

Windtech

update kali: «the avant-garde of design»

KALI

DHV 1/2



Photo: Jérôme Maupoint

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The brand new Kali is the replacement for the Pulsar after 3 years of great success. This new wing aspires to become the new reference point for the intermediate DHV 1-2 class, the largest and most competitive paragliding market sector. For this reason we have dedicated all of our efforts, and all the latest technologies, to create a glider which will satisfy even the most demanding needs of a wide range of paraglider pilots, in every possible respect.

From the inspired new aerodynamic profile, which demonstrates incredible safety characteristics, through all the other important elements, such as the ultimate in most durable lightweight materials, and even the graphics, we have paid the greatest attention to each and every minute detail of design and construction of the Kali.

This new intermediate wing will establish a new frontier in the most popular paraglider class and show the world that Windtech is at the avant-garde of innovation and design.

design

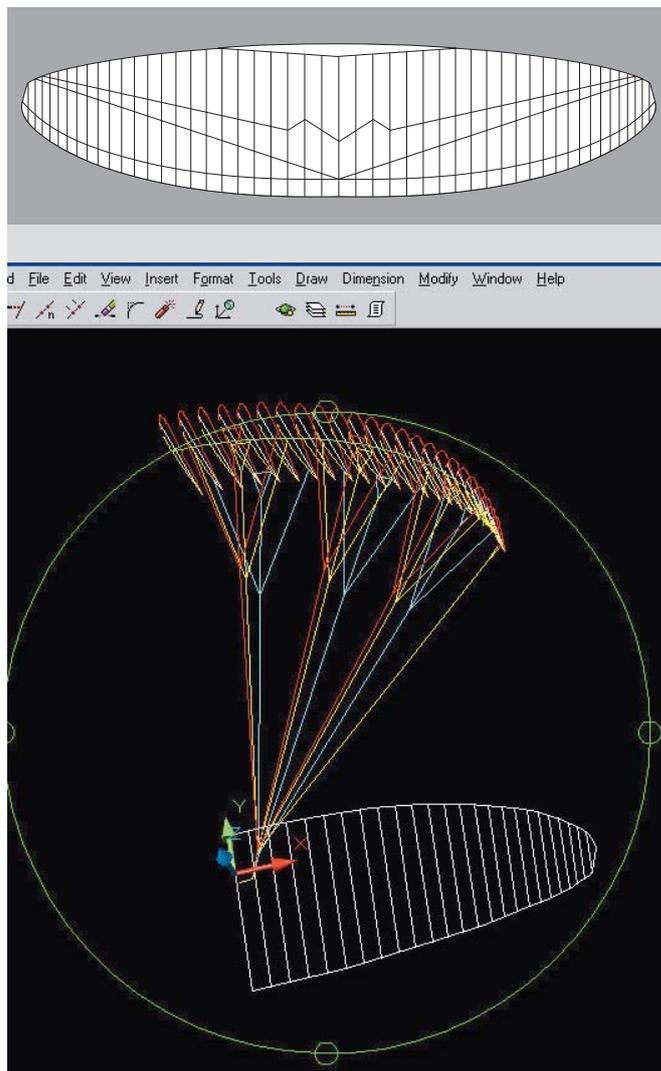
Using a brand new concept, and the latest technologies, to design the ultimate all-round intermediate paraglider.

The Kali follows the Tempest in the quest to find total perfection in form and shape. Since we have implemented new software into the company, by combining the best from powerful software design tools such as Paracad and Flycad, we have achieved a whole new level of perfection in the art of sculpting wings.

The most outstanding innovations are the regressive development of cell width and an evolutionary profile along the entire wing span. This is something which traditional applications have not been able to achieve until recently.

In addition to this, we have replaced the profile used for the last few years with a carefully crafted adaptation of the one we have used for the Tempest. The maximum profile depth is now further forward, allowing us to exploit the full speed range, and an incredibly clean trailing edge reduces drag, improving overall performance and stall speed.

Within the new software we have implemented numeric templates which isolate each individual cell to calculate the pressure applied inside them, so we can reduce fabric distortion and cut every panel to perfection, reducing any creases in the material to an absolute minimum, and in addition saving unnecessary weight.



The new state-of-the-art software enables evolution of the profile and varying cell widths across the span

The result is a cleaner surface – so performance is superior, especially at higher speeds. Aerodynamic tension has been optimized across the leading edge, and even more so across the trailing edge. The brakes take effect from the first part of the travel and, due to the new profile, are even lighter than before. With the Kali we have managed to achieve incredibly fluent and very direct handling – perfect to attack the core of weak thermal, without over-banking the glider.



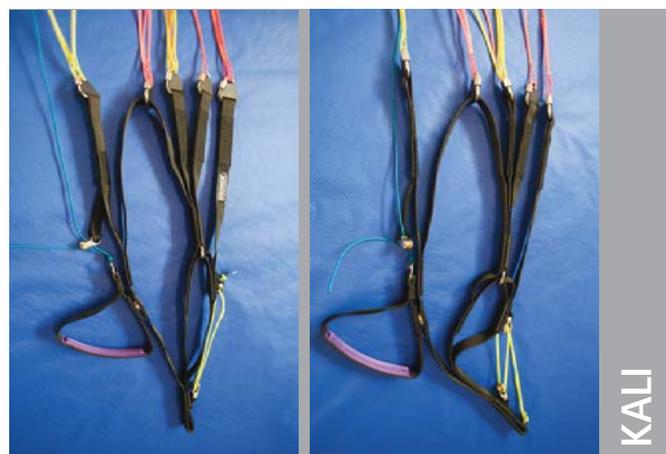
The Kali excels in its resistance to collapses in turbulence.



The curved-back wingtips assist in the recovery of collapses without pilot input.

