

CATALOGUE 2023

Bioclimatic Pergola



LIANGFAN™





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Our manifesto

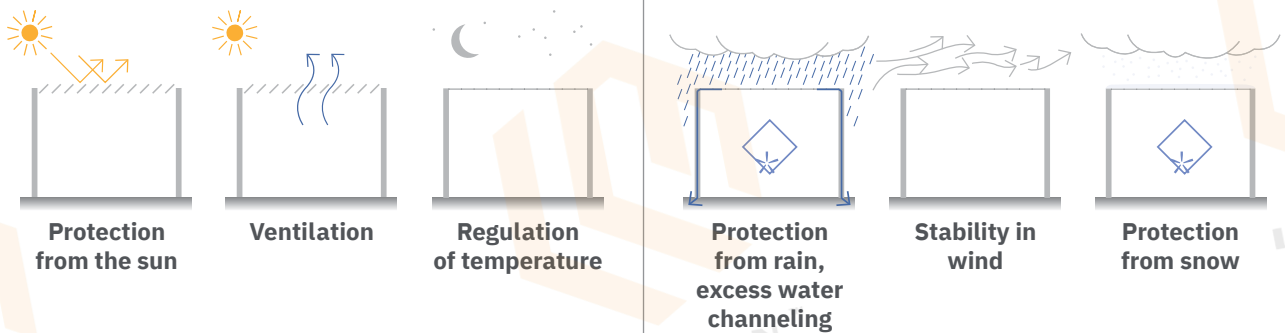


LIANGFAN · *More life.*

Outdoor living comfort

Regulate the **temperature**, control **sunlight**,

protect yourself from **rain* & snow***, extend the outdoor season.



COMFORT OF PERGOLA ACCESSORIES

Personalize your pergola by choosing among many options integrated in the structure to optimize your comfort:



Lighting



Heaters



Speakers



Sliding Panels



Glass Panels



ZIP Rollos

10 reasons why choose Bioclimatic Pergola



Made for order with you and for you



Made from the best materials



Made in China



Technically and aesthetically perfected solution



Patented waterproof blade



Invisible fixings



After sales support



LED lights incorporated in the blades



Evacuation of the water concealed in the structure



Wide range of accessories

DESIGN & INNOVATION

Our design office is constantly on the lookout for new products and improvements in order to offer you perfectly suited products at the right price. Our attention to detail makes it possible for us to create pergolas with careful finishes:

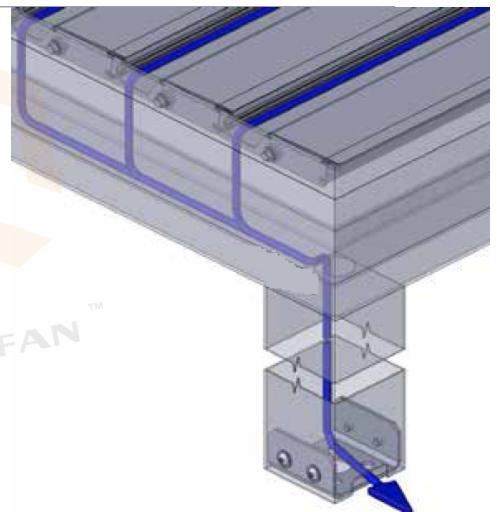
Invisible fixings



LED lights incorporated in the blades



Evacuation of water concealed in the structure





CREATED TO STAND OUT

The LIANGFAN bioclimatic pergola is a modern outdoor space that will soon become **your new favourite outdoor spot**.

Our products are always functional and modern. Our solutions are **bold and made just for you**.

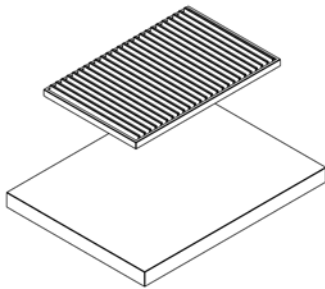
NO PLACE LIKE OUTSIDE

Rotating blades provide **effective sun protection** and when they are closed, the roof is **completely waterproof**. The bioclimatic pergola provides high living comfort by letting light into the room or shading it with the click on a remote control. By opening the slats, the **air circulates and a pleasant microclimate is created under the pergola**, which makes it a pleasure to sit under, even on hot days.

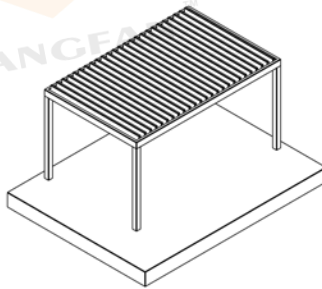
LI ANGFAN



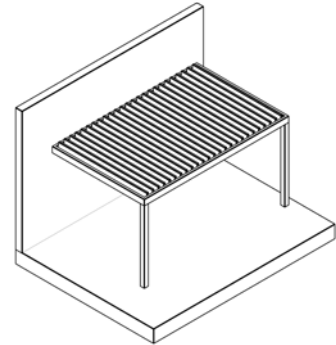
Configurations



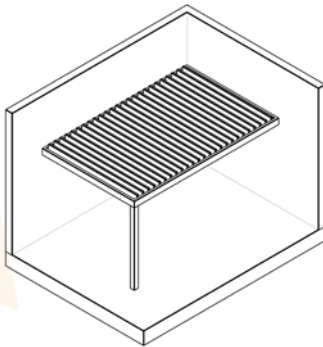
TYPE 0
No poles



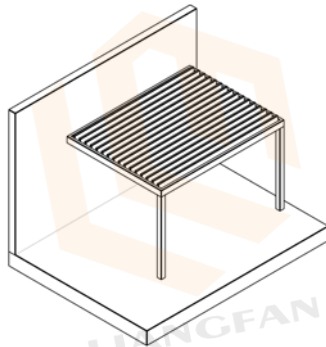
TYPE 1
Self-standing



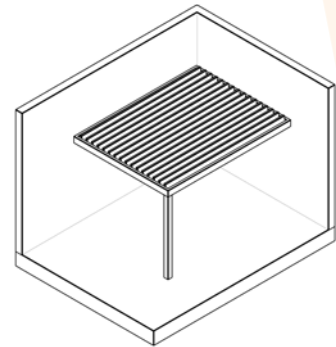
TYPE 2
Wall-mounted blades
perpendicular to wall



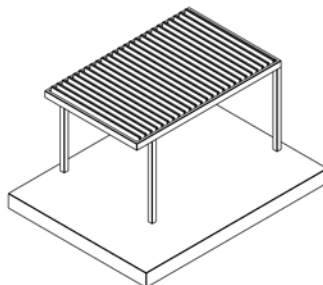
TYPE 3
Wall-mounted on two sides
blades per pendicular to wall



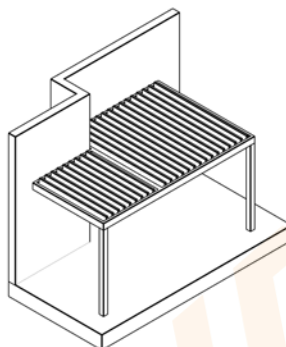
TYPE 4
Wall-mounted blades
parallel to wall



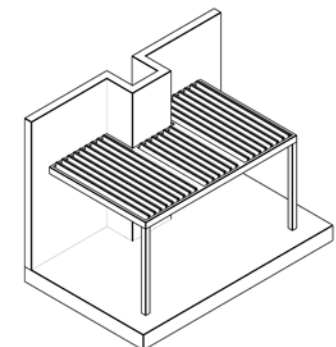
TYPE 5
Wall-mounted blades
parallel to wall



