FIRST TESTS

NIVIUK BI SKIN 2 P 31

THE LIGHTEST TANDEM IN THE WORLD

31m², single surface, 3.3 kg feather weight: we were able to do the first quick tests with the new 'lightest tandem in the world'. Our unanimous verdict: amazing...

Photo: Véronique Burkhardt Pilot: Sascha Burkhardt

Most certified ultralight tandems on the market at the moment weigh about 5.5 kg. When the first ultra light single skin wings such as the Niviuk Skin Plume 1 (1.6 kg) and the Air Design UFO began to fill the skies above the foot paths, we all started to dream: and if we could have the same thing as a tandem?

A sizable problem was the flare: with a first generation single skin wing, you sometimes arrived a bit fast at the landing field. Air Design quickly worked on a UFO tandem and got the prototypes to fly, but the definitive version was delayed for various reasons.

It was at Niviuk that the small revolution in the world of tandems became official at the end of the summer of 2016: a 31m² tandem, weighing 3.3 kg and certified EN B!

It's a real little sensation, as for all paragliders, the small sizes are not easy to certify, and especially if it's a single skin!

Well made single skins can behave very nicely during an incident in flight (read more on this subject in our comparative test), but their stall point, which is often very abrupt, can be a trap for not very experienced pilots as well as for the certification.

Niviuk therefore waited to have the tandem Skin certified, in the EN B category moreover, before launching their whole new range of second generation single skins: following this successful certification, the solo Skin 2, will be out soon.

The most visible difference between the Skin 1 and the Skin 2: the rare 'full' cells that there are, have a SharkNose. The performance of the single skin wings seems to be closely linked to the performance of the cells. One can thus suppose that even six openings with SharkNoses play a big role.

The second visible difference: there are trimmers for extra speed before landing. Of course, if a wing pitches backwards fairly well, arriving with a lot of speed, paradoxically, allows a gentle landing. We were able to do a few short flights on a tandem Bi Skin P with different all up weights and noticed that, in fact, the trimmers allowed very gentle landings. At the bottom of the weight range, it isn't even necessary to activate them, even in nil wind!

Here the Bi Skin P is being flown by Esteban Bourrofies (from the village of Font Romeu in the Pyrenees). One of his remarks: 'Nice glide in the turn despite being a stable wing which doesn't tilt at an angle in the roll and which is capable of keeping this same glide in a small radius turn'.

A very nicely done promotional video.
https://www.youtube.com/watch?v=Q13wu0aG4fI

NIVIUK SKIN 1P

Is the secret in the detail? The new generation of Niviuk Skins, of which the tandem has a SharkNose held nicely in place by Nitinol rods in the six cells. The good shaping of the leading edge is visible along the whole wing span.

Photo: Véronique Burkhardt
Pilot: Sascha Burkhardt

NIVIUK SKIN 2 (BI P)

Photo: Sascha Burkhardt
Pilot: Esteban Bourroufies

Photo: Sascha Burkhardt
Pilot: Esteban Bourroufies

With an all up weight in the top part of the range, the load take up is average, but it's compensated for by the time that you save during the inflation: the distance to run, therefore, remains fairly short.

There must be other big differences, but more hidden. Perhaps the large amount of tension in the wing, clearly visible in the leading edge, is something to do with it, as almost all those who try this tandem ask: where does this little piece of 31m2 cloth get its performance, even when fully loaded?

In thermals, it often holds up just as well as a 'full' tandem with two surfaces. In weak conditions, the Skin can even be better because, with its impressive handling, it lets you play with the thermic bubbles almost as if you were on a solo wing.

When you use the brakes, with very little effort, it starts to turn immediately in a small radius, by advantageously mixing the yaw with a light roll. It's very nice! On the other hand, if you want to lean it further, the force in the controls increases a lot before the wing increases the roll.

All this is very efficient and very safe. Unfortunately, we weren't able to measure the speed correctly due to a broken instrument, but we'll publish them in a future special edition about tandems.

It isn't just in the air that this tandem is surprising and has great performance, but also on the ground. The inflation is impressive: the wing really does come up all by itself. To the extent that Michael Georges from Niviuk France warned: 'Be careful, once you are clipped in, in a gust, it can take off all on its own'. As if the wing was an animal ready to pounce and throw you into the air.

Ah yes, it's true that in certain conditions, you do need to watch out, as any breath of air will lift it up.

Moreover, for the inflation, some Niviuk pilots don't even take the front risers in their hands...

Once it's overhead, there's another surprise: even in a light breeze, the wing floats above your head and waits patiently for the signal to take off.

With a large all up weight, the load take up takes a bit more time, but given the weather and the run that you save during the inflation, it isn't a problem.

A wing which turns 'like a bicycle', although the solo skin wings obviously remain a bit easier to handle.

In flight, as with all single skins, it moves a lot in turbulence, but they are micro-movements whose size is very limited.

The wing tips can close a bit, but that's of no consequence. You really feel very safe under this little bit of fabric! In accelerated flight, a fold can appear along the wingspan.

A note concerning the fabric: although it has the name 'P' for 'Plume' (feather), this wing isn't made in Skytex 27, but in Skytex 38 (leading edge) and Skytex 32 (upper and lower surface). It's an intelligent compromise in weight versus longevity; 3.3 kg is enough really.

CONCLUSION FROM THE FIRST TESTS

This tandem is a real revolution. Perhaps not for professional tandem pilots, who would find it a shame to work this little gem every day. It's no doubt a real work of art and it appears to be simply made, but in reality is very high-performance and sophisticated.

We've never seen a tandem as light and compact before...

Below right: the 'maillons' are Dyneema softlinks which contribute to making it lighter. The unsheathed lines are in Aramid and fairly smooth to untangle.

The risers are made up of thin straps. The trimmers are for the take up of speed before landing.

The six cells, with the Niviuk SharkNose held in place by Nitinol rods, no doubt, part of the secret recipe of this wing.

But for private tandem pilots who want to climb mountains on foot with the minimum amount of weight for the maximum amount of pleasure, the Bi Skin 2 P opens up new horizons. In addition, those who travel by car will always find a little space to take the lightest and least bulky tandem in the world. In a future edition, we'll also publish the speed measurements, so that you can judge the XC abilities of this unusual tandem.

Sascha Burkhardt

BI SKIN 2P - TECHNICAL DATA	
Manufacturer: Niviuk Web: http://www.niviuk.com/ Tel: +34 972 422 878	
CELLS	39
FLAT SURFACE AREA [m²]	31
PROJECTED SURFACE AREA [m²]	26.17
FLAT WINGSPAN [m]	13.06
PROJECTED WINGSPAN [m²]	10.39
FLAT ASPECT RATIO	5.5
PROJECTED ASPECT RATIO	4.12
ALL UP WEIGHT	130 - 190
WEIGHT OF THE WING [kg]	3.3
CERTIFICATION	EN/LTF B

We flew with a full tandem, including reserve and harness, which only weighed 7.6 kg. And in addition, you could save a few hundred more grammes by choosing accessories which are lighter still and by not using the spreader bars. However you do it, it's amazing!

THE LIGHTEST TANDEM IN THE WORLD	
Niviuk Bi Skin	3.3 kg
Supair X-tralite tandem reserve	3.0 kg
1 Neo String harness	0.3 kg
1 Nervures String Expé 2 harness	0.2 kg
Lightweight Icaro spreaders	0.5 kg
6 lightweight karabiners	0.3 kg
TOTAL	**7.6 kg**

Unusual: the wing comes up almost by itself in the slightest breeze and floats nicely above the pilot and passenger.