Germany's highest research facility is located on the southern slopes of its highest peak, the Zugspitze.
Here, scientists determine atmospheric pollutant load, monitor weather phenomena and research the effects of climate change.

Gemini office complex, Wollerau (Switzerland)

System requirements
- Efficient heat protection for energy-efficient façades
- Bottom-up closing mechanism
- Excellent unobstructed outside view
- Discreet window fit
- Weather-independent and low-maintenance systems

Technical implementation
- 1,500 electric counter-pull blind systems (2,400 x 3,100 mm) on an inclined glass façade, of which 100 systems boast a trapezoidal shape
- Installation in suspended ceilings and covered with property-specific head box profile
- Heat protection film with 61 % solar reflection and 7 % light transmission
- Central system control via building services



The striking Gemini office complex in Wollerau on Lake Zurich captivates with its pyramid shape and reinforced concrete and glass architecture. The sophisticated building energy concept uses solar energy for heating in winter and solar power for cooling in summer.

Maria Montessori building, Radboud University Nijmegen (Netherlands)

System requirements
- Effective sun protection for the different areas of use
- Reduction of solar energy input
- Optimum visibility when using digital media

Technical implementation
- 216 MultiSky® counter-pull systems measuring 1,200 x 3,600 mm each
- 780 electric Classic-Line roller blinds of 2,300 x 3,700 mm
- 20 electric XXL façade systems of 2,300 x 7,000 mm

The central inner courtyard of the Maria Montessori building is spanned by an atrium measuring 1,000 $m^{2.}$
Over 200 horizontal, specially developed MultiSky® systems span the roofed glass area, ensure a temperate indoor climate and maintain the building's bright character.

Electrical accessories

Control technology for 24V (Classic-Line, Trend-Line, counter-pull systems)

Inis DC (switch mode power supply)
- Individual control with Somfy WT28

Centralis DC IB (central switch)
- Group control for up to 3 roller blinds with Somfy WT28 (excl. power supply) and central control function

Inis DC

Centralis DC IB

Group control for several roller blinds with Somfy WT28 on request.

Control technology for 230V wired motors (film façade systems)

Smoove Uno switch
- Individual control

Smoove Duo switch
- Control of 2 roller blinds

Smoove Uno IB+ switch
- Individual control

Smoove Origin IB central switch
- In conjunction with group control unit

Smoove Uno

Smoove Duo

Smoove Uno IB+

Smoove Origin IB

Group control for several roller blinds with 230V motors on request.

Remote controls for Somfy / radio motors (Classic- and Trend- Line, film façade and counter-pull systems)

1-channel hand-held transmitter

5-channel hand-held transmitter

6-channel hand-held transmitter
- With timer

16-channel hand-held transmitter

1-channel hand-held transmitter

5-channel hand-held transmitter

6-channel hand-held transmitter

16-channel hand-held transmitter

Charger and accessories for Somfy battery motors (Classic- and Trend-Line, counter-pull systems)

Charger for Roll-up 24 RTS and Sonesse 28 RTS

Extension cable for charger

Charger

Extension cable

Electrical accessories

Remote controls for Gaposa 230V radio motors (film façade systems)

1-channel hand-held transmitter

1-channel wall-mounted transmitter

90-channel hand-held transmitter
- Digital clock
- Time programming

1-channel hand-held transmitter

1-channel wall-mounted transmitter

90-channel hand-held transmitter

5-channel hand-held transmitter

5-channel wall-mounted transmitter

Wall bracket for 90-channel hand-held transmitter

5-channel hand-held transmitter

5-channel wall-mounted transmitter

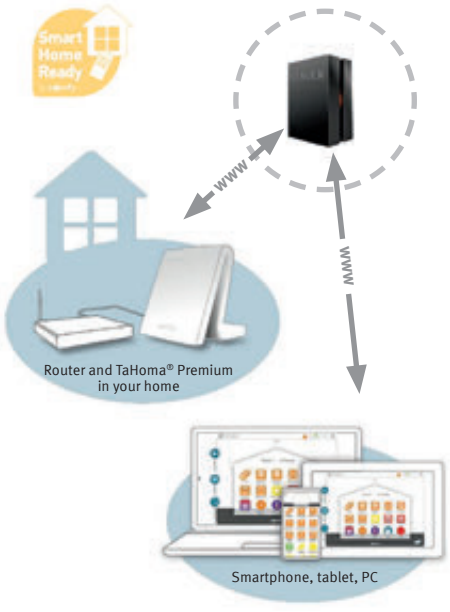
Wall bracket for 90-channel hand-held transmitter

Building automation / smart home

In principle, all electric roller blinds can be integrated into building control systems such as KNX, LON systems or Somfy control systems.

Radio-controlled motors can be conveniently operated via the Somfy TaHoma® box or other smart home solutions.