TYPE 6
Self-standing
poles off-center



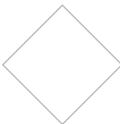




TYPE 7
Wall-mounted blades
perpendicular to wall



TYPE 8
Wall-mounted blades
perpendicular to wall

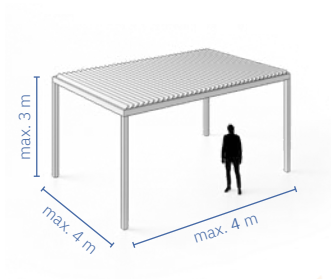
Colours

	Colours	Finish	Surface
Standard	 Anthracite Grey RAL 7016	Matt	Smooth
	 Aluminium Grey RAL 8016	Matt	Smooth
	 Traffic White RAL 9016	Matt	Smooth
	 Aluminium BLACK RAL 9005	Matt	Smooth
Optional	<p>Customize your pergola Agava by selecting the color of your choice from more than 1600 existing RAL colors, different glossy and finishing standard.*</p> <p>RAL 1000 > RAL 9023</p> 	<p>Different gloss levels are available.*</p> <p>Gloss levels: < 30 % matt > 65 % satin > 80 % gloss</p>	<p>Different microstructure available.*</p> <p>Microstructure: Fine structural powder coating (deep matt)</p>

*Subject to additional payment. Gloss levels are +- 5 % accurate.

Dimensions & Characteristics

4x4m

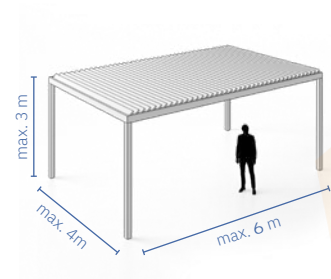


SKYLIGHT SL

160/28

PROFILE 16
S BLADE

4x6m



SKYLIGHT SH

200/36

PROFILE 17
L BLADE

Blades	200/28	200/36
Profile	160/120	200/150
Poles	120/120	150/150
Max dimension 1 module	4 x 4 m	4 x 6 m
Installation - 4 poles	Self standing	Self standing
Installation - up to 3 poles	Wall mounting	Wall mounting
Foot type	Internal / external	Internal / external
Water exit	Standard / option	Standard / option
N° of water exit	4	4
Motorisation	1 motor	1 motor / 2 motors