Despite actually reducing the overall amount of line, again saving weight, we have elongated the Kali's wing radius by 50 cm compared to the Pulsar (i.e. the lines are longer overall).

You will see this change when you lay the glider out on for launch. Projected surface is larger (although actual flat surface is smaller, also reducing weight) yet the wing loading is increased, due to a higher weight range, giving a faster trim speed whilst still decreasing the minimum sink rate.



Riser system of the new Kali, with their unique layout of the A's and B's. This makes each riser go down progressively whilst at the same time raising the wingtips relatively.



Riser system of the Pulsar.

performance and safety

A higher level

We know that a cleaner surface has a direct influence on efficiency and therefore performance. To give you an idea of the improvement we have managed to achieve, the performance gap between the Quarx 2 and Tempest is about the same as between the Pulsar and Kali. In several flight tests of the Tempest published over the past few months in the paraglider magazines, applauding the Tempest, they mention a glide angle improvement of around 0.6 to 0.7 compared to the Quarx 2. This is also the improvement from the Pulsar to the Kali. However, something we want to make clear above all is that "top glide performance" was not the only goal we had when designing this wing, but the best all-round characteristics across the entire speed range without compromise to other aspects. This is why the accelerator system is now even more usable across the speed range than before, and the new profile withstands very low angles of attack, without compromising on overall safety levels.



The perfect leading edge tension makes a direct and quick handling making the wing responsive.

The accelerator system is split between A and B and now acts more progressively, whilst at the same time allowing the wingtips to lift, flattening the wing's camber. It is lighter and more usable than any other speed system currently on the market.

what happens when it collapses?

As mentioned before, this glider excels in its resistance to collapses, even in very turbulent air. There is no doubt that this is the best feature of this glider, and is a remarkable achievement which the Windtech design team is extremely proud of. The curved-back wingtips and the special line cascade layout contribute greatly to prompt collapse recovery, even without pilot input.

The Kali's new profile reduces forward surges of the wing and it pitches less than previous gliders after manoeuvres or collapses.

Surprisingly, the return to level flight after any size collapse - even big ones - is almost immediate and with less than 90 degrees change of direction.

materials

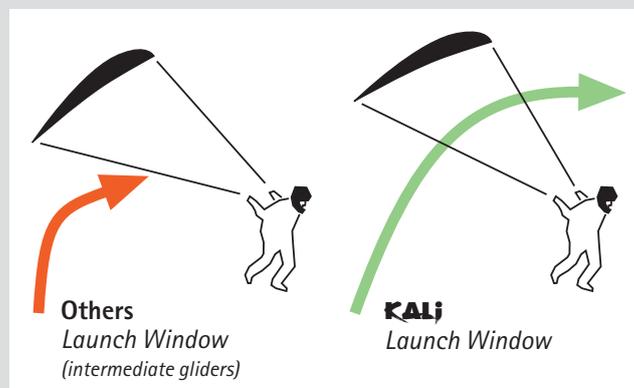
The best choices so the Kali will always shine.

Starting with the risers, usually the first thing to be handled by the pilot, the Kali shows only the very highest standards of quality right in all areas. We have replaced the 25 mm webbing with a new 19 mm polyester, which has a better braid and a new coating.

The Maillons are adjusted to the new width risers and the new plastic Skyclips fit like a glove so the lines are always in order. Even the metal pulleys are very sleek high quality, low-friction ones from AustriaAlpin. All of this reduces drag - and weight!

The new Skytex is the ideal choice from the many different fabrics available on the market, using a combination of several different weights best suited to the different canopy parts, for example 9092 for the upper surface and the light 9017 for the lower surface. Edelrid lines offer the best compromise between strength and diameter, whilst also reducing weight and drag. The new half moon shaped leading edge reinforcements also save weight and give a very, very easy inflation. Although the Pulsar's launch characteristics was already one of the nicest around, now even this has been improved! The new Dacron reinforcements last longer and crease less when folding away the wing.

All of these design and construction features make the Kali lighter (1.6kg for size 30 compared to the Pulsar) and more durable than ever before, whilst at the same time having better all-round safety and performance, and superb handling!



With other intermediate paragliders the wing either stops or drops back in a stall if it doesn't pass the 'sticking point' normally found around the first half of the launch window.

The Kali doesn't have this 'sticking point' and launches right from the ground all the way up. This makes inflation much easier for less experienced pilots.

a new look, so others can admire you!

You can quickly associate the Kali logo with the Windtech "flyman" logo. This offers stylish colour combinations, and follows nicely on from the look of previous Windtech models. This is on both the bottom and top surfaces and it can be recognized from a great distance. The small stripe on centre of the trailing edge, which matches the leading edge colour, makes the wing look sleek and slender - like a glider with a higher aspect ratio, but better stability!

There are four standard colour combinations to choose from.

custom colours

It is possible to have your Windtech glider made in custom colours but keeping the original design (pattern) of the wing. The colours are limited to those available for the glider material.

logo service

We provide a full service to have logos put on your new Windtech glider (eg. company or sponsor logos, artwork, etc). The cost for this would depend on the size and complexity of the logo.

Remember, delivery time for any custom order need a minimum of three weeks for production.

technical specifications

size	23	25	27	30
flat area (m ²)	23.77	25.65	27.48	29.55
projected area (m ²)	21.57	22.80	24.55	26.40
flat span (m)	11.06	11.49	11.89	12.33
real A/R	5.22	5.22	5.22	5.22
projected A/R	4.1	4.1	4.1	4.1
min-max. speed (Km/h)	21-54	21-54	21-54	21-54
P.T.V. (Kg)	60-80	75-95	90-110	105-130
weight of the glider (Kg)	6.1	6.3	6.5	6.7
DHV	1/2 pending	1/2	1/2	1/2