Smart home with Gaposa



Smart home with TaHoma®

REFERENCES

GERMANY Allianz Campus, Berlin | Airbus, Hamburg | Arcor, Stuttgart | AXA Abraham Lincoln Park, Wiesbaden | BASF, Ludwigshafen | Bayerischer Rundfunk (Bavarian Broadcasting), Munich | Bavarian Red Cross, Augsburg | Bayernwerk AG, Regensburg | Berlin Congress Center | Berufsgenossenschaft Holz und Metall (Trade Association for Wood and Metals), Mainz | Blohm + Voss, Hamburg | Deutsche Bahn (German railway company) Berlin, Cottbus, Düsseldorf, Halle, Rostock, Schwerin | Daimler VAN Technology Center, Stuttgart | Delphi, Wuppertal | Der Spiegel (publication), Hamburg | German Meteorological Service, Munich | German Institute for Standardization (DIN), Berlin | German Museum, Munich | Marburg Documentation Centre | EnBW-City, Stuttgart | European Patent Office, Munich | Fulda University of Applied Sciences | Erding Tax Office | Berlin Schönefeld and Tegel Airports, Landshut | Ferrero, Frankfurt | Fraport AG, Frankfurt/Main | Giesecke & Devrient, Munich | Hafencity Sandtorkai, Hamburg | Hansestadt Hamburg | HUK-Coburg, Berlin | Infraserv, Frankfurt | Landratsamt Würzburg (Administrative District Office) | Luft- und Raumfahrtzentrum (German Aerospace Centre), Berlin | Mainova AG, Frankfurt | MAN, Munich | Max Planck Institute, Frankfurt | MID, Nuremberg | NRW Bank, Düsseldorf | PCI, Hamm | PSD Bank, Münster | RHEINZINK, Datteln | Rundfunk Berlin-Brandenburg (Berlin-Brandenburg Broadcasting), Potsdam and Berlin | Schwarzkopf Henkel, Viersen | Sparkasse Köln-Bonn | Spreekarree Berlin | Stadtwerke (municipal utilities) Bochum and Unna | Thuringian Ministry of Justice, Erfurt | Thyssen-Krupp, Essen | Technical University of Munich | University of Hamburg and Hohenheim | Economic Authorities, Hamburg | Centre for Virtual Engineering (ZVE), Stuttgart

NETHERLANDS Airport Towers Amsterdam, Eelde, Eindhoven, Leeuwarden, Maastricht, Vlieland | Albert Heijn, Zaandam | Building the Admiral, Amsterdam | Chemelot Campus, Limburg | De Friesland, Leeuwarden | Deltares, Delft | Facilicom, Schiedam | Gemeentehuis, Oudenbosch | Havendienst, Rotterdam | INTERRA, Joure | Luchtverkeersleiding Schiphol, Amsterdam | Nehalennia, Middelburg | Organon, Oss | ROC Amsterdam | Ruijterkade, Amsterdam | Sandoz, Almere | Sporthal Parijsch, Culemborg | Tweede Kamer, Den Haag | Universiteit Amsterdam | Universiteit Groningen | Maria Montessori Radboud-Universiteit, Nijmegen | Woonconcept, Meppel

LIECHTENSTEIN - Hilti Glass Construction, Schaan

LUXEMBOURG Cour De Justice, Luxemburg-Stadt | Espace Pétrusse-Ilôt A, Luxemburg-Stadt | Espace Pétrusse-Le Dôme, Luxemburg-Stadt

FRANCE Banque de France, Paris | EBP, Rambouillet | Mairie de Paris, Paris | Ministere de l' Économie et des Finances, Paris | Price Water, Versailles | Universal Music, Antony

UNITED KINGDOM B & Q, Southampton I London Heathrow Airport, London | North Yorkshire Police Headquarters, Harrogate | Southampton International Airport

IRELAND Dublin Airport | Shannon International Airport

AUSTRIA BAWAG P.S.K., Vienna | Bosch, Vienna | Hellerpark, Vienna | Klingerpark, Gumpoldskirchen | Messecarree Nord, Vienna | Millennium Tower, Vienna | Nordbahnhof, Vienna | Paketzentrum Post, Vienna | Seestadt Aspern, Vienna | TPA Zentrum, Graz | Wohnpark "Die grüne Welle", Vienna

SWITZERLAND Basler Verkehrsbetriebe | CLS Behring AG, Bern | Coop, Basel | ETH Zurich | Fielmann, Basel | GEMINI, Wollerau | InfraPost AG, Basel | Google Switzerland | Migros Genossenschaft, Zurich | Post-Finance, Bern | SUVA, Lucerne | Swisscom, Bern | Swiss life, Zurich | Tamedia AG, Zurich

BULGARIA Argogroup, Sofia

ROMANIA Daikin, Bucharest | Harting, Sibiu | Kaufland, Bucharest | Laurentiu, Constanta

PORTUGAL Visabeira Group, Palácio do Gelo, Viseu

LITHUANIA | Apskrities viršininko administracija, Vilnius | Klaipédos Skuba, Klaipéda | Technologijos Universitetas, Kaunas

DENMARK Glenco, Ålborg | Silhorko, Skanderborg | Stena Aluminium, Kolding

NORWAY Bergen Museum | Dronning Eufemias gate 8, Barcode, Oslo | Gardermoen Airport, Oslo | Greverud Kjøpesenter, Oppegård | Holmenkollen World championship Center, Oslo | Hospital, Tromsø | Kjevik Airport, Kristiansand | Nedre Bekkelaget school, Oslo | Norwegian Defense research institute, Kjeller | Olav Thon Eiendomsselskap ASA | Sandane Airport | Sola Airport | Stena Don Off shore drilling | Tromsø Airport | Ullevål University Hospital, Ullevål | University of Bergen | Værnes Airport, Trondheim | Vika Atrium, Oslo | VM-huset, Oslo

SWEDEN Karolinska Institutet, Stockholm

FINLAND Pohjola Insurance, Helsinki

CHINA Agricultural University, Beijing | Asian Infrastructure Investment Bank (AIIB), Beijing | Bank Of Communication, Shenzhen | China Aviation, Beijing | German Enterprise Center, Qingdao | Technoform Hong Kong | University of Chemical Technology, Beijing

KOREA Seoul University

UAE Dubai Airport | Abu Dhabi Airport

MONGOLIA Ulan Bator Airport

MALAYSIA Menara Exxon-Mobile and Petronas Twin Towers, Kuala Lumpur

SINGAPORE BASF | HarborFront & Keppel Bay Towers

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