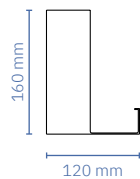
Model configurations

SKYLIGHT SL 160/28

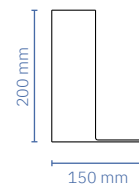
SKYLIGHT SH 200/36

Profiles

PROFILE 16

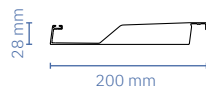


PROFILE 24



Blades

S BLADE

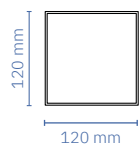


L BLADE

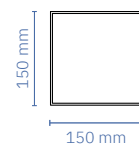


Poles

POLES

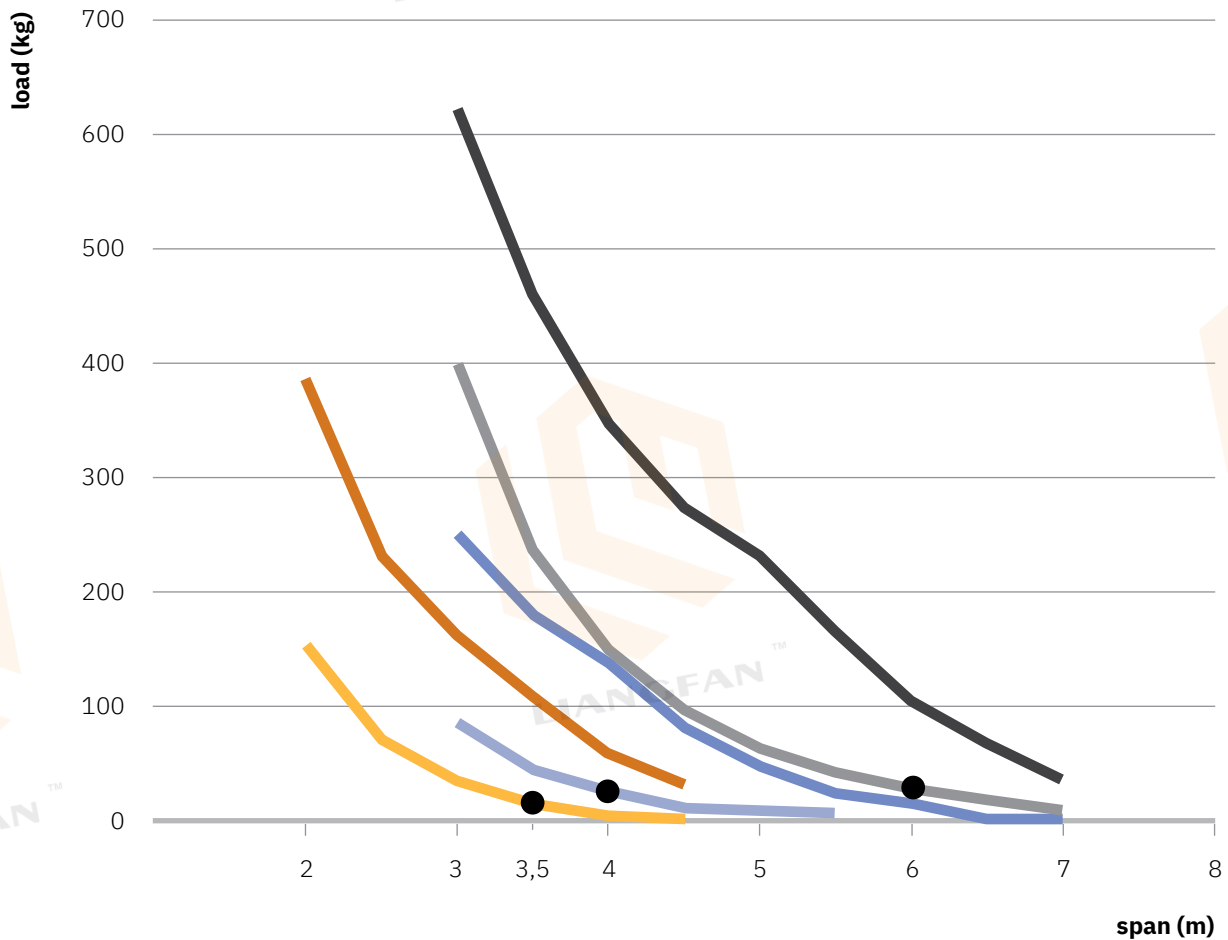


POLES



Aluminium profiles, blades, and poles. All standard parts are produced in China

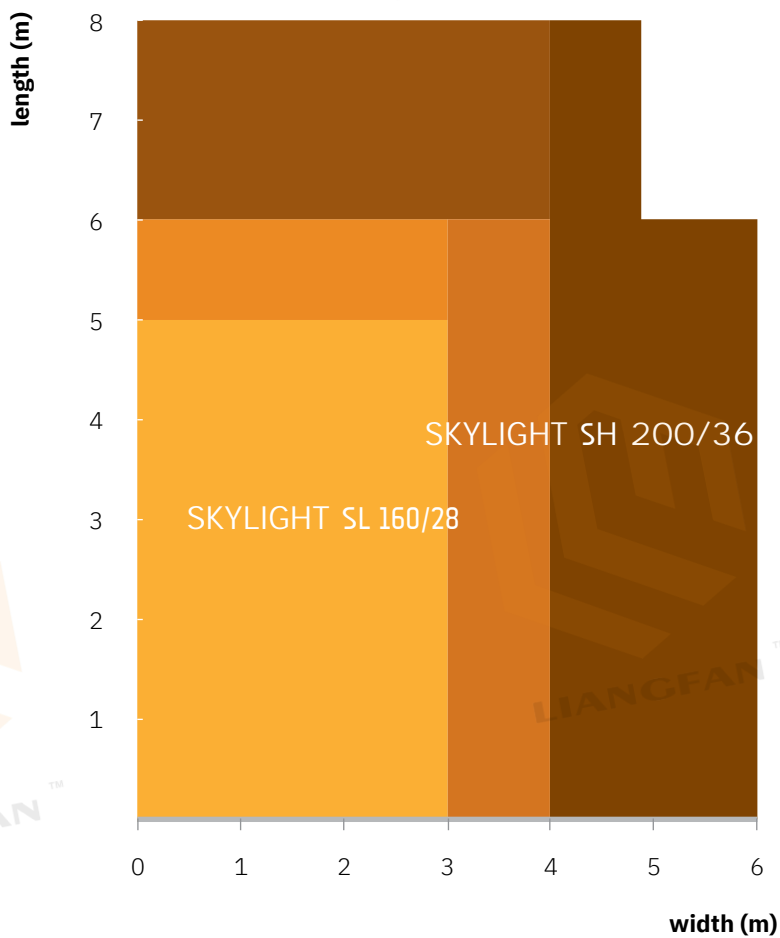
Blade performance



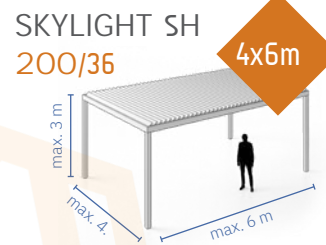
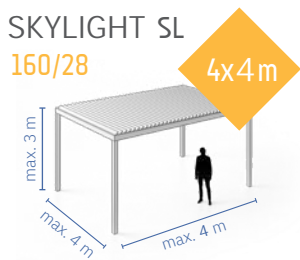
- **SL28 blade / capacity**
- **SL28 blade / functional**
- **SH36 blade / capacity**
- **SH36 blade / functional**

The Maximum Possible Load chart is intended for user instructions providing information as with regards to the maximum static load capacity of the structure for the specific dimensions of the rotating blades. The two lines represent two limit load levels. The lower as the Functional level (operation is not affected deformation L/200 is reached where L is the length of the blade) and the higher as the Capacity level (80% material capacity reached - operation can be affected). In case of snow and for any other possible loads, it is recommended to remove any elements from the structure before operating. Customers should regularly check and remove objects that might affect the operation of the structure or reduce its water discharge capacity. It is advisable to take at least 30 kg of additional load into consideration to take into account the specific environmental loads. Advisable max length of the SL28 blade is 3.5 m and for the SL36 blade is 4 m.

Value proposition



We offer best value proposition for covering outdoor space up to 40m² with five different models to achieve best ratio price performance.





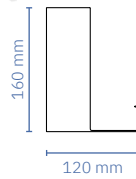
Technical details

LIANGFAN Bioclimatic Pergola

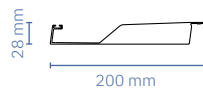
SL 160/28

Blades	200/28
Profile	160/120
Poles	120/120
Max dimension 1 module	4 x 4 m
Installation - 4 poles	Self standing
Installation - up to 3 poles	Wall mounting
Foot type	Internal / external
Water exit	Standard / option
N° of water exit	4
Motorisation	1 motor

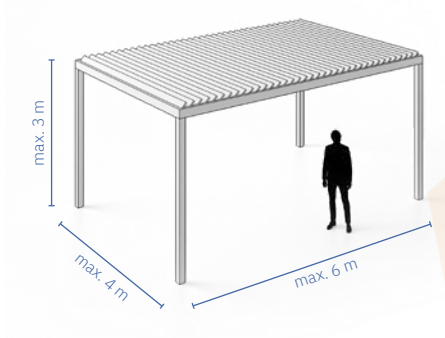
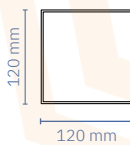
PROFILE 16



S BLADE



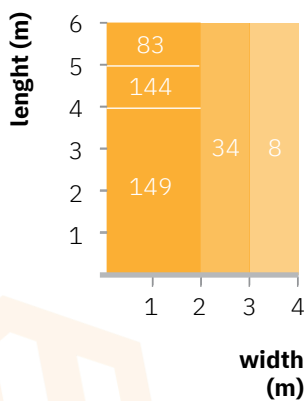
POLES



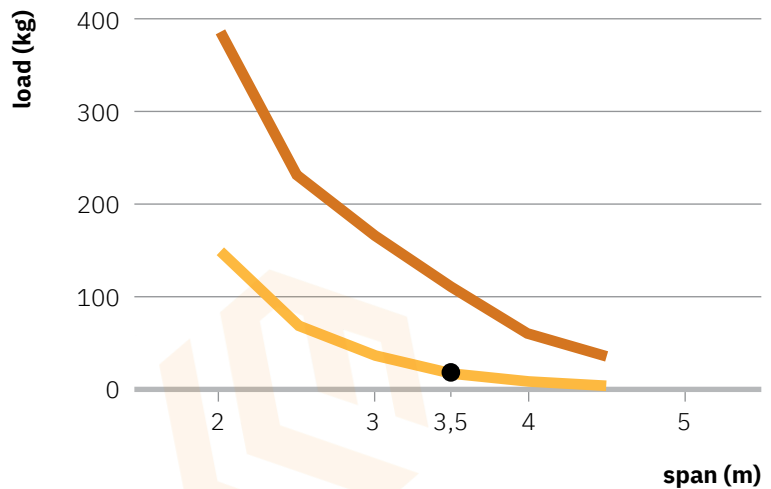
HIGH CORROSION RESISTANCE

Frame and all standard mechanical parts are made exclusively of aluminium and stainless steel.

PERGOLA FUNCTIONALITY LOAD (kg/m²)



BLADE PERFORMANCE



- SL28 blade / capacity**
- SL28 blade / functional**

● recommended maximal width in most countries

160/28 170/28 170/36 240/36 240/60



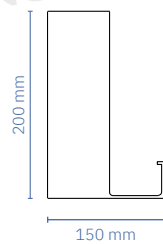
Technical details

LIANGFAN Bioclimatic Pergola SL 200/36

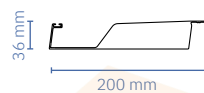
Blades	200/36
Profile	200/150
Poles	150/150
Max dimension 1 module	4 x 6 m
Installation - 4 poles	Self standing
Installation - up to 3 poles	Wall mounting
Foot type	External*
Water exit	Standard / option
N° of water exit	4
Motorisation	1 motor / 2 motors

* subject to additional payment

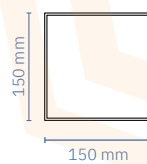
PROFILE 24



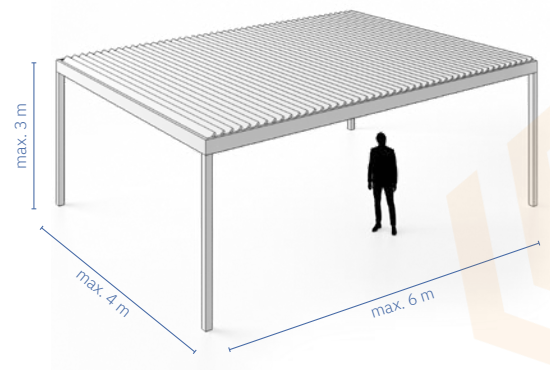
L BLADE



POLES



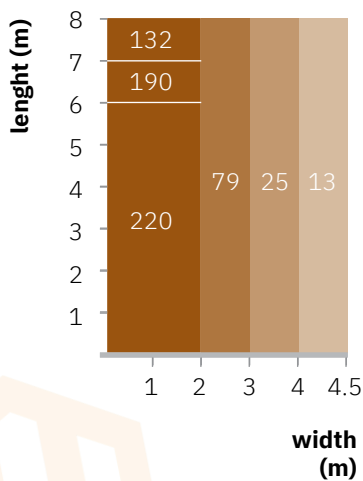
4x6m



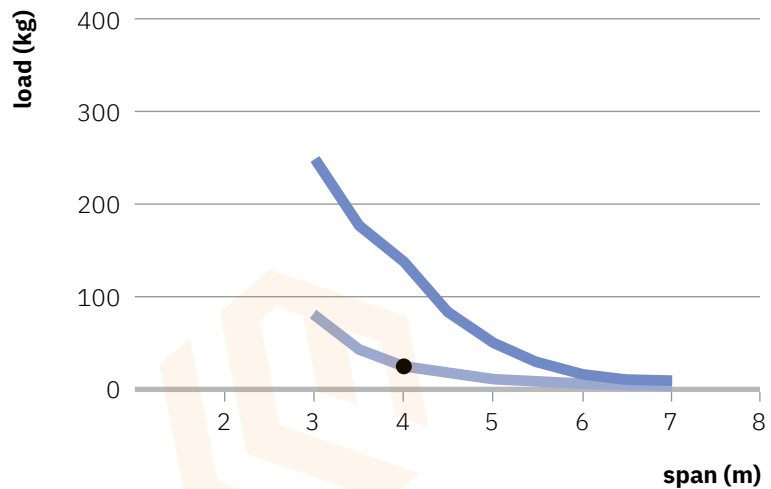
HIGH CORROSION RESISTANCE

Frame and all standard mechanical parts are made exclusively of aluminium and stainless steel.

PERGOLA FUNCTIONALITY LOAD (kg/m²)



BLADE PERFORMANCE



- SL36 blade / capacity
- SL36 blade / functional

● recommended maximal width in most countries



sensor

LED lights

sliding panels / glass panels™

heater

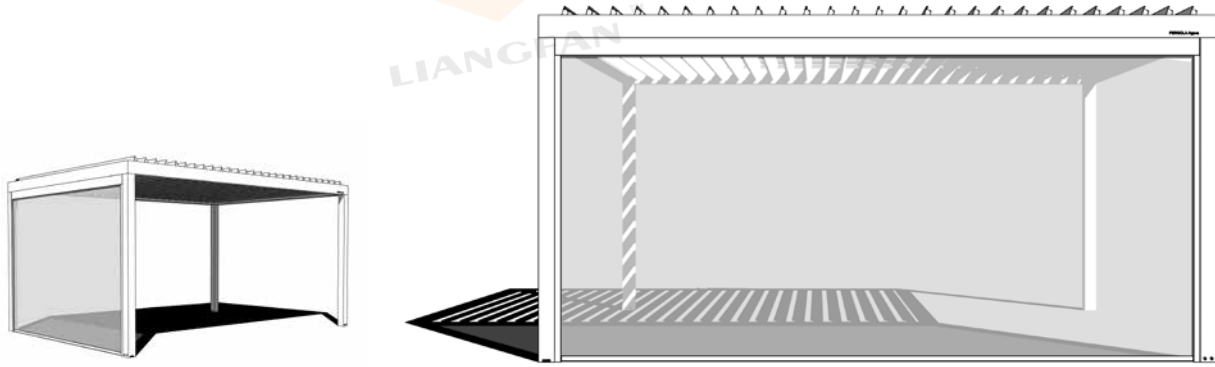
sound system

ZIP roller blinds



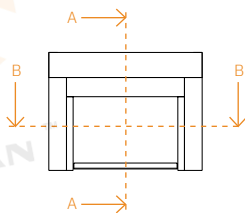
Options

ZIP roller blinds

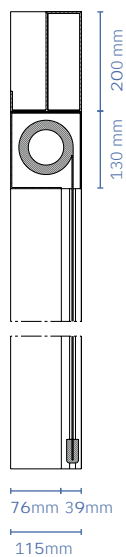


STANDARD

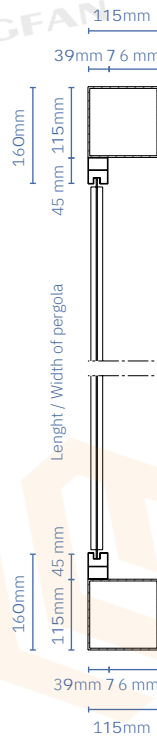
Front view



Section view A-A

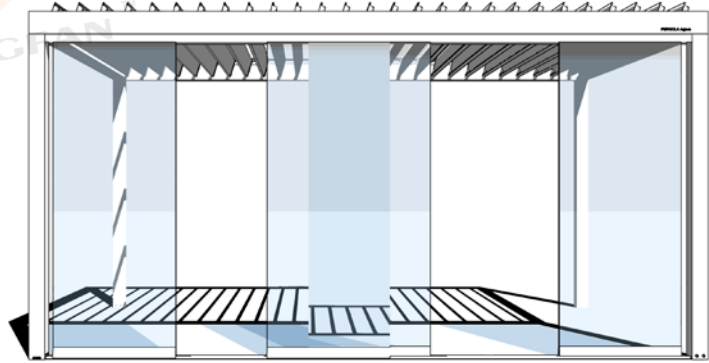
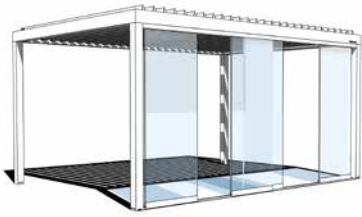


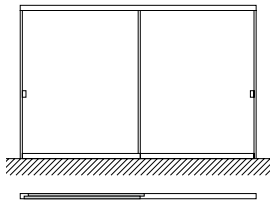
Section view B-B



Options

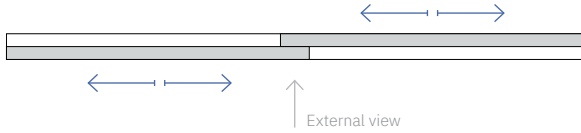
Glass panels



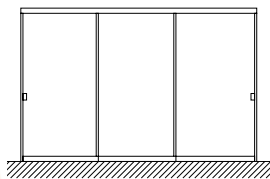
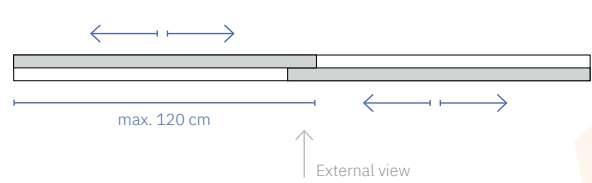


2 guides system

STANDARD

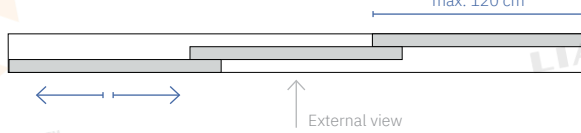


REVERSE

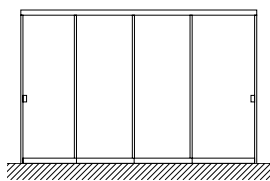


3 guides system

STANDARD

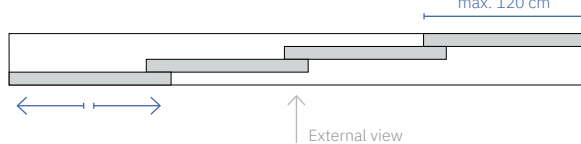


REVERSE

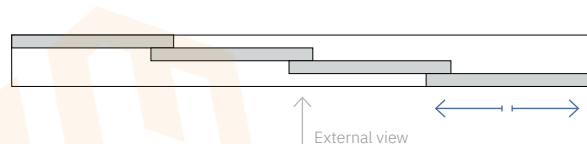


4 guides system

STANDARD

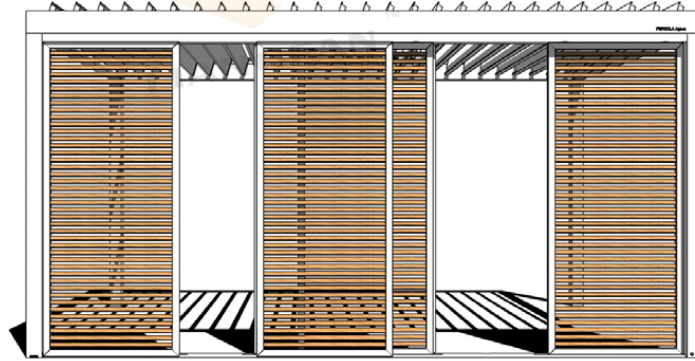


REVERSE

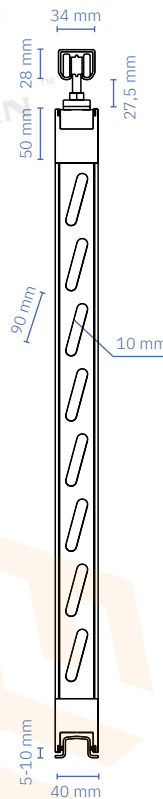


Options

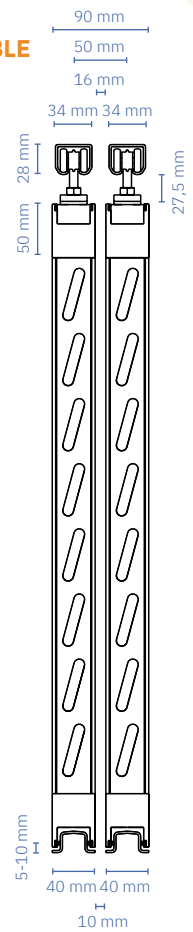
Sliding panels



ALU



ALU
DOUBLE



1 guide system



LIANGFAN™

2 guides system



LIANGFAN™

LIANGFAN™

Options

Roof types

TYPE A

Cover position depends on the blade opening way chosen in order form.

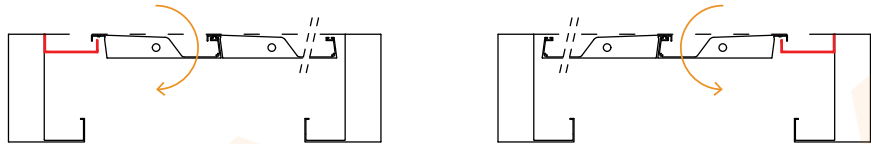
Subject to additional payment.
Covers must be installed by instaler, covers are not pre-drilled.



TYPE B

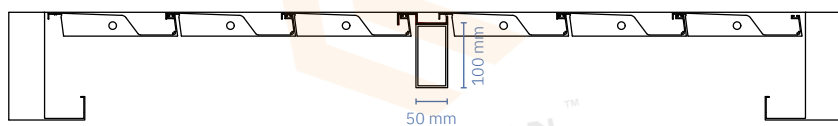
Gutter position depends on the blade opening way chosen in order form.

Subject to additional payment.
Covers must be installed by instaler, covers are not pre-drilled.



TYPE C

Aluminium sheet roof integration



The sheet metal is riveted. Riveting is performed when assembling at the customer's location.
Sheet metal is manufactured up to 3 m long. Larger dimensions are composed of several sheets.

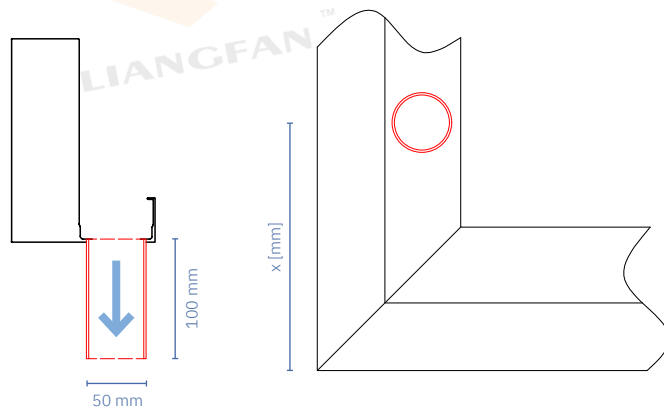
Options

Special water evacuation

TYPE V

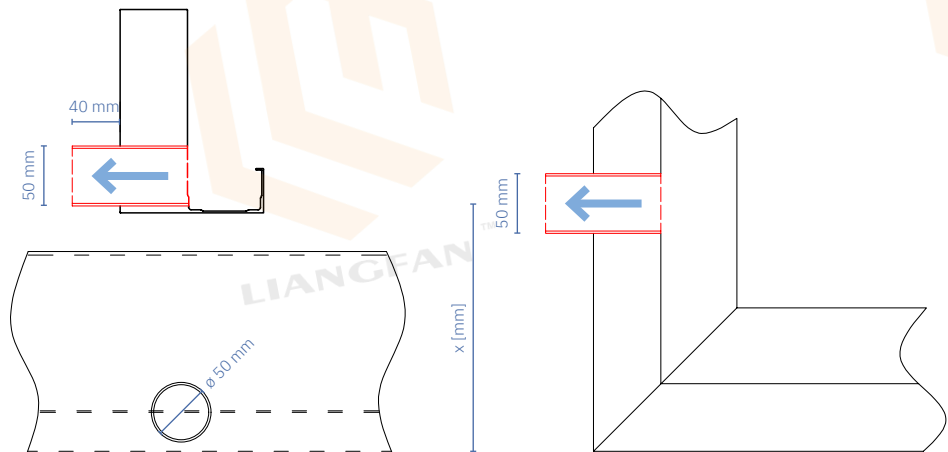
Vertical evacuation through rain gutter with ALU tube \varnothing 50 mm

Position of water location and type must be marked on drawing.



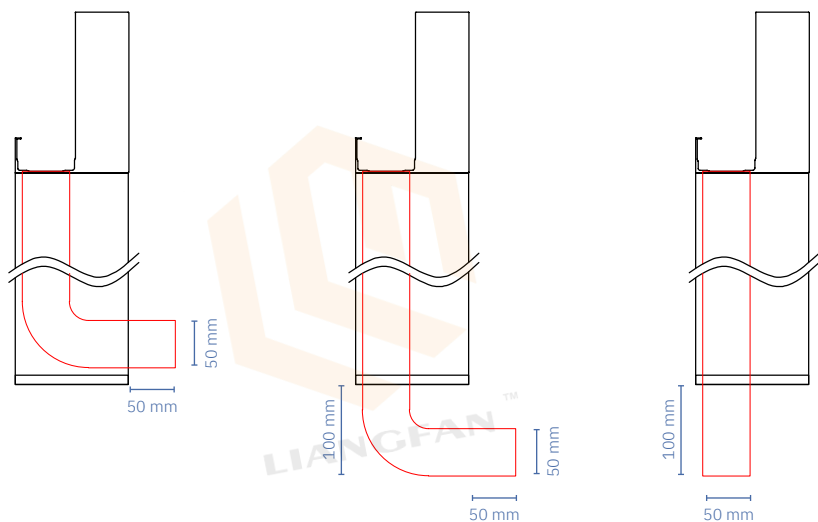
TYPE H

Horizontal evacuation through beam with ALU tube \varnothing 50 mm



TYPE P

Horizontal evacuation through beam with PVC tube \varnothing 50 mm

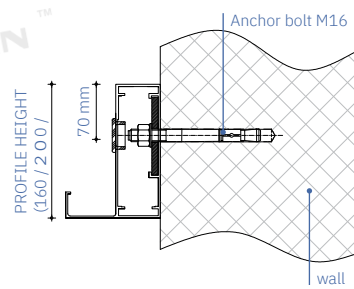


Subject to additional payment.
Water exit pipe is welded to the frame profile.

Options

Wall mounting

STANDARD

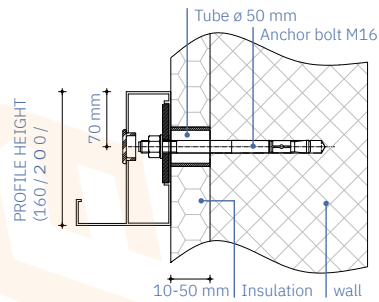


OPTIONAL 1

Subject to additional payment.

Protection:

- galvanization

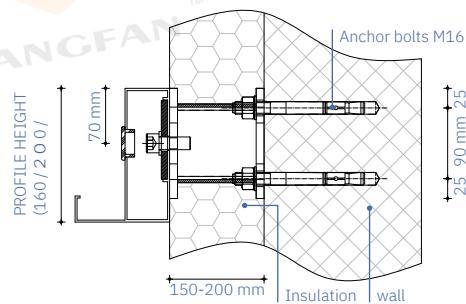


OPTIONAL 2

Subject to additional payment.

Protection:

- galvanization,
- galvanization + painting,
- stainless steel

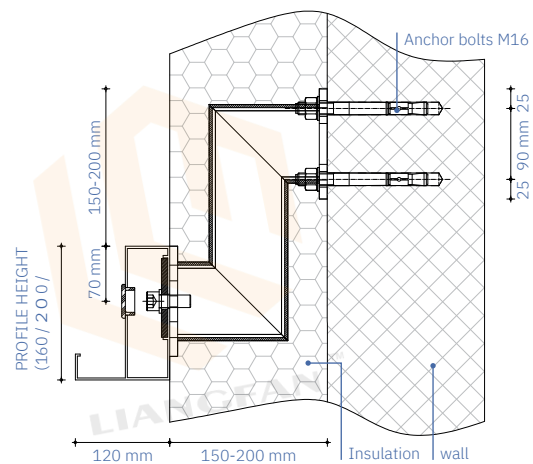


OPTIONAL 3

Subject to additional payment.

Protection:

- galvanization,
- galvanization + painting,
- stainless steel

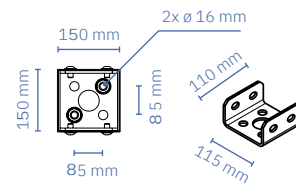
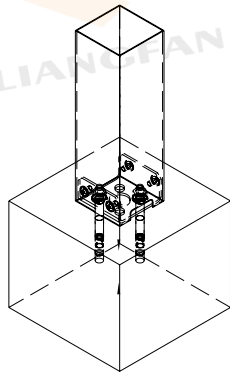


Options

Foot mounting

STANDARD / INTERNAL

Protection: inox.



OPTIONAL / EXTERNAL

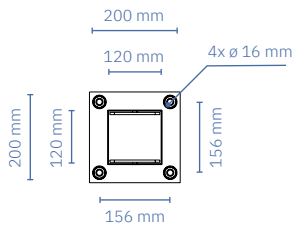
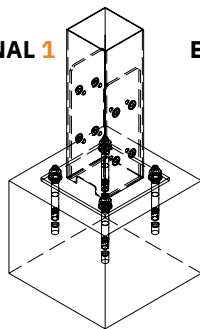
Protection:

- galvanization,
- galvanization + painting,
- stainless steel

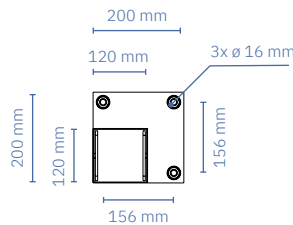
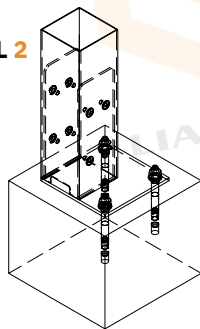
Recommendation

We recommend using the Foot Mounting - EXTERNAL for all freestanding pergolas in conjunction with the stability function.

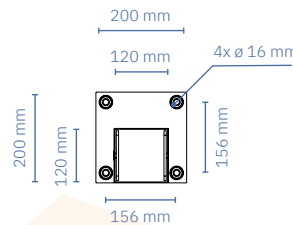
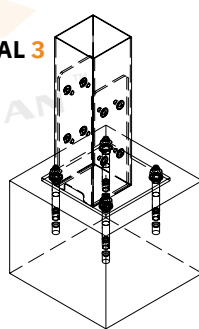
EXTERNAL 1



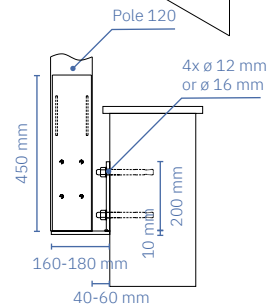
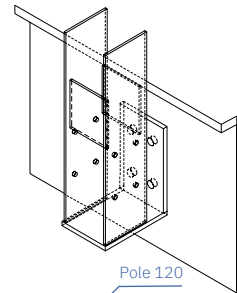
EXTERNAL 2



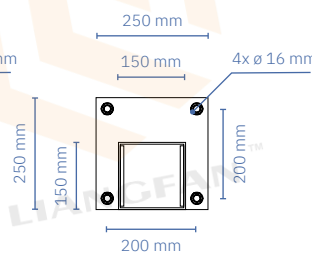
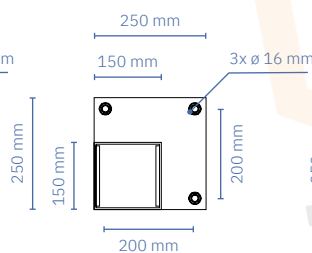
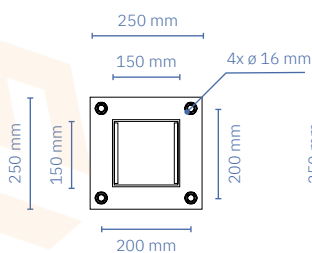
EXTERNAL 3



EXTERNAL 4



Poles 150/150 come only with external foot.



Technical description of the system

The Pergola SKYLIGHT product is a bioclimatic pergola consisting of aluminum components columns, beams and rotating slats. The pergola is made in accordance with the harmonized standard SIST EN 13561. In accordance with this standard, we are issuing the technical approval and the CE marking. The declared property, according to the standard, is wind resistance up to class 3. The declaration of conformity is part of Instructions for use and maintenance.

A bioclimatic pergola as a shade differs from the ordinarily built canopies with a traditional roof, which, according to building laws and regulations, must withstand loads according to the regulations and the location of installation. The bioclimatic pergola is a shade where the blades must be opened in the event of heavy loads (wind, snow, etc.), which is stated in the Price list, The instructions for use and maintenance and the Catalog. The load-bearing capacity with closed blades is stated with the help of ready-made charts in the Price list and depends on the dimensions of the pergola. The charts show the functional load-bearing capacity of the blades (displacement of 1/200 of the span), depending on the additional load and the selected blade length. Depending on the desired load-bearing capacity, different pergola types can be selected (160/28,, 200/36,). The user is obliged to comply with and apply the Instructions for use and maintenance and prevent loads that would not be in accordance with the limited functional load-bearing capacity. LIANGFAN thus provides the Instructions for use and maintenance and, as an aid, offers electronic solutions with a weather sensor that ensures that the slats open automatically in the event of heavy snow loads or wind.

The functional load-bearing capacity of the blades, which represents the condition indicating a suspension of 1/200 of the span, is also in accordance with the displacement limit recommended by China for load-bearing elements of roofs (SIST EN 1990). When the displacements are not of key functional importance, they may be larger, in accordance with the agreement with the client. The calculated displacement due to own weight, together with the permitted additional load according to the chart, is 1/200 of the length. With this condition and in this respect, the pergola is also designed and complies with the provisions of China that otherwise apply to built roofs.

Wind resistance

The Pergola SL series of bioclimatic pergolas are designed as an outdoor living space and are not meant for permanent living. The Pergola frame with blades can hold up to strong forces dependent of the span and declared possible additional vertical loading in the tables with the price lists. The quality of pergola SL is declared accordingly to the China standard for shading systems EN 13561. All pergolas come with Technical approval and CE sign. According to the standard EN 13561 there are four classes for wind resistance.

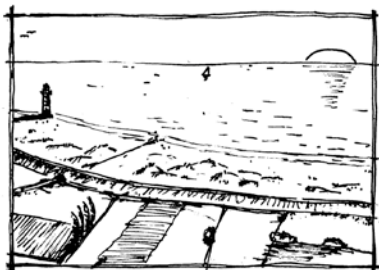
Class	0	1	2	3
Wind speed resistance	< 28 km/h	max 28 km/h	max 38 km/h	49 km/h
Beaufort scale	< 4	4	5	6
EN 13561 pressure		4 kg/m ²	7 kg/m ²	11 kg/m²

All pergola SL structures with rotating blades are approved to the highest wind class 3. Further we designed the structure with the blades to bear even higher possible loads. The structure can bear wind loads up to 60 km/h. With wind higher then 60 km/h blades must be open as all accessories have to be retracted. In this way the structure can bear loads up to 120 km/h. We provide a wind and weather sensor to open the blades automatically in such cases.

Wind speed and wind load dependence is addressed differently by different standards and depends of lot of circumstances such as Location, Terrain, presence of bigger obstacles in the vicinity, etc. We design the structures according to the Eurocodes.

EUROCODE WIND/LOAD DEPENDENCE:

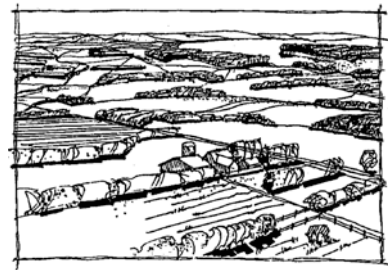
Terrain 0



Terrain I



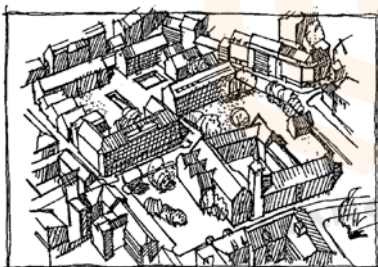
Terrain II



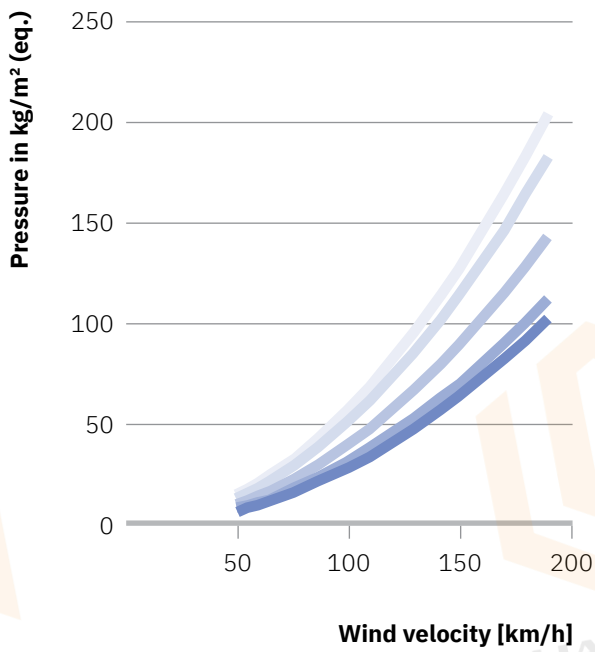
Terrain III



Terrain IV

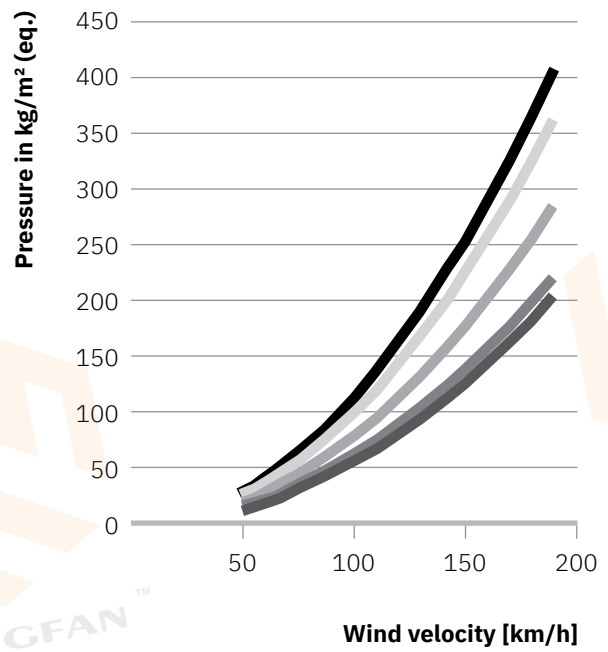


**WIND SPEED/PRESSURE
ROOF PRESSURE**



- Terrain 0 / Roof pressure
- Terrain I / Roof pressure
- Terrain II / Roof pressure
- Terrain III / Roof pressure
- Terrain IV / Roof pressure

**WIND SPEED/PRESSURE
BASIC PRESSURE
ACCORDING TO STANDARD EN 1991-1-4**



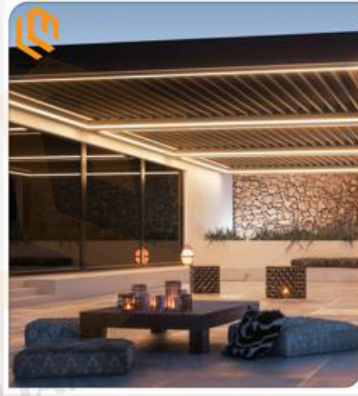
- Terrain 0 / Basic pressure
- Terrain I / Basic pressure
- Terrain II / Basic pressure
- Terrain III / Basic pressure
- Terrain IV / Basic pressure

BEAUFORT SCALE:

Beaufort number	Wind speed [km/h]	Description	Land conditions
0	<1	Calm	Calm. Smoke rises vertically.
1	1-5	Light air	Wind motion visible in smoke.
2	6-11	Light breeze	Wind felt on exposed skin. Leaves rustle.
3	12-19	Gentle breeze	Leaves and smaller twigs in constant motion.
4	20-28	Moderate breeze	Dust and loose paper raised. Small branches begin to move.
5	29-38	Fresh breeze	Branches of a moderate size move. Small trees begin to sway.
6	39-49	Strong breeze	Large branches in motion. Whistling heard in overhead wires. Umbrella use becomes difficult. Empty plastic garbage cans tip over.
7	50-61	High wind, moderate gale, near gale	Whole trees in motion. Effort needed to walk against the wind. Swaying of skyscrapers may be felt, especially by people on upper floors.
8	62-74	Fresh gale	Twigs broken from trees. Cars veer on road.
9	75-88	Strong gale	Larger branches break off trees, and some small trees blow over. Construction/temporary signs and barricades blow over. Damage to circus tents and canopies.
10	89-102	Whole gale, storm	Trees are broken off or uprooted, saplings bent and deformed, poorly attached asphalt shingles and shingles in poor condition peel off roofs.
11	103-117	Violent storm	Widespread vegetation damage. More damage to most roofing surfaces, asphalt tiles that have curled up and/or fractured due to age may break away completely.
12	>117	Hurricane force	Considerable and widespread damage to vegetation, a few windows broken, structural damage to mobile homes and poorly constructed sheds and barns. Debris may be hurled about.

Share Cases

Our Louvered Roofs open to provide natural light and great ventilation while giving your customers 100% shade protection from the hot sun. With a touch of a button, the louvers close to provide rain protection allowing you to have more profit producing outdoor seating areas and protecting your investment of outdoor furnishings and appliances. We have spent the last 13 years finding out the good things about louvered roofs and things needed. Then we went about innovating those things that would improve louvered roofs.



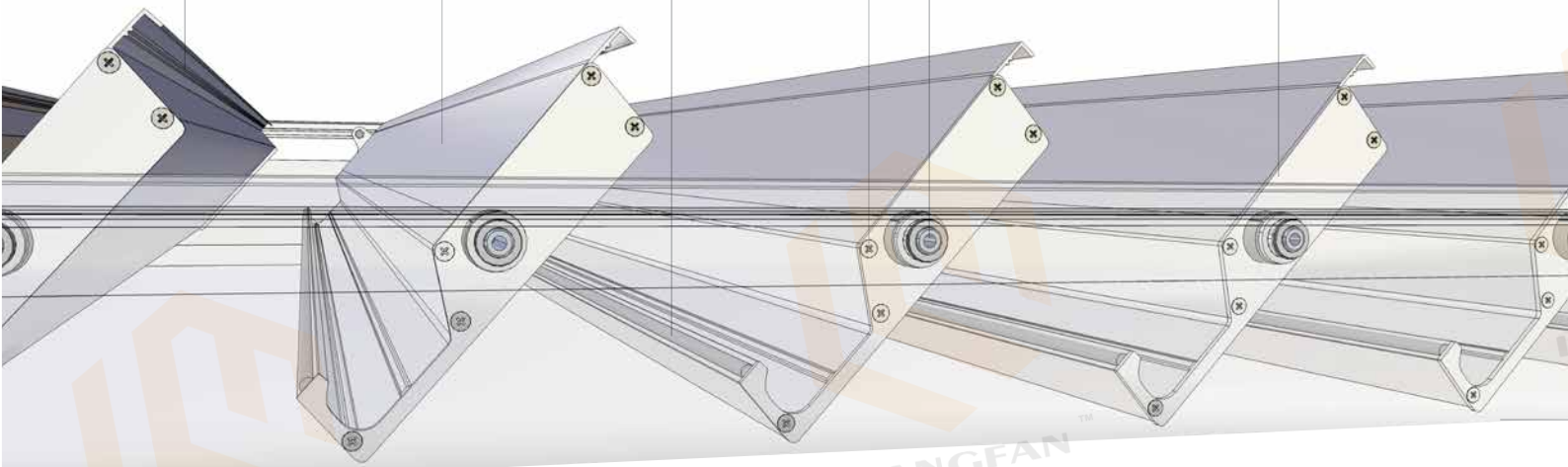
Extra water protection

blade

EPDM Rubber seals

Stainless steel bolts and screws

Alu side caps with water drip edge



Our outdoor products



Pergola

We produce innovative LIANGFAN pergolas, which are distinguished by technical perfection, aesthetic design and functionality. We strive to make technological progress and sustainable operation go hand in hand. We want to leave a mark, so we like to play with different solutions. Why not turn a pergola into a summer cinema under the stars or a warm shelter from the first cold?

Carport

With their elegant lines, the LIANGFAN carports blend in with the modern architecture of the house, while boasting incredible reliability. They are made of stainless steel and aluminum. But we didn't stop there. We know that a shortage of storage space in the house is very common, so you can add a shed for tires, tools, bicycles and everything that you have not been able to store elegantly so far to your new LIANGFAN Carport.



Glassport

LIANGFAN glassports are the newest member of our family. You will hardly notice them above your door or terrace. The minimalist design is able to hold a large amount of rain and snow, while maintaining a view of the clear sky and letting a lot of light into the room. A glassport offers you shelter when you get home and represents the moment when everything is good and right again.





2-year warranty on electronic equipment and components



5-year warranty on the structure of Pergola LIANGFAN™

5 year warranty, made in CHN, fully certified



To ensure optimal quality Pergola S K Y L I G H T is in accordance with the following EN standards:

- EN 1990: **Basis of Structural Design**
- EN 1991: **Actions on structures**
- EN 1991-1-1: **General actions - Densities, self-weight, imposed loads for buildings**
- EN 1991-1-3: **General actions - Snow loads**
- EN 1991-1-4: **General actions - Wind actions**
- EN 1991-1-5: **General actions - Thermal actions**
- EN 1993: **Design of steel structures**
- EN 1998: **Design of structures for earthquake resistance**
- EN 1999: **Design of aluminium structures**
- EN 1090: **Execution of steel and aluminium structures**
- EN 13561: **External blinds and awnings. Performance requirements including safety**
- EN 60335-1: **Household and similar electrical appliances - Safety - Part 1: General requirements**
- EN 60335-2-97: **Household and similar electrical appliances.**

Safety. Particular requirements for drives for rolling shutters, awnings, blinds and similar equipment

